Using Prediction Markets as a Tool for Classroom and Civic Engagement

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Abstract

In the post-COVID classroom, some challenges remain the same as pre-COVID: keeping students actively engaged in the course and seeking ways to help them understand how to apply course content to real-world scenarios. In an effort to address this enduring barrier, we implement a prediction market focused on the 2022 congressional midterm elections in our introductory and upper-level political science courses. Using original survey data, obtained through the administration of pre and post surveys, we discuss the impact of the market on behavior, knowledge, and attitudes. We will also explain how we accomplished this semester-long project using both the prediction market and classroom assignments with the goal of providing useful tips for anyone seeking alternative methods of engagement and different ways by which to achieve it in either introductory or upper level courses.

Keywords:

Simulations; civic engagement; elections; Congress; markets

Leading up to the 2020 election nearly $150 million flowed through the United States' largest election prediction market.[1] Americans bet real dollars and cents on the outcomes of everything from who would win the Alabama Senate election to what the margin of control would be in Congress (down to the exact number of seats each party might hold!). Public-facing betting markets are not new; the Iowa Electronic Markets, developed by the faculty at the University of Iowa, for example, has been operating since 1988. Scholars have noted for years the benefits that betting markets provide to predicting outcomes especially with regard to private information revealed by those trading (Wolfers and Zitzewitz 2004; Almenberg, Kittlitz, and Pfeiffer 2009; Bennouri, Gimpel, Robert 2011). In short, if your days' wages are on the line then you might think twice about betting on a candidate just because you agree with their policy preferences or ideological positioning. This feature scales and leads market prices to aggregate information about predicted outcomes (Wolfers and Zitzewitz 2004; Almenberg, Kittlitz, and Pfeiffer 2009; Bennouri, Gimpel, Robert 2011).

Today, it's probably most appropriate to contextualize the benefits of betting markets in American politics alongside other sophisticated ways pundits and scholars discuss the probability of election outcomes. Gelman (2021) notes that forecasting models, like those built by teams at major publications such as *FiveThirtyEight* or *The Economist*, are backward-looking by construction. These models rely on historical experience and involve variables that have been selected prior to the election. By contrast, prediction markets are fundamentally forward-looking and can rapidly incorporate information from novel and essentially arbitrary sources–as long as any trader considers it to be relevant (Gelman 2021). Each approach has unique value, yet recent

[1] Funt, Danny. 2022. "Betting on Elections Can Tell Us a Lot. Why Is It Mostly Illegal?" *The New Yorker*. https://www.newyorker.com/news/the-political-scene/betting-on-elections-can-tell-us-a-lot-why-is-it-mostly-illegal

research suggests an average of the two approaches likely outperforms either source alone (Gelman 2021; Sethi et al. 2021).

The utilization of prediction markets in undergraduate courses extends the long history of efforts by political science faculty to engage students in innovative and experiential learning (e.g., Bradberry and De Maio 2019; Elder, Seligsohn, and Hofrenning 2007; Brock and Cameron 1999; Hensley 1993); the goal is often to foster not just critical thinking skills, but also genuine interest and enthusiasm in the content and area of study more broadly. Examples of markets in undergraduate classrooms abound in political science (Ellis and Sami 2012; Berg and Chambers 2018; Abramson 2010)[2] and the business and management discipline in particular (Buckley and Doyle 2016; Buckley, Garvey, and McGrath 2011). With the 2022 United States congressional elections looming, we decided an effective way to both get our students interested in the election and immerse them in the literature on congressional elections was to implement our own private elections prediction market. In making this decision, we also chose to design and execute a quasi experiment to evaluate our effectiveness in fostering increased political interest, knowledge, civic engagement, and efficacy in our students.

While implementing the experiment was a new experience for both instructors, the goal of producing an engaging classroom environment where students are active learners was the same. After preliminary analysis, it is clear that the results of the experiment were mixed. However, the results provide overall encouragement in regards to multiple considerations and we consider the experience a worthwhile investment of classroom space and time.

[2] While Abramson (2010) utilizes a market with his class, he allows his students to opt in and sought to use the market to teach his students about campaign strategies rather than to motivate them about politics more generally (as the other studies in this area do). As such, we will not review his study in equal detail as we do the remaining two in this paper.

Prediction Markets in Political Science

Among scholars who have implemented prediction markets in their political science courses, the approaches and results have been mixed. Moreover, none of the studies we have found approach the use of a prediction market in the same way as we did. Ellis and Sami (2012) create a prediction market for their class on war in international relations. In doing so, they utilize a variety of current events for the students to bet on ranging from the Iranian nuclear weapons test in 2010 to legislative elections in Haiti that same year. They randomly assigned a subset of their class to trade on the market they built themselves. Ellis and Sami (2012) selected topics to open and close at different points throughout the semester; they also used a virtual currency, internal to their market, that they translated into real money as an incentive for their students at the conclusion of the simulation.

In their analysis of their pre- and post- course survey data, Ellis and Sami (2012) find that students already previously interested and engaged were more likely to engage actively with markets. Interestingly, they do not find increased enthusiasm for course content (and actually observe a decline in enthusiasm among all groups). Aptly, they note education research cautions against the idea that interactive technology games in the classroom will be well-received by all students (Whitton 2007). Despite these conclusions, we wonder the extent to which a new and younger set of students–who have explicitly grown up with advanced smartphones and internet access from a young age–might be less hostile to utilizing technology in the classroom for simulation-based exercises such as a prediction market. And, of course, research in other disciplines even from this same earlier period have found that prediction markets stimulate active learning to the extent that students participating in the market seek out new information outside

of class lectures to increase their performance on the market (Buckley, Garvey, and McGrath 2011).

Berg and Chambers (2018) conduct a more recent study spanning three semesters and therefore also both the 2016 presidential primary and general elections. Their study shares our common topic of United States elections, but varies in other important ways from both our and Ellis and Sami's (2012) study. Rather than building their own markets and allocating virtual currency to each individual student, Berg and Chambers (2018) used real U.S. dollars on the public prediction market PredictIt and allowed their class to make bets collectively by a simple majority vote. They also built in incentives, allowing their students at the conclusion of the course to use their earnings to purchase refreshments for their final exam. Berg and Chambers (2018) repeat their quasi experiment across different classes over their three semesters ranging from their department's core American politics course to an international relations course and even a course in economics. Similar to previous studies, they conducted pre- and post- course surveys intended to gauge the students' political awareness, knowledge, and engagement (Berg and Chambers 2018).

The findings from this second study are mixed; yet, Berg and Chambers (2018) do report students generally had increased interest in the 2016 election and in reading about politics. While these findings are certainly positive from a pedagogical perspective, they do not see similar positive findings in other areas. For example, they do not observe statistically significant increases in student knowledge of politics or course content, nor do they observe increased political participation among those who were exposed to the prediction market (Berg and Chambers 2018).

Taken together, these two important studies suggest there is more to learn about the role of prediction markets in the political science classroom. In designing our own quasi experiment with a prediction market we hope to replicate the findings of increased interest and engagement with American politics and extend those positive findings into the areas of knowledge and efficacy as well. The remainder of the paper details our approach, findings, and the implications for this important area of pedagogical exploration among scholars of political science.

Market Implementation and Research Design

To complete this experiment, we decided to use three separate Government courses during the fall 2022 semester. Of the two courses, two were introductory courses in American Politics and the other was an upper level course in Congressional Elections. One of the introductory courses (taught by McGee) was the control group while the other introductory course (taught by Hall) and upper-level Congressional elections course (taught by McGee) were the treatment groups. While each participant completed the pre and post surveys in August and November, only Hall's introductory course and McGee's upper level course were then assigned a "toss-up" race in which they were required to conduct research and present on that research at 4 different intervals in the course. In addition, everyone in the treatment groups received individual access to the Prediki platform[3] which allowed them to bet on the outcome of any of the "toss-up" or "leaning" elections in the market.

The size of the classes varied, but overall we began the semester with a total of 70 students - 24 in the control group and 45 in the treatment group (25 in Hall's Introductory Course

[3] Prediki is a private company that creates and manages online betting markets internationally. For the purpose of this experiment, we paid to have a private market created and the instructors tailored it to fit our needs for this simulation (i.e., creating and organizing the races, restricting student access to certain parts of the website, etc.).

and 21 in McGee's Upper level course).[4] There was much thought put into the design of the experiment, particularly in regards to the treatment and control groups. The initial idea for this experiment began with the upper-level congressional elections class; however curiosity began to have us consider if the treatment effects would differ between an upper level elective course full of majors and minors and an introductory course that consisted of majors, minors, and those just looking to fulfill their mandated distribution requirements? In addition, there was an understanding that while there were two different instructors across three courses, neither needed to change their teaching style to match the other, there simply needed to be alignment on the format and pacing of the experiment itself. The notion that neither instructor needed to change their teaching style or planned content, lends itself to later investigations of whether or not the content of the course had any bearing on the results. Once there was agreement on the format and pacing, and Institutional Review Board approval was obtained, we were able to launch the experiment quite early in the semester with the pre-survey completed in class by students the second week of the semester and races assigned the third week.

At the start of the third week of the semester students were randomly assigned one race rated as a "toss up" by the Cook Political Report. Four times throughout the semester between September and November (one week prior to the general election), students were asked to present information about their assigned race to the class and update the race's information on the prediction market's webpage. Students were provided a template to complete in which they needed to research various aspects of each candidate in their race, collecting information ranging from how much money was being raised and spent and from where, to what their advertising looked like, and, of course, which issues they were discussing, and ending each presentation with

[4] While each instructor did require completion of the survey as part of taking the course, a small number of students in the treatment group never completed the post-election survey and instead had a penalty applied to their final course grade.

their prediction for who would win the election based on the information that was collected[5]. When it came to assigned races and presentations, there was one key difference in the treatment groups: Because of the nature of the courses, it was decided that students in the introductory course would be put in pairs and assigned one race per pair, while students in the upper level course would be individually assigned races. In order to conduct this experiment, both instructors had to sacrifice time in their courses as presentation days would take up as much as 60 to 70 minutes of a 90-minute course.

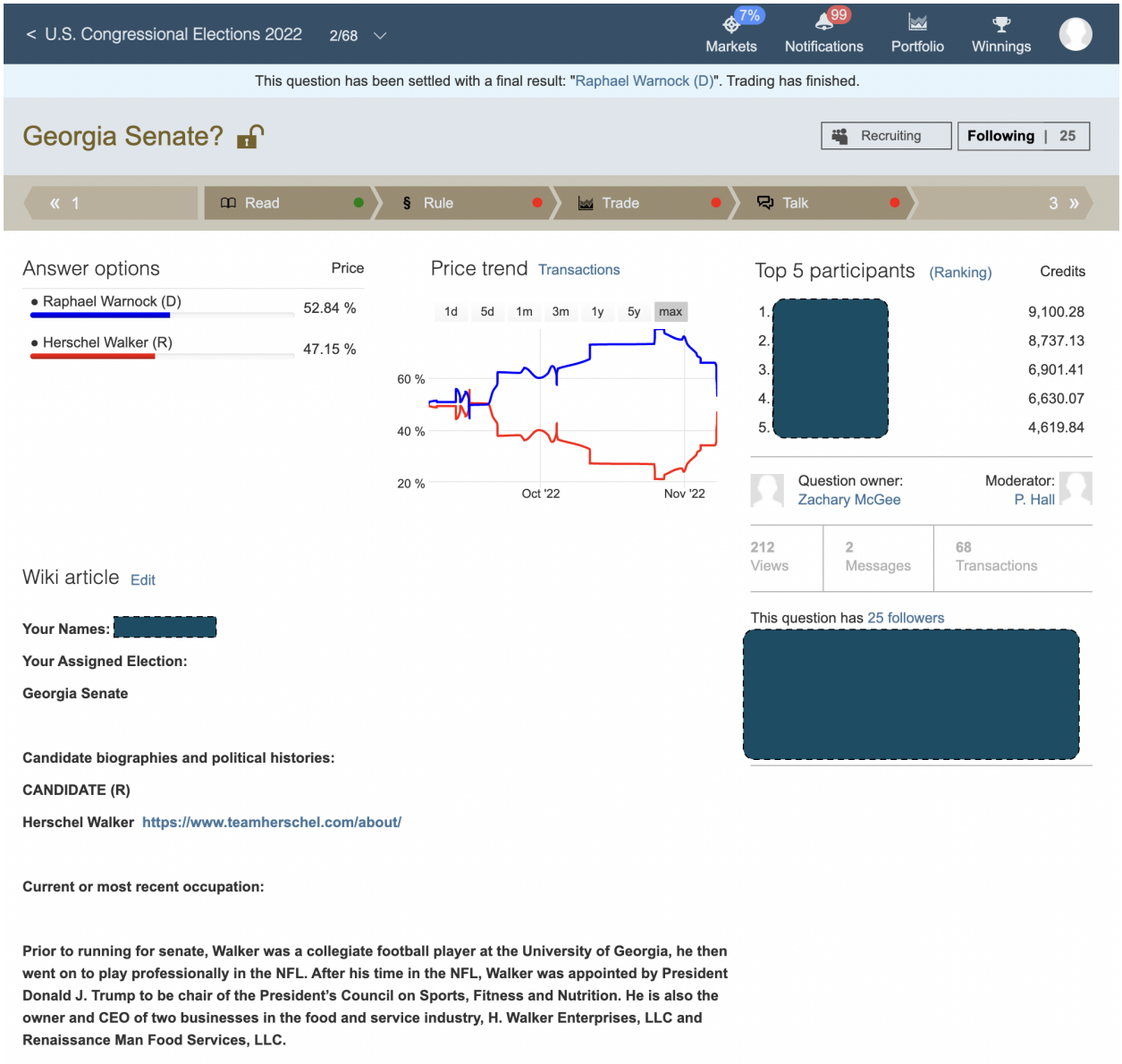
Assigning the races and providing the templates for the in class updates was one aspect of this experiment; the other was actually getting the students to participate in the market itself. To do this, we mandated that each student needed to bet on at least three races during the experiment. While students were welcome to come into the market and bet as much as they wanted, the minimum requirement was to place at least one bet on three separate races - one bet in September, one in October and the final one in November. With this set up in mind, we understood early on that the notion and idea of betting on races might cause alarm in our students - both those who may be concerned due to a lack of funds, which was an issue if equity, and those who are generally risk averse in regards to any sort of betting, which was an issue of personality for most and possibly morality for some.

We recognized at the very early stages of setting up this experiment that asking students to spend their own money would only complicate our efforts to integrate markets into a political science classroom. While the most immediate and obvious concern was equity we could not do this without also considering the issues of gambling addictions, particularly among college students (Nowak and Aloe 2014). To address our concerns about equity, addiction, and morality, we utilized virtual currency in our markets and as such students were each given 100,000 virtual

[5] See appendix for assignment template as it would be filled out by a student.

credits to place bets on which candidate they thought was going to win a given election. Bets could be placed at any time between week 3 of the course and 8:00 am EST on Election Day and each time a student selected a race, they could see the price of the market, price trend, and the top 5 owners of stock in that race, which may have helped some of them decide whom to bet on.

Figure 1: Screenshot from the Georgia Senate Race Page



After Election Day, the market "paid out" virtual currency to each student based on whether or not they bet on the correct candidate and how much each candidate's "stock" was worth. To further incentivize students to not only participate, but to take their participation seriously, the students were informed that prizes would be awarded to the winners of the market. The overall winner (the student with the largest realized profit after the elections) was awarded an iPad, while the winner of each course (besides the overall winner), was awarded a pair of AirPods. While this experiment did not present a financial cost to any of the students, the use of licenses for students to use the platform over a 4-month period and the prizes amounted to approximately $700. We are grateful to both Prediki and Saint Lawrence University for providing the resources for this experiment to happen.[6]

As discussed in the literature review, previous researchers who have implemented prediction markets have yielded mixed results. These results led us to be hopeful, yet grounded in the reality that we too might observe mixed results. The next section will contextualize our preliminary results and demonstrate that while mixed findings exist in regards to political knowledge and civic engagement, there remain reasons to encourage these types of classroom activities in the name of producing more politically engaged and civic-minded students.

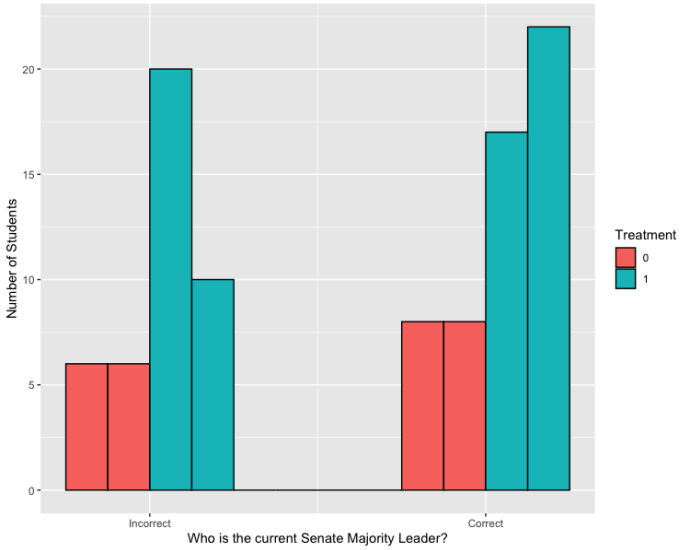
Findings

Our findings, like other studies in this area, are mixed. For each of the figures provided, the treatment group is denoted by the blue-colored bars, while the control group is denoted by the coral-colored bars. In addition, all pre-election surveys are denoted on the left for each response, while post-election results are directly to the right for each given response.

[6] Prediki provided a substantial discount on the licenses since we are an educational institution advancing democracy and both Professors McGee and Hall were awarded $500 each from an instructional mini grant from Saint Lawrence University.

Initial survey questions inquired about the current political knowledge of the participants. Standard practice in evaluating political knowledge involves questions about the United States' political leaders (Boudreau and Lupia 2011; Jessee 2015; Delli Carpini and Keeter 1993). We asked three questions in this area and report the results of each below. For our first political knowledge question, we saw increases in the number of students in the treatment group able to successfully identify that Senator Chuck Schumer (D-NY) was the Senate Majority Leader after the election (see Figure 2). Moreover, we saw no change in the control group on this metric. We also queried the students on the Speaker of the House (Nancy Pelosi) and President (Joe Biden). While all students entered the semester correctly identifying Joe Biden as President of the United States, the results for Speaker of the House were somewhat puzzling. Post-election, we saw an increase in students for both the control and treatment groups incorrectly identifying Nancy Pelosi as Speaker of the House. While initially confounded by these results, we attribute these findings to the fact that students understood that the Republicans were going to gain control of the House due to the electoral results; therefore, they answered the question based on what they understood the electoral results to be, not who was still Speaker of the House in November after the election. In general, we think these results are a net positive for our experiment and do suggest increased attention to party leadership in Congress as a result of the experiment rather than general knowledge.

Figure 2: Knowledge of Senate Majority Leader



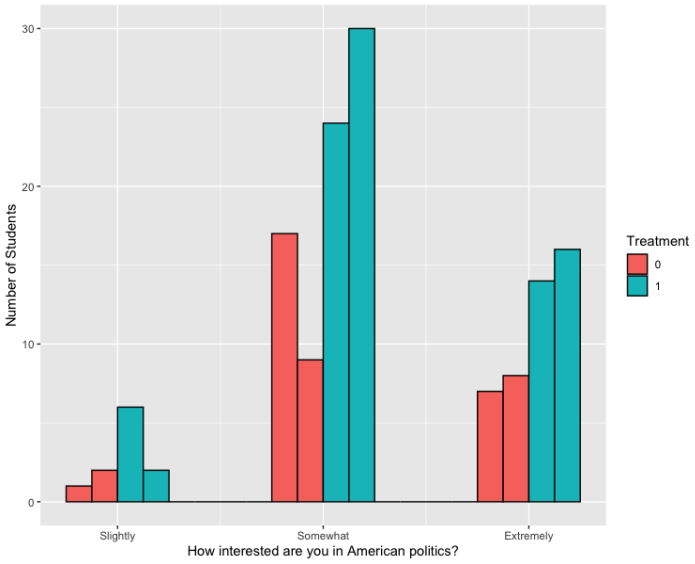
Next, we considered multiple questions about interest and effort to get involved in American politics. As a first cut at this concept of interest we asked the students directly how interested they were in American politics. For this question we utilized a Likert scale for the students to choose their response from. In this instance, and the handful of remaining questions we will analyze utilizing Likert scales in which responses were recoded in order to more easily display the results.[7]

When it comes to direct interest in American Politics, the results suggest an effect on the treatment group with marked increases on the treatment group for those "somewhat" and "extremely" interested in American politics during the post-survey administration. While it is true that the control group saw an increase in participants "slightly" and "extremely" interested in American politics, these results are not as pronounced as they are with the treatment group, which suggests that these types of classroom experiences can be a useful aid in increasing

[7] The recoding involved collapsing the five responses ranging from "Not at all…, Slightly, Somewhat, Moderately, Extremely" to three response collapsing "Not at all…" and "Slightly…" responses into a single category and the "Moderately…" and "Extremely…" responses into a single category. The middling responses, that is "Somewhat…," stand on their own.

interest in American politics. The hope being that this increased interest would also lead to increased engagement.

Figure 3: Interest in American Politics



A necessary precondition of being politically engaged is being informed. In an effort to understand if the experiment would have an impact on levels of political information, we asked participants about their media habits to see if this type of experiment would have some sort of impact on consuming political media (see Figure 4) or posting about politics on social media (see Figure 5). When it comes to frequency of consuming political media, students were asked to indicate how many days per week they consumed this type of media. While participants were able to select 0-7 days individually, the categories were collapsed here for ease of analysis. The results of this question reveal an increase in consumption of political media of both 3-5 days and 6-7 days per week for the treatment group. In addition, we observe that the control group saw an increase in the 6-7 days category and a decrease in all other categories. This suggests that all participants saw some increase in frequency of consumption of political media with most

participants shifting away from 0-2 days to 3-7 days per week with its most pronounced effects on the treatment group.

Figure 4: Frequency of Consuming Political Media

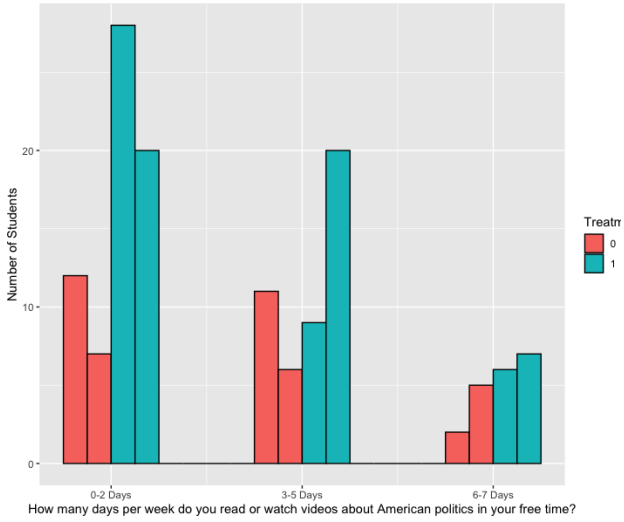
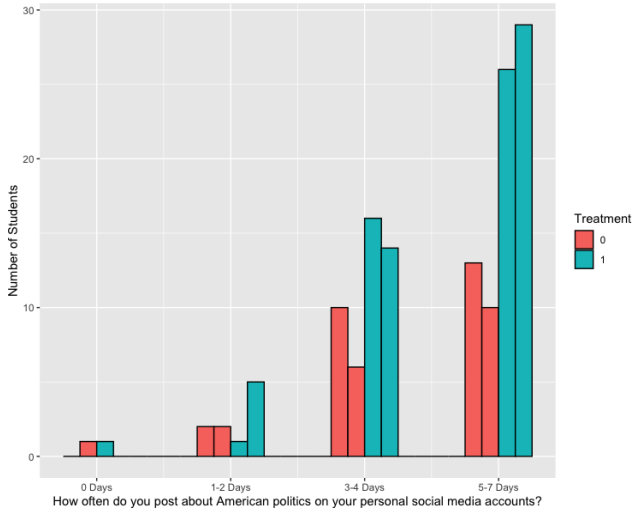


Figure 5: Posting on Social Media about Politics



In an effort to determine if the classroom experiment yielded changes in action as well as attitudes, participants were asked about their frequency of posting on social media about American politics. When discussing political and civic engagement, we would be remiss if we did not include social media behavior as this generation is already heavily connected to social media. While they are connected to social media, it does not mean that the social media they are connected to is civically or politically focused.

The results of this question suggest differences between the control and treatment groups. Specifically, the control group saw decreases in the frequency of posting in both the 3-4 days and 5-7 days categories and an increase in the 1-2 days category. This differed from the treatment group that saw increases in both the 1-2 days categories and 6-7 days categories. While the

treatment group saw a decrease in the 3-4 days category, we are unable to determine if the decrease means that these participants now post more or less than before the experiment began. Looking at these results from a broader perspective, there is support for the experiment yielding more action on social media from the participants in the treatment group than the control group.

The notions of civic action are further investigated in Figures 6-9 which asks questions about encouraging friends and family to engage with campaigns (see Figure 6), encouraging friends and family to vote (see Figure 7), and the likelihood of, and act of, voting itself (see Figures 8 and 9, respectively). When it comes to encouraging friends and family to engage with campaigns the results reveal a marked increase in students in the treatment group being both somewhat and likely to encourage their friends and family to engage. These results do not hold for the control group as there was a decrease in those being somewhat likely and a marginal increase of being likely to encourage friends and family to engage with campaigns. These results have wider implications as it demonstrates that the experiment and the act of continuous research by one or two individuals has rippling effects for society as they become more likely to encourage their friends and family to engage politically. In addition, Figure 7 suggests that this is not just a matter of encouraging friends and family to engage with campaigns, but also encouraging friends and family to vote. We observe a sharp decrease in students in the control group indicating that they are "unlikely" to encourage friends and family to vote to indicating that they are now "likely" to encourage friends and family to vote. While an increase is observed in the treatment group, a decrease is observed in the control group. This finding suggests that the act of sitting in a classroom is not enough to inspire individuals to encourage others to engage in political action. Rather, it suggests that the repeated and consistent action of researching and gathering information and paying attention to changes in current events and the political world is

what converts knowledge to action. This presents questions for how we can use the classroom space differently to impart knowledge and inspire civic action.

Figure 6: Encouraging Friends and Family to Engage with Campaigns

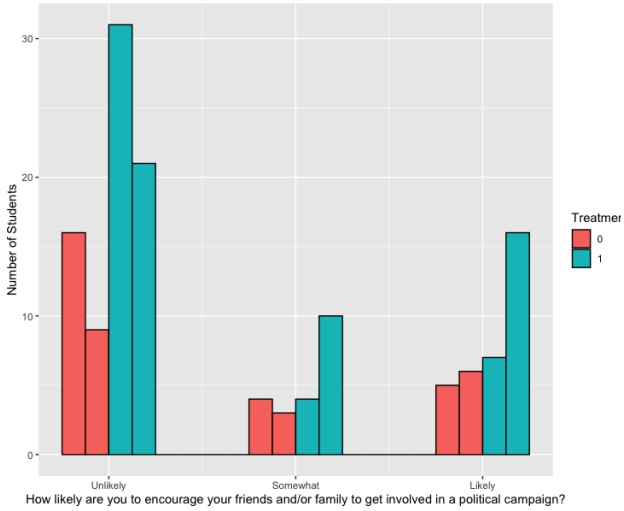
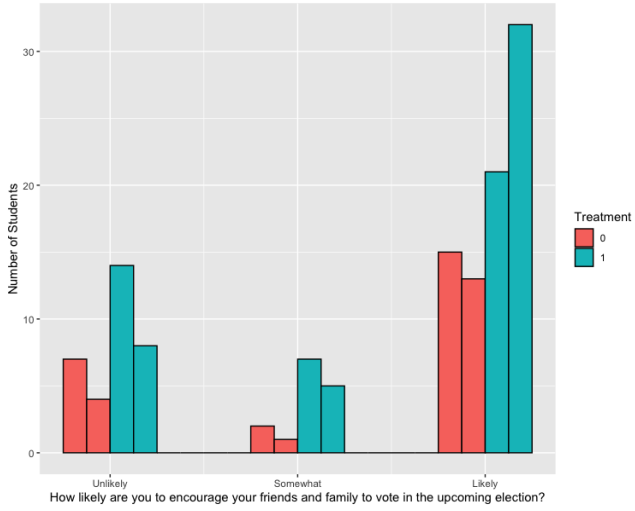


Figure 7: Encouraging Friends and Family to Vote



While the results for figures 6 and 7 are encouraging, the results for figures 8 and 9 are somewhat less so. Questions for figures 8 and 9 inquire about the participant's interest in voting and the act of voting in the election itself. While the initial survey provided encouragement as a majority of participants in both the treatment and control groups indicated that they were likely to vote in the midterm election, this indication did not come to fruition in the act of voting itself. While a majority of both groups stated that they were likely to vote, only about half actually voted. To make these results somewhat more confusing, we observed that slightly more than half of the students in the control group voted while slightly less than half of the students in the treatment group voted. As many would consider voting the ultimate act of political engagement,

we were hopeful that we would see more than half of the students in either group voting and a higher proportion of students in the treatment group voting as a result of participation in the experiment; yet, this is not what the data conveys. Although we viewed this as somewhat disappointing, we believe that these results could be attributed to many barriers posed to college students voting on residential campuses. It's no secret that college students living on residential campuses, particularly those where a majority of the student population is from another state, face unique barriers when trying to engage in voting (especially for the first time). These barriers include a lack of understanding of how to vote when temporarily living away from home, lack of knowledge on how to engage in absentee voting, or even deadlines for switching their voter registration to their address on campus. Using this lens, we remain hopeful that in the years to come, the effects of this experiment will yield not only a change in attitudes about voting, but engagement in the act itself.

Figure 8: Student Interest in Voting

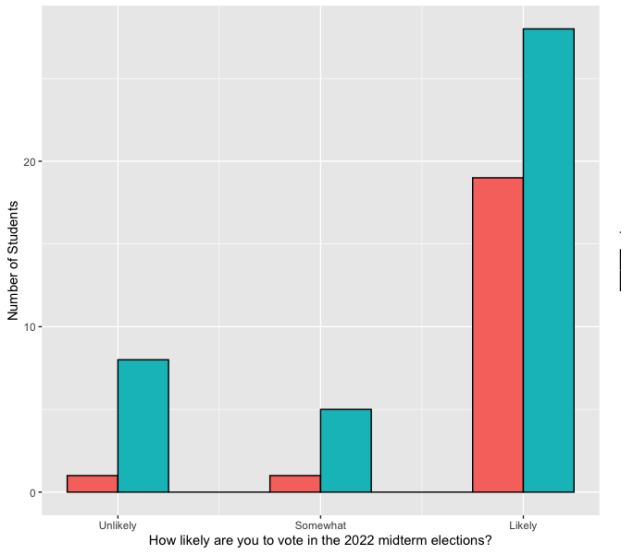
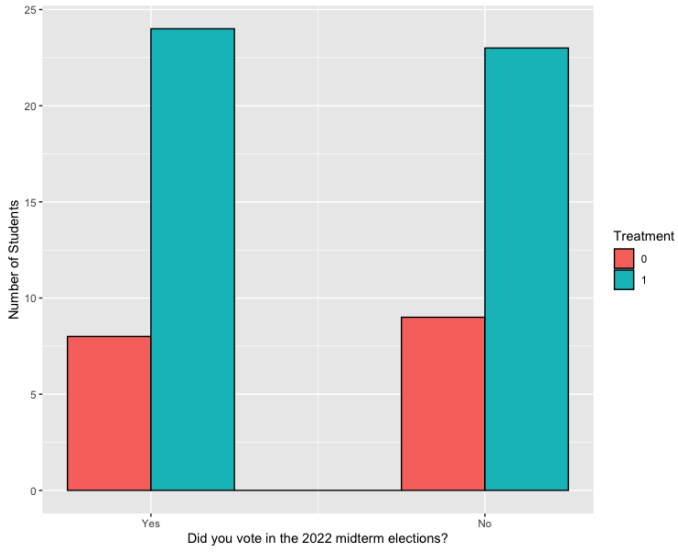


Figure 9: Student Act of Voting



Our final question for this analysis looks at student preferences about public policy. While this question certainly varies in purpose from the others presented here thus far, it is emblematic of many of the questions we have yet to consider from the extensive survey we administered. Beyond fostering interest and civic engagement, we also wanted to get a sense for what impacts consistently studying a midterm election might have on the lenses through which students understand American politics.

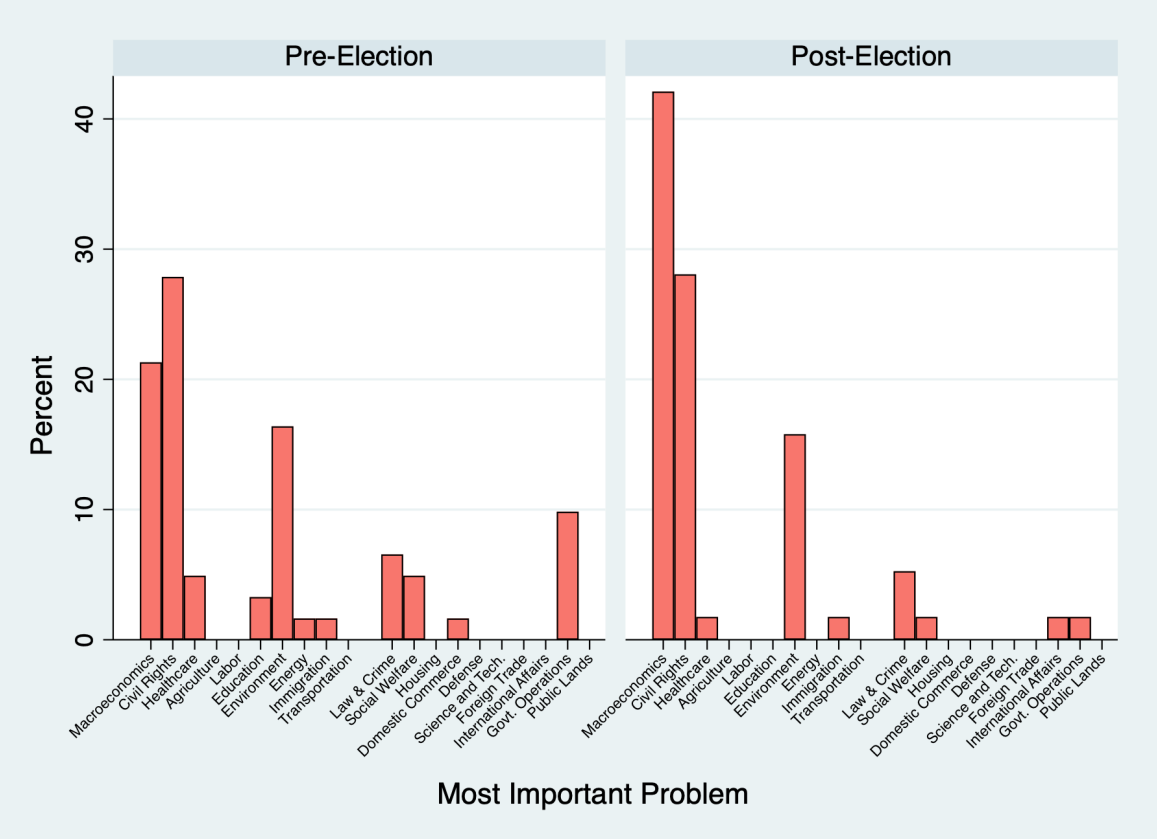
To some degree, students come into our classes with some sense of what they think the pressing policy problems facing the United States are. With consistent exposure to both the official partisan messaging that comes along with any given congressional campaign (Lee 2016) and the coverage surrounding the elections more generally, students see for themselves the ways in which party leaders and media elites try to shape the political discourse in the United States. Moreover, they are all actively learning about both fundamental and more complex aspects of the American political system in our courses.

If students are being impacted by the exposure to media and messaging, we would expect to see increases in policy areas that received significant attention during the election cycle. Based on our own experience following the election cycle, we argue the issues most attended to by the parties and media were: the economy/inflation, crime, reproductive rights, and immigration. In our survey students were asked, "Thinking of society today, what do you consider the three most important issues that you believe the government needs to address?" The results presented here (see Figure 10) take the number one policy issue each student volunteered and categorize it into one of the 20 major topic codes utilized by the Policy Agendas Project (e.g., Baumgartner and Jones 2009).

The results, which are not yet coded for treatment vs. control group, suggest students started the semester most concerned with civil rights, macroeconomics (e.g., tax reform, concerns about the federal budget, inflation, etc.), and environmental issues. After the election we see students most concerned with the exact same issues, except the number one issue shifted from civil rights to macroeconomics. This shift is interesting and suggests a narrative similar to the one we saw begin to take shape in the final days before the election. That is, increased concern with inflation and decreased prevalence of abortion or social justice issues. We do not observe increases in concerns about crime or immigration. But, we do see the diversity of issues shrink following the election, and the descriptive data suggest students may have felt acute concern about inflation.

Many different explanations could be driving these results. It's important, of course, to remember that this experiment was conducted at a small residential liberal arts college. Almost all of these students are "traditional" in the sense that they are between the ages of 17-22 years old. Therefore, we can assume these students are facing the job market for the first time in the next few years and they are clear-eyed about the reality of how a ravaged economy could negatively impact their immediate future. Moreover, it could also be the case that our sample skews Democratic in its party affiliation and the messaging on crime and immigration was coming from Republicans. Further, and more careful, analysis of these data will reveal more of the underlying explanations for our next draft of this paper.

Figure 10: Most Important Problem



Discussion and Implications

The previous literature on prediction markets in the political science classroom highlights how these experiments frequently yield mixed results. The preliminary findings for this experiment have yielded the same. While there was increased knowledge in some areas, there was decreased knowledge in others. In addition, while the data revealed an increased interest in politics and likelihood of encouraging friends and family to get involved in campaigns and vote, we did not see this increase reflected in the act of voting itself. Yet, while we did not see an increase in the act of voting, we did see an increase in posting to social media and consuming political media. Importantly, our study does provide some results that are consistent with Berg and Chambers' (2018) findings. In particular, the increased interest in politics and the desire to

read about politics (or consume political media). In an area of research plagued by mixed results, we feel extremely positively about the prospect of beginning to build a nexus of consistent results on prediction markets in the classroom that suggest they foster an increased interest in American politics. It is possible that we, along with Berg and Chambers (2018), see these increases whereas Ellis and Sami (2012) do not in part because students at American universities find the content of American politics more easy to connect to than those of an international relations course (as Ellis and Sami utilized). This proposition, of course, is mere speculation and we have no empirical evidence to suggest this is a certainty.

While we take heart in our positive results, we have also given some thought as to why we encountered otherwise mixed findings. First, in regards to political knowledge, we attribute the increase in incorrect answers about who the Speaker of the House is to confusion about question wording that could have been made more clear in the instrument. In addition, when it comes to actions that are regulated by the government (such as voting), we need to account for structural barriers that prevent involvement, rather than viewing a lack of involvement as a lack of care or concern. The data clearly suggests that participants care and are even likely to encourage others to get involved, even if they are not able to be involved themselves.

Thinking through important considerations for future research, we seek to highlight some strengths of our counterparts in the business and management discipline. One important consideration for future studies in this area is that political scientists should attend more explicitly to levels of student motivation in their survey measures. Buckely and Doyle (2016) provide ample evidence from their own discipline, as well as the discipline of education, showing that varying levels of intrinsic and extrinsic motivation mediate the benefits students receive from simulations like prediction markets in the classroom. In future studies conducted in

political science, we should consider implementing more rigorous batteries in our surveys to attempt and understand the motivation levels of our students, as that clearly impacts their receptivity to experiential learning in these cases.

Even with a mixed set of results, overall, we remain encouraged and hopeful for the lasting impacts of this experiment, especially when we consider the wider impacts of the experiment on the community as a whole. Participants who were in the treatment showed greater levels of interest in American politics and were even more likely to be the ones to encourage friends and family to participate and vote. It's in this increased likelihood of encouragement that we can see the possible rippling impacts of this experiment on the students and their counterparts. By using our college classrooms to engage in consistent research and presentation of data that has real life consequences, we have impacted our students and those close to them, which we hope leads to more widespread engagement and participation. In the end, this prospect has made the time, energy, and effort of this experiment worthwhile as it yielded gains in both civic and political attitudes, engagement, and action.

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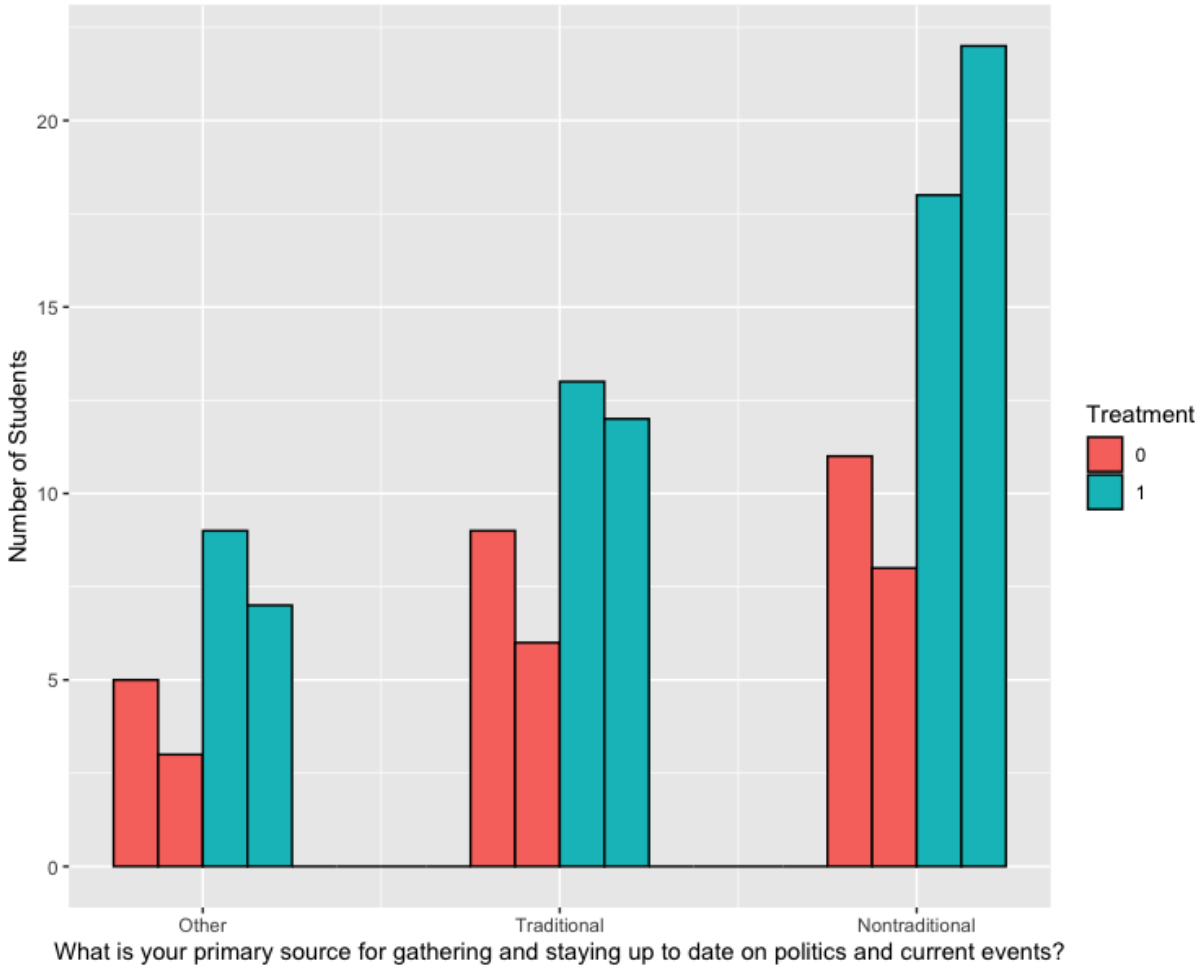
Appendix

Figure A1: Types of Political Media



Addendum 1: Election Update Template with Example Responses

St. Lawrence University Election Prediction Market
Election Update Template
Fall 2022

Your Name: Zachary McGee
Your Assigned Election: New York, 21st District

Candidate biographies and political histories:
Elise Stefanik (R)
Current or most recent occupation: Member of Congress, NY-21 since 2015

Other relevant biographical information: Member of House Republican leadership; originally elected at 30-years-old, she was the youngest woman ever elected to Congress at the time.

Matt Castelli (D)
Current or most recent occupation: A leadership position with a veteran-founded New York based technology company dedicated to eliminating barriers to care for groups often left behind in the healthcare system including veterans and rural communities.

Other relevant biographical information:
Former CIA agent; worked under Trump administration for one year

Replace the information below with information about your race. ***DO NOT CHANGE THE SIZE OF THE TABLE*** *(the width of the second column should always remain at 4.09"). Next, copy and paste the table below directly into the election prediction market wiki page for the race you are following. Finally, upload the document (or copy and paste the table) to the requisite assignment on Canvas to receive credit for the election update in the course.*

Question/Information	
Most Recent Poll:	Stefanik (R): 68% Castelli (D): 42% https://www.realclearpolitics.com/epolls/latest_polls/2022/
Current Prediction from 538:	99% Stefanik (R) https://projects.fivethirtyeight.com/2022-election-forecast/house/new-york/21/

Money Raised this Election Cycle:	Stefanik (R): $7,327,076.16 Castelli (D): $1,114,515.86 https://www.fec.gov/data/candidate/H4NY21079/ https://www.fec.gov/data/candidate/H2NY21164/
Money Spent this Election Cycle:	Stefanik (R): $6,683,701.65 Castelli (D): $683,097.60 SOURCE LINKS (if different from above)
Current Cash on Hand:	Stefanik (R): $2,626,915.33 Castelli (D): $431,418.26 SOURCE LINKS (if different from above)
Most Recent Campaign Advertisement or Appearance Online:	Stefanik (R): "Elise Holds Rally with Marc Molinaro and Montgomery County Supporters 08.15.2022" https://www.youtube.com/watch?v=FbR-sR_DvdI Castelli (D): "Matt Castelli – Mission" https://www.youtube.com/watch?v=EYZ9C4H_Uwc

Top 4 News Headlines:	Stefanik (R): 1) Stefanik urges Canada to drop ArriveCAN requirement for cross-border travel (WWNY) 2) Poll: Former Stefanik aide and ex-Trump official tied in swing district GOP primary (The Hill) 3) Top U.S. Republican urges Canada to scrap ArriveCAN app (CBC) 4) Stefanik calls for transparency from FBI on Trump search, limo crash (WCAX) Castelli (D): 1) Meet the NY-21 congressional candidates: Matt Castelli (WWTI) 2) NY-21 Democrats release first video ads ahead primary (The Press Republican) 3) Why I'm choosing Matt Castelli (Adirondack Daily Enterprise) 4) Congressional Corner with Matt Castelli (WAMC)
Top 3 Important Issues (Based on your opinion given your research):	1) Inflation 2) COVID-19 Restrictions 3) Immigration
Top 3 Industries Supporting Each Candidate:	Stefanik (R): 1) Retirees 2) Republican/Conservative Groups 3) Real Estate Castelli (D): 1) Retirees 2) Lawyers 3) Education https://www.opensecrets.org/races/industries?cycle=2022&id=NY21&spec=N

Major Changes Since Last Presentation:	Matt Castelli won the Democratic Party primary and is officially challenging Stefanik for her seat. He has significantly less cash on hand than Stefanik, partially due to having to fend off primary challenger Matt Purtorti. This will put him at a competitive disadvantage compared with Stefanik going into September.
Your Prediction as of Today:	Elise Stefanik (R)

Addendum 2: Post Election - Full Survey Battery

Q1 Thank you for your participation in this study. Please answer each question as it pertains to you and your knowledge. Please note that you are free to choose "prefer not to answer" or leave free responses blank for any question in the survey.

Q2 Who is the current president of the United States?

_____

Q3 Who is the current Speaker of the House?

_____

Q4 Who is the current Senate Majority Leader?

_____

Q5 Which party currently controls the House of Representatives?

- ○ Democratic Party (1)
- ○ Republican Party (2)
- ○ Some other party (3)

- ○ I don't know (4)
- ○ Prefer not to answer (5)

Q6 How interested are you in American politics?

- ○ Not at all interested (1)
- ○ Slightly interested (2)
- ○ Somewhat interested (3)
- ○ Moderately interested (4)
- ○ Extremely interested (5)
- ○ Prefer not to answer (6)

Q7 How many days per week do you read or watch videos about American politics in your free time?

- ○ 0 days per week (1)
- ○ 1 days per week (2)
- ○ 2 days per week (3)
- ○ 3 days per week (4)
- ○ 4 days per week (5)
- ○ 5 days per week (6)
- ○ 6 days per week (7)
- ○ 7 days per week (8)
- ○ I don't know (9)

- ○ Prefer not to answer (10)

Q8 What is your primary source for gathering and staying up to date on politics and current events?

_____

Q9 How often do you post about American politics on your personal social media accounts?

- ○ Daily (1)
- ○ Weekly (2)
- ○ Monthly (3)
- ○ A few times per year (4)
- ○ Never (5)
- ○ Prefer not to answer (6)
- ○ I do not have any social media accounts (7)

Q10 Were you eligible to vote in the 2022 midterm elections?

- ○ Yes (1)
- ○ No (2)
- ○ I don't know (3)
- ○ Prefer not to answer (4)

Q11 Are you registered to vote in the United States?

- ○ Yes (1)

- ○ No (2)
- ○ I don't know (3)
- ○ Prefer not to answer (4)

Q12 How likely are you to vote in the 2024 midterm elections?

- ○ Not at all likely (1)
- ○ Slightly likely (2)
- ○ Somewhat likely (3)
- ○ Moderately likely (4)
- ○ Extremely likely (5)
- ○ I don't know (6)
- ○ Prefer not to answer (7)
- ○ N/A: I am not eligible to vote in the United States (8)

Q43 Did you vote in the 2022 midterm elections?

- ○ Yes (1)
- ○ No (2)
- ○ Prefer not to answer (3)
- ○ N/A: I am not eligible to vote in the United States (4)

Q13 How confident are you about who you voted for in the 2022 midterm elections in the United States?

- ○ Not at all confident (1)

- ○ Slightly confident (2)
- ○ Somewhat confident (3)
- ○ Moderately confident (4)
- ○ Extremely confident (5)
- ○ Prefer not to answer (6)
- ○ I do not plan to vote (7)

Q14 How likely are you to encourage your friends and family to vote in future elections?

- ○ Not at all likely (1)
- ○ Slightly likely (2)
- ○ Somewhat likely (3)
- ○ Moderately likely (4)
- ○ Extremely likely (5)
- ○ I don't know (6)
- ○ Prefer not to answer (7)
- ○ N/A: None of my friends or family are eligible to vote in the United States (8)

Q15 How likely are you to encourage your friends and/or family to get involved in a political campaign in future elections?

- ○ Not at all likely (1)
- ○ Slightly likely (2)
- ○ Somewhat likely (3)

- ○ Moderately likely (4)
- ○ Extremely likely (5)
- ○ I don't know (6)
- ○ Prefer not to answer (7)

Q16 Which political party do you think should be in control of the legislative branch in the United States?

- ○ Democratic Party (1)
- ○ Republican Party (2)
- ○ Third party or Independent (3)
- ○ I don't know (4)
- ○ Prefer not to answer (5)

Q17 How often have you donated to a politician, political party, or politically motivated group?

- ○ Never (1)
- ○ Once (2)
- ○ Twice (3)
- ○ Three or more times (4)
- ○ I don't know (5)
- ○ Prefer not to answer (6)

Q19 How often have you contacted an elected official in the United States federal government?

- ○ Never (1)

- ○ Once (2)
- ○ Twice (3)
- ○ Three or more times (4)
- ○ I don't know (5)
- ○ Prefer not to answer (6)

Q20 How often have you attended a political rally or campaign event?

- ○ Never (1)
- ○ Once (2)
- ○ Twice (3)
- ○ Three or more times (4)
- ○ I don't know (5)
- ○ Prefer not to answer (6)

Q21 How often have you volunteered for a political campaign?

- ○ Never (1)
- ○ Once (2)
- ○ Twice (3)
- ○ Three or more times (4)
- ○ I don't know (5)
- ○ Prefer not to answer (6)

Q22 In your view, the amount of money raised and spent on campaigns in American politics is…

- ○ Too much (1)
- ○ Just enough (2)
- ○ Too little (3)
- ○ I don't know (4)
- ○ Prefer not to answer (5)

Q23 Thinking about the people who run for office in federal elections in the United States, in your view, how many of them run because they want to serve the community?

- ○ All of them (1)
- ○ Most of them (2)
- ○ Some of them (3)
- ○ A few of them (4)
- ○ None of them (5)
- ○ I don't know (6)
- ○ Prefer not to answer (7)

Q24 Thinking about the people who run for office in federal elections in the United States, in your view, how many of them run because they want to serve their own personal interests?

- ○ All of them (1)
- ○ Most of them (2)
- ○ Some of them (3)
- ○ A few of them (4)
- ○ None of them (5)

- ○ I don't know (6)
- ○ Prefer not to answer (7)

Q25 How much of the time do you think you can trust the United States federal government to do what is right?

- ○ Just about always (1)
- ○ Most of the time (2)
- ○ Only some of the time (3)
- ○ Never (4)
- ○ I don't know (5)
- ○ Prefer not to answer (6)

Q26 The United States federal government intentionally withholds important information from the public it could safely release.

- ○ Strongly agree (1)
- ○ Agree (2)
- ○ Somewhat agree (3)
- ○ Neither agree nor disagree (4)
- ○ Somewhat disagree (5)
- ○ Disagree (6)
- ○ Strongly disagree (7)
- ○ I don't know (8)
- ○ Prefer not to answer (9)

Q28 Thinking about the state of the United States these days, I feel fearful.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)
- I don't know (8)
- Prefer not to answer (9)

Q29 Thinking about the state of the United States these days, I feel hopeful.

- Strongly agree (1)
- Agree (2)
- Somewhat agree (3)
- Neither agree nor disagree (4)
- Somewhat disagree (5)
- Disagree (6)
- Strongly disagree (7)
- I don't know (8)

- ○ Prefer not to answer (9)

Q30 Thinking about the state of the United States these days, I feel angry.

- ○ Strongly agree (1)
- ○ Agree (2)
- ○ Somewhat agree (3)
- ○ Neither agree nor disagree (4)
- ○ Somewhat disagree (5)
- ○ Disagree (6)
- ○ Strongly disagree (7)
- ○ I don't know (8)
- ○ Prefer not to answer (9)

Q31 Thinking about the state of the United States these days, I feel proud.

- ○ Strongly agree (1)
- ○ Agree (2)
- ○ Somewhat agree (3)
- ○ Neither agree nor disagree (4)
- ○ Somewhat disagree (5)
- ○ Disagree (6)
- ○ Strongly disagree (7)

- ○ I don't know (8)
- ○ Prefer not to answer (9)

Q32 The United States federal government does enough to address issues affecting people like me.

- ○ Strongly agree (1)
- ○ Agree (2)
- ○ Somewhat agree (3)
- ○ Neither agree nor disagree (4)
- ○ Somewhat disagree (5)
- ○ Disagree (6)
- ○ Strongly disagree (7)
- ○ I don't know (8)
- ○ Prefer not to answer (9)

Q33 Voting by people like me directly impacts how the United States federal government runs things.

- ○ Strongly agree (1)
- ○ Agree (2)
- ○ Somewhat agree (3)
- ○ Neither agree nor disagree (4)
- ○ Somewhat disagree (5)
- ○ Disagree (6)
- ○ Strongly disagree (7)

- ○ I don't know (8)
- ○ Prefer not to answer (9)

Q34 Ordinary citizens can do a lot to influence the United States federal government if they are willing to make the effort.

- ○ Strongly agree (1)
- ○ Agree (2)
- ○ Somewhat agree (3)
- ○ Neither agree nor disagree (4)
- ○ Somewhat disagree (5)
- ○ Disagree (6)
- ○ Strongly disagree (7)
- ○ I don't know (8)
- ○ Prefer not to answer (9)

Q35 Suppose you contacted your member of the U.S. House of Representatives with a problem. How likely do you think it is that they would help you address it?

- ○ Very unlikely (1)
- ○ Somewhat unlikely (2)
- ○ Not very likely (3)
- ○ Not likely at all (4)
- ○ Prefer not to answer (5)

Q36 Thinking of society today, what do you consider the three most important issues that you believe the government needs to address.

- ○ Most important issue (1) _____
- ○ Second most important issue (2) _____
- ○ Third most important issue (3) _____

Q42 In which course at St. Lawrence University are you taking this survey for?

- ○ Congressional Elections (1)
- ○ Introduction to American Politics (w/Dr. Hall) (2)
- ○ Introduction to American Politics (w/Dr. McGee) (3)
- ○ Prefer not to answer (4)

Q37 Please select the category (or categories) that best describes you. (Select all that apply)

- ☐ Asian (1)
- ☐ Black of African American (2)
- ☐ Hispanic (3)
- ☐ Indigenous American (e.g., Native American, Alaskan Native, Native Hawaiian or Pacific Islander, etc.) (4)
- ☐ White (5)
- ☐ Identity not listed (you may specify in the text box below) (6)

_____

- ☐ Prefer not to answer (7)

Q38 Please select the gender identity that best describes you. (Select all that apply)

- ○ Female (1)

- ○ Male (2)
- ○ Non-binary (3)
- ○ Gender identity not listed (you may specify in the text box below) (4)

_____

- ○ Prefer not to answer (5)

Q39 Please select your age.

- ○ 17 years old (1)
- ○ 18 years old (2)
- ○ 19 years old (3)
- ○ 20 years old (4)
- ○ 21 years old (5)
- ○ 22 years old (6)
- ○ 23 years old (7)
- ○ 24 years old (8)
- ○ 25 years old or older (9)
- ○ Prefer not to answer (10)

Q40 Did you attend a public high school?

- ○ Yes (1)
- ○ No (2)
- ○ Unsure (3)

- ○ Prefer not to answer (4)

Q41 In politics today, do you consider yourself a:

- ○ Strong Liberal (1)
- ○ Liberal (2)
- ○ Leaning Liberal (3)
- ○ Moderate (4)
- ○ Leaning Conservative (5)
- ○ Conservative (6)
- ○ Strong Conservative (7)
- ○ Prefer not to answer (8)

Q42 In politics today, you identify most with which of the following political parties?

- ○ Democratic Party (1)
- ○ Republican Party (2)
- ○ Green Party (3)
- ○ Libertarian Party (4)
- ○ Independent (5)
- ○ No affiliation (6)
- ○ Prefer not to answer (7)

Q43 Thinking about your party identification, how connected do you feel towards that party?

- ○ Very strong (1)
- ○ Strong (2)
- ○ Neutral (3)
- ○ Weak (4)
- ○ Very Weak (5)
- ○ Prefer not to answer (6)