

Get out of the way! Reflections on 15 years of developing and using a web-based legislative simulation

John Wilkerson
Department of Political Science
University of Washington
jwilker@uw.edu

Abstract

Fifteen years ago, I created a web-based resource to support an in-class simulation exercise. The product now includes all of the essential tools for a student-run legislature and is used in colleges and high schools as a supplement to American Government courses. In this paper, I reflect on what I've learned from *LegSim* about simulation design, how simulations can contribute to social science education, and the challenges of effectively integrating a simulation into a curriculum. I conclude with a few reflections about leading a software development project as an academic with other professional obligations and little programming experience.

Introduction

At a teaching retreat in the summer of 2000, I sketched out some ideas for a web-based "mock Congress." The internet was the new thing and seemed like a convenient way to share documents (such as bills and committee reports) during the week-long simulation that was the capstone of my US Congress course. Students responded positively and suggested improvements. Why not also post information about their priorities and constituencies? Would it be possible to hold committee hearings and vote on-line? Their enthusiasm was inspiring and what came to be called *LegSim* morphed into an ongoing software development project that continues to this day.

Designing and developing the website has been a rewarding experience. However, the most enlightening part of the project has been discovering the benefits and addressing the challenges of a project-based approach to instruction. Incorporating a simulation has changed how I think about teaching at the undergraduate level. I am convinced that it improves overall retention and contributes new knowledge. It has made my class more engaging, more fun to teach, and one of the more popular courses our department offers. Yet I continue to search for the right balance between lectures and simulation activities, as well as ways to improve student buy in.

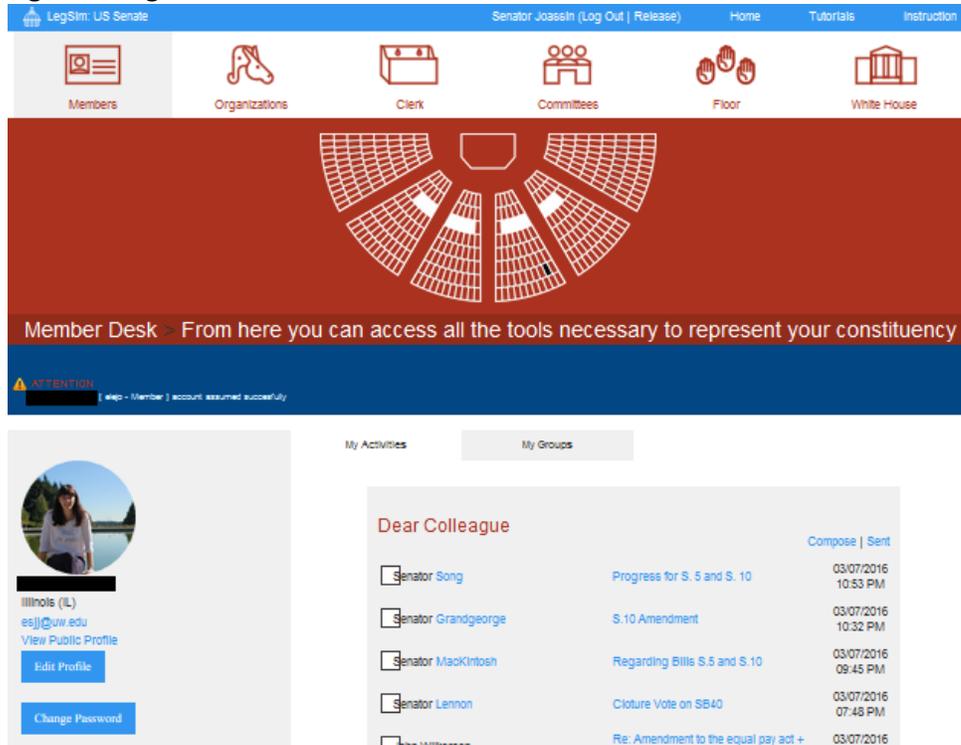
LegSim

LegSim is an interactive website (figure 1) that supports class-based simulations. It facilitates sharing and tracking the progress of student-authored bills, especially in large classes. In addition, it includes all of the tools needed to conduct legislative business.

Get out of the way!

This gives the instructor additional flexibility, and provides additional learning opportunities outside of the classroom (figure 2).

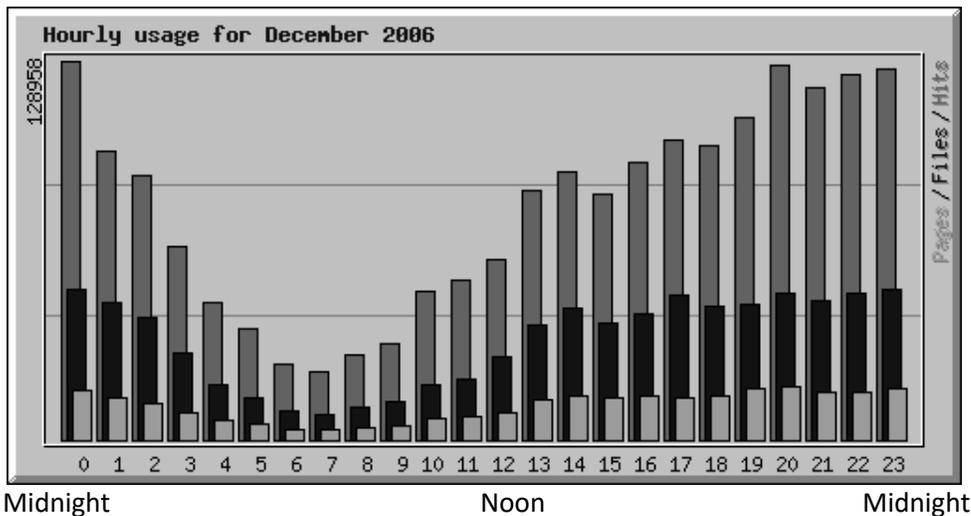
Figure 1. LegSim screenshot



Each course gets its own password-protected session (a U.S. House or U.S. Senate that includes a President with veto powers). The instructor provides login instructions and students populate the site, organize the legislature, and propose and consider legislation. LegSim includes tools for each step of the legislative process. Members, legislation, and actions are also linked to make it easy for students to track bills, learn more about legislative sponsors and cosponsors, and access related activities such as committee reports, discussions, proposed amendments and votes. Finally, the bill management process is hardwired to capture key features of the US federal legislative process. For example, House bills can only be scheduled for floor consideration according to calendar ordering, unless the chamber adopts a special rule proposed by the Rules committee. If at least one senator indicates that she is “still debating,” floor votes are suspended in the Senate and the only vote that is in order is a motion for cloture.

Get out of the way!

Figure 2. Hours of the day when students are most active on LegSim



The administrator of the site (usually the instructor) and legislative leaders chosen by students have higher levels of access. The administrator customizes their session during the setup process (for example by limiting available committees), has the ability to circumvent the hardwired floor scheduling process, receives all of the “dear colleague” letters students send to one another, and has access to statistical data on student activity and participation. Legislative leaders have the ability to appoint committee members, refer bills, initiate hearings, draft committee reports, manage floor calendars, and schedule roll call votes.

Different instructors use the site differently. In my US Congress class, students start creating their profiles during the second week and the legislature adjourns *sine die* during the last week of class. A longer simulation provides more opportunities for students to experiment and adapt. Most of my assignments are also simulation-related for reasons discussed later in this article. High school instructors teaching AP Government must cover a broader range of content. Some have students complete preparatory tasks (such as creating their profiles and sponsoring bills) while the class is focused on other subjects, and then devote one or two weeks to an intensive legislative simulation. To keep things moving, they may also assign committee positions (rather than letting students decide) and assume the role of chamber leader.

Learning science and the contributions of simulations

Simulations consume valuable class time that could be devoted to other productive activities. Proponents of simulations should therefore be expected to explain why simulations are beneficial to learning. In their seminal book, *How People Learn: Mind, Brain, Experience and School*, Bransford, Brown and Cocking (2000) highlight three findings from learning science with implications for teaching. The first is that expert knowledge is not just about having the ability to recall facts. It is about having well organized knowledge that promotes understanding. Experts appreciate how the different elements of a subject are related and are able to retrieve relevant knowledge

when needed (p. 9). Teachers should therefore encourage in-depth explorations that promote deeper understanding, even if it means covering less factual material. The second is that students come to class with very different preconceptions about how the world (or politics) works (p. 10). These preconceptions shape how students learn so instructors should incorporate early activities that reveal student thinking in order to guide instruction. The third is that students (and people more generally) often have unrealistic perceptions of their own competence (p. 12).¹ Because students often fail to appreciate what they need to know in order to succeed, instructors should establish clear learning goals and encourage students to realistically assess their progress.

Simulations can be effective tools for promoting each of these objectives. They draw students out, provide regular feedback, and create incentives for developing deeper understandings. In the remainder of this article, I reflect on four general benefits of the simulation that I use in my US Congress course: fostering learning communities, challenging students, providing new knowledge and promoting deeper connections.

1. Simulations foster learning communities

In education research, “learning communities” refer to collaborative learning that goes beyond assigning students to work together (Brown & Campione, 1996). Learning communities are distinguished by a shared sense of identity and emotional attachment that encourages discovery. I think that this is one of the main values of simulations. Students are emotionally invested: *“I know that I’m not a real representative, but I have gotten myself so into this class that I feel like I have become one! It’s really frustrating to put your heart into something you feel so passionate about and have no ability to help it, but I guess it’s all part of the game.”*

Students have opinions to share and they want to prove that they can legislate. A student who passionately opposes a bill will search for ways to defeat it. When a student objects that a bill violates the 10th amendment, was never referred to their committee, or gives a carefully prepared floor speech, other students notice and are inspired. I have seen students take the simulation far more seriously than I ever anticipated. One year, they voted to start each class with a non-denominational prayer (just as Congress starts its legislative days). After about a week, a student went directly to the University President with a complaint. Not long afterward I was meeting with the Provost. The “simulation” ultimately produced a very real discussion with students about the meaning of freedom of speech on college campuses. The controversy was also covered in the student newspaper and then later by the Seattle Times.

My favorite year (so far) was when a Democratic member filed a “legal motion” (by sending me an email) to extend the legislative session. The syllabus specified that the legislature was to adjourn *sine die* on Wednesday of the last week. The student (who wanted more time to bring up a health care reform bill) argued that the official end of the semester was not until Friday. The Republican party leader strongly opposed

¹ Kruger and Dunning (1999) had students predict their exam performance. The worst performing students overestimated their scores while the best performing students underestimated theirs. This happens because poor performing students are not aware of little they know, whereas top performing students appreciate that they don’t know everything.

Get out of the way!

extending the session (and the bill) so I decided to let the “court” resolve it. I contacted a real attorney who agreed to consider the case. On their own initiative (no additional credit was involved), groups of students on both sides prepared impressive legal arguments and amicus briefs and submitted them the next day. The “court” then issued a written decision that carefully addressed the arguments made in the student briefs.²

Learning communities have to be nurtured. Our department has 800 majors. Students usually don’t know one another and are not used to actively participating in classes. Sharing their real political opinions or revealing what they (don’t) know in front of so many strangers seems personally risky. My partial solution has been to include early activities that promote community building (this is *their* simulation) as well as substantive knowledge. Their first task is to complete their on-line profiles, which has them reflecting on their own political views and researching the politics of the district or state they have decided to represent. The next has them electing a leader and assigning committees. Shortly afterward we have a “new members’ reception” with the stated purpose of meeting the leader candidates and lobbying for committee slots. However, I also require each student to connect with at least three other students.³ Other early activities have students collaborating to complete an on-line procedural quiz and to research and report on their committee issue responsibilities.

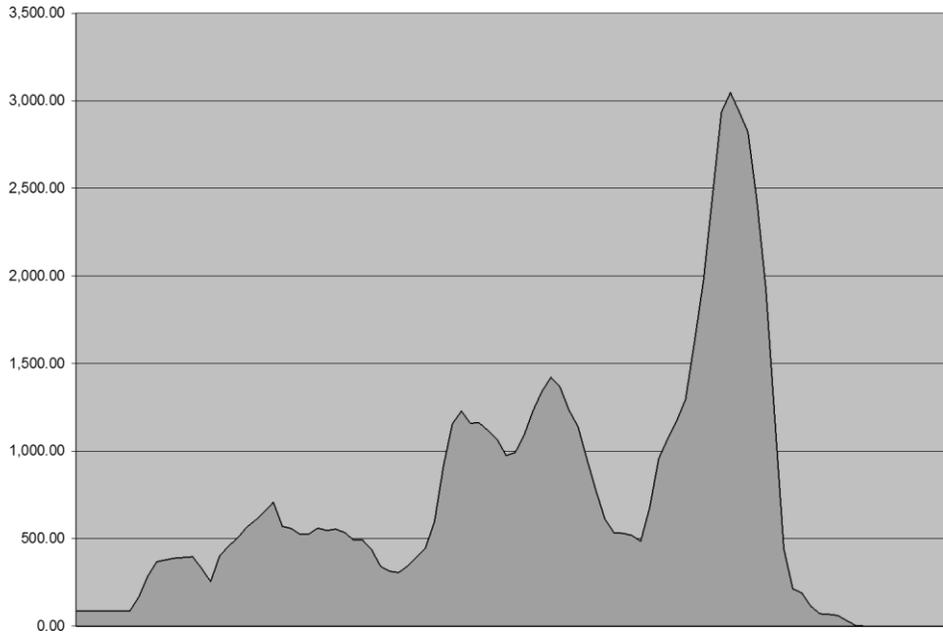
These activities do help to break the ice. But the tipping point in terms of creating a collective sense of ownership is usually a student-led close decision. The winning side feels empowered, while the losing side is determined to not let it happen again. The leader election can reveal fissures for the first time. I have also encouraged chamber leaders to schedule controversial bills early in the process for the same purpose. The transition is very visible. Students start gathering in small groups before and after lecture. Activity on the LegSim website starts to build (figure 3).

² The court found in favor of the plaintiffs but the minority Republicans were still able to defeat the bill by running out the clock.

³ We also suggest ice-breaker questions to get conversations started.

Get out of the way!

Figure 3. Activity on the LegSim website across a 10-week semester (smoothed)



Note: Y axis refers to the number of daily posts and views in a 100 student course

2. Simulation learning objectives can be valuable motivators

Instructional scaffolding refers to instructional techniques that progressively move students toward stronger understanding and greater independence in the learning process (Jumaat and Zaidatun 2014). My simulation starts with a master challenge –become effective legislators. The final assignment of the class asks students to reflect on their performance and explain why they should be reelected. Telling novices that they need to become expert legislators by the end of the quarter is not enough of course. I support their learning with several scaffolding assignments that have them applying what they are learning about Congress in class to the simulation.

When representation is the topic, students propose a legislative agenda and describe how it is informed by what they have learned about representation. Another assignment asks students to explain their committee requests in light of what they have learned about why committees matter. At the bill drafting stage, they know that they will have to describe the purpose and intended effects of their bill, as well as likely sources of support and opposition. I also require each student to submit remarks for one debate that draws on what they have learned about agenda setting and coalition building.

This is where the scaffolding ends. The bill writing assignment ensures that there is plenty for students to do. Inevitably, however, the absence of additional instructor-required activities leads to a “dead period.” Committee chairs discover that even getting a quorum can be difficult, much less getting others to help in preparing reports. Many students assume that they just need to wait for committees to act on their bills.

Get out of the way!

This is where learning communities prove their worth. Some committees do get things done and it doesn't take long for other members to notice that they are also setting the agenda and passing bills. In addition, time is running out. Committee productivity increases, forcing leaders to make difficult decisions about priorities. The clock keeps ticking. Anticipating the *Final Report* and realizing that their bills won't make it to the floor, members get creative. Common tactics include surprise floor amendments, omnibus bills and outright obstruction. Every year ends differently, but the final days are always intense (figure 3). Attention then shifts to the Final Report, where students are asked to reflect on what they did well and what they would do differently next time, before proposing a reelection theme based on their record.⁴

3. Simulations do more than reinforce lectures and readings

In a typical legislative politics course, instructors will emphasize factual and conceptual knowledge (Anderson et al. 2001). Both are essential to developing legislative expertise, but legislative outcomes are also shaped by human interactions. As President Clinton's chief legislative aide puts it, *"To get anything done in Congress, one has to understand the players and what motivates them, as well as who can deliver and who can be trusted. No expert can teach those things; they have to be learned and practiced on the job"* (Hilley 2007).

Simulations lack authenticity. The "players" are not members of Congress, and participants have less reason to be concerned about their reputations in a one semester simulation. Yet students can still learn from them. I recall one student who acted on her belief that legislators use threats to get things done. The tactic backfired badly but she learned and taught the entire class a useful lesson in the process. Things that seem self-evident to me (having taught for 25 years) are not always obvious to students. For example, many are surprised that so little gets accomplished without compromise. Other lessons about the human side of lawmaking (that probably apply to other life situations as well) include "bills don't advance solely on their merits," "information is power," "the best is the enemy of the good," and "don't burn your bridges." Students also experience the psychological temptations of partisanship, votes that are difficult to explain, and situations where their honesty is tested. Instead of lecturing about these lessons, I try to take advantage of "teachable moments."⁵

4. Simulations help students make deeper connections

Several years ago a team of researchers at the University of Washington conducted a controlled experiment to test the benefits of a project-based AP Government curriculum (Parker et al. 2011). Students in six different classes in three high schools (269 students in all) were enrolled in either a traditional AP Government class, or in a new AP+ class

⁴ Students also learn that another student will be conducting opposition research on them. This ensures that their Reports do not veer too far from the truth.

⁵ I also assign one insider book. Kaiser's (2014) account of the enactment of Dodd-Frank and a good fit for upper division courses. Redman (2001) is written from the perspective of a young staffer in the 1960s. Both inspire students.

Get out of the way!

that included three project-based learning modules (LegSim and two paper-based Election and Supreme Court simulations).

The researchers were primarily interested in whether the projects would promote a deeper, more connected understanding of American Politics. Because the simulations would take time away from content coverage, they were also interested in whether tradeoff would be less breadth of knowledge. The classes were compared in two ways. First, each student wrote before and after “complex scenario” essays that assessed their ability to apply what they have learned to new situations.⁶ Second, student scores on the national AP Government exam were compared after adjusting for demographic differences. The researchers hypothesized that the AP+ students would exhibit more evidence of “deep learning” on the complex scenario test, and hoped that they would do as well on the largely fact-based national AP Government exam.

To their surprise, the AP+ students ended up performing significantly better on both (table 1), a finding that has been replicated in follow-up research (Valencia and Parker 2016). These findings led the school district to mandate project-based approaches in all of its AP Government courses. Other high school instructors who were not part of the research experiment have also told me that they think the simulation improves their students’ performance on the AP test. Their view is that simulations give students reasons to care about course content beyond good test scores. They leave less time for content coverage, but what is covered is more likely to be retained.

Table 1. Performance on the national AP Exam by treatment condition

	PBL AP course School A		PBL AP course School B		Traditional AP course School C		PBL AP course Schools A & B combined	
	(study 1)		(study 2)		(studies 1 & 2)			
	(N=103)		(N=100)		(N=66)		(N=203)	
score of 5	29	28.2%	8	8.0%	4	6.1%	37	18.2%
score of 4	18	17.5%	10	10.0%	9	13.6%	28	13.8%
score of 3	31	30.1%	21	20.0%	21	31.8%	52	25.6%
score of 2	21	20.4%	36	36.0%	19	28.8%	57	28.1%
score of 1	4	3.9%	25	25.0%	13	19.7%	29	14.4%
score 3 or higher	78	75.7%	39	38.0%	34	51.5%	117	57.6%
score 4 or higher	47	45.6%	18	18.0%	13	19.7%	65	32.0%
Mean score	3.46*		2.40		2.58		2.94*	
SD	1.21		1.20		1.14		1.31	

*p < .05 (comparison between PBL AP course mean and traditional AP course mean).

Note: Reprinted from Parker et al. 2011.

Final reflections

When I first created LegSim, technology in education was rare, particularly in the social sciences. I know that some of my colleagues wondered why I was spending so much time on a teaching simulation when I could be doing research. The answer was pretty

⁶ For example, in one scenario the student was political advisor to a group opposing a local government’s effort to sell its water rights to a middle-eastern country.

Get out of the way!

simple. I saw how students responded and was convinced that it was a better way to teach. Technology is now important at all levels of education and people with ideas for educational software now ask me for advice. I tell them that it has been a very positive experience, but a big commitment (and there is always more to do!). My main advice is to be realistic about the time and effort involved. Is it a productive use of their limited time? Who will maintain the product once it is built? Funding is always a challenge in education, and even more so in the social sciences. Will the project require ongoing support? LegSim is supported by user fees.⁷ These are sufficient to support a part-time student programmer,⁸ lease server space, and hire outside website designers on occasion. Most of the labor is free however. I create the site content, oversee the design process, and interact with users. There's a lot more we could do. The software is designed for versioning and can be used to simulate other legislative institutions (such as the United Nations). We have yet to move in that direction simply because it requires a level of commitment that we cannot currently support.

I envy the charismatic professors who are so good at engaging and motivating students within traditional lecture formats. For the rest of us, simulations are worth considering. They can be very rewarding for students and instructors. My knowledge of legislative procedure is put to the test every year. I have had the opportunity to watch students' issue priorities evolve, and seen how committed they can be to those issues. In evaluations, students frequently say that they have never learned as much in a class. Shifting learning responsibility to students can be unnerving. It requires instructor faith that students will eventually come through. All I can say is that my class has always ended on a high note.

⁷ We charge a \$16 registration fee for college students and offer a \$250 annual site license for high schools. We have also received small development grants from the William and Flora Hewlett Foundation, the Dirksen Congressional Center, and the University of Washington.

⁸ Sean Kellogg deserves equal credit for LegSim. He started on the project as a sophomore political science major and worked on it through law school and beyond. For the past three years, Hiram Munn has been an indispensable source of support for the project.

Get out of the way!

References

- Anderson, L. W. and D.R. Krathwohl (Eds.). (2001). *A taxonomy for learning, teaching and assessing: A revision of Bloom's Taxonomy of educational objectives*. New York: Longman.
- Bransford, J. D., Brown, A., & Cocking, R. (2000). (Eds.), *How People Learn: Mind, Brain, Experience and School, Expanded Edition*. Washington, DC: National Academy Press.
- Brown, A. L. and J. C. Campione (1996). "Psychological theory and the design of innovative learning environments: On procedures, principles, and systems." *Innovations in learning: New environments for education*. L. Schauble and R. Glaser. Mahwah, NJ, Erlbaum: 289-325.
- Kruger, Justin and David Dunning. (1999) "Unskilled and Unaware of It: How Difficulties in Recognizing One's Own Incompetence Lead to Inflated Self-Assessments". *Journal of Personality and Social Psychology*. 77 (6): 1121–34.
- Hilley, John. (2007) *The Challenge of Legislation: Bipartisanship in a Partisan World*. Washington DC: Brookings
- .
- Jumaat, Nurul Farhana and Tasir Zaidatun. (2014). "Instructional Scaffolding in Online Learning Environment: A Meta-Analysis." Presented at the 2014 International Conference on Teaching and Learning in Computing and Engineering. doi: 10.1109/LaTiCE.2014.22
- Kaiser, Robert. (2014) *Act of Congress: How America's Essential Institution Works and How It Doesn't*. New York: Vintage
- Parker, Walter, Susan Mosborg, John Bransford, Nancy Vye, John Wilkerson & Robert Abbott. (2011) "Rethinking Advanced High School Coursework: Tackling the Depth/Breadth Tension in the AP US Government and Politics Course." *Journal of Curriculum Studies*, 43:4, 533-559
- Redman, Eric. (2001) *The Dance of Legislation*. Seattle: University of Washington Press.

Get out of the way!

Valencia, Sheila and Walter Parker. (2016). "Learning from text in an advanced government and politics course." *Citizenship Teaching and Learning*, 11(1), 87-103.