A Needs Analysis for Instructional Support in LegSim

Mahesh Joshi¹, Yi-Chia Wang¹, John Wilkerson², Carolyn Rosé¹,³

¹ Language Technologies Institute, School of Computer Science, Carnegie Mellon University, Pittsburgh PA, USA
² Department of Political Science, University of Washington, Seattle WA, USA
³ Human-Computer Interaction Institute, School of Computer Science, Carnegie Mellon University, Pittsburgh PA, USA

1. Problem Domain
   ♦ Argumentation in Political Science
   ♦ Crucial skill for future policy makers

2. Legislative Simulation (LegSim)
   ♦ Multi-player web-based game-like environment
   ♦ Designed to teach legislative procedures & strategies
   ♦ Students play roles of Congressional Senators
   ♦ Form caucuses, legislative committees etc.
   ♦ Propose legislations (bills), debate and vote for them

3. Data
   ♦ Comments from 71 Students
   ♦ 304 bills proposed, 99 promoted to floor for debate, 48 actually debated on floor and got voted on
   ♦ 479 floor debate comments in total

4. Opportunities for Learning Argumentation Skills
   ♦ Passing or failing of a bill after vote
   ♦ Popular outcome contrary to one’s opinion is evidence of failure
   ♦ Swaying someone’s opinion prior to vote
     ♦ Provides positive reinforcement

5. Data Statistics and Visualizations
   Distribution of comments
   Dimension | Values
   | Arg. Quality | High | Medium | Low |
   | Sentiment | Positive | Negative | Neutral |
   | 281(58.66%) | 93(19.42%) | 105 (21.92%) |

Timeline for 6 different bills

6. Salient Results
   ♦ Only 40% (15%) bills came up for vote before last 10 (20) days
   ♦ Only 1 change of opinion evident from comments
   ♦ Only 8 cases of final vote opposing sentiment
   ♦ Students who voted yes/no more likely to comment
   ♦ No evidence of increase in argumentation quality

7. Conclusions
   ♦ Game-based environments alone don’t promote learning
   ♦ Instructional support is needed to actively steer students towards opportunities to learn argumentation
   ♦ Technology can be used to prompt students to voice conflicts that have not yet been articulated or to encourage students to elaborate bald claims with warrants, data, and qualifiers