

## GoCivics—Tablet-Enhanced Role-Play Games: A Demonstration

Matthew Haselton and Beth Quinn, Filament Games, 2010 Eastwood Avenue, Madison, WI 53704  
 mhaselton@filamentgames.com, bquinn@filamentgames.com

**Abstract:** In this demonstration session a novel digital approach to traditional educational role-plays will be demonstrated. *GoCivics Congress* is a tablet-enhanced role-play game that introduces middle school social studies students to the process of negotiation in a US Senate committee and provides practice in listening and public speaking. The game is the prototype for a larger project, *GoGames*, a set of games that represent a novel use of tablets—multiplayer, augmented *social* reality—that streamlines the process of implementing time-tested pedagogical models such as model legislatures, mock trials, and structured debate. Session participants will view a video about the prototype’s development and pilot testing in middle school classrooms. A subset of attendees then will be invited to play test *GoCivics Congress*, and will join presenters in a panel discussion of the game and its uses.



Figure 1. *GoCivics* Mobile Congress Title Screen

### The Purpose of *GoCivics*

A fundamental assumption of democratic forms of government is that they require the informed and active participation of their citizens. Self-governance depends on citizens understanding how to effectively assess issues, form reasoned opinions, express themselves clearly, and effectively navigate political and legal institutions (National Task Force on Civic Learning and Democratic Engagement, 2012). Citizens who do not understand how or why they should participate undermine the health of a democratic government. A core mechanism for developing informed citizens has historically been formal education. Indeed, one of the early justifications for public education in the U.S. was the development of capable citizens (Dewey, 1954; Merriam, 1934).

Yet in 2010 only 22% of U.S. eighth graders demonstrate “proficient” knowledge on the National Assessment of Educational Progress (NAEP) Civics exam. More problematically, over three-quarters of U.S. middle school students fail to demonstrate even the most basic level of civic knowledge, a pattern that has been noted for over a decade (National Center for Education Statistics, 2011). This is perhaps unsurprising given the relative neglect of civics education in American schools in the last 40 years. Fortunately, this is changing and civic education is “back on the agenda” in the United States (Galston, 2001: 217; Wood, 2012).

One highly effective way to address this “civics gap” is the tried and true method of classroom role plays such as mock trials and model legislatures (Youniss & Levine, 2009). While effective and engaging, these methods are unfortunately time-intensive, administratively burdensome, and difficult for teachers to assess. In the current educational environment in the US—where concepts such as *data-driven* and *standards-aligned* reign supreme—an administratively burdensome activity that fails to clearly address either of these concepts is unlikely to be widely adopted regardless of its pedagogical efficacy.

We suggest, however, that if these traditional models could be made more manageable and easier to administer, they would be more commonly employed. To this end, Filament Games—a commercial game

development company that focuses exclusively on developing high quality learning games—is developing *GoGames*, a suite of tablet-enhanced role-play game. The games are structured as a kind of “augmented reality” (AR): digital tools that enhance real world activities with digital information, identities, or actions. Unlike most AR games which hinge on augmenting *physical* reality (e.g., Squire and Klopfer, 2007), *GoGames* are designed to augment *social* reality by providing scaffolding for coordinated role and process enactment.

*GoGames* products are designed to:

- 1) enhance students’ efficacy and experience participating in role-playing activities,
- 2) significantly streamline and improve the ability of educators to plan, implement, and assess these activities, and
- 3) provide school districts with cost-effective but powerful tools for teaching crucial content (e.g., civics) and skills (e.g., listening, speaking, compromise, debate).

We have completed a prototype, *GoCivics Congress*, as a proof-of-concept (see Figure 1). This game has students assume the role of US Senators who are attempting to craft a new bill in a Senate Committee. Players are challenged to balance individual values against the interests of the group, while honing skills of persuasion and public speaking. The targeted pedagogical goals align with Common Core “Speaking and Listening” Standards for 7th grade (Common Core State Standards Initiative, 2010), while the game’s structure draws on the Argumentation-Based Computer Supported Collaborative Learning (ABCSSL) model by “[supporting] the sharing, constructing, and representing of arguments in multiple formats” (Noroozi et al. 2012).

## Contributions of the GoGames Approach

In each simulation, students take on different roles in the targeted process. Each role performance is informed and structured with on-time, role-specific information, directions, and cues via an app running on his or her individual tablet. By using elements of traditional games such as character roles, stages of advancement, clearly defined abilities and obvious win conditions, *GoGames* provide an easily understandable structure for navigating an open-ended problem space, effectively reducing the player’s cognitive load and making it easier for them to engage with the content and each other (Mayer & Moreno 2003). Instructors are provided with an allied app providing oversight and pacing tools, grading modules, and real-time chat functions for private communications with individual students during the simulation.

Unlike traditional video games *GoGames* do not aim to fully immerse students in an alternate digital world. They are multiplayer experiences that naturally scaffolds *direct* interaction among students in the real world. Players do not control an avatar on the screen; rather, they *become the characters themselves* and are able to interact face-to-face, but with their knowledge and goals augmented and supported by the unobtrusive mobile technology. This engenders “improved activity awareness and coordination, [and] improve[d] communication efficiency by enabling non-verbal communication such as gestures, and facilitate grounding via a shared visual reference” (Wallace et al. 2009, p. 569). *GoGames* enhance learning for students by providing role-based, just-in-time and on-demand information while focusing students on the relevant choices to be made based on their role. For example, a student playing a witness in a mock trial is provided with material relevant to his or her testimony while a lawyer sees the rules of evidence and suggestions for witness questions. The game’s use of multiple tablet touchscreen interfaces offers a distinct collaborative advantage over traditional single terminal computers by naturally facilitating activity “in a collaborative and communicative way” (Mostmans et al. 2012, p. 105). Each student controls his or her own tablet and are able to view the actions of their fellow students in real-time on their tablet. According to Szewkis et al. (2009) this type of Single Display Groupware (SDG) is especially useful for developing collaboration between members of a large group and leads to greater participation and student engagement. Thus, *GoGames* provide the appropriate supports for a rich, group-based exploration of important civic functions.

A core goal of the *GoGames* solution is to maximize teacher usability by removing the traditional challenges of an in-class simulation. *GoGames* scaffolds the simulations, keeping all students actively engaged throughout the activity, encourages and structures student interaction, and provides teachers with a dashboard in which to set up, manage, and assess the activity. This frees the teacher to focus on instruction, rather than facilitation and management. *GoGames* apps also provide tracking of student interactions within the simulation, efficient and effective grading rubrics, peer-evaluation components, and seamless integration of these components in an easy-to-use (and easy-to-export) data format. By providing automatic scaffolding, keeping all students actively engaged throughout the activity, and providing teachers with a dashboard to help set up, manage, and assess the activity, *GoGames* removes obstacles to traditional simulations and lowers the barrier to more widespread use of these best-practice teaching techniques. *GoGames* tools should be usable with minimal training and administration, a crucial feature where time and money are scarce.

Given research on the effectiveness of traditional educational role plays, epistemic games, and augmented reality museum games, we hypothesize that using *GoGames* will lead to improvements in student motivation and engagement, and significant gains in civic knowledge and skills (such as argumentation and active listening). In the context of a tablet-enhanced, simulated civic activity, students can experience a specific

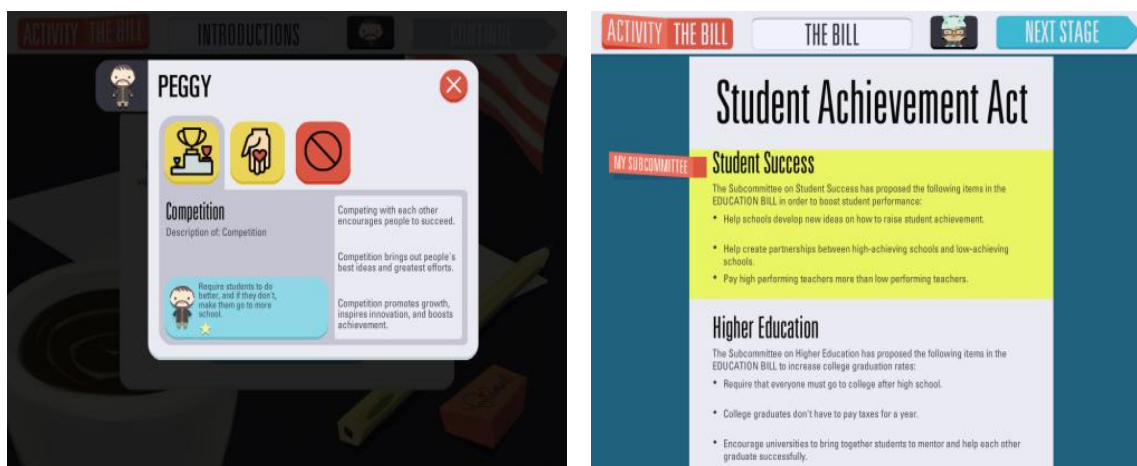


Figure 2. *GoCivics Congress*: Selecting values, the draft bill, and info bar

civic issue, how civic systems function, personal investment in civic participation through role-play, and collaboration and competition across defined roles. That is, *GoGames* allow players to “connect academic content and practices with students’ physical, lived worlds” (Squire and Klopfer 2007, p. 371). In doing so, students will construct a sophisticated understanding of how diverse civic roles interact within a dynamic civic system. As students pursue goals consistent with their roles within that civic system and receive timely, accurate, and customized feedback about their performance, they will develop a deeper understanding of civics and increase their motivation for civic engagement and reasoned debate. We hypothesize that teachers using *GoGames* tools will spend less time preparing for the activity, will exhibit higher levels of confidence, and will experience higher quality interactions with their students. By supporting or automating many administrative, management, and assessment tasks, the simulation will free teachers to focus on providing on-demand coaching and support for students, and on documenting formative assessment of student performance.

### The Prototype: How to Play *GoCivics Congress*

*GoCivics Congress* invites students to take on the role of a US Senator who is trying, with his or her colleagues, to craft a new bill (see Figure 2). This draft bill is sent to committee and this is where the action begins. Each student-senator takes on sets of contrasting values that influence their motivation for passing particular types of amendments to the bill. They meet in caucus with those holding similar values to craft strategy and to review the proposed amendments. Senators are then assigned to different substantive subcommittees to hash out deals with colleagues who may hold very different values. The subcommittees may



Figure 3. *GoCivics Congress*: Presenting the Package

pass out of subcommittee only a small subset of possible amendments so each Senator must try to convince their subcommittee colleagues to support their amendments or work a deal. Each subcommittee then attempts to convince the larger committee to vote for their package by presenting and defending their package on the floor of the committee (see Figure 3). Players accumulate points based on the values that are represented in the final bill. What if no bill is passed? Everybody loses!

Pilot tests of iterative versions of Mobile Congress were conducted with university students and with three classes of middle school students. These context usability tests demonstrated the feasibility of the technology and the game design. The game effectively supported various forms of discussion and players were actively engaged in the simulation. This data is being used to inform the design of other forms of tablet-enhanced role plays including a mock trial, a structured debate, and a small-scale Model United Nations.

## Structure of the Demonstration Experience

The presentation will begin with a video documentary about the creation and testing of the project, including field-testing examples with middle school students. During our demonstration, a subset of attendees will be invited to play through a section of Mobile Congress using iPads while a presenter narrates an overhead projection of the gameplay and the remaining attendees observe. The session concludes with a panel discussion among the playtest participants, and the lead designer and principal investigator of *GoCivics Congress*.

## References

- Common Core State Standards Initiative (2010). *Common Core State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects*. Retrieved from [http://www.corestandards.org/assets/CCSSI\\_ELA%20Standards.pdf](http://www.corestandards.org/assets/CCSSI_ELA%20Standards.pdf).
- Dewey, J. (1954). *Democracy and Education*. New York: Macmillian Company.
- Galston, W. A. (2001). Political Knowledge, Political Engagement, and Civic Education. *Annual Review of Political Science*, 4, 217-234.
- Mayer, R. E., & Moreno R. (2003). Nine Ways to Reduce Cognitive Load in Multimedia Learning, *Educational Psychologist*, 38:1, 43-52. Retrieved from [http://dx.doi.org/10.1207/S15326985EP3801\\_6](http://dx.doi.org/10.1207/S15326985EP3801_6)
- Merriam, C.E. (1934). *Civic Education in the United States*. New York: Scribners.
- Mostmans, L., Vleugels, C., & Bannier, S. (2012). Raise Your Hands or Hands-on ? The Role of Computer-Supported Collaborative Learning in Stimulating Intercreativity in Education. *Educational Technology & Society*, 15(4), 104-113.
- National Task Force on Civic Learning and Democratic Engagement (2012). *A Crucible Moment: College Learning and Democracy's Future*. Washington, DC.
- National Center for Education Statistics (2011). *The Nation's Report Card: Civics 2010* (NCES 2011-466). Washington, DC.
- Noroozi, O., Weinberger, A., Biemans, H. J. a., Mulder, M., & Chizari, M. (2012). Argumentation-Based Computer Supported Collaborative Learning (ABCSCL): A synthesis of 15 years of research. *Educational Research Review*, 7(2), 79-106.
- Squire, K., & Klopfer, E. (2007). Augmented Reality: Simulations on Handheld Computers. *Journal of the Learning Sciences*, 16(3), 371-413.
- Szewkis, E., Nussbaum, M., Rosen, T., Abalos, J., Denardin, F., Caballero, D., Tagle, A., et al. (2011). Collaboration within large groups in the classroom. *International Journal of Computer-Supported Collaborative Learning*, 6(4), 561-575. doi:10.1007/s11412-011-9123-y
- Wallace, J., Scott, S., Stutz, T., Enns, T., & Inkpen, K. (2009). Investigating teamwork and task work in single and multi-display groupware systems. *Personal and Ubiquitous Computing*, 13(8), 569-581.
- Wood, Peter (2012, March 14). Better Citizens: Obama's Higher-Education Agenda. *Chronicle of Higher Education*. Retrieved from <http://chronicle.com/blogs/innovations/better-citizens-obama%E2%80%99s-higher-education-agenda-part-4a-of-8/31930>.
- Youniss, J., & Levine, P. (Eds.). (2009). *Engaging Young People in Civic Life*. Nashville, TN: Vanderbilt University Press.

## Acknowledgements

Filament Games would like to thank our partners on this project: iCivics' Carrie Ray-Hill and Jeff Curley who were instrumental in creating game content and honing the game design; Dr. Connie Flanagan, University of Wisconsin, who served as subject matter expert and helped with prototype testing; and Waukesha STEM Academy teachers Beth Wartenluft and Lukas Christianson, and Edgewood Campus School teacher Lynn Koresh, who provided ongoing feedback on the game and tested the game with their students.

*The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education, through the Small Business Innovation Research (SBIR) program contract ED-IES-10-C-0023 to Filament Games. The opinions expressed are those of the authors and do not represent views of the U.S. Department of Education.*