Using Iterative Design to Improve Student Engagement in a Media and Democratic Education Online Simulation [1]

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Abstract

In this chapter we describe methods and data used to increase access and engagement through our iterative design and development process for PurpleState Solutions. PurpleState, a Virtual Internship that utilizes an immersive computer supported collaborative learning environment (Shaffer, 2006), places students in the role of interns at a strategic communications firm. The goal of the simulation is to increase students' skills and knowledge needed to engage actively as democratic citizens in the current media-driven US context. This chapter focuses on the way that the iterative design feature of design-based research (DBR) can be used to provide equity of opportunities for students in high quality curriculum. The iterative nature of this DBR project focuses on collecting and analyzing data to inform reviews of the simulation with the goal of maximizing student engagement (behavioral, emotional, cognitive) and learning of core skills and concepts related to democratic and media education. Implications for the chapter include the affordances of a DBR design for making curricula and learning environments more inclusive and scaffolded for student success and as a model for a DBR team in developing and employing a computer-supported collaborative learning (CSCL) environment and design.

Introduction

The use of role-plays and simulations in civics and government classes is far from new. However, opportunities to participate in high-quality simulations are often limited to student populations in affluent schools or are used as part of upper level or AP Government Courses (e.g., Parker, et al., 2013). Further, when it comes to digital simulations, students from under-resourced schools and low income and marginalized communities often have limited access to high-quality learning environments as there is a greater emphasis on credit recovery programs or other forms of technology-rich but intellectually-thin curriculum (Margolis, et al., 2008). Further, civics and government simulations often model official roles within the government hierarchy, or are designed to align with state standards and textbooks, rather than reflect the dynamic nature of how government processes occur, which may be more relevant for students from marginalized backgrounds (Raphael, et al., 2011; Stoddard, et al., 2016). These simulations also do not necessarily model the media-rich world that today's citizens inhabit (Stoddard, 2014).

This chapter describes our attempts to increase participant opportunity and engagement during our development and iterative pilot study of PurpleState Solutions. PurpleState is a Virtual Internship simulation focused on developing student skills, knowledge, and values related to media and civic education (Gould, 2011; Hess & McAvoy 2014). Through PurpleState we attempt to address some of the issues identified above by creating a simulation accessible to a wide range of students, focused on a state-level and relevant policy issue, and designed to engage students in a dynamic and authentic context of politics and media education. However, as with any design – the first version almost always needs revisions to reach its goals – in this case providing opportunities for students to engage fully and deeply in the simulation. Over three iterations we used data generated by the simulation and through our observations to refine specific aspects of the design to increase students opportunities to fully participate and to attempt to increase their levels of engagement. These changes included refining simulation resources so that the reading level was more accessible or clear, changing elements of the simulation to remove what we saw as unnecessarily frustrating tasks, and increasing different levels of

support and interactions between student participants, classroom teachers, and our online mentors to help students engage more deeply in the collaborative problem-based learning that was intended.

This simulation utilizes an online platform and computer-supported collaborative learning (CSCL) design (Stahl, Koschmann, & Suthers, 2006). Engaging students in a simulation or inquiry activity in a virtual or online environment is far from a guarantee of authentic and high-level intellectual engagement within social studies education, despite the vast funding dedicated to the purchase of computers and internet access (e.g., Cuban, 1986, 2001; Margolis, et al., 2008). However, some studies that have focused on affordances of online learning environments have shown them to support student learning and provide opportunities for higher levels of intellectual work. For example, Saye & Brush (2007) combined inquiry learning with embedded scaffolding in history education and found that this provided support for learners and teacher. They identify the need, however, for both hard forms of scaffolding, such as embedded links with word definitions, and soft scaffolding, such as the kinds of support a teacher may provide based on their knowledge of the student and context (see also, Barron, et al., 1998).

Here we use an online platform for engaging secondary students in PurpleState because of three affordances: 1) the learning environment connects students in collaborative activities with a team of student colleagues and with an online mentor who facilitates their work from a distance; and 2) the environment allows access to curriculum material, tasks, assessment, and both hard and soft scaffolding, and 3) the learning environment is also a research environment designed to be able to collect a broader array and amount of data than could take place in a classroom-based simulation. This final affordance of the platform allowed us to gather multiple sources of data to use in our iterative development and testing of the simulation. In the rest of this chapter we focus on the methods, design-based process, and resulting development over three iterations of PurpleState. We attempt to increase access and engagement in the kinds of democratic education opportunities (e.g., inquiry, discussion, engaging with experts) found to be important keys to the development of engaged citizens (Gould, 2011).

Democratic and Media Education in PurpleState

In the Guardians of Democracy report (Gould, 2011), a number of best practices for civic education were identified, including engagement with controversial issues, understanding the structures and processes of government, and engaging in simulations designed to help students understand these institutions and processes. Levine and Kawashima-Ginsberg (2017) reiterate these best practices but also add that many state curricula do not address contemporary issues or politics most important for developing contemporary citizens. PurpleState is designed around several of these core practices while also addressing the need to help young citizens understand, and be prepared to engage in, contemporary politics and civic action.

In particular, the simulation is designed around a community of practice, that of political communication consultants, that is at the heart of much of politics today. We do not want participants to become consultants as a career option – but we do want participants to understand the strategies and goals of these groups in attempting to persuade them and to help them reflect on why they see particular ads or messages on their smartphones, for example. Similarly, we provide a model for engaging in a controversial issue that is also set in an authentic and state level context, so that the skills and understandings may be more relevant to how they might act on an issue they care about outside of school. As a result, participants also learn about the role of special interest groups, the news media, and the role of data (e.g., polling, personal) in the political system.

The simulation is also designed to help participants develop skills and understanding in four interrelated aspects of media education that are central to strengthening democratic education: an understanding of the nature of media and how it is used in politics; the role and perspectives of special interest groups and consultants such as political media strategies in politics; the explicit development of skills for analyzing political messages and authorial intent in media; and the ability to communicate effectively and persuasively across media forms (Stoddard, 2014).

Participation in a simulation in particular affords students the authenticity of an experience and the ability to engage in realistic issues or problems with fellow students (Stoddard, 2014). In this case,

students developed the epistemologies of practice of active citizenship by campaigning for a position on a proposed statewide ban on fracking that is to be addressed on an upcoming, albeit fictitious, ballot. In this case, students engaged in understanding the nature of media, its role in civic action and politics, how to use media to access and evaluate information from divergent perspectives, and how to communicate and persuade others using different media forms and to take meaningful action. In this way, PurpleState is designed to help students develop the necessary understandings and skills to act as a citizen in contemporary politics as well as develop key academic skills and understandings needed for college and career readiness.

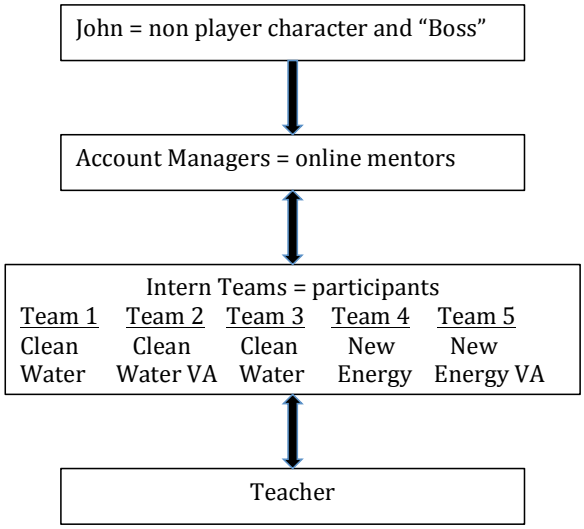
Virtual Internship Design

PurpleState was designed using Shaffer's (2006a, 2006b) model of a Virtual Internship that employs epistemic frames and communities of practice from professions as a model of learning (see Lave & Wegner, 1991). An epistemic frame is comprised of the skills, knowledge, values and identity of a particular professional practice and goes beyond the cognitive modeling, for example of a particular academic discipline, to also consider the values and identity of those individuals and how they act within a community of practice (Shaffer, 2006a, 2006b). The epistemic frames of professionals are shaped by their membership in communities of practice, which are designed for the development of expertise (Lave & Wegner, 1991), and therefore serve as an authentic model for learning and developing epistemic frames. Shaffer and The Epistemic Analytics Lab at the Wisconsin Center for Education Research (UW-Madison) have developed Virtual Internships modeled on the work of engineers, journalists, and urban planners. William & Mary researchers developed PurpleState in partnership with the Epistemic Analytics Lab, using an existing virtual internship simulation as a model. We were also allowed to use their WorkPro simulation platform.

For PurpleState, students act as interns at a communications firm that specializes in designing media campaigns on highly contested public policy issues. The student interns collaborate within the simulation community of practice to learn core concepts and skills related to political communications,

research a controversial public policy issue (e.g., fracking), and then develop a media campaign to help persuade voters based on their assigned client (one of two opposing special interest groups). The organizational structure and many of the tasks are based on an actual strategic communications firm and how they use interns.

Figure 1 PurpleState Virtual Internship Organizational Structure

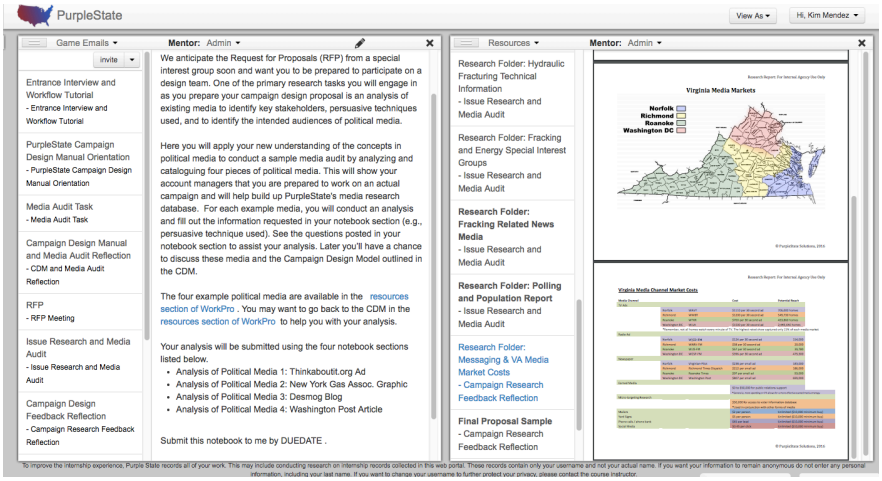


Tasks in PurpleState emphasize the development and application of political communications concepts and content, such as persuasive techniques used in political media. Students also learn about rarely taught but prescient topics such as "earned media," or the free coverage of a political group or candidate's views through strategic media placement among legitimate journalism outlets. They also engage in research on the controversial public policy issue, which in this case is a potential ban on fracking. Participants do this through examining sources on the process of fracking, and journalistic and government reports advancing arguments for and against it. The Virtual Internship takes place over 10 "days" or tasks and takes roughly 10 hours of class time or a combination of class time and out-of-class online individual work. See Appendix A for an outline of the tasks for the simulation.

All activities take place in WorkPro, an online productivity suite that includes email and chat functions, a notebook, and all the tools and resources that students need to complete the internship.

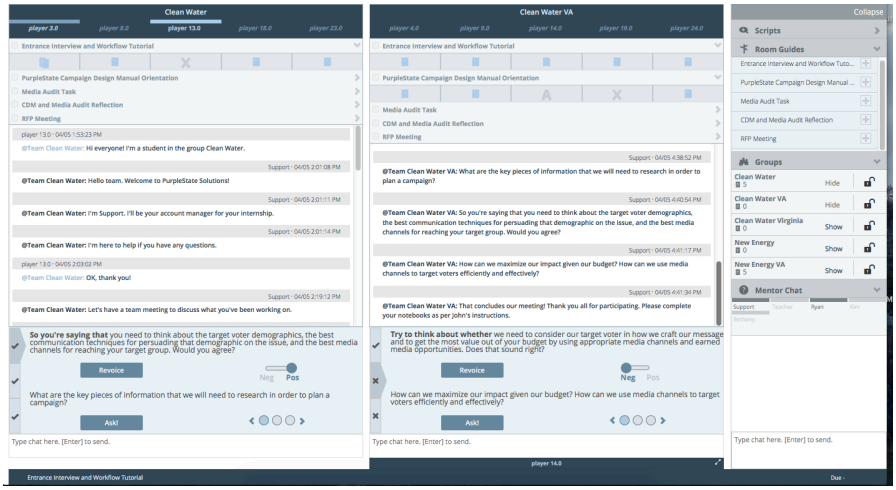
Students use WorkPro to interact with other students in the simulation, as well as with their supervisor and online mentors (see Figure 2, below).

Figure 2 WorkPro Student Intern View Sample Screen Shot



For example, the supervisor (John – a mentor-controlled non-player character) sends tasks to students and evaluates their work products; the mentor (playing the role of the account managers reporting to John) answers questions, offers suggestions, guides reflective conversations, facilitates team collaboration, and provides support. Mentors were undergraduate and graduate William & Mary students trained to facilitate the simulation in the roles of both account managers and John. Mentor screens show each student's name from every group, their notebook status, all chat streams with built-in controls (including mentor-mentor, mentor-teacher, and mentor-tech support), as well as functionality to see the screen from each student's perspective in order to better assist them (see Figure 3, below).

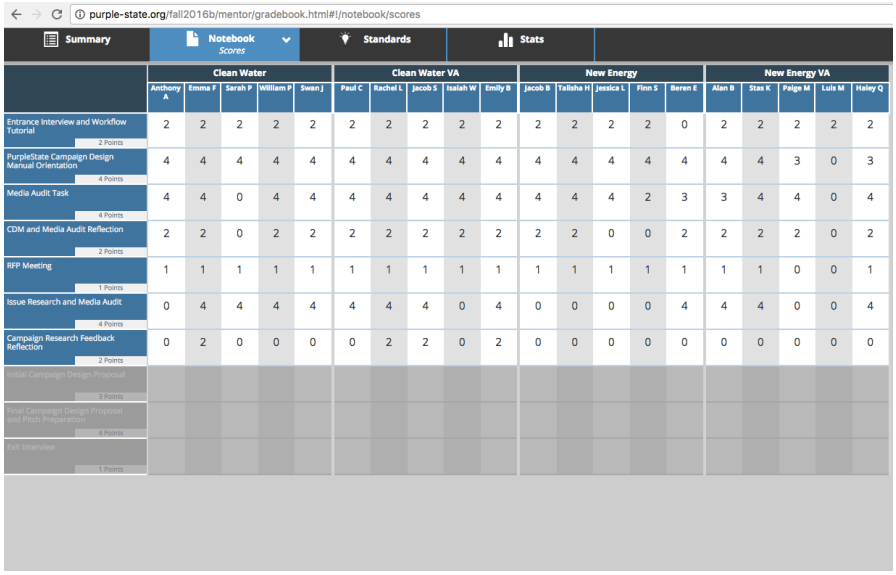
Figure 3 WorkPro Mentor (Account Manager) Sample Screen Shot



External simulation supervisors were the collaborating teachers in the physical classrooms. The teacher's role changed over the course of the project, but included at its onset primarily in class student support, helping to "sell" and facilitate the authenticity of the simulation, and communication with W&M mentors to identify any issues or students who could use support either online or in class. In the last iteration, the teacher took a more active role both in the simulation and in collaborating with project staff.

The WorkPro online environment was developed by the Epistemic Analytics Lab. WorkPro is a custom-designed platform modeled on project management systems used by most consulting firms. It includes typical elements found in any software suite, including email, chat, a shared resource file, files for the simulation resources, and a notebook to submit memos and deliverables to their boss. It is also designed to capture all of the data generated through student chats, the tasks they submit, and even the number of times they access a particular resource. This data is captured for easy use by the research team as well as the classroom teacher (see Figure 4, below, for the gradebook view screenshot).

Figure 4 WorkPro Teacher Dashboard Sample Screen Shot



The platform also allows for easy real-time communication between the classroom teacher, the online mentors working with the students, and other members of the design team. The design team consisted of William & Mary researchers and students, our collaborating teachers, Epistemic Analytics Lab staff and graduate students, and the real John, who works in a communications firm and helped us to model the work of interns and the structure of the community of practice based on his experiences designing political campaigns. In our third iteration, described below, we focus in particular on how we could utilize this affordance of the platform to make adjustments and provide "soft scaffolding" in real time for students identified by either the teacher or mentor to be struggling and needing assistance or to facilitate attempts to encourage participants to engage more in the task.

Design-Based Research and Student Engagement

We selected a design-based model for our project, as our two primary goals were to explore the impact of a virtual internship on participants' skills, knowledge, and beliefs related to engaging politically, and to design a simulation that provided the greatest opportunity for participant engagement as possible. This model of research is particularly suited to work being done in a CSCL environment, where the goal is to refine a simulation to increase student opportunity and engagement and share this process with others--as was the case for PurpleState. As Amiel and Reves (2008) note:

> The ultimate goal of design-based research is to build a stronger connection between educational research and real-world problems. An emphasis is placed on an iterative research process that does not just evaluate an innovative product or intervention, but systematically attempts to refine the innovation while also producing design principles that can guide similar research and development endeavors (p. 34-35).

Throughout the project we worked closely with teacher-collaborators, content and design experts, and professionals from the field (Brown, 1992; Dede, 2004). A design-based approach allows for ongoing development of the simulation in response to the data being collected live in the WorkPro

environment. The approach resulted in a more robust simulation and a broader array of rich data for measuring the effects of the simulation.

As the rest of this chapter makes clear, one of the primary goals of our project was to use the iterative and collaborative design process to improve opportunity and participant engagement of PurpleState. Aspects of opportunity primarily focused on reading levels and language issues (e.g., in instructions, resources). We used data collected to identify areas where we could improve the instructions, reading level of materials, and the nature of the materials to be more open to English Learners in particular.

Engagement can be viewed in many different ways, including as a measure of a student's investment or commitment to a task, the level of effort employed, or the level of motivation for pursuing an activity (Fredricks, Blumenfeld, & Paris, 2004). Here we use Henrie, Halverson, and Graham's (2015) conceptualization of student engagement in a technology-mediated environment. They view engagement as including behavioral, cognitive, and emotional aspects. Behavioral engagement includes observable participant actions, including completion of tasks, attendance, and participation. Cognitive engagement is "the focused effort leaners give to effectively understanding what is being taught" (p. 37). Emotional engagement comes in the form of expressions of interest, frustration, boredom, or some kind of social relationship with what or whom they are engaged with in any learning environment or activity. Data collected using these categories of engagement were used to drive our revisions to the simulation (both simulation design and materials as well as delivery strategies) over three iterations. We additionally employed hard and soft scaffolding (Saye & Bruch, 2007), increased accessibility of materials, and more concise instructions.

Methods and Iterative Design Process

We implemented the simulation in three iterations from 2016 to 2017. Within these iterations were also three rounds of data collection, analysis, and simulation revision to attempt to reach our goals of maximum participation and engagement through making the materials and simulation

structure as accessible and engaging as possible. The three iterations took place in Virginia's twelfth-grade government courses (1 course section each in spring 2016 and fall 2016) and in two ninth-grade classes in Wisconsin in the spring of 2017 (one civics institution course and one AP US Government course). This third iteration allowed us to test the simulation and changes made so far with a younger group of students. It also represented a different context as Virginia employs high stakes testing in social studies whereas Wisconsin does not.

For each iteration, we focused on aspects of the simulation identified as needing improvement toward providing opportunities and improving engagement toward learning. Below we describe our process for collecting, analyzing, and using that data to make changes. We focus less here on the data and more on the process used and data-driven changes we made after (or during) each iteration of the simulation. This focus on process over traditional results is to allow others to learn from our use of the design-based research process and improve the intervention for students in their own projects.

We utilized data collected in the WorkPro online environment, including team-chat data, task deliverables (assessments), and descriptive statistics generated on task completion. The teacher dashboard in WorkPro automatically provided the breakdown of individual participation in team chats (by % of utterances), as well as an overview of the task assessments that showed how many students were at the proficient or exceptional level on each submitted task, as well as how many times revisions were made on those tasks. We also collected data from our mentors and our teacher collaborators, including observational and reflection data captured in daily memos. We used a combination of analysis techniques ranging from basic counting of the completion rates of tasks to identify areas that may need to be addressed in the simulation, identifying examples of group discussions where we saw a high rate of participation versus a low rate and then did a comparative analysis of the group interactions and the role of the mentor, we used basic invivo inductive coding to identify and then count the frequency of signs of frustration, interest or disinterest in particular tasks. This latter analysis was conducted primarily with the chat data and therefore we were limited to instances of when the participants communicated frustration with utterances such as "I don't get this," "this is stupid," or

"that is too much reading." See Figure 5 for one example of a chat stream indicating participant frustration and confusion.

Figure 5 Participant Data Indicating Frustration and Confusion with WorkPro Process and Tasks

Mentor 2	Don't forget to check your inbox and begin your first task from John
Rayquan H	this is so confusing
Mentor 2	What do you need help understanding?
Rayquan H	do we suppose to be doing this survey ?
Mentor 2	Yes.
Rayquan H	okay , good looks
Rayquan H	WHY IS THIS SO MUCH WORK LOL ?
Rayquan H	Finish survey #1
Rayquan H	finished
Mentor 2	Have you submitted your notebook tasks?
Austin W	I finished the survey and it said it was sent is that all?
Austin W	notebook tasks?
Mentor 2	In your notebook, you need to record the date and time you completed the interview, and write up the workflow process. When you're done with your notebook entry, sign and submit it. Remember to use a professional tone in your notebook entries. John reads these and uses them to monitor your progress and improve the internship experience.
Austin W	Where do you go to the notebook entry?
Austin W	How do you get to it?
Rayquan H	how ?
Austin W	how?
Mentor 2	You can access your notebook from your dropdown menu
Mentor 2	Also, you can exclude the date and time, we've modified our notebook submission system.
Austin W	FFFOUND IT!
Mentor 2	Great!!
Rayquan H	i did it but is there anything i suppose to put in those boxes in particular ?
Austin W	What is the entrance interview record?
Austin W	It also wont let me put the date in.
Malia S	This is confusing...
Mentor 2	Did you all read the workflow document, or simply complete the survey?
Austin W	Ms. [teacher name] and her confusing work she wants us to do
Rayquan H	yes i diid the survey and read the email sent to me
Austin W	We told you that was too much to read [mentor name]
Malia S	I've read most of it but it's still not clicking at all.
Mentor 2	The document you are summarizing for John is a detailed description of the workflow at Regional Design Associates, the company that we adopted the online productivity platform from. However, if you need a quick reference, I have put together a summary of the main steps and shared it with you in the Shared Space section of WorkPro.
Mentor 2	It's called "Internship Workflow." John is looking for something similar to this in your notebook entry.
Austin W	We need a new boss because [mentor name] isnt making any sense
Rayquan H	kinda yeah
Rayquan H	im so confused like -__-
Austin W	I submitted it what now?
Malia S	After I've read everything what do
Mentor 2	You all should be reading the workflow document and then summarize it in the notebook entry.
Austin W	I did
Mentor 2	It'll be very helpful moving forward if you all understand how our system and process works.
Austin W	[Mentor name] you need to quit, your not helping
Mentor 2	Austin your notebook did not summarize enough of the information from the workflow document, we really need to know that you understand everything before we move forward.
Malia S	So I enter my notebook summary first then I take the survey?
Malia S	I meant interview
Austin W	Ill read it again but i deleted the message can you send it again [mentor name]?
Austin W	nvm i found it [mentor name]?

We used this data to identify: 1) tasks, interactions, or instances in the simulation where students were confused, frustrated, or spending a significant amount of time on trivial tasks as well as ones where we saw signs of collaboration and interest (behavioral and emotional engagement), 2) technical or structural issues with the simulation that could be addressed (hard scaffolding), 3) assessments that yielded common misconceptions or consistently were completed poorly and areas where we saw high levels of successful completion of a task (cognitive engagement), and 4) mentor-intern and intern-intern interactions in chat that were on the high or low end of engagement and quality of substantive conversation measures (behavioral and cognitive engagement). The rubrics for evaluating the quality of discussion were adapted from the Authentic Intellectual Work observation rubrics (Newmann, King, & Carmichael, 2007).

In the final round of implementation, which was done with 9th grade rather than 12th grade students, we also engaged in more continuous interaction with our collaborating teacher to identify students who seemed disengaged, frustrated, or who were struggling, so that we could collaborate to support the students' successful participation in the simulation (soft scaffolding). As noted above, this final iteration was also a test of how well the changes we made after iteration 1 and 2 worked with a younger group of participants. This group also included some English learners and students with recognized disabilities, which in part led to the higher levels of communication between the teacher and the PurpleState team – a model we plan to implement in any future iterations.

Iterations, Results, and Revisions

Utilizing the data generated in WorkPro, we identified several areas for revision to increase access and engagement in each round of implementation. We also identified areas that we wanted to examine for possible improvement in the next iteration (for iterations 2 & 3) as a design team based on the data and our own reflections, as well as for future iterations after the third iteration of PurpleState. The goal of the first iteration was really to make sure the platform functioned as designed and the participants appeared to reach the intended outcomes of the simulation. For the purposes of simulation

improvement, we really focused on participants' emotional and behavioral reactions, as they would best reflect how students were experiencing the design of the simulation. As we moved into iteration 2 we focused on more nuanced aspects of improving opportunities for students, such as analyzing the impact of changes we made to discussion prompts to encourage greater participation in group chats. We also wanted to examine the levels of engagement in terms of any changes in task completion and quality as a result of our changes to tasks, task instructions, and resources (e.g., reading level) from the previous iteration. Finally, by iteration 3 we wanted to study changes made post-iteration 2 to mentor guides and protocols and how they worked with participants in particular. Therefore, we also made some changes on a day to day and even minute to minute basis as we implemented information from the teacher partner into mentor actions to encourage and support students. Below we explore in more detail the changes made after iterations 1 and 2, and those made during iteration 3 based on our analysis of data and observations made during the simulation implementation.

For the first implementation we primarily wanted to focus on ways to provide the most opportunities possible for all students to participate in the simulation and also make the tasks as efficient as possible. We were very wary of asking students to participate in a very different school routine and environment that could be frustrating for some students. We also made some assumptions that elements of the simulation that was modeled from other Epistemic Analytics Lab simulations may not work as designed for PurpleState as they were modeled after other communities of practice within engineering and science. While we anticipated some of these issues in design, iteration 1 was used to identify any major structural and instructional changes that needed to be addressed through instructions, resources, and systems built into the simulation.

Therefore, we used this first test to focus in particular on emotional as well as behavioral engagement. In particular, we wanted to identify what made the participants excited about the simulation and to identify ways to limit "bad" frustration (e.g. over unnecessary components) and work on scaffolding areas of "good" frustration (e.g., over intellectually challenging tasks). We wanted to be sure that all students could succeed and that none would give up. We relied heavily on

the chat data, where the students interacted with each other and with the online mentor, on the notes collected from the teacher and mentors, and from the rate of completion and success on various tasks. For example, we identified areas where students expressed confusion or frustration and coded the data to identify what the source of frustration was and whether it was "good" or "bad". We then identified the sources of "bad" frustration (illustrated in Figure 5) that came up the most often and examined the design to see what, if anything, we could change to potentially lesson it. In some cases, frustration was expressed over factors out of our control, such as the school schedule or when the network crashed. In other cases, however, we identified that the task instructions were not clear, or that small tasks that we had included in the activity were unnecessarily frustrating, given the importance of the task.

Post-Iteration One Revisions

The revision process primarily included chat streams (mentor-intern, intern-intern, mentor-mentor) and task analyses (deliverables). After analyzing the data from our first implementation, we adjusted a number of elements from the simulation to be used in iteration two, including: wording in emails and task descriptions to make them clearer and straight-forward, rubrics for feedback, and instructions for mentors (we identified that some issues were our training and consistency among mentors). We also revised discussion questions and prompt scripts for mentors to support greater participation (e.g., more explicit questions to guide student thinking or encourage participation), and the elimination of tasks or the implementation of tasks that were not core to the intellectual work (e.g., parts of tasks that caused confusion or frustration but were not necessary to the main goal). For example, adjustments to include increased chat support from mentors during lengthier assignments were applied to the second iteration of the simulation which, upon analysis, correlated with a reduction of confusion in the chat streams. Additionally, more targeted and constructive feedback from mentors regarding the students' task deliverables positively impacted the quality of a higher quantity of resubmissions in the second iteration. Collectively, these changes resulted in reduced confusion and frustration and higher levels of engagement (in the form of more equal levels of participation in the chat discussions) among team

members during implementation of this revised simulation in iteration 2. See Figure 6, below, for an example of how we reworded emails to be more clear and accessible for participants to complete the task. Additionally, see Table 1 for a summary of the data collection, analysis, and a list of revisions made after the first iteration.

Figure 6 Task Email Changes from Iteration 1 to 2

Task Email – Iteration 1

I have received feedback from our Account Executive and Research Group on your initial Campaign Design research. They have also provided us with a list of Campaign Messages that tested the strongest with focus groups and the guide for budgeting media buys in Virginia media regions. Please share your research notebook from the last round, and then review your teammates work and the Research Report. Then be prepared to share important aspects of the feedback you received with your teammates via chat and your thoughts on which message would be the best fit for your proposal.

After you have reviewed the feedback you will meet with your account manager to discuss the research and to develop your campaign strategy and a plan for developing your proposal.

First, share your notebook from the last task by selecting the shared resources button from your research notebook. You will also need to identify which overall message will be best for your campaign from the list of messages from our research division that tested the strongest with potential voters.

You can access the Research Report for this campaign to see the list of messages and information for media buying in Virginia. See our PurpleState Campaign Proposal template to see what elements your proposal will need to include. You and your teammates will have to decide who will develop each proposal section using your team's research and the feedback from the Research Report.

When you are finished, record the following in a notebook entry:

- Identify the overall strategy and message your team identified and your assigned role for developing the proposal.

Task Email – Revised Iteration 2

I have received feedback from our Account Executive and Research Group on your initial Campaign Design research. They have also provided us with a list of Campaign Messages that tested the strongest with focus groups and the guide for budgeting media buys in Virginia media regions. Today you will discuss the feedback you have received on your Campaign Design Research and meet with your team to select an overall message and split up work on your proposal.

First, share your notebook and feedback from the last task with your teammates and read the research report. Your account manager can help you with this process. Next, you will meet with your account manager to identify which overall message will be best for your campaign. You will choose from the list of messages from our research division that tested the strongest with potential voters. During the meeting, you and your teammates will also have to decide who will develop each section of your proposal for TEAMNAME using your team's research and the feedback from the Media Messaging and Buying research report.

You can access the Research Report for this campaign to see the list of messages and information for media buying in Virginia. See our PurpleState Campaign Proposal template to see what elements your proposal will need to include.

When you are finished, record the following in a notebook entry:

- Identify the overall strategy and message your team identified and your assigned role for developing the proposal.

Table 1 Post-Iteration 1 Revisions

Data collected/analyzed	*Revisions*
• Student participation (behavioral) – Imbalance in student participation (some students engaged far more frequently than others).	• Increased classroom management support from classroom teacher. • Redirecting off-task behaviors. • Checking in more frequently while students are working to offer assistance. • Prompting from mentors toward specific groups/individuals to increase engagement.
• Mentor participation via chat – Lack of feedback given to students in key areas of tasks.	• Instructions for mentors to engage with students frequently for lengthier and complex tasks.
• Process issues (emotional) – Students demonstrate confusion on work flow and location of resources as evidenced by chat streams.	• Mentor scripts were adjusted to guide student thinking. • Revised daily emails to outline tasks more clearly.
• Assessment data (cognitive) – Students had difficulty completing deliverables, indicating misunderstanding of the task content and "too much reading".	• Truncated reading amount (emails, task descriptions, etc.) while maintaining reading levels. • Eliminated tasks not core to intellectual work.

Post-Iteration Two Revisions

Although confusion was reduced overall in the second iteration, we continued to notice inconsistencies in the levels of mentor feedback (some provided more direction than others), as well as several complaints from students about the large amount of reading to be done in the time allotted for particular tasks. We also recognized during the second iteration that we had mentored some students who were on lower reading levels than their peers. During and after the second implementation, we identified additional areas for further revision, including refining discussion questions, creating training and scripts for online mentors to help them provide more aggressive supports (hard and soft

scaffolding), aligning simulation resources more closely with the tasks, and reducing the reading level and amount while maintaining the level of sophistication. See Appendix B for an example of a more accessible resource that was revised to be clearer and better for participants with lower reading levels.

We were particularly focused on the level of participation and level of quality of the structured reflective meetings. The purpose of these meetings was to help the teams come together at key points of the simulation to make sure everyone was on the same page conceptually or to help them to organize or plan for the next step, such as breaking up the research tasks as they plan their proposal for their client. We analyzed the data from chat groups in the second iteration to identify strategies or characteristics among the groups where we saw higher levels of participation among team members and where we saw higher quality discussions based on the level of students' answers and how they interacted (e.g., building off of each other). In this way we viewed discussion in these meetings as a modified version of the substantive conversation standard in the Authentic Intellectual Work (AIW) framework described by Newmann, King, and Carmichael (2007), which is characterized by building upon participants' statements to collectively understand a concept or problem so that everyone might have a shared understanding in the end. See Figure 7 and Figure 8 for two different excerpts of conversation about the same topic, with Figure 7 reflecting a chat discussion with little examples of the substantive conversation in the AIW framework. Figure 8, on the other hand, was viewed as a stronger model of a discussion because of both the way the mentor encouraged the conversation and the ways in which the team worked together, leading to a more substantive conversation in the team.

Figure 7 Non-substantive Conversation about Proposal Task

Mentor 2	**So you should be sharing out your individual pieces from yesterday, and then deciding as a group what you like, and what you want to revise. Today, each of you will submit the same final campaign design proposal.**
Beren E	Alright. Well I've completed the notebook, but I don't see where to share. Do I need to submit it first?
Finn S	I submitted, but still don't see a share function
Mentor 2	You don't have to submit first
Beren E	Alright. Thanks [mentor name].
Beren E	Never mind, I found it and it is now in shared space.
Mentor 2	ok
Beren E	Got my feedback from John, so it's all good. I'll stand by till we're all ready for the next thing
Beren E	T.V. ads would be best, and I tend to agree.
Jessica L	What are we supposed to be doing?
Beren E	I have the powerpoint, and my section saved to a word file but also it's here on the saved space. I have no idea whatsoever how we are going to compile these
Beren E	Why not just submit a notebook where we just create our own number lists and each compile our whole sections so we each have an identical list following the proposal guidelines?
Mentor 2	Touch base with your teacher to get instructions on getting to the shared document.
Beren E	Oh! Don't we still need to do the last section?
Jessica L	Budget. Or did I miss an episode? It's fine, I'm well known for not getting memos
Beren E	I know, I wasn't sure if we'd done it yet or if/when we were planning on doing it. Never mind though, it looks like we're all on the same page.
Talisha H	Alright, well it looks like we're going to individually assemble our presentations then simultaneously submit them. Our hands are tied while we're waiting for Jacob to have his section approved, then we're going to all come together and work on the last section before submitting.
Jacob B	Im doin that now

Figure 8 Substantive Conversation about Proposal Task

Mentor 1	Okay, so before we start lining up who is doing which slides, let's first look at our Final Campaign Proposal. John has sent you an email just now for this. Please read it and then ask me your questions in here and I will help you. :)
Casey T.	okay
Mentor 1	So you should be sharing out your individual pieces from yesterday, and then deciding as a group what you like, and what you want to revise. Today, each of you will submit the same final campaign design proposal.
Scott B.	I updated my summary, I can share it but it's also in shared space.
Emily R.	who did target voter demographics and location?
Mentor 1	Scott: Overall Theme.
Mentor 1	Casey: Target Group
Mentor 1	Emily: Comm Channels
Casey T.	for the tv part of the selected media channels, make sure it says Richmond and Norfolk as well
Mentor 1	Chris: Budget
Mentor 1	Jordan also kindly did the identification of Stakeholders. Thumbs up.
Chris L.	Is the stakeholders in the sharespace?
Chris L.	sorry thats at jordan
Mentor 1	The stakeholders will be n the shared space soon, but you can move ahead with your part already, Chris.
Mentor 1	Jordan shared that notebook, yes.
Scott B.	should we just copy/paste our written part into the powerpoint?
Mentor 1	Only after John has ok'ed the final proposal. So that will be the last thing you do (which will be tomorrow).
Emily R.	casey let us know when you have submiited yours into the shared space
Casey T.	do you want it in the shared space or the chat?
Scott B.	is everyone's finished?
Emily R.	shared space please
Emily R.	i am i just need casey's part
Casey T.	Alright, sending it there in a few seconds
Emily R.	is yours the "likely persuadable voters section?"
Jordan E.	should we copy and paste ours in the chat when we finish?
Casey T.	yes
Casey T.	you can or you can make a new note and put it in shared space
Jordan E.	Okay what do you all think about this for message and theme- The message we are giving is to stop fracking and convince people who are both directly and indirectly affected. Using the message Focus on Green Power for Clean Water- Clean Energy. We plan to persuade viewers in the DC area while using the message "Not in my backyard" for the Roanoke area to stop supporting fracking. Using statistics/card stacking and an appeal to emotions about the negative outcomes of fracking will have the greatest impact. People lean strongly towards safety of their families and strong facts that show realism about what measures need to be taken. Messages such as "Not in my backyard" are used to show people that it is truly themselves that are being effected by fracking. I also believe people need to see an idea of how the environment will affect the future if fracking doesn't stop therefore I believe visuals will also hold an impact on votes.
Mentor 1	Thanks, Jordan. Visuals will be necessary which is what you all will compile during the presentation stage. So, "Not in My Backyard" it is. Next up: Scott's element.
Scott B.	Clean Water is seeking proposals for a campaign to sway public support in favor of a ban on hydraulic fracking in Virginia. For Clean Water, our company proposes the use of two distinct messages in two areas. We will use a combination of the focus on green energy and clean water clean enerrgy messages in the Richmond and DC areas in order to sway the large population of undecided voters there. In addition to being some of the most densly populated counties in the state, most counties are within ten percent of being convinced either way, and therefore could be persuaded. There is also a cluster of persuadable voters around the fracking sites, specifically in Buchanan and Dickenson counties. Our polling tells us these counties are ten to twenty percent in favor of fracking, however we have found the the ""Not in my backyard"" message to be very effective with voters near the frackign sites, and believe these populations could be persuaded.
Mentor 1	I see, so you wil lbe using BOTH "Green Power for Clean Water" AND "Not in My Backyard". This is a unique approach that I believe will be effective. Good job on working to truly identify and know your target voters to the point of differentiating hte message for each group. Next up: Casey

As a result of our analysis of conversations like those in figures above, we increased mentor support frequency, guidance, and reinforcement, and students seemed less confused and more synchronized in their responses as a result in the following iteration. Additionally, we refined some of the discussion

question sets based on good examples of discussions and also made changes to better align questions where we saw lower quality examples of discussion. In some cases this meant being more explicit in our questioning or using a broad to specific sequence of questions to help guides students and to make sure they reached the point needed to move to the next task. In the example below, we condensed the question set for the meeting where we ask students to reflect on what they had learned from our Campaign Design Manual tasks – where they learn core concepts for political communications.

Initial Question Set:

Using evidence and communication strategies to identify and reach persuadable voters

- What are the key pieces of information that we will need to research in order to plan a campaign?
- How important is it to understand the political landscape of the state or region we are targeting?
- How can we do that?
- How can we use polling data to help us identify the target persuadable voter?
- What are the potential limits on using polling data?

Revised Question set:

Using evidence and communication strategies to identify and reach persuadable voters

- What are the key pieces of information that we will need to research in order to plan a campaign?
- Why is it important to understand the political landscape of the state or region we are targeting?
- How can we use polling data to help us identify the target persuadable voter? What are the potential limits on using polling data?

In this example, we reduced the total number of questions and framed question two from a "how important" – which garnered responses such as "very" to "why is it important," which helped provide evidence for where the group's understanding was and focused them more specifically on one of the goals for this discussion.

We also increased the number and applicability of scripted discussion facilitation messages that mentors could access for use in the meetings. These are a form of soft scaffolding that can be easily entered into chat by mentors to react to situations in the meetings or chat interactions that they notice. For the meetings, we provided mentors with a list of general scripts focused on encouraging participation of all members of the group – these messages are modeled after similar messages we would use in a classroom to encourage greater participation in a discussion, such as "what do the rest of you think?" and "does anyone disagree or have something else to add?" We found messages like these during our structured chat meetings led to more representational participation across the teams and a higher quality conversation. These are all strategies to promote inclusive and high-quality discussion (Hess, 2009; Parker 2003). In addition to these new areas of focus, we also studied any ongoing frustration or other emotional engagement issues to identify other potential changes. Using what we viewed as high-quality examples of tasks, discussions, or interactions within teams as models for future changes was particularly useful throughout this project – but no more useful than in looking at the chat discourse between team members and between team members and their mentors. See Table 2 for data collection, analysis, and revision notes for the second iteration.

Table 2 Post-Iteration 2 Revisions

Data collected/analyzed	*Revisions*
Total student participation by task (behavioral) • Evaluated trends across individual/student/mentor participation for each task across each group. • Determined which questions/tasks fostered the greatest level of participation and quality of interactions by analyzing chat streams for higher-order thinking skill performance.	• Further refined discussion questions to prompt more content-relevant input from students for each task. • Mentors prompted students with the newly scripted clarification questions that support the mandatory questions.
Intellectual level of participation (cognitive) • Identified instances that appeared to engage	• Additional unscripted suggestions for mentors to use during tasks to increase

students in more depth in(?) chat discussions related to the tasks they are completing - and where collaboration is more apparent. • Identified levels of interaction (e.g, sharing, response to mentor, deliberation) ranging from sharing/low levels of participation to multiple meaningful interactions between students.	deliberation and promote sharing among students (communicated during mentor training). • Mentors reworded questions to be more specific and included ad-hoc questions designed to ensure understanding of a specific topic.
• Mentor group chat - Continued analysis of mentor group chat to identify areas in need of more aggressive supports.	• Created a mentor training program (1 hour duration) and created additional support and reference documentation for mentors, including flow charts of the simulation process with completion schedules for each task each day.
Process issues (emotional) • Identified instances from the chat where students are confused as to what they are supposed to be doing or where they are identifying issues with simulation processes or materials. • Analyzed occurrences of student difficulty with the flow of the WorkPro process and content issues in order to identify areas in need of attention for revision.	• Continue minimizing reading amounts without compromising intellectual levels. • Created accessible content to assist students at lower reading levels. • For complex tasks, planned for increased support and open communication between classroom teacher and mentors through more frequent mentor chat participation.

Iteration Three Revisions – Ongoing and Post-Implementation

During the final round of implementation, we also focused our revisions on making the role of the online mentors more active during the sessions, which is something we identified as a goal after iteration two. We attempted to do this through providing daily tip sheets and scaffolding ideas for mentors and the collaborating teacher to employ based on needs that were identified. We also implemented more individualized student support both online in the simulation and in the classroom through our collaborating teacher. This was essentially hard scaffolding for our mentors that would help offer more soft scaffolding for the student teams they were working with in the simulation. See Figures 9 and 10, below, for example tools developed to help mentors be more engaged and effective in their role in the simulation.

Figure 9 Mentor Chat Prompts by Task

Welcome

1. Introduction to teammates (choose a scripted dialogue for Entrance/Workflow task)
2. Practice Chat with teammates
3. Direct teammates to look in inbox to get started

Entrance Interview/Workflow Tutorial

1. Workflow tutorial example
2. Direct teammates to not look up answers for entrance interview
3. Send 10 minutes warning
4. Direct teammates to sign their notebooks and submit

PurpleState Campaign Design Manual Orientation

1. Send general chat scripts plus your own feedback and guidance (most questions will be content-related)

Media Audit Task

1. Send general chat scripts plus your own feedback and guidance (most questions will be content-related)

Campaign Design Manual and Media Audit Reflection

1. Send Start Meeting script
2. After meeting has concluded, send Meeting Close script

RFP Meeting

1. Send Start Meeting script
2. If teammates are confused about who is asking for the proposal, send the Questions about RFP script
3. After meeting has concluded, send Meeting Close script

Issue Research and Media Audit

1. Send general chat scripts plus your own feedback and guidance (most questions will be content-related)

Campaign Research Feedback Reflection

1. Ask teammates to review research feedback
2. Ask teammates to share notebooks and feedback
3. Send Start Meeting script
4. After meeting has concluded, send Meeting Close script

Figure 10 Mentor Daily Task Outline

Day 1 – Workflow/Entrance Interview
Teammates will provide:

- **A summary of information provided in the Internship Workflow resource, making sure to include descriptions of each step of the process through which they will receive interactions, submit their work, and review feedback.**
- **A statement indicated they completed the interview.**

Days 2 & 3 – Campaign Design Manual Orientation
Teammates will provide:

1. **Synthesis of Key Strategies from Persuasive Communication Techniques**
2. **Synthesis of Steps for Conducting a Media Audit**
3. **Synthesis of Key Strategies from CDM: Using Political Polling Data to Target Voters**
4. **Media Channels for Targeting Voters**

Day 4 – Campaign Design Manual and Media Audit
Teammates will provide:

- **Campaign Design Summary (1 per team)**
- **Individual Reflections**

Day 5 & 6 – RFP Meeting
Teammates will provide:

- **A summary of the meeting topics and plan for breaking up research tasks**

These artifacts include a sample of the kinds of mentor task schedules and chat prompts to help mentors both understand what they needed to do on particular days of the simulation – and helped them to see where these steps fit into the larger simulation. One challenge we faced is that the graduate students who served as mentors were not involved on a daily basis in the project, which made keeping up communication between all mentors and between mentors and their intern groups difficult. The types of tools and scaffolding for the mentors described above will be particularly useful in any future uses of the simulation at a larger scale with a greater number of mentors and class sections. During the third iteration, they did seem to contribute to deeper engagement for the students with the mentors and more effective feedback and soft scaffolding during the simulation, as well as more effective use of the hard scaffolding we had built in for the second iteration of PurpleState described above.

One of our additional goals for this third iteration was a more prominent role for the classroom teacher, especially as the classes for the third iteration included younger students and more students who had IEPs or were English Learners. We had seen a lack of communication with the teacher in iteration two as a problem holding back success for all students. Our iteration 3 collaborating teacher provided us with tips on students (without including confidential information) and our mentors were charged with providing updates to the teacher on individual students and attempting to intervene

earlier rather than later when they felt a student may need extra teacher help. The role of the teacher evolved over the course of the three weeks of implementation. For example, the teacher identified early on that he had students who were receiving or had received ESL services, and characteristics about them. Midway through the simulation he was very impressed with the level of effort they put into the simulation, but was worried that they would get overwhelmed if behind and stop trying. In response, our mentors made sure to check in regularly with these students through chat and through asking others in their team to check in with them if they finished their tasks early – so as to provide soft scaffolding from three angles (teacher, online mentor, teammates). This support enabled English Learners to participate despite the challenge of a largely text-based simulation.

At the teacher's request, we also tried to include him more heavily in the instruction without breaking the façade of the simulation. For example, he identified the need for short review sessions to assure all students had a basic understanding of the core concepts and what was being asked of them. He also tried to get students to think about how what they were learning applied to their own interactions with media or for important concepts he or the mentors felt they were not quite getting at the level needed. In addition to the issues identified by the teacher, we were also interested in having students reflect on their own use of media or interactions with political media and a better level of preparation to move onto more complex tasks. We saw some evidence of this in the chats and assignments but realized it was not built into the simulation explicitly enough. Therefore, we also built in these autonomous moments for students with their classroom teacher. These were short reflective discussions facilitated by the classroom teacher at key moments in the simulation to help them reflect on how what they were learning in the simulation applied to their own practices and actions with political media – and in particular their role in political media culture. These discussions will be structured into future iterations of PurpleState.

Encouraging a more active role on the part of the classroom teacher improved communication and coordination between online mentors, researchers, and what was going on in the classroom. It also made the teacher feel that he had a larger role in the simulation and he was more invested in the

project. It also helped to connect what was going on in class with what they were learning in the simulation through the autonomous moments (see Parker & Lo, 2016, for further discussion of autonomous political moments). See Table 3 for our analysis of data and planned revisions as a result of iteration three. Since many of the changes for this iteration did not require structural changes to the simulation or materials, we were able to address issues in real time as we were trying out ways to improve communication and the role of the teacher.

Table 3 Post-Iteration 3 Revisions

Data collected/analyzed	*Revisions*
• Mentor chat - Continuous analysis of teacher/mentor collaboration to identify areas of weakness (cognitive).	• Increased feedback between mentors and teacher during sessions to support students having difficulty. • Created a shared document for teacher/mentor debriefing after each session to address persistent issues and improve student success for subsequent session.
• Mentor chat – Continuous analysis of mentor/student collaboration to identify areas of weakness (cognitive).	• Mentor role more actively engaged through use of tip sheets and conversation prompts. • Classroom teacher shares particular student needs for mentor to offer more targeted support.
• Student chat by task – Determining key moments where more time for pause and reflection may be necessary (cognitive).	• Implemented reflective discussion moments so students would be better prepared moving forward (facilitated by classroom teacher).
• Identified need for developing a measure of what good chat meetings looked like in order to compare across mentors/teams more systematically (cognitive).	• Representative sample for new rubric analysis - Identified completed deliverables and participation by student for all three iterations and chose a criterion sampling for the development/testing of the Elaborate Written Communication rubric (Newmann, Carmichael & King, 2007).
Sample Student notebook entries by task, group, and session (behavioral, cognitive) • Determined incidences of communication at varying levels of sophistication. • Each student received a score for each of the measurable notebook entries (5 out of 7). • Scores were averaged and reported by task for each session. • Overall average for each task across all sessions computed.	• Adapted and implemented a version of the Elaborate Written Communication rubric (Newmann, Carmichael & King, 2007) based on analysis of student notebook entry analysis.

Implications

This design-based project offers some clear and impactful lessons for the development or integration of computer supported collaborative learning (CSCL) for democratic education. In this

chapter we have presented a model for collecting and using data from our simulation, PurpleState, to systematically address issues of participant opportunity and engagement in the simulation. We collected and analyzed chat comments expressing frustration or confusion and used this data to determine needed changes in our resources and instructions. Our goal was to have the maximum level of participation and support for the maximum number of students. We analyzed the percentages and nature of participation within group discussions and used this data to refine the discussion structure and implement soft scaffolding to support greater and deeper participation. Finally, we utilized the human power in the simulation, in the form of the classroom teacher and online mentors, to make sure all students had the opportunities and support to be successful in PurpleState. Of note is the shift from having to address issues of emotional and behavioral engagement in iteration one and two to a greater focus on cognitive engagement in iteration three. Perhaps similar to a early career teacher, we first needed to address issues in practice such as the ability to clearly communicate with participants or to set expectations that aligned with the collaborative nature of the simulation before moving on to a deeper engagement in collaborative problem solving.

We implemented strategies such as increased communication and forms of scaffolding (both hard and soft) for the teacher and mentors in addition to the students. These were in response to our observations and analysis of emotional, behavioral, and cognitive engagement data we gathered. Too often technology platforms are viewed as a replacement for teachers or teaching (Cuban, 1986, 2001). Here we utilize the power of the design and platform to better assess student progress and support their learning – as well as support the work of the teacher who could now spend their time more effectively for students who needed it, while also engaging their students in complex problem-based learning focused on media and democratic education. One potential for this kind of computer-supported collaborative platform is that it allowed students to engage in problem-based, collaborative learning while also freeing up the teacher to focus their attention on students who needed the most help to succeed. This kind of simulation may also serve as a scaffold for teachers not comfortable in engaging

students in controversial issues or some of the other topics or learning strategies embedded in PurpleState.

However, in addition to the many affordances of the simulation and WorkPro platform, there were also many constraints that limited our ability to reach our goal for increased opportunity and engagement. First, the text-based nature of WorkPro was a limitation for students with lower levels of technical or academic reading ability and English Language Learners. Although audio-visual material was not embedded in the WorkPro platform, we provided links to the web where necessary. However, we did find that these students were more successful when we better utilized all of our human soft scaffolding resources – through the communication with the classroom teacher and through having the online mentors provide support and suggest students who were further ahead help their teammates at specific points in the simulation, for example. We also found that the CSCL environment provided a powerful space for hard and soft-scaffolding for elements of practice viewed as Authentic Intellectual Work (Newman, King & Carmichael, 2007) that also support the development of engaged citizens (e.g., Gould, 2011; Hess & McAvoy, 2014; Parker, 2003). We cannot reiterate strongly enough that the simulation was only successful with responsive student support on the part of the online mentors and teacher in the classroom.

As noted above, simulations such as PurpleState provide opportunities for authentic pedagogy, include supporting classroom teachers to engage students in disciplinary inquiry and substantive conversations (e.g., discussion) as part of the simulation and through engaging students in an authentic and real-world problem. The platform and design-based team allowed for hard scaffolding (e.g., materials, tasks, and functions built into the simulation) as well as soft scaffolding (e.g., communications with students and teachers, prompts, online mentor support of students) that illustrate the value of both these types of collaborations as well as for platforms that assist teachers to engage students in higher order thinking, discussion, and inquiry (Saye & Brush, 2007). This adds to the literature around using technology as a replacement or tool – and instead focuses on the platform and simulation model as a form of distributed cognition for students and teachers – and as a medium for

engaging in complex problem solving - so that the teacher can focus on encouraging higher level engagement and on focusing on individual needs of students to be successful.

In our case of the initial design and iterative development of PurpleState, we benefited from a design-based iterative research model in numerous ways. While likely obvious, the knowledge that we would have multiple attempts to refine and test the simulation provided the team with the opportunity to take risks and learn from our initial iterations. The design also included the perspectives of multiple team members and roles over the course of the project, which we believe led to both a simulation that was more practical for implementation in the classroom and a better pedagogical model by the end of the simulation. The design-based process also allowed us to focus on how and why students were engaging in particular ways in addition to measuring the outcomes of their participation. Again, this information was vital for development as well as provided data for inquiry into their participation, collaboration, and epistemic cognition during the simulation tasks. In sum, while we had significant gains in all of our iterations, the design-based approach led to higher levels of participation, deeper engagement, and more authentic collaboration.

However, we could have benefited even more greatly from the DBR model if we had greater connections to, time with, and input from all members of our team. For example, many of the mentors made great insights and suggestions during their time on the project, but because of their schedules as students we did not have consistent engagement with them and thus likely did not gain as much from their role a we could have with more consistent partners. Similarly, given our classroom teacher collaborators schedules and level of work at their schools, we often did not get the real time or end of iteration feedback we could have benefited from – with the exception being the teacher from iteration 3. For our teacher partners, this was in part the result of our attempt at maintaining the delicate balance of welcoming as much investment and input the teachers would provide to our development and design while not feeling like we could ask for too much of their time given their positions. Again, in iteration 3 our teacher was the most invested and it may have been in part a result from our request to increase the role they played in the simulation. We also had different teacher collaborators for each

round, which was not ideal in terms of development but did help us understand how it would work with different teachers. We can not iterate strongly enough that the role of the teacher is key to our simulation and most computer supported collaborative learning – especially when our goals included those of democratic education: high levels of meaningful participation, engaging in issues and deliberations, and working to produce consensus and well-warranted solutions to complex political problems.

Endnote

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Appendix A: PurpleState Solutions, Inc. Virtual Internship Overview

Task 1: Entrance Interview and Online Environment Tutorial

- Interns complete an interview (pre-test) and read the online environment tutorial
- Online Environment Tutorial can be found in the resources section

Task 2: PurpleState Campaign Design Manual Orientation (CDM)
Interns review PurpleState's Campaign Design Manual and complete a task that asks them to apply what they have read – this includes core concepts for political communications:

1) Persuasive techniques in political advertising
2) How to conduct a media audit (e.g., review media sources, identify allies and potential earned media outlets)
3) Polling – role of polling in campaigns and limits on polling data
4) Strategic Communications Media Channels for reaching different target audiences (e.g., television ads, social media)

Task 3: Media Audit Task
Interns utilize their knowledge developed in Task 2 to "catalogue" example political media for the PurpleState Media data base. Interns will analyze three sample media for source, perspective, persuasive technique used, intended audience, evidence, and to identify allies and potential friendly journalists and outlets, etc.

Task 4: CDM and Media Audit Reflection – [Meeting] Must be done synchronously/live
Facilitated discussion with account manager (online mentor) to share their CDM research and Media Audit Feedback. This will also include a discussion over how to plan media campaigns and the types of tasks they will do as interns as part of a group developing a proposal.

Task 5: RFP [Meeting] – Reflection Meeting portion must be done synchronously/live

- Interns read Request for Proposals (RFP) resource to learn about the campaign design proposal that they will be working on at PurpleState
- Account Manager runs a reflection meeting with interns to ensure understanding of Request for Proposals
- The Request for Proposals from special interest group for pro/anti fracking campaign (New Energy Virginia and Clean Water Virginia)

Group discussion on RFP managed by their Account Manager, what they are looking for, emphasis on earlier research and what they need to consider as they design their campaign – using expertise developed in their previous groups.

Task 6: Issue Research and Media Audit
Interns research the policy issue and persuadable voter demographics: campaign research memos will be submitted by individual group members – will be shared with all group members in resources.

Intern tasks – group members decide which part of the task to complete:
1) Polling: research polling data (or somehow simulate the design and conduct original survey research) to understand the current sentiment, to test the effectiveness of potential messages, and to discover the demographics most interested in your position and potential message
2) Research arguments for fracking: research and identify the compelling evidence, identify likely allies (e.g., organizations, journalists, politicians) with public following (local and national), to understand the angles that the public and media are most interested
3) Arguments against fracking: research and identify the compelling evidence, identify likely allies (e.g., organizations, journalists, politicians) with public following (local and national), to understand the angles that the public and media are most interested
4) Identify stakeholders: Interns would help determine the political landscape, including the political players on both sides, the organizations that support/oppose them, and the public they need to reach to accomplish their goal

Task 7: Initial Campaign Design Proposal (for Account Executive "John")
The group uses feedback from their research to plan and then design elements for the proposal (using the PurpleState Campaign Design Process and Proposal Template – which also serves as the rubric for the task assessment and feedback), including:

- Intended audience identified to target/persuade
- Select strongest message and strength of message for target audience
- Selection of media channels to best reach target audience demographic
- Timing and location of media for target audience/budget
- Strongest evidence for/against on issue – sample tag lines – images - etc
- Proposed budget

Task 8: Initial Campaign Design Proposal Reflection 1 [Meeting] - Must be done synchronously/live

- Interns review feedback on their initial proposal design
- Account Manager runs a reflection meeting with interns to reflect on polling and interest group feedback
- Each team receives feedback on their design proposal using feedback from "focus groups" and executive review that tells them which elements were acceptable and unacceptable
- In the reflection meeting, students should start understanding what choices in their campaign designs their client will find acceptable, and what kinds of changes they might want to make for their final proposal and "pitch"

Task 9: Campaign Design Proposal Final Draft
Intern teams revise and submit their final Campaign Design Proposal for their client interest group for review and to "pitch" to the client.

Optional Task: Groups develop a PowerPoint "deck" to pitch to the Account Executive "John" based on their proposal.

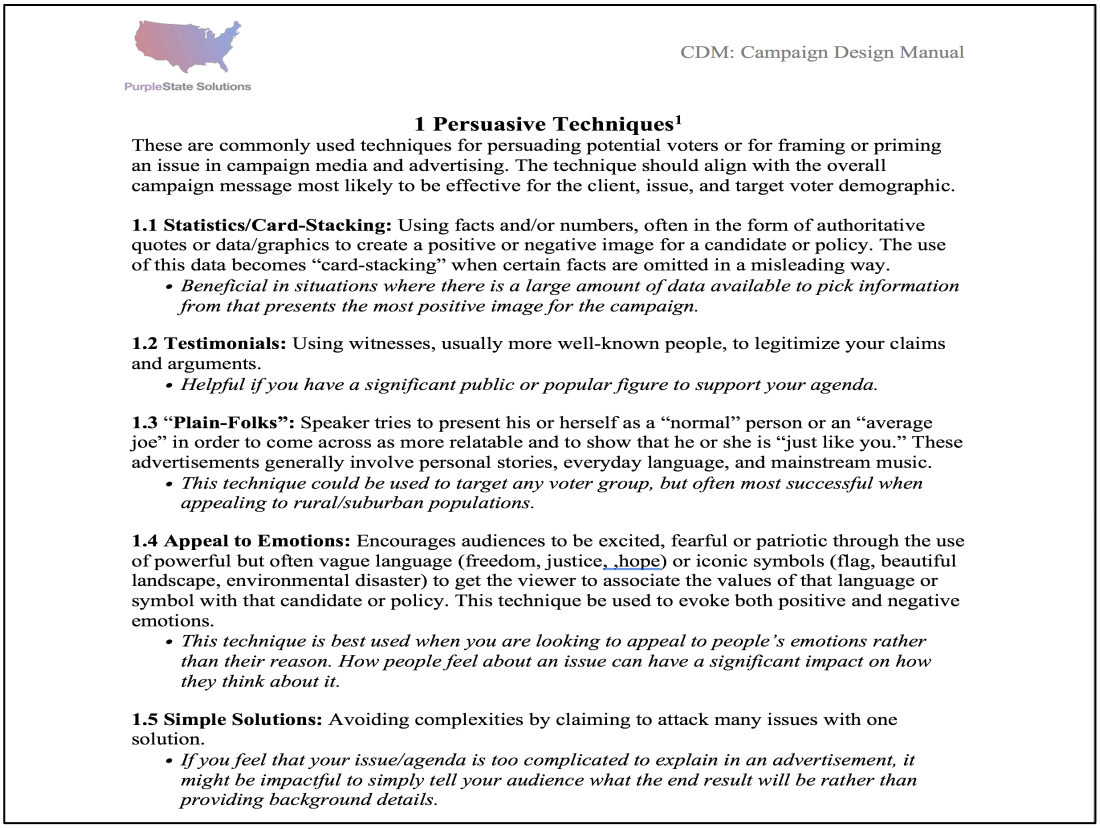
Task 10: Exit Interview

- Interns complete exit interview
- Final task of internship
- Last task! Don't forget to thank the students and say goodbye

Optional Task 11: Present Pitch Decks and Proposals to PurpleState Executives (this was done for the pilot - done in class face to face with question and answer session for each group.

Appendix B: Sample PurpleState Resource Revision

Original Resource Iteration 1



PurpleState Solutions

CDM: Campaign Design Manual

1 Persuasive Techniques[1]

These are commonly used techniques for persuading potential voters or for framing or priming an issue in campaign media and advertising. The technique should align with the overall campaign message most likely to be effective for the client, issue, and target voter demographic.

1.1 Statistics/Card-Stacking: Using facts and/or numbers, often in the form of authoritative quotes or data/graphics to create a positive or negative image for a candidate or policy. The use of this data becomes "card-stacking" when certain facts are omitted in a misleading way.

- *Beneficial in situations where there is a large amount of data available to pick information from that presents the most positive image for the campaign.*

1.2 Testimonials: Using witnesses, usually more well-known people, to legitimize your claims and arguments.

- *Helpful if you have a significant public or popular figure to support your agenda.*

1.3 "Plain-Folks": Speaker tries to present his or herself as a "normal" person or an "average joe" in order to come across as more relatable and to show that he or she is "just like you." These advertisements generally involve personal stories, everyday language, and mainstream music.

- *This technique could be used to target any voter group, but often most successful when appealing to rural/suburban populations.*

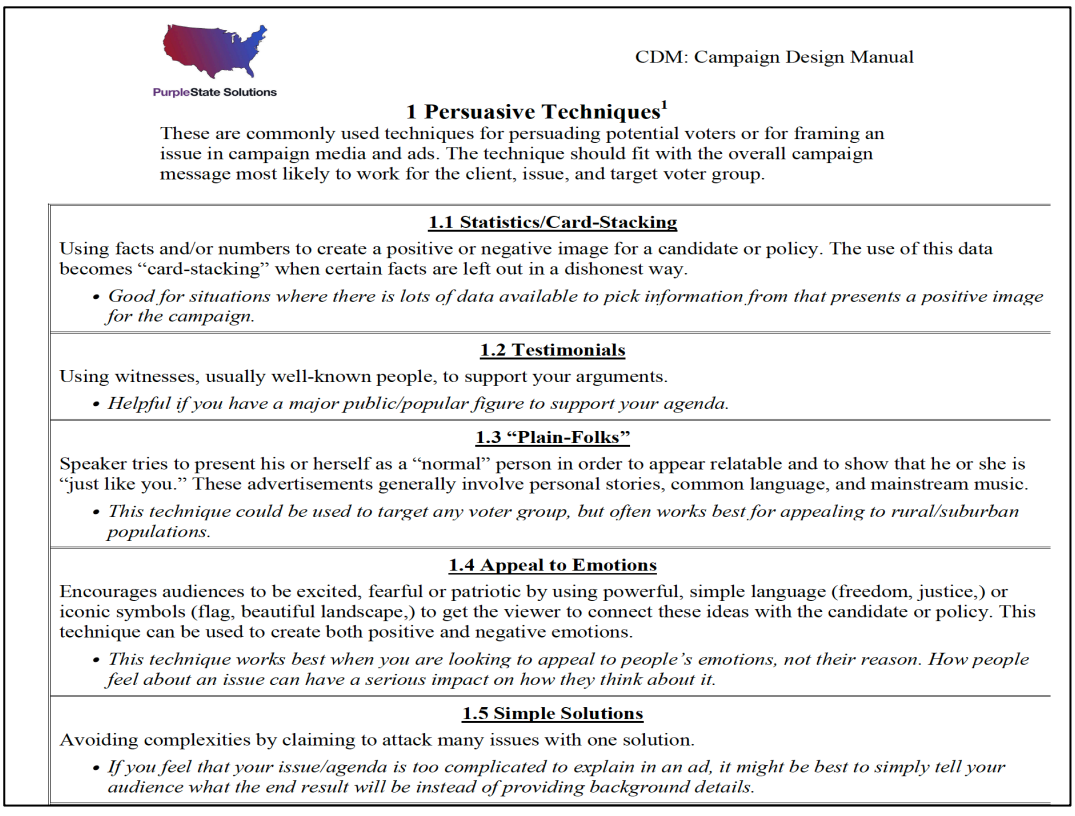
1.4 Appeal to Emotions: Encourages audiences to be excited, fearful or patriotic through the use of powerful but often vague language (freedom, justice, ,hope) or iconic symbols (flag, beautiful landscape, environmental disaster) to get the viewer to associate the values of that language or symbol with that candidate or policy. This technique be used to evoke both positive and negative emotions.

- *This technique is best used when you are looking to appeal to people's emotions rather than their reason. How people feel about an issue can have a significant impact on how they think about it.*

1.5 Simple Solutions: Avoiding complexities by claiming to attack many issues with one solution.

- *If you feel that your issue/agenda is too complicated to explain in an advertisement, it might be impactful to simply tell your audience what the end result will be rather than providing background details.*

Revised Resource Iterations 2 and 3



PurpleState Solutions

CDM: Campaign Design Manual

1 Persuasive Techniques[1]

These are commonly used techniques for persuading potential voters or for framing an issue in campaign media and ads. The technique should fit with the overall campaign message most likely to work for the client, issue, and target voter group.

1.1 Statistics/Card-Stacking

Using facts and/or numbers to create a positive or negative image for a candidate or policy. The use of this data becomes "card-stacking" when certain facts are left out in a dishonest way.

- *Good for situations where there is lots of data available to pick information from that presents a positive image for the campaign.*

1.2 Testimonials

Using witnesses, usually well-known people, to support your arguments.

- *Helpful if you have a major public/popular figure to support your agenda.*

1.3 "Plain-Folks"

Speaker tries to present his or herself as a "normal" person in order to appear relatable and to show that he or she is "just like you." These advertisements generally involve personal stories, common language, and mainstream music.

- *This technique could be used to target any voter group, but often works best for appealing to rural/suburban populations.*

1.4 Appeal to Emotions

Encourages audiences to be excited, fearful or patriotic by using powerful, simple language (freedom, justice,) or iconic symbols (flag, beautiful landscape,) to get the viewer to connect these ideas with the candidate or policy. This technique can be used to create both positive and negative emotions.

- *This technique works best when you are looking to appeal to people's emotions, not their reason. How people feel about an issue can have a serious impact on how they think about it.*

1.5 Simple Solutions

Avoiding complexities by claiming to attack many issues with one solution.

- *If you feel that your issue/agenda is too complicated to explain in an ad, it might be best to simply tell your audience what the end result will be instead of providing background details.*