Gameful Constructionism Midterm Progress Report Spring 2018

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1. Abstract

In this report we will describe the progress made in the gameful constructionism, constructionist game library user story. The items discussed will be sections of the user stories completed, going into detail how they were completed and using which technologies. The feature we have completed so far under gameful constructionism (#16) is the instructions (#385). Then items to be completed before the end of the semester will be discussed with a schedule of completion for those items. This report will be discussing instructions, what they are, how they are being implemented, and how they are useful to SAGE.

2. Architecture

Like other teams working on SAGE this semester, we worked on integrating Material JS into all the pages we are working with. AngularJS Material is both a UI Component framework and a reference implementation of Google's Material Design Specification. It provides a set of reusable, well-tested, and accessible UI components based on Material Design. This makes all parts of SAGE more visually pleasing as well as consistent.

3. Design and Implementation

3.1 Instruction Model Design

The instruction was designed to be created for games and shown in different assessments. When an instructor goes to create the assessment, the instructions can aid them in creating the assessment. For students, instructions will show up on the right hand side when students play a game. They will be able to scroll through the instructions their instructors created for them for that specific game. The model for the instruction is designed to be flexible for instructors to create different instructions for each of their games.

3.2 Instruction Creation

We created instruction inside the original game creation page. Whenever a game is created, the instruction related to that game would be created too. Further, the original POST

method gets game id from backend, we use this game id to store extra information about everything of the instruction. We designed one API that allowed to add new instruction related to one game. Another API to get all the instruction information by using GET method with game id.

3.2.1 Endpoints

The following endpoints have been created:
1. Add instruction: `[POST] /instructors/games/:gid/createInst/create`
2. Get instructions: `[GET] /instructors/games/:gid/instructions`

3.3 Instruction Preview

      For some game creators, they do not know what their instruction would be like after they finished filling the steps they want to guide users. Thus, we designed instruction preview. When game creators fill in 'heading', 'description' or upload any related images in any steps, the area that shows instruction preview updates at the same time. And it is draggable. So it is convenient for game creators to drag instruction preview area to the most comfortable place for them. As a result, game creators could make sure their instruction is what they want to present to users before creating the game.

4. Limitations & Assumptions

      We ran into quite a few challenges while working on SAGE so far this semester. Most of the challenges have dealt with fixing existing bugs or bugs that occured. One bug occured in one .CSS file. Some part of codes in that .CSS file modified the general setting of some elements in HTML(ex: changed all elements that had h2 class to color blue). Therefore, when creating new elements in HTML, it would show up in a weird place or have weird color. We traced all the .CSS setting and finally figured out which line of which .CSS file causes this. We modified .CSS setting and designed our instruction page carefully without making the same mistake and applied material UI on our page.

5. Future Work

      For the rest of the semester we plan to create instruction for instructor to know how to create instruction for students. We will also need to allow user to modify the existing instruction. We will add a 'edit' button that redirect instructors to another page and show up the data from backend, instructors could update all the instruction in that page, all these features are part of the instructions feature (#385). If time permits, we will look into constructionist game creation (#69) and editing (#70).