Gameful Affinity Space Project Proposal Spring 2018

Harsimran Bath (COMS 3998 W sec 028)

Yuval Schaal (COMS 6901 E sec 028)

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Abstract

In this paper, we will describe our proposal to add class administration abilities to SAGE (Socially Addictive Gameful Engineering)[1]. First, we will analyze related works to better understand the implementations of class administration feature by similar projects. Then, we will describe the scope of the class administration feature in the context of SAGE. The proposal will describe the class creation, class editing, copy class, and upload student roster features that will be attempted in this project.

1 Introduction

The motivation behind the SAGE Gameful Affinity Space is to create a platform with a user friendly and engaging interface that allows instructors to easily create different learning curricula in computational thinking for their students. According to Jeannette Wing, “computational thinking involves solving problems, designing systems, and understanding human behavior, by drawing on the concepts fundamental to computer science”[2]. This takes researcher’s work in the Gameful Affinity Space and adds a higher degree of gamification for the students. We want to introduce the creation and edit of classes for the instructor dashboard. This feature will be a step in the direction towards having SAGE be a platform where teachers can host classes that students can enroll and be enrolled in to learn gameful thinking techniques.

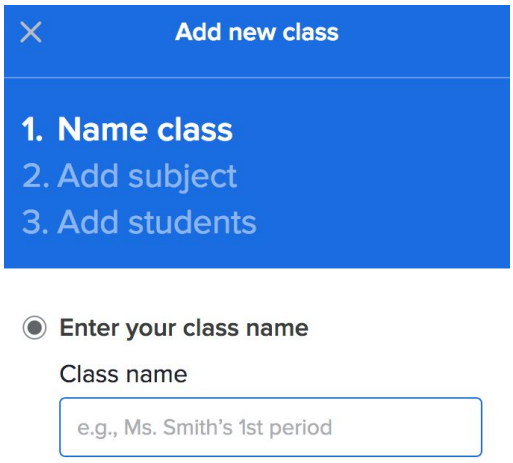
This semester, we intend to build upon the work done by previous students and researchers in the gameful affinity space and create the platform and class module that will be used as a major part of the SAGE platform to allow instructors to manage their students in a more organized fashion.

2 Related Work

2.1 Khan Academy [3]

Khan Academy is an existing online learning management system. It houses a dashboard for teachers to manage classes, much similar to what this proposal aims to build. The purpose of classes in Khan Academy is to enroll students in a specific class room and build a curriculum for the classroom using existing subjects in Khan Academy.

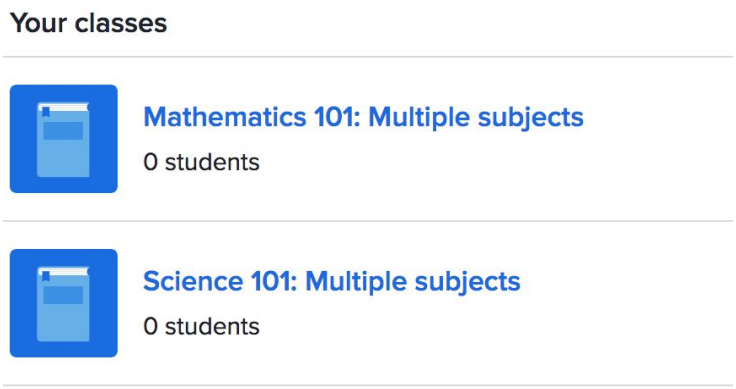
2.1.1 Adding a Class



In this user interface (UI), Khan Academy empowers the instructor to create a classroom for students. In the UI, the instructor specifies the name of the classroom,

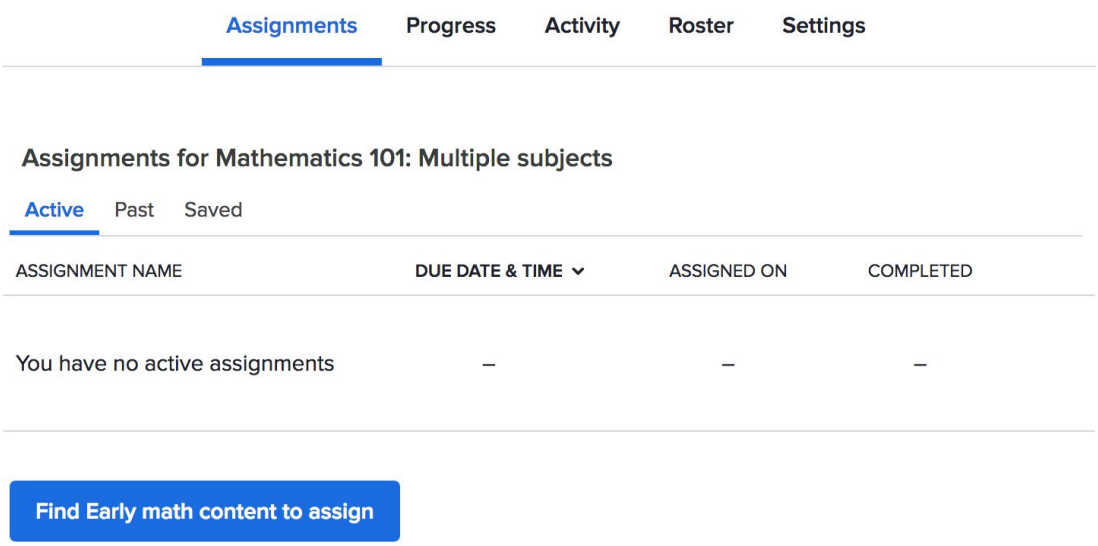
the subjects (coursework students would enroll in), and students who would enroll in the course. The students would then be associated with this specific class, run by this instructor, and progress through the curriculum.

2.1.2 List of Classes



In this screen, Khan Academy has a dashboard for viewing and managing the classes an instructor has created. It also gives the instructor a statistic on the number of students in the class. This list item UI could perhaps be extended in SAGE to display additional quick information to the instructor, such as average score, etc.

2.1.3 View and Edit a Class



Khan Academy has a dashboard for viewing and editing a class. On the **Assignments** tab, the instructor can manage the assignments in the curriculum of this course. This including, adding and removing assignments. Furthermore, the **Progress** tab allows the instructor to visualize the progress of students in the class through charts. The **Activity** tab allows the instructor to view statistics of student engagement in the classroom, such as amount of time spent on assignments. The **Roster** tab is where the instructor can add or remove students from the classroom. Finally, the **Settings** tab is where the instructor can manage the properties of the classroom, such as name.

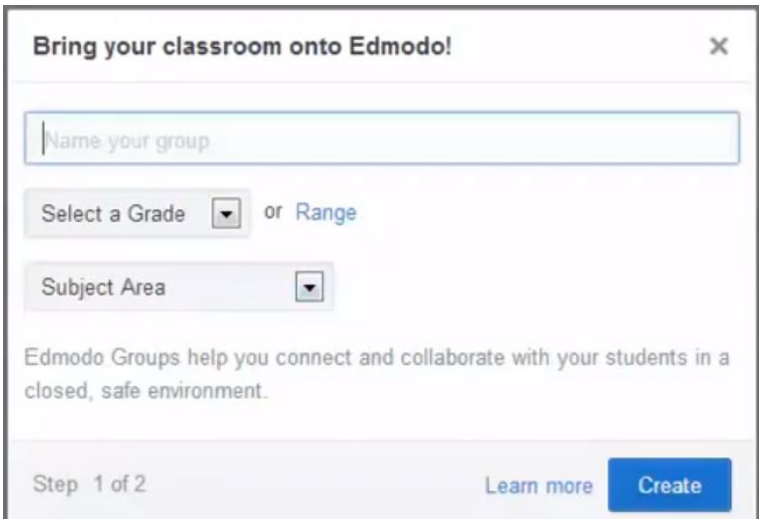
2.2 Edmodo [4]

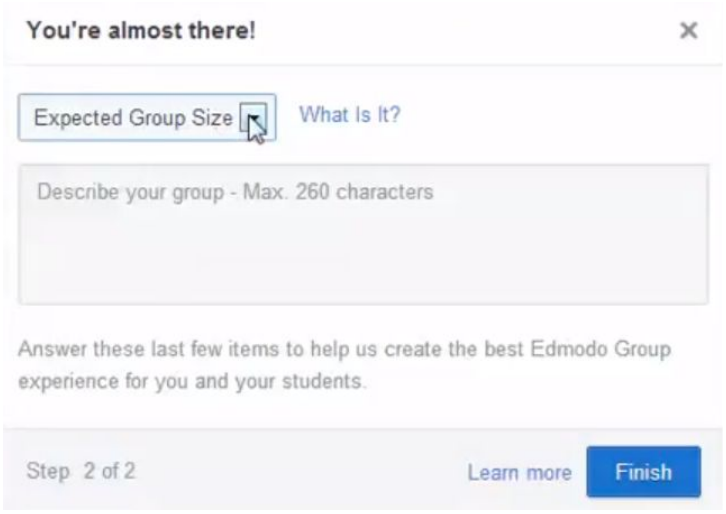
Edmodo is one of the world's largest K-12 social learning community where teachers, students, and parents can connect safely and securely. Edmodo has groups

similar to classes proposed for SAGE, which an instructor can create in order to bring their classroom curricula to Edmodo.

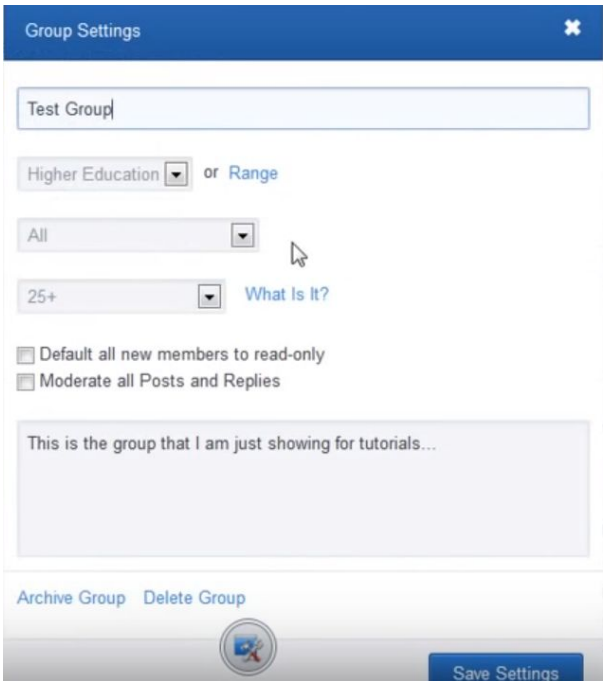
2.2.1 Create a class

The figures below show the group/class creation process in Edmodo.





2.2.1 Edit a Class



3 Proposal

The class administration will be primarily managed through the instructor dashboard as part of Sage-Frontend. This proposal mainly focuses on features related to the class module that will be created as a part of this proposal as well.

3.1 Class Creation

Classes, in SAGE, are a way for instructors to manage multiple students and keep tracks of their progress. For this feature, a teacher will be able to create a class from the instructor dashboard. A class should allow a teacher to easily associate students with missions as well as monitoring the students' progress.

At class creation, the instructor will be able to give a name to the class (a named group of students). Students' email addresses should be allowed to be entered upon class creation to give the student's access to the class's curriculums.

3.2 Class Edit

The Class edit feature will permit the instructor to edit a class to adjust class enrollment or to modify other attributes as needed. After creating a class, the instructor that is the owner of the class will be able to go to the class's settings and be able to change attributes such as the class enrolment as well as changing the class naming.

3.3 Class Copy

The class copy feature enables an instructor to copy a class to more easily configure additional classes that are similar to the copied class. This feature will encourage the creation of more classes by instructors on the platform. When a teacher sees a class that has a similar curricula to the class they want to create on SAGE, they will be able to use the class copy feature to more quickly complete their class creation process. The class copy feature will copy the missions along with the corresponding quests and games.

3.4 Student Roster Upload

The student roster upload feature equips the teachers with the tool to quickly upload a .csv file containing student names and email addresses to easily enroll students into a class, adding them to the class roster. This takes a lot of work off the instructor’s hands and allows for more automation of the class creation and student entry operation.

4 Timeline

Sprint Number	**Milestone**	**Sprint End Date**
Project Proposal	Project Proposal	February 2nd, 2018
0	Environment Setup, Wireframes	February 16th, 2018
1	Class backend setup	March 2nd, 2018
2	Class Creation, Class Edit	March 30th, 2018
3	Class Copy	April 8th, 2018
4	Student Roster Upload	April 13th, 2018
5	Testing	April 27th, 2018
6	Final Report & Presentation	May 11th, 2018

5 Conclusion

The class feature will be a big part of SAGE's student-teacher interactive vision. It will allow instructors to more easily assign missions to students as well as track their progress. The features proposed will be part of the instructor dashboard and will give teachers the ability to create, edit, and copy classes as well as upload a .csv file to enter the class roster automatically into the system.

6 References

[1] Bender, J., “Tooling Scratch: Designing a Collaborative Game-Based Learning System to Infuse Computational Thinking within 6-8 Curricula,” Columbia University, New York, NY 2015.

[2] Wing, J. M. (2006). Computational Thinking. *Communications of the ACM, 49*(3), 33-36.

[3] “Khan Academy.” *Khan Academy*, www.khanacademy.org/.

[4] “Edmodo.” *Edmodo*, www.edmodo.com/.