

Building a Platform for a Decentralized Class

(Technical Report)

**A Comparison of Perceived Norms: Standard Lectures vs
Gamified Classrooms**

(STS Research Paper)

An Undergraduate Thesis Portfolio
Presented to the Faculty of the
School of Engineering and Applied Science
In Partial Fulfillment of the Requirements for the Degree
Bachelor of Science in Computer Science

By

Andrew Abraham

5/1/2020

Socio-Technical Synthesis

Gamification - the concept of applying game-like elements to everyday tasks - is practiced in the world of business with a fair degree of success. While the idea has seen success in the business world, gamification also has many practical applications in the classroom. Educators are seeking to apply this idea to their classes in hopes that it will lead to a more engaging and a more fulfilling educational experience. The idea of gamification will encourage students to progress through the curriculum at their own pace and reward them for success with game-like elements.

While the intent of gamification is to encourage students to learn, it changes how a class is structured. This could result in a deviation of expectations and norms when students walk into class. The technical portion of this document covers the design of a system that fits a gamified class. The design is specified by the customer, UVA Professor Mark Floryan, who is teaching a pilot gamified course. The design of the website is structured such that students have the ability to learn at their own pace. The STS portion of this document will analyze how exactly the norms change compared to a typical lecture and a gamified course. The analysis should show how gamification has the potential to substantially increase the effectiveness of grade school and college education by fostering an increased importance on the aspect of learning.

To analyze the perceived norms of classes, a survey will be conducted to gauge student's feelings about important aspects of a class. The survey will ask about three different classifications of lectures: a typical lecture - where students focus on the instructor who speaks solely for the entirety, a student-focused lecture - where group work is encouraged and students play more of a part in their success, and a gamified lecture. For each classification, students will be asked to rank what they feel is most critical to their success in the class. In addition to the survey, an interview with the customer of the technical portion of

this thesis, UVA Professor Mark Floryan, will offer his perspectives of norms, since he has taught both the typical lecture style class and his pilot gamified course. Professor Floryan can give his opinion of what it seems students are more focused on compared to the introductory CS lecture class and the gamified introductory CS course. The norms and expectations of a class can be obtained by combining the student responses with the professor's response; the students' responses show what the students actually think is important to their success and the professor's response will show how he feels what is important for success in the class.

Table of Contents

Capstone Report	--	5
STS Research Paper	--	40
Prospectus	--	62