The Art of Learning Community:
Technology and Gamification As A Recipe For Learning Umami

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Abstract: School reform efforts purport to create engaged learners that can think creatively beyond the standards, however, teachers struggle with how to reconcile the culture of standardized testing with the learner engagement and motivation that is key to student success. When designing learning experiences that promote creativity, via information and computer technology, teachers need to adopt an ecological approach that encompasses people, practices, values, and technology interacting- with the spotlight being on human activities. The Japanese word ***umami*** describes how humans engage all senses to form judgments about their food. This provides an apt metaphor for instructional design. Food should be nourishing, presentable, ***and*** delicious- a feast for the senses. This is a worthy standard for any lesson- the goal of "learning umami." The author proposed to create an analogous process in crafting an online learning community (http://edvislee.wix.com/rehearse-for-life), which consists of a mash-up of tools, apps, content, gamification, and collaboration with artists as "flavors" for engagement. This paper will review the community's features before and after modifications, discuss design implications and rationale for changes, and make recommendations for additional improvements. The results demonstrate how pedagogy, design, and evaluation can be used to tailor existing apps, tools, services, and content to create a compelling learning community to meet any instructional design challenge.

Introduction

In Japanese, Umami /uːˈmɑːmi/ means savory taste. It is one of the five basic tastes (sweet, sour, bitter, and salty). In 1909, Professor Kikunae Ikeda coined the term from *umai* (うまい) "delicious" and *mi* (味) "taste". He was convinced that there was a "fifth taste" that triggered the sensation of "yumminess." When humans eat, they engage all the senses to form judgments about their food, but taste is the most influential in determining how delicious a food is. This provides an excellent analogy for learning. As consumers, we insist that our food be not only nourishing and presentable, but also delicious. This is not an unreasonable standard to apply to a lesson- the goal of "learning umami." If eating can be compared to learning, can we extend the metaphor? Humans engage all their senses first to gauge whether a morsel is "worthy" of being ingested- i.e. if it is spoiled and hazardous or wholesome and fit for consumption. Could an analogous process be at work when learners encounter new and unfamiliar material, perhaps from instructors that they don't yet entirely know or fully trust? Might they suspiciously hold

off ingesting the material unless it engages their senses and connects with a priori knowledge? If so then this might explain why it is so exceedingly rare to find lessons that truly captivate learners.

Flavoring A Learning Community

No matter how good a lesson is from a content aspect, students will resist absorbing the material unless it engages them by connecting with their prior experiences and future goals. In today's test-centric school environment teachers are under increased pressure to cover a dizzying array of content area standards for "the test." It is as if testing has become the pre-eminent learning objective by itself. However, students have difficulty learning this way. As Rieber warns, "learning and motivation are inseparable components, with motivation being the more important (Rieber, 2001). Students need to be engaged by context that comes from real world examples and the arts. It is as if we are telling them that the only thing that matters in food are the nutrients- that taste has no place in a healthy diet. According to Franklin, modern technology offers a solution. The current state of learning technology is at a "tipping point where educators are being compelled to make changes to adapt to a new breed of learners" (Franklin, 2011). Mobile apps, media, and social networking are the tools that can add appeal and "flavor" to a learning community. It is the key to differentiating instruction and appealing to different learner styles. However, as illustrated by a 2012 Harvard study, technology alone can never be a panacea for poor instructional design. The authors expected middle-school students to be very enthusiastic about using Facebook, Twitter, and mobile texting as a means for literacy improvement but in reality found that "the students expressed only lukewarm interest in using social media for educational or literacy purposes" (Li, 2012). The study further noted that "the students remained generally enthusiastic about these networking tools, just not with regard to the way they were being implemented" in learning. (Li, 2012) Clearly, motivation, authenticity, and design are key components in building an engaging learning community. Such a community should emphasize a hands-on, project-based, team-learning environment built upon the latest apps, mobile technologies, and social networking. Further, the design of the community would incorporate gamification, at its core, as a key strategy to engage learners. Although many learning management systems currently exist, no single one allows for such a high level of customization with the goal being to appeal to young, media and tech-savvy students who are adept at finding and sharing information via social networking and learning and conquering challenges using a gaming format. The purpose of this usability study was to design, test, and improve the effectiveness and appeal of a Web 2.0 community that allows teacher-artists at a Honolulu high school to incorporate the latest technology with social networking and elements of gamification to teach students both online and face to face while bringing together students, parents, artists, and community resources so that they can interact in a way that makes content appealing, relevant, and "flavorful" (learning umami) and allows them to rehearse for life.

Literature Review

Research shows that video games are so engaging because they captivate players with "flow experiences" where gamers are caught up in a seemingly real struggle to conquer a challenge or complete a quest by virtue of their skill and persistence. According to Becker, truly "deep" learning requires us to set up conditions of play where learners can become engaged or immersed via creation of "flow"- a state of mind involving suspension of disbelief and absolute concentration on a task or challenge (Becker, 2006). Liu notes that "flow" experiences are commonly found in sports, games, and other engaging activities that can become addictive. However, these are also the same mechanisms that create learner engagement (Liu, 2011).

I used apps, social networking and gamificaton to create quests that guide learners through module concepts that are designed using Keller's ARCS Model of engagement. Kim & Lee have devised a "dynamic model for gamification" that maximizes instructional effectiveness by focusing on four main factors. They note that gamification is a more effective instructional method than more traditional approaches and, furthermore, that learners display marked growth once they become accustomed to the processes of gamified learning (Kim, 2012). The four factors in their model- curiosity, challenge, fantasy, and control- correlate almost one-to-one with Keller's ARCS Model of motivation and the authors observe that many researchers and instructional designers are effectively using Keller's model as an effective means to implement gamification. Flow experiences came from students working in groups, under the guidance of a guest artist, to create a performance-based, problem-solving end product. Because a major goal was to tie instructional content with real world practice and practitioners, the concept of "craftsmanship" was crucial. MachEachren finds that the idea of "craftsmanship" in the arts can be a particularly effective metaphor for teaching the learning process to students, however, the concepts must arise organically from and be taught in the context of genuine, creative craftsmanship experiences (MacEachren, 2004).
For this unit, students worked with an artist from the community to create a music video, using Garage Band, Imovie, Photoshop, and other technology, to highlight their mastery of literary and rhetorical devices, basic voice principles, and the General Learner Outcomes (GLO's). Appleton notes that engagement is comprised of three major components consisting of behavioral, cognitive, and affective domains (Appleton, Christenson, Kim, & Amy Reschly, 2006). Because only behavioral engagement is directly observable, we relied on project-based, group learning and sharing to engage the cognitive and affective domains. This concurs with Ellison, who finds that using social networking helps students to form and maintain social capital (Ellison, 2007).

Parents and community members were also invited to comment and contribute to the community. They served as "critical friends," offering assistance during the process and critiquing the final product via anonymous polling. Mobile devices played a key role in the interaction of the community. Fuegen writes that "mobile devices bridge not only the physical separation but also the psychological separation or transactional difference

between learner and instructor" (Fuegen, 2012). He further notes that millennial students "expect to use mobile technology" as they are comfortable using the devices for all manner of daily tasks (Fuegen, 2012). Loveless notes that when designing learning experiences that promote creativity via information and computer technology, teachers need to adopt an ecological approach that encompasses people, practices, values, and technology interacting- with the spotlight being on human activities (Loveless, Burton, & Turvey, 2006).

This learning community started with a standards based lesson shared via technology and used technology to thread together community members and build engagement via hands–on, authentic learning projects. Throughout the entire learning process, the community interacted, shared, and practiced skills using their mobile devices. This is in agreement with Maor who advises teachers adopting technology for interactive collaborative learning to metaphorically don the four hats of pedagogy, manager, social, and technical (Maor, 2003).

In order to gauge the effectiveness of the various components and technologies used in the community, I conducted usability testing, which Krug advises "is one of the best things people can do to improve their websites" (Krug, 2009). Krug further admonishes that "all sites have usability problems" and that "all organizations have limited resources" therefore we should identify and focus on fixing the most severe problems. His two considerations for severity are "will a lot of people experience this problem?" and "will it cause a serious problem or just an inconvenience?" (Krug, 2009) As this community focused on using technology, project-based learning, and gamification to engage learners, the majority of usability challenges were found there. As Koh notes, project based learning (PBL) engages students in problem solving through design of the learning task" (Koh, 2010). He recommends that designers assign students a design problem, structure project milestones, and have students articulate learning through concrete products. As this is a challenging and lengthy process, I engaged testers to help to identify usability issues in the PBL component of the community. Furthermore, because so much of the community relied on what Kop terms "self-directed learning," many challenges arose that hindered learners from enjoying a quality learning experience. Kop recommends that designers "foster conditions that encourage people's involvement and engagement," of which social presence is major factor (Kop, 2011). Kop found four major learning activities that enhance learning- aggregation, relation, creation, and sharing. These accord nicely with Keller's ARCS model and the usability testing helped to assess to what degree the community was successful in integrating these factors into its design. Unal notes that course management systems (CMS) "are an increasingly important part of higher education" and that the CMS is "the key to the effectiveness and efficiency of the online courses that are to be implemented" (Unal, 2011). As my learning community enlisted a diverse patchwork of different networks, technologies, and services, it was essentially a customized CMS that needed to be vetted through the usability process. The desired outcome of this "customized" CMS was, according to Liu, an online community "where class members expect their learning needs will be satisfied by pursuing a common goal" with what he terms the "collective class consciousness" built as students and instructors interact via the user interface. Liu also notes that the Technology

Acceptance Model (TAM) dictates that "the ease of use and usefulness of technology affect users intentions to use it" and that this directly predicts their "willingness to adopt technology and learn in the online community" (Liu, 2010).

Project Design & Development

A Real-Life Need

The design of this learning community was in response to a real-life need. In 1984 a non-profit organization was founded in a Honolulu complex school, with the goal of using skills gleaned from dramatic productions as a metaphor to allow students to "rehearse for life." A key concept for the organization (hereafter referred to as Rehearse For Life or RFL) was the idea of using artists as teachers in the classroom. Since 1984, RFL artists have travelled statewide to various Hawaii schools, from K-12, to conduct weeklong residencies ranging from Shakespeare to singing, dancing, and rapping, to job interview readiness. The teacher artist resides in the classroom for an entire week, working in conjunction with the classroom teacher to teach content area skills through the arts, with the end goal of creating a final, performance-based product. However, since the rise in prominence of HSA testing, end of course exams, and teacher evaluations, RFL has witnessed a dramatic decline in opportunities to work with students through their artists in the classroom program. This learning community was intended as a solution to that dilemma. It incorporated technology-mediated lessons, social networking, and mobile devices so that students can continue to work with guest artists, both in person and virtually.

Building A Prototype for SME's

In preparation for the usability study, the learning community prototype (www.rehearseforlife.com) was developed using a combination of Wikispaces, Wix website builder, Google+ communities, Blendspace, and 3D Gamelab. Wikispaces was chosen because of it's ease of use and flexibility as a course management tool. The Wix website served as a landing page and virtual hub to all the other components of the community. Google+ was chosen to pull together not only social networking but also Google apps, hangouts, drive, and other services that have become ubiquitous. Blendspace was chosen because it is an easy way for teachers, artists, and community members to create a "canvas" of learning materials that they can share with the community. 3D Gamelab is a relatively new tool, developed at Boise State University, which allows teachers to gamify their course content by creating quests and rewarding students with virtual badges allowing them to level up. The prototype was reviewed by subject matter experts (RFL Board Members and teacher-artists) who gave feedback and recommendations. In addition over 100 10th grade students were surveyed along with nineteen teachers of various subject areas. Their most important feedback was in regard to the features that they wanted in order to teach or learn engaging and inspiring lessons at, a distance, as effectively as they would face to face. Unsurprisingly, the use of current media, mobile technologies, social networking, and project-based learning kept emerging as desirable features. Usability was also a key concern for the SME's. They defined

usability as "being able to easily find what I'm looking for, share ideas and content, and communicate and interact with the community." Even more important to them was the "wow factor," that the students should feel like they are using cool tools and apps, watching videos, and playing games- just like they would normally do during their free time. The artists wanted to blur the line between class materials vs. "fun stuff," and the stigma that students often attach to course content as being boring and tedious.

A Learning Community To Engage

The learning community incorporated community interaction, mobile technology, project-based learning, and concepts of gamification to engage students in authentic learning. The test module consisted of a standards-based lesson that takes students through the process of brainstorming, writing, rehearsing, recording, producing, and sharing a music video with a theme or message. Lessons were delivered using self-contained quests that house all the elements of instruction. Furthermore, students interacted both in person and online via Google Hangouts with teacher artists and other students. The community allowed the instructors to keep in touch with students throughout the term, allowed teams to collaborate online, and gave students a space to practice skills and share ideas. A key component of the community was its emphasis on gamification, which not only allowed students to get a virtual representation of how they were doing, but also gave them a sense of realism, urgency, and friendly competition. Students learned materials by embarking on and completing quests that incorporated Keller's ARCS Model of engagement. Completion of quests allowed students to gain experience points and badges and to level up. Further motivation was provided by a community leaderboard and prizes provided by artists and community members.

Refining The Prototype

From the initial prototype, the overall design of the learning community needed to be improved to enhance simplicity and ease of use. This single adjustment would yield the greatest return. The landing page had "too much to read" and needed to be simplified with "more icons" and "simpler menus." Furthermore, employing a navigation system that would allow students to access the community via their mobile devices would greatly add to its appeal and usability. The solution was to implement a picture-based landing page using Thinglink. This proved to be not only more visually engaging for students, but the social networking capabilities of Thinglink added another layer of interaction to the community. In addition, Thinglink is available as a mobile app on both IOS and Android devices, ensuring that students could navigate the learning community easily from their mobile devices. (Appendix C).

The prototype also suffered from being too complex, requiring users to navigate to many different websites and services. This was a consequence of trying to cobble together the most appealing and relevant technologies, apps, and web content to trigger engagement in users. To build upon the cooking metaphor embodied in the idea of "learning umami," with practice, the chef ultimately realizes that less can actually mean more. This was the

approach I adopted as I looked to pare down the actual components of the learning community to balance engagement with ease of use and consistency.

The first iteration of the learning community consisted of a homepage linked to various functional elements. However, navigating and keeping track of so many components proved to be confusing for students. With the growing ubiquity of Google apps and services across all platforms, this offered an opportunity to simplify the learning community design without sacrificing functionality. Using the Google+ Community as a central hub worked particularly well. Not only was it easily accessible from mobile devices but also allowed for instantaneous notifications via smartphone. Community members could literally view and respond to media, projects, and community activity from anywhere. Additionally, because Google+ integrates so tightly with Drive, Calendar, Hangouts, YouTube, Apps, etc. I was able to greatly simplify my design. Wikispaces was no longer necessary as Google+ can function as a very simple yet agile learning management system. A separate polling tool was no longer necessary as this feature is built into Google+. Similarly, separate blogging and leaderboard tools were no longer needed as these could be accomplished via Google Apps. Even better, because Google+ is so ubiquitous, most apps and web services have built-in sharing to Google+ circles. This offers the flexibility for students to choose and customize what apps and services they would like to use to accomplish any purpose, making for more engaging and diverse end products. (Appendix D)

Another concern with the initial prototype was gamification. Gaming was intended as a centerpiece that would pull together the learning content and allow students to have fun while practicing skills and having some semblance of competition and accomplishment. 3D Gamelab seemed like an ideal all in one solution to implement the core components of gaming into the learning community. While 3D Gamelab does allow for leaderboards, badges, and creation of learning quests, the overall effect was more that it felt "scripted" and that even though there was a leaderboard, badges, and quests the process felt more contrived than engaging. (Appendix E). The second prototype took the wide-open approach of having students, themselves, create and administer the games. (Appendix F). This proved to be the perfect solution as designing, implementing, and playing games in the community using a smash up of tools, services, and content was extremely engaging for students. Additionally, it had the added benefit of strongly reinforcing course content and general learner outcomes as the students took on the role of creator. (Appendix H).

Conclusion

The terminal objective for this usability study was to discover and implement improvements to a prototype learning community that seeks to foster learner engagement by creating a mash-up of technology tools, apps, content, gamification, and collaboration with real-life artists. Feedback from test participants was invaluable as the overall findings of the usability study yielded valuable data sets that guided the improvements needed to create the learning community version 2.0.

The initial iteration of the learning community was overly complex and redundant because of the limitations of the designer and the inherent difficulties with trying to select and "smash together" the best and most effective tools to achieve a desired effect with a particular audience. Because teens are so familiar with mobile device interfaces, apps, social networking, and perpetually connected computing, their expectations of a learning community differ from the designer's. Most of these "flaws" were addressed for the second iteration of the learning community and are reflected in a better and more refined product. However, technology is a fickle mistress and tools, tastes, and expectations will continue to change. It is the job of the designer to remain current and continue to adapt.

It was earlier noted that fostering student engagement was really the main objective of creating this learning community. If that is the case, then the designer must strive to create as authentic and real-life conditions as possible. As Keller's ARCS model famously posits, students must be made to not only see the relevance, but also understand how it applies to their lives, confidently practice those skills, and enjoy satisfaction for having mastered those skills. When done correctly, engagement is a major factor in learner motivation, allowing students to truly become life-long learners and community contributors. Continued research should be pursued on how to make this learning community even more authentic and "true to life" for students. In particular, the researcher has identified the following areas outlined in the table. (Appendix I).

It is the hope of the researcher that this usability study serves as a model for how teachers can adapt technology to create an engaging and dynamic learning community for their students. The usability protocol is particularly valuable because it is only through input from actual test subjects that beneficial insights can be obtained regarding user perceptions, frustrations, and desires. It is only by judiciously analyzing this data that instructional designers can improve their product by tailoring their design to be more engaging and user friendly. Regardless of what size and type of organization is concerned, usability testing is immensely beneficial toward creating a quality experience for the end user. To restate the metaphor, it is what allows the chef to understand what particular flavors will pique, delight, and satisfy the palate of diners.

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Appendix A
Rehearse For Life home page prototype. Text-heavy, dropdown menu navigation system

Appendix B
"Umami" engagement lessons built into the website

| HOME | HOW TO UMAMI CRASH COURSE | CLASS STUFF | SOCIAL STUFF | EVENTS & PRIZES | FYI | More |

X Create a

| BACK TO COMMUNITY | Home | WHAT IS UMAMI? | GAMING AND ENGAGEMENT | UMAMI LESSONS |

Umami-
The Flavor Of
Engagement

Ludo
Erg
Disc

Week 1 Aristotle's Rhetoric
Week 2 Develop Your Own Flavor
Week 3 A Picture Paints 1,000 Words
Week 4 Engage The Senses
Week 5 Use The Brain As A Canvas
Week 6-8 Shoulders Of Giants: Games
Week 6-8 Shoulders Of Giants: Apps
Week 9 Inspiration
Week 10-12 Walking The Talk
Week 13-16 Student Showcase
Weekly Assignments
Week 1 Assignments
Week 2 Assignments
Week 3 Assignments
Week 4 Assignments
Week 5 Assignments
Week 6-8 Assignments
Week 9 Assignments

Dopamine &

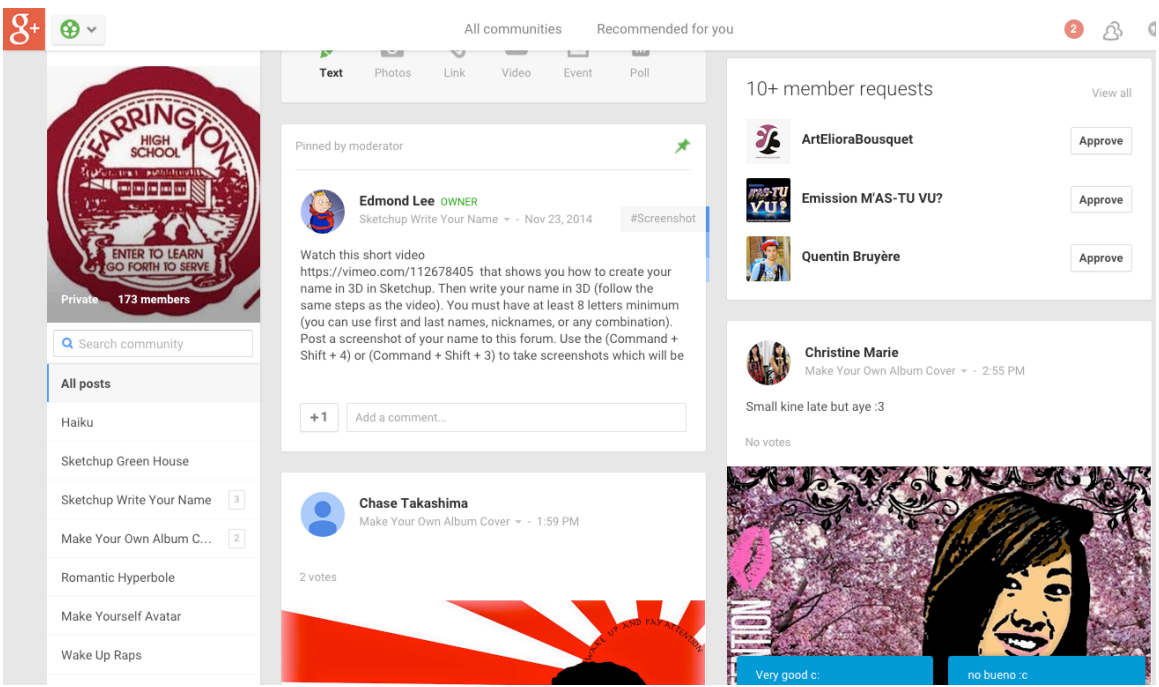*Why Does Some Learning*

Bore Us En

Appendix C
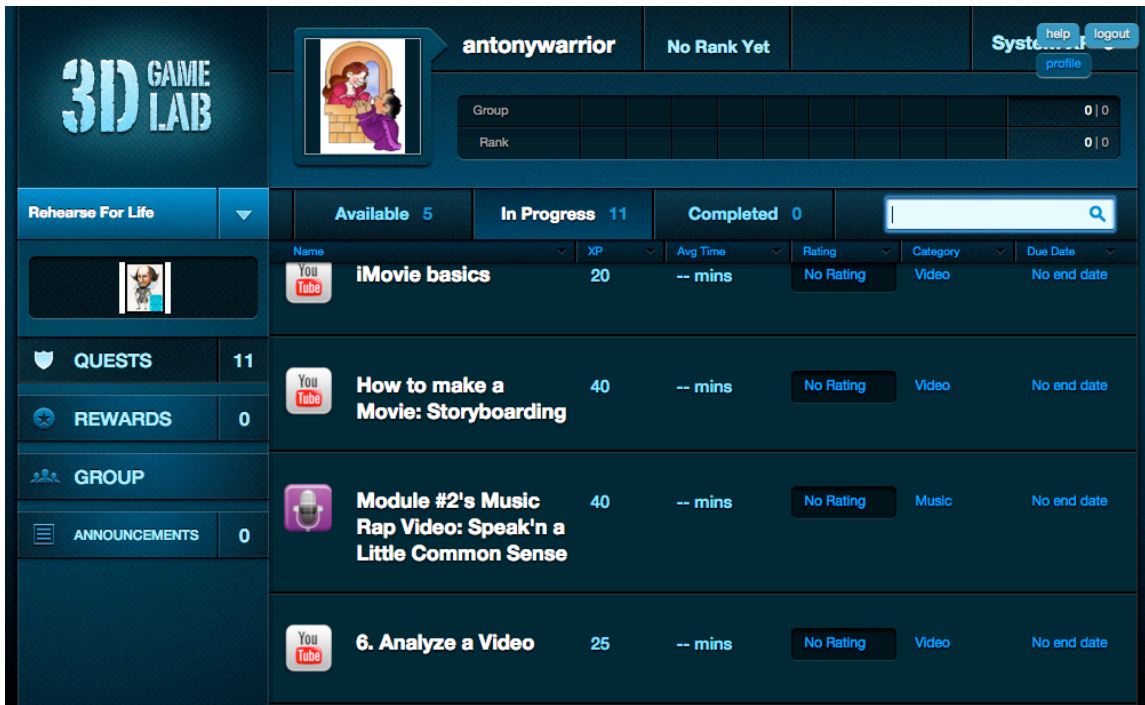Thinglink Picture-Based Navigation Homepage
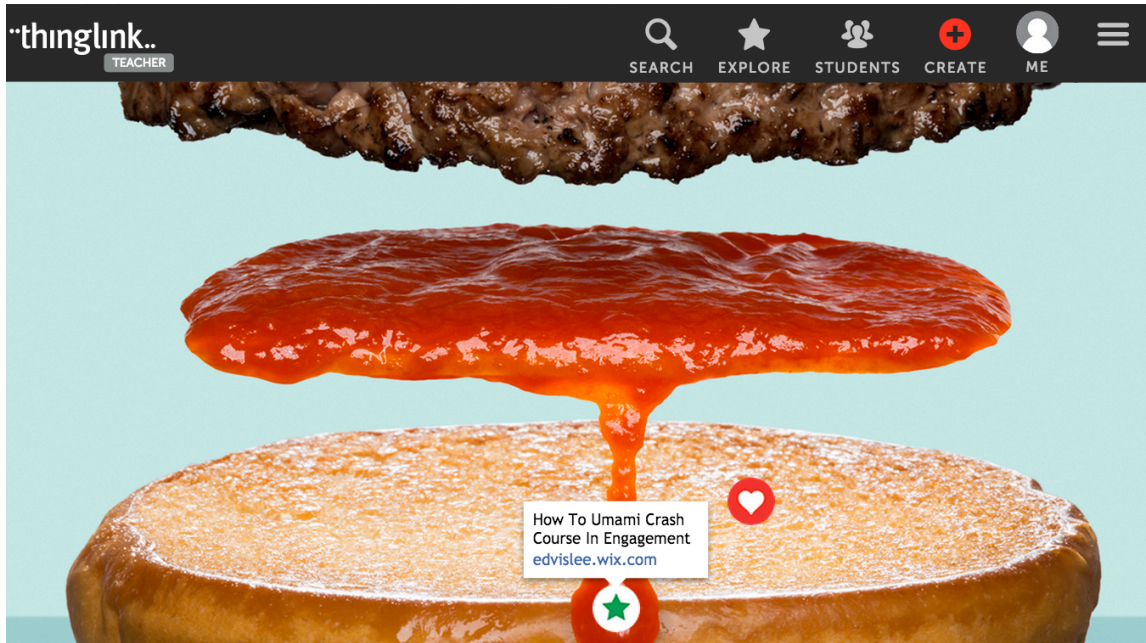
Appendix D
Simplifying The Learning Community By Using Google Plus and Google Apps

Appendix E
Using 3D Game Lab To Implement Gamification Into The Community

3D Game Lab's Quest And Reward Features

Appendix F
Custom Built Gamification- Using Thinglink To Create A Learning Community Game

Appendix G
Creating A Game Using Social Networking (Google Plus)

Appendix H
"App Smashing" Aurasma And Thinglink To Create A Learning Community Game
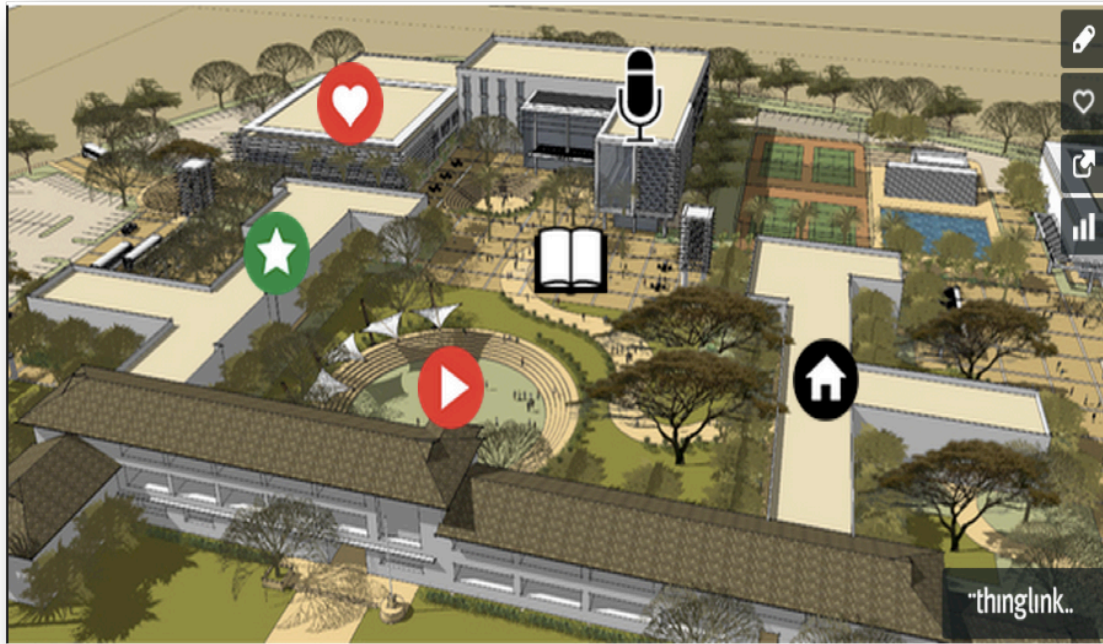
Appendix I
Areas For Further Research

Areas For Further Research	Rationale
Allow Students To Take Custody Of Various Components Of The Learning Community	Gives Students Truly Authentic & Practical "Real-Life" Experiences That Touch Upon The GLO's And Trigger Learner Engagement
Allow Students To Design Community Navigation, Materials, & Activities That Appeal To Multiple Learner Styles	One of ACO Standards Asks Students To "Create A Solution To Solve A Client Need (Problem) & Adapt It To Fit The Situation & Client. As Students Create Content For The Community They Practice Triggering Engagement By Designing For Multiple Learner Styles
Gamify All Course Content By Having Student Groups Create Actual Case Studies With Projects & Activities To Be "Solved" By Other Students	Create A Truly Authentic Learning Environment Where Case Studies Are Gamified Using Technology, Apps, Social Media, And Web Content

APPENDIX J
Recruitment Materials

Recruitment Email:

Subject: You are invited to participate in a usability study.

Body:

Aloha!

I would like to invite you to participate in a usability study. The purpose of the usability study is to investigate the navigation and usability of a learning community designed to bring together educators, students, parents, and the community around authentic, project-based learning tasks created using technology tools in a mobile-friendly environent. This study will be conducted by me, Edmond Lee. This usability study is a requirement for my Master of Education degree program.

During this usability study, you will be answering several questions and completing tasks related to the learning community and website. You will not be evaluated, and there is no right or wrong answer. The information collected relating to your perceptions and experiences in using the site will help me to make improvements to the site and module.

Study Information

- How long is the session?

    ✓ About one hour

- Where and when does the session occur?

    ✓ The study will be held at your convenience during January and February of 2015. The study will be held online in a Google Hangout, which is a free online video, voice and screen sharing conferencing tool similar to Skype. Please note: If you participate in this study, your audio as well as your computer web browser will be recorded (your face will not be

captured). These recordings will be held in a secure location and deleted after analysis.

- Interested in participating?

  ✓ Please reply to this email with your preferred contact information and we can determine if you qualify for the study.

If you have any questions, please email Edmond Lee at edmondl@hawaii.edu

Mahalo,

Edmond W.L. Lee
Master of Education student, University of Hawaii at Manoa

Recruitment Flyer:

R U 'fraid of Zombies?

No? Then A Usability Study Should Be No Problem!

T-SHIRT THEATRE *

ETEC
Masters in Educational Technology

REHEARSEFORLIFE.COM

Each year, millions of bored students trudge through classes like mindless zombies. Help us to stem the zombie apocalypse by creating a learning community to reclaim our "walking dead"- a community that brings together students, parents, teachers, artists and technology. The purpose of this usability study is to test and improve the effectiveness and user satisfaction of our online community that shows students how content-area standards are used in the real world and that allows them to use technology to collaborate with teachers, artists, and fellow students to create cool and engaging projects. If you would like to help, text "stopzombieapocalypse" to 808-398-3661. The fate of the world rests in your hands...
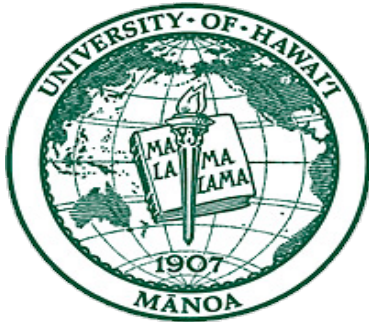
CONSENT TO PARTICIPATE IN RESEARCH PROJECT

Evaluating Usability of a Learning Community That Uses Technology To Foster Collaboration, Engagement, and Project-Based Learning

Hello, my name is Edmond Lee, and I am a Masters Degree Candidate in Learning Technology at The University of Hawaii at Manoa. This research project is a requirement for completion of my degree program. The purpose of this usability study is to test and improve the effectiveness and user satisfaction of our online community that shows students how content-area standards are used in the real world and that allows them to use technology to collaborate with teachers, artists, and fellow students to create cool and engaging projects.. We have chosen you to participate in this research study because your input and opinions will give us valuable insight into the various stakeholders that will use our community. Your participation in this study will help determine the changes to be implemented in the community to improve the user experience.

What Will I Be Doing and How Long Will It Take?
Participation will be both in person and online through a Google Hangout. If you participate, you will be asked to actually navigate the learning community while working through a series of real-life scenarios that actual users might face. These scenarios are intended to evaluate the ease of use and effectiveness of the learning community. We will be asking you to share your thoughts out loud as you use the community, which will help researchers in gathering further insights into the user

experience. Your actions and verbal comments will be screen captured and recorded only for research purposes. They will be kept in strictest confidence and destroyed once research is completed.

After finishing the scenarios, you will be asked a series of follow-up questions. You will also be asked to take an online demographic survey before beginning the usability test, as well as a user satisfaction survey after the test. The user satisfaction survey will gauge your attitude and feedback about the ease of use and effectiveness of the learning community. A short debriefing will be conducted after the post survey to gather further insights about your experience. This study, including both surveys and the debriefing interview, should last approximately 30 and no longer than 45 minutes.

Confidentiality and Privacy: Any data from your participation in this study will be used only for this usability study. The data will be securely housed on a password-protected computer. During presentation of the results of my research project, I will not use your name or any other identifying information. The recordings from this study will be transcribed to find correlations between participants. Upon conclusion of research, all recordings will be destroyed.

Voluntary Participation: Participation in this research project is strictly voluntary. You can, at any time, opt out of participation by simply notifying the researcher. Your opting out will not incur any penalty or loss of benefits.

Questions: If you have any questions regarding your participation in this research study, please contact me via email at at edmondl@hawaii.edu
You may also contact Faculty Advisor Catherine Fulford at fulford@hawaii.edu.   If you have any questions about your rights in this project, you can contact the University of Hawaii, Human Studies Program, by phone at (808) 956-5007 or by e-mail at uhirb@hawaii.edu.

Participant:
I have read and understand the above information, and agree to participate in this usability study. I understand that I can change my mind about being in the project at any time by notifying the researcher.

_____
    _____
Name (printed)   Signature

_____
Date

Audio Recording:
Audio Recording: I understand that my verbal responses and screen activity will be recorded as I participate in this usability study. These audio recordings will only be accessed by the researcher and will be destroyed once the research is complete.

_____

_____

Name (printed)   Signature

_____

Date

Appendix K

Instruments

Instrumentation: Pre-study Recruitment Survey

Hello! We sincerely thank you for your interest in helping us to improve the Rehearse For Life learning community. Please complete this short survey to determine if you are eligible to participate in this study.

Are you 18 and over?

Yes

No

Are you of affiliated with Farrington High School?

Yes

No

In what capacity are you affiliated with FHS?

Parent

Student

Classroom Teacher

Administrator

Artist/Teacher

Community Member

Other (Please Describe)

Are you currently affiliated with Alliance For Drama Education or T-Shirt Theater?

Yes

No

If you answer yes, what is your affiliation?

Member of T Shirt Theater

Parent of student

ADE Staff

Are you available for at a maximum of one hour from January to February to participate in the study? If selected, we will work with you to schedule a convenient time.

Yes

No

Please select the statement that best applies to you.

I have access to a computer and Internet connection and am able to participate in the study online

through Google Hangouts.

I prefer to meet with researcher in person at Farrington High School to participate in the study.
None of the above.

**IF THE RESPONDENT DOES NOT MEET THE MINIMUM QUALIFICATIONS-
Thank you for your interest in our study. Unfortunately, you did not meet the minimum requirements to participate. Thank you again for your kindness!
**IF THE RESPONDENT DOES MEET MINIMUM QUALIFICATIONS-
Thank you for your interest in participating in the study. Please provide the following information so that we can contact you about selection and scheduling. Your information will be kept strictly confidential and will be only used to contact you to provide more information on this study. If you would rather not to provide this information, you are free to exit the survey. Thank you!
First Name
Email Address
Phone Number (xxx) xxx-xxxx
We will contact you soon and thank you for your interest!

Instrumentation: Demographic Survey:

To begin the study, please complete the following survey. Your information is always confidential and is strictly for use with this study only.

What is your sex?
Male
Female
What is your age group?
12-17
18-20
21-29
30-39
40-49
50-59
60+
How long have you been affiliated with FHS?
1 year or less
2-5 years
6-10 years
Over 10 years
Why are you interested in this learning community (check all that apply)?
Curious about new ways to learn
Want to improve the school and community
Professional development
Interested in helping to mentor/teach students
Want to share life experience and lessons with students
Other: _____
Rank the following in order of priority as the most important elements you would like in a learning community (1 = highest 10 = lowest)
__A traditional classroom lecture format
__Authentic project based learning that addresses real-world problems
__Instruction and guidance by industry professionals and artists
__Group work/teamwork
__Social networking interaction and discussion focused around class topics
__Projects and assignments shared with and critiqued by the community
__Use of current technology and mobile devices in instruction and learning
__Class materials available anytime and anywhere
__Class materials, media, and assignments that appeal to and engage target audience (i.e. teens interested in art)

__Use of games and gaming principles

Have you ever taken an online course before?

Yes

No

If you answered yes, how long ago did you take your last online class?

I am currently taking a class or have taken it less than a year ago

Between 2-5 years ago

Over 5 years ago

How would you rate the experience of online learning?

Excellent

Good

Fair

Poor

Do you think that a class that takes place both online and in person and that uses the internet and mobile devices to distribute and share course content can be as good as a traditional face to face classroom?

Yes

No

If you answered "No", why not?

Students need the structure of sitting with a teacher in a classroom

Students may lack discipline to download materials, meet with peers online, and post assignments

Online learning might be boring without other students "in the room"

Lack of technology (computers, internet, etc.) or not knowing how to use them might limit some students

Other_____

Do you think that high school students are prepared for the challenge and responsibility of learning in an online community?

Yes

No

If you answered "No", why not?

They might find it boring to learn alone

Requires too much self discipline that they don't yet possess

They lack the technical/technology skills

They lack computer or technology resources (i.e. devices, internet connection, etc.)

Other_____

Technology

Please rate your level of computer skill?
Extremely Poor – Excellent (6 point scale)
Please rate your level of comfort using the internet.
Very Uncomfortable – Very Comfortable (6 point scale)
How often do you use the internet?
Daily
Weekly
Occasionally
Never
How do you usually access the internet?
Desktop/Laptop Computer
Mobile Device (tablet, iPad, smartphone)
Other: _____
Where do you usually access the internet?
Home
Work
School
Other: _____
What do you do on the internet? Check all that apply.
Education-related
Email
Social Media
Shopping
News
Entertainment
Information Search
Other: _____
When you use a computer or tablet at work, what do you typically do (check all that apply)?
Word processing
Spreadsheet
Presentations
Cash register functions/inventory tracking
Email
Other_____

<u>Instrumentation: Post-Study User Survey</u>

Please complete this survey based on your experience with this usability study. It is designed to gather information on overall satisfaction and feedback on the website. Please rate each statement based on the scale provided.

DESIGN LAYOUT
1-Strongly Agree
2-Disagree
3-Somewhat Disagree
4-Somewhat Agree
5-Agree
6-Strongly Agree

__The home page layout is easy to understand.
__The text is clearly written.
__The images are interesting.
__The website is visually appealing.
__The organization of the site is logical and easy to follow.

NAVIGATION
1-Strongly Agree
2-Disagree
3-Somewhat Disagree
4-Somewhat Agree
5-Agree
6-Strongly Agree

__The community was easy to navigate.
__Number of buttons/links is reasonable.
__Labels are clear and concise.
__Links are consistent and easy to identify.

EASE OF USE
1-Strongly Agree
2-Disagree
3-Somewhat Disagree
4-Somewhat Agree
5-Agree
6-Strongly Agree

__The community is easy to use.
__I can use the community without instructions.
__The community is user-friendly.
__The community has a clean and simple presentation.

EFFECTIVENESS
1-Strongly Agree
2-Disagree
3-Somewhat Disagree
4-Somewhat Agree
5-Agree
6-Strongly Agree

__The lessons captured my attention at the beginning.
__The lessons made me see how the learning was relevant to my life (why I need to learn this)?
__The lessons provided practice materials that gave me confidence that I could use these skills later
__The final project is a satisfying way to demonstrate our mastery of the skills
__Working with the teacher artists was motivating
__The teacher artists clearly demonstrated how the skills are used in real life
__The prizes, special events, and activities motivated me to work harder and learn more
__Having famous artists participate in our community was inspiring and/or motivating
__When the artists commented on and gave me suggestions through the community it helped me to improve my work.
__When other students commented on and gave me suggestions through the community it helped me to improve my work.

__The community is a good way for parents to stay connected to what their students are doing and learning.

__The lessons in the community are engaging and make we want to learn.

__The learning quests in 3D Game Lab feel like I am playing a game.

__I enjoyed posting my assignments using a mobile device.

__Using social networking to share assignments and read classmates' responses was effective.

__

OVERALL EXPERIENCE

Layout

Very Confusing – Very Clear

Navigation

Very Difficult – Very Easy

Ease of Use

Very Difficult – Very Easy

Effectiveness of website

Not at all effective – Very Effective

COMMENTS

Were there any features that were confusing for you?

Do you have any suggestion to improve the website?

Thank You!

Your feedback is crucial to help us improve the site. Please return to your moderator to complete the study.

Usability Protocol

Good morning/afternoon/evening! I am Ed Lee and I will be guiding you through this usability session today. Thank you for helping us with our research! Are you a parent, artist, student, teacher, or community member?

Before we start, I will be going over a brief outline of what we will be doing today. At any time, please feel free to stop me to ask questions.   Today, we're going to do a (remote) usability study where you will be asked to actually use our learning community to help determine whether it works as effectively as we intended. As you use the community, I will be asking that you speak your thoughts out loud as much as possible. It is crucial that you immediately vocalize what you're looking at, what you're trying to do, what you're thinking, and any suggestions or even criticisms that come to mind

(We will be using Google Hangouts and the screen-sharing feature). We're (also) going to use a screen recorder to record your actions on the computer screen and verbal comments made during the session.   In addition, you will be asked to complete a short demographic survey before we start and a short post-test survey after the session has concluded. In addition, I also might ask for additional feedback during a quick interview once the session is over.

It is most important for you to keep in mind that we are evaluating the learning community and not you. There are no right or wrong answers, so please be honest with your feedback, whether good or critical as it will be crucial in helping us to identify areas of strength and targets for improvement. The entire session should not take more than 30-45 minutes.

How are you feeling? Any questions for me at this point?

Okay, before we begin, I emailed you a link to our consent form and pre-test survey. Did you have a chance to complete these items? (If answer is yes-skip to begin test) If not (I will post a link in the chat box located in the bottom right hand corner of the hangout screen) you can complete it now. Here is are those documents. I will give you time to complete them. Please let me know when you are done.

LINK

Please take a few moments to click on the link, read and complete the consent form and answer the short pre-test survey. I will wait for you. Please let me know when you are done.

Begin Test
Thank you! Any questions before we begin? Okay, great!
(First, please click on the link in the chatbox. Now please share your screen with me.

1. Hover over the left side of the video call window, and a bar with various app icons will appear.
2. Click ![screenshare icon] **Screenshare** on the left side of your screen.
3. In the window that appears, choose your desktop or choose the window you want to share.
4. Click **Start Screenshare**.)

Any questions? Shall I start the recorder? Great!

[***Start screen recorder***]

Before we begin, I want to remind you how important it is to think or talk your thoughts out loud. It may feel awkward to think out loud while working, but doing so will help to give us insight into your experience as a user. Some examples would be " I like this because….This looks like it would…I'm puzzled by…It would be better if…I liked…" I may remind you to share your thoughts as we go along. We'll be going through several tasks and scenarios throughout the session. Please feel free to stop me anytime that you have any questions.

Task #1 Navigate The Rehearse For Life website homepage

This is the homepage of the Rehearse For Life community. The community is designed to be a virtual classroom, hangout, bulletin board, and workspace that can be used anytime, anyplace, even from mobile devices.

First, I am going to ask you to scan and scroll through the page and tell me what you see. If you point your cursor to where your eye is on the page, we can follow along as you look.
Again, please try to think out loud as you go along. You can scroll around with your mouse, but please don't click on anything just yet. As you do so, please think aloud as you reflect upon the following questions:

- Does the page immediately capture your attention and make you want to explore? Why or why not? If not, what would you recommend?
- What do you notice first? What strikes you about it?
- What are your initial impressions about the layout of this page and what you think of the colors, graphics, photos, etc.?
- What are your thoughts of the text on this page?
- Feel free to move around the page. Without clicking on anything yet, please describe the options you see on the homepage and what you think they do.
- If you were visiting this website, what do you think you would click on first?

When you are done exploring, please let me know

Task #2: Navigate the community to find information and resources.

Scenario:
You are a (parent, student, teacher, artist, community member) where would you find the following information?
- What assignment are we doing this week?
- Who are the teacher artists and what are their backgrounds?
- When is the next Google Webinar hangout with the guest artist? What is the topic?
- Where do I go to complete my homework lessons?
- What social networking services does the community use?
- Where can I see examples of projects?
- Where and when is the end of year award ceremony? What is it called?
- What are some of the prizes and special events that are upcoming for community members?
- Where can I find information about the philosophy of the community and its approach to learning?
- Where can I go to see what my level is? How many medals I have earned? The leaderboard?

When you feel you have completed this task, please let me know.

Task #3: Complete a learning quest

Scenario:
You are a student who needs to complete a learning quest so that you can contribute to your role in the final project (director, writer, singer, rapper, recording technician):

- Where would you go to find your learning quest?
- Complete a simplified version of a learning quest
- Does the learning quest grab your attention at the beginning making you want to go on?
- Does the learning quest show you how the lesson is relevant to your life?

- Does the learning quest give you practice to build confidence with the skill?
- Does the learning quest give you satisfaction when you share it with the community?
- Does the learning quest feel challenging and engaging like a game? Why or why not? Suggestions for improvement?
- What other learning quests are available?

When you feel you have completed this task, please let me know.

Task #4: Use one of the social networking services and a mobile device to complete a homework assignment then share it with the community

Scenario: The Teacher Artist has assigned a mobile device assignment this week. You are somewhere without computer access but have your internet-connected smartphone

- Where would you go to find your assignment?
- How do you know it is an assignment that can be done completely on a mobile device?
- Complete a simplified version of the assignment
- Share your assignment to the community
- Comment on one other person's post
- Was this an effective way to do homework? Explain
- Was this an engaging way to do homework? Explain
- How would you compare this to "traditional" methods of submitting assignments? Explain

When you feel you have completed this task, please let me know.

You're doing great! We're on our last scenario. Any questions before we continue?

Task #5: Sign up to attend one of the special events hosted by our community artists

Scenario: You know the community artists frequently host free events for members. You want to sign up to attend:

- Where would click on and why?
- Sign up for a live event.
- Is the event "exciting?" Explain
- How would this event motivate you as a community member and learner? Explain

- Sign up for a virtual event
- Is this event "exciting?" Explain
- How might this event motivate you as a community member and learner? Explain
- Would you want to share any of these events with your friends and family? Explain

When you feel you have completed this task, please let me know.

Task #6: Identify the standards and evidence of student learning

Scenario: You are a teacher, student, parent, or administrator

- Where would you go to find out what standards are being addressed in the lesson?
- Do you think that the learning quests and activities are effective ways to meet the standards? Please explain with any examples
- Does the community show evidence of student learning? Please explain with examples?
- *For teachers and administrators only*- Navigate to the course management site. Go to the final project. What tool could you use to easily assess student progress on their project? Do you think this is an effective assessment tool? Explain

When you feel you have completed this task, please let me know.

That was the last scenario for our session. (I have posted the link to our post-test survey. We have a post-test survey for you to complete. I will post the link in the chatbox in the bottom right hand corner).

LINK

Please take a few moments to click on the link and answer the survey.

Please let me know when you are done.

[*Pause screen recorder till participant returns*]

Mahalo!

[debrief interview]

So I have just a few questions before we end today.

[follow up on observations as needed]

What did you like best about the community?

What did you like least about the community?

What was your overall impression about using the community? Easy or difficult? Why? Can you give me some examples?

What was your overall impression about using this community as a learning space? Is it effective? Is it engaging? Does it motivate you? Do you find any features cool? Please explain and give examples

Do you have any suggestions to improve the community? Do you have any other comments?

I just want to say thank you very much for your time today. If you do have any questions about the study moving forward, please feel free to email me.

If you don't have any more questions right now, I'm going to go ahead and conclude our research today.

Thank You Very Much!

(*Stop screen recorder and save the file)*