

Improve human interaction  
of online creative education by integrating  
video gaming experience

by Vicky Y. Hsu

Graduate Supervisory Committee

Michelle Fehler

Alfred Sanft

Kyle Larkin

Jackson Boelts

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## ABSTRACT

With lifestyles becoming increasingly busier, people are finding less time to take courses in a traditional classroom. Consequently, people are turning towards online classrooms more to help them reach their goals. Online educational programs provide students with great flexibility. These programs generally allow a student to move as slow, or as fast, as they need to finish their degrees. The classroom materials are primarily electronic, so a student may access them from any location, as long as they have a computer and Internet access.

However, even with all of the benefits of online education, there are still issues which plague the minds of people worried about its efficacy. One of these issues is the lack of physical interaction. In addition, studio classes and labs are difficult to put into a digital environment. Another issue is the lack of motivation in the online student, when they do not have efficient ways to have peers or a professor to discuss their current projects with. This investigation has found that it may be possible to lessen the advantages that traditional classrooms have over online classes. Using elements found in video games, human interaction in online creative classes can be improved upon.

The study begins with literature reviews in the areas of:

- The principles of creative education,
- Advantages and disadvantages of an online education, and
- Similarities between the delivery of information in video games and an online education.

Features found within video games were used to help create solutions to improve online education and rid it of any problem areas that were found during the literature reviews.

After the literature review was complete, an online survey was conducted to gather opinions about online education and explore the previous experiences the respondents had with it. Using the answers gathered in this survey, alongside the information from the literature reviews, a prototype of an online course was then created. The primary purpose of the prototype was to overcome any difficulties the respondents had with past courses.

The respondents were then shown the first prototype of the creative online course. After the presentation, group interviews were performed to discuss the important elements of creative education and how to bring the prototype online. They also discussed the advantages of the video gaming experience and how to utilize it to enhance online education in a creative manner.

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## INTRODUCTION

### Justification & Significance

“Studies have shown that the art of creativity can indeed be taught (ÇUBUKCU & DÜNDAR, 2007).” When students were given visual cues, their creativity and imagination improved. Many traditional and online classrooms use visual materials to help stimulate student creativity. When it comes to the distribution of visual materials, online classes have a distinct advantage in that they are able to upload the material to give students the ability to access it as often as needed and from wherever they need to. Within traditional classrooms, there is a large chance that the material displayed during the lecture may only be shown once. Moreover, online classes can keep discussions and critiques open for weeks to allow students to think about the concepts and thoroughly reflect upon the subjects.

Many electronic methods, or e-methods, can be used to support creative education effectively. These include e-mail, online discussions, voice chats and video chats. Because of the technologies and the design of the online teaching applications, online educators can give students faster feedback than in the traditional classes.

Bringing creative education online is not meant as a solution against the traditional art medias. Rather, it is meant as a new option for young artists and designers. In the art, design and production business, the ability to use digital media software is highly desired. As such, teaching these skills to artists and designers early on can help them excel in their career fields.

The primary goal of this investigation is to improve online creative education solutions and facilities to help students gain the same quality of knowledge and skills in an online class, as a face-to-face studio class. Unfortunately, the results illustrate that most students do not think that current online education shares the same quality as traditional classrooms. The most popular reasons for this include: the lack of stimulation, the lack of interaction with both professors and other

students, poorly designed discussion systems and rules, an unfriendly website or application user interface, and the difficulty in finding professors or classmates as a resource of study. All of these problems should be solved to make creative online education possible and sufficient.

Online education fills a lot of needs and provides many advantages, from both the students' and educators' perspectives, so it is in high demand today. Many basic creative classes are being introduced online or even only offered online. However, the current and most common online education tools do not cover the basic needs of an online creative class, such as in-class demonstrations from instructors and assistance from peers. Hence, it is very important to improve the online education system before pushing creative online education. At the same time, video gaming environments have perfected the process of delivering stimulating information to users in a very efficient manner.

## Purpose of the Study

In this study, we looked for the existing and potential problems of creative online education. The solutions will be derived from video gaming environments to make creative online classes on par with traditional face-to-face studio classes.

## Research Topics and Questions

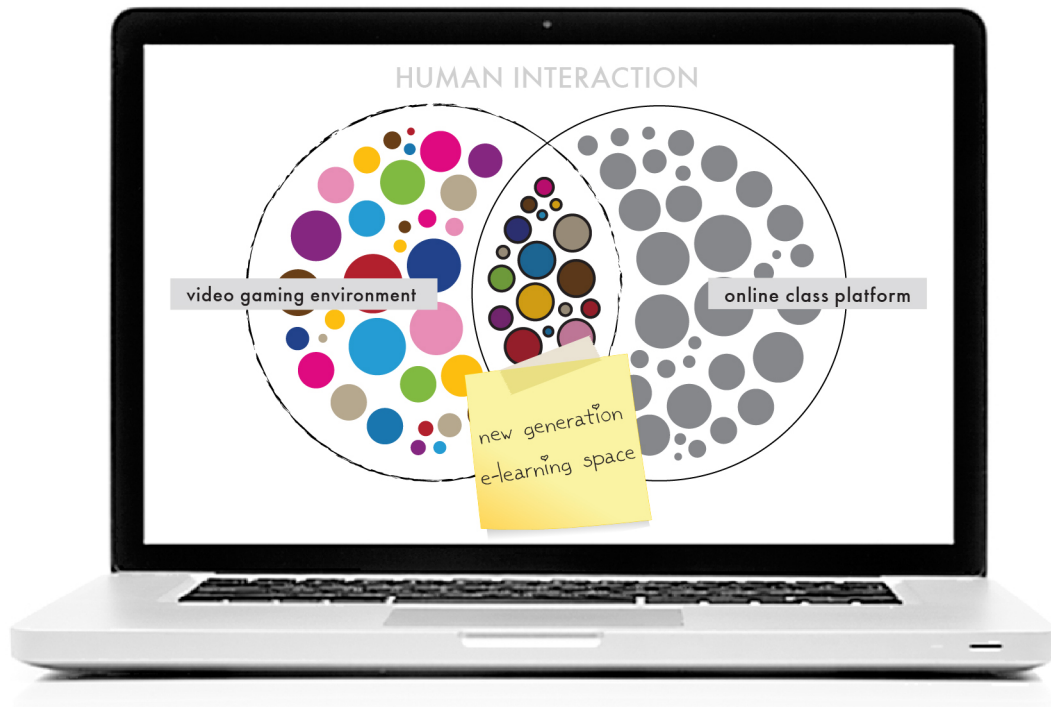
Online Creative Education: How to create a sufficient and effective virtual space for online creative education?

1. The study will search and analyze the general benefits and problems of current online education. This will involve looking into the issues and investigating the outcomes that might affect online creative education. **What are the potential benefits and problems of online creative education?**
2. The investigation will not only define the benefits and problems of online creative education, it will also develop solutions into extending the benefits

and eliminating the problems from existing technological resources. **What functions and features of existing video games and social media can be used to support online creative education?**

3. The first stage of the online creative education application prototype will be built upon the literature reviews, a survey and inspirations from the existing resources. The first stage of the prototype is to collect an extended set of data via group interviews to illustrate to users/ participants/ students the solutions to the problems of online creative education and how we can expand the benefits of it. In the meantime, students could point out additional problems and suggest solutions of their own. **What do the users/ participants/ students expect from the online creative education application?**

## Conceptual Framework



The primary goal of this research is to develop a new generation of the e-learning space by looking into the problems and benefits of current online education. As a result, usable and applicable technologies and methodologies from video gaming environments will be explored.



## Spheres of Influence

- Create more methods of accessing creative education
- Continue education for current creative professionals
- Open up more opportunities to learn from people who are on the other side of the world. This includes more perspective and culture.
- Extend the learning time and space.
- Improve other classes that are considered hard to teach or understand online, such as labs, mathematics and physics.

## Scope and Limitations

Few online creative classes currently exist, especially studio or workshop type classes. This causes limitations to access and review the existing resources. Moreover, most creative online classes are delivered using *Blackboard* (an online learning management system), which is generally known as a poorly designed technique, which lacks interactive functionalities. In cases that require more interaction, some instructors offer *Skype* appointments with their students.

Part of the pilot observation and analysis was conducted by observing students in GRA 294 (InDesign) at Arizona State University. This offered a chance to review, monitor and evaluate the student learning process.

The research will focus on students' perspectives and opinions of online creative education. During the pilot observations, a few interviews with school faculty members were carried out to better understand the potential problems of online creative education and what the study's focus should be on. However, the actual data collection process will not involve educators, it will only involve students.

This study is focused on searching for advanced solutions to online creative education issues using video gaming experiences. In person meetings and hybrid classes will not be included in this study.

This study will involve video gaming *experiences*, rather than any theoretical video gaming theories, to improve online creative education. As such, the first task will be to look over existing video games and software with a high user base. The literature about video gaming theories will be reviewed to ensure proper applications between online creative education and video gaming experiences. However, the main data resources of the video gaming experiences will be obtained via surveys and interviews.

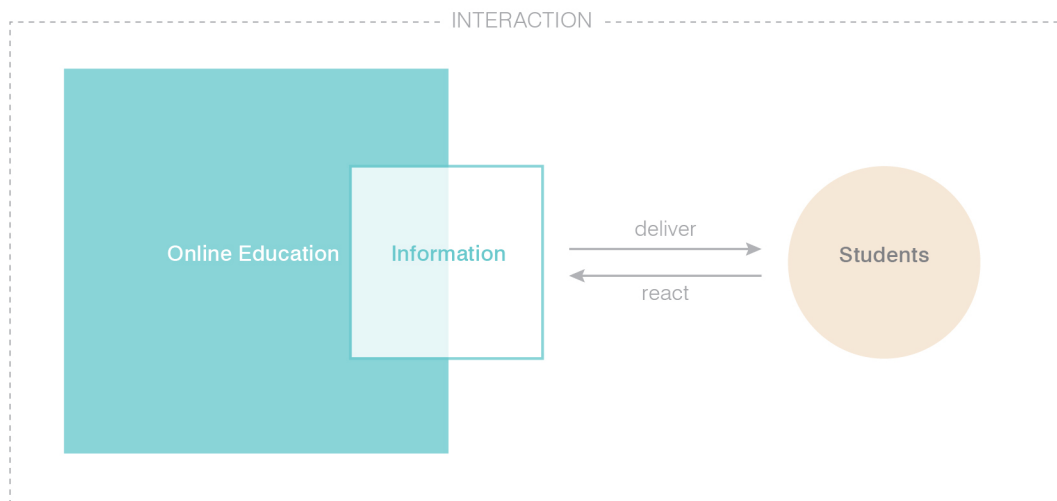
Sound effects were found to be a helpful asset while conducting the interviews. Sound effects stimulate players in games; they also provide clues and alerts to users in many applications. That being said, this study will focus on visual communication and usability.

Mobile learning, or m-learning (a continuous access learning process through mobile devices, such as phone, tablet or laptop), has been considered the next level of e-learning. However, the study has found that current technologies are not completely capable for online creative education at the moment. There are very limited resources and functions that can be used for online creative education. Due to the limitations and technical support, this research will focus on a computer based online creative education prototype design.

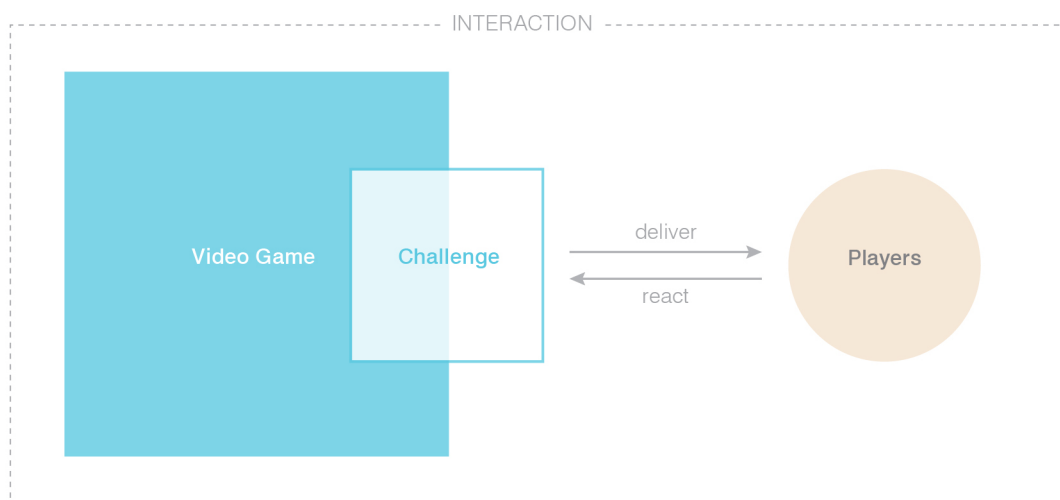
Even though m-learning is very limited by the current technologies, it still brings many potential advantages to education. Therefore, this study will point out the advantages and disadvantages for future applications.

## LITERATURE REVIEW

According to previous studies, online education and the video gaming experience actually share very similar frameworks. Both deliver information and challenges to their users (students). The only difference is how they deliver their information and challenges, which results in different reactions to the material from the users (e.g., levels of enthusiasm, attention, participation and effort).



Interaction pattern of online education



Interaction pattern of video gaming, based on (Calvillo-Gamez, Cairns, & Cox, 2010)

## Creative Education

### Teaching and Learning Styles

Dineen, R., Samuel, E., & Livesey, K. (2005). The promotion of creativity in learners: theory and practice. *Art, Design and Communication in Higher Education*, 4(3), 155-72.

This research investigates the promotion of learner creativity between conceptual (theory) and operational (practice) definitions. The research found some relationships between the espoused theory and the perceptions of practitioners and learners regarding the conditions of creativity. The goal of design education is not from external “judgments,” instead, it focuses on individual growth towards self-independence.

The data shows that 97% of participants (creative educators) considered the **teaching style** to be either significant or very significant. One of the participants (L15) stated, “It needs an enthusiastic and engaging approach — the right attitude and motivation on the teacher's part.”

The findings demonstrate the ability of art and design education models to stimulate individual creativity. The teaching and learning approaches and methods are believed to promote innate creative potential.

The research results support Lucas’s four key conditions of creative learning: challenge, appropriate feedback, the ability to live with uncertainty, and the elimination of negative stress (Lucas, 2001). The research also supports Ramsden’s six principles of effective teaching: interest and explanation, concern and respect, appropriate feedback, intellectual challenge, opportunities for independence, and learning from students.

### Conversation: Learning Through Interaction

Edstrom, A. (2008). Art students making use of studio conversations. *Art, Design and Communication in Higher Education*, 7(1), 31-44.

This empirical study analyzed students' use of studio conversations. The studio conversations focused on five aspects: A) whom to talk to; B) when to talk; C) expanding the student's options; D) testing the artistic expression, and E) the context of the student's art work.

The research illustrated how students intentionally use the interactions in the studio conversations to gain access to alternative options, to find out how others interpret their work and to situate themselves in the professional art world. The findings follow Rebenius' study, illustrating how interactions are absolutely vital for the development of artistic work.

Testing the artistic expression is an aspect of studio conversations that functions as a kind of 'reality check'. The students display their work to others to perceive how their artworks are received; studio conversations are frequently used for this. The students grow through their interactions with others, through the studio conversations, and also through communication with their fellow students, such as seminars or other opportunities to receive feedback and reactions.

Studio conversations are definitely a vital segment of the student's learning environment. "The studio conversation as a learning situation is an excellent example of learning through interaction" (Edstrom, 2008, p. 41).

### **Visual Clues**

**ÇUBUKCU, E., & DÜNDAR, Ş. G. (2007). Can creativity be taught? An empirical study on the benefits of visual analogy in basic design education. *A, Z ITU Journal of Faculty of Architecture*, 4(2), 67-80.**

This empirical research was designed to test whether the use of **visual images** does foster creativity in the first year of design education. The results show that when **visual clues** were given, the creativity score was higher than when visual clues were not given. This empirical study provides evidence that novice design students benefit from analogical reasoning based on visual clues and illustrates better

creativity performance. In conclusion, the study illustrated that creativity can be taught.

### **Creative Process**

**Gillham, B., & McGilp, H. (2007). Recording the creative process: An empirical basis for practice-integrated research in the arts. *International Journal of Art & Design Education*, 26(2), 177-184.**

This research was aimed at identifying the importance of the creative process. The results show that the creative process is a solution to better understand how artists and designers think and how they could or should present their methodology. A creative process journal not only helps others to understand a creative process, it also records what the artists did, allowing them to follow the stages of the working process and improve themselves in the future.

A creative process journal should be a detailed diary/log alongside sketches, photographs of prototypes, drafts and so on. “Digital technology can make possible the integrated presentation of multiple media in what we call a creative process journal” (Gillham & McGilp, 2007, p. 180).

### **Computer and Traditional Tools**

**Stones, C., & Cassidy, T. (2007). Comparing synthesis strategies of novice graphic designers using digital and traditional design tools. *Design Studies*, 21(1), 59-72.**

This article presented an empirical experiment based on comparing synthesis strategies adopted by novice designers when using paper-based and computer-based tools. The results indicated that paper-based sketching was more effective in producing more solutions than digital working. Paper-based sketching was also more effective in supporting each of the particular synthesis strategies, such as loading on memory constraints, supporting early design thinking through its ambiguity and fluidity and discovering solutions. The computer was not as successful as paper-based tools at stimulating and supporting a diverse range of ideas.

The data illustrates that paper-based working allowed more solutions to be discovered, of all synthesis types, than digital working. In general, either the computer user could not physically make the solutions based on the contribution strategy or could not see the possibility of that relationship between the shapes or the form of a technical skill issue, the latter being a cognitive one. Both reasons are viable, but require more investigation.

### **Computer and Traditional Tools**

**Stones, C., & Cassidy, T. (2010). Seeing and discovering: How do student designers reinterpret sketches and digital marks during graphic design ideation? *Design Studies*, 31(5), 439-460.**

The study results suggest that, while students are capable of reinterpreting the digital marks as other forms, they are less successful at turning those new digital forms into new ideas. It would appear that while not causing reinterpretation, paper-based sketches, more than digital tools, could support the vital process of reinterpretation that generates new ideas.

Due to the finished appearance of the digital mark (such as a rendered typeface or a selected perfect shape), when used in the early stages of design, this mark could prove to be destructive and restrictive.

The study also mentions that “digital marks can be ambiguous in appearance, such as drawn with the freehand tool, or is thin or light colored. A pixelated line, for instance, shares qualities both of a smudged and a wobbly line. The degree of ambiguity can also be dependent on the choice of digital tool. Software such as Corel’s Painter feature an array of ‘softer’ tools in the tool palette enabling the user to overlay soft lines and textures on top of each other, allowing the creation of the alternative contours and missing contour lines that as ambiguous qualities of sketching. This makes new organic forms become possible due in part to hybrid working methods adopted. Digital establishment of a digital aesthetic where surface

and form is pushed into a new realm by the freedom the digital tool affords” (Stones & Cassidy, 2010, p. 442).

The data suggests that paper marks appeared to provide richer opportunities for reinterpretation that stimulated new ideas than digital marks. The data also suggests that student designers can see other forms in their digital marks, but that they are fewer in number and are essentially more critical of what resemblance is found than when using paper.

## Online Education

### **Use Online Technology to Aid Problem Based Learning**

**Snepvangers, K., & McAlpine, I. (2006). Student learning processes using an online PBL module in an art and design education course. *Proceedings of the 23rd annual ascilite conference: Who’s learning? Whose technology?* 779-788.**

This study considers the design of an online problem based learning (PBL) module and how students used the online resources in their group work on a professional practice problem. The results show that most students were enthusiastic about developing problem-solving skills that they felt would be useful to them professionally; this is also one of the main aims of the PBL activity. The study also identified that students developed much more effective skills from the PBL approaches.

Providing an online adaption is a potential alternative to the semester long, lecture based course of writing individualized essays, focused on passive reception and content overload. An online module in a PBL format in an Art Education course used practicing teachers as online tutors to provide students with a direct link to the school environment (Snepvangers & McAlpine, 2006).

Taking a PBL approach within online learning can be used to provide a learning environment to support the process that can enhance the student’s learning results. For example, *online discussions enabled communication processes among the class*



*that remained there for reference and later reflection and review.* The online discussion became a group artifact, or an evolving document, in the same way that the group reports evolved as a product and as a reflection of the group's approach to the task.

The PBL approach was used to encourage deep learning in the tasks that reflected the complexity of 'real world' professional environments. Using an online learning environment as part of the PBL approach enables the students to be self-directed in their approach to problem resolution.

By using online learning technologies to enable or support PBL, with a user and activity-centered design for the online environment, the potential power of the online technologies may be leveraged further by the potential of the PBL to foster high level learning outcomes.

The data obtained from the research also found that "collaborative group work is usually considered to be an essential aspect of PBL. A meta-analysis of research on learning in small groups showed a significant positive effect on learning" (Snepvangers & McAlpine, 2006, p. 780).

### **Interactions in Online Discussion Forum**

**Balaji, M S, & Chakrabarti, D. (2010). Student interactions in online discussion forum: Empirical research from 'Media Richness Theory' perspective. *Journal of Interactive Online Learning*, 9 (1), 1-22.**

This article hypothesized that the use of an online discussion forum (ODF), along with face-to-face lectures, provides a richer communication context and facilitates effective student interactions and learning. This teaching method shows positive effects on the student's interactions and promotes a deeper understanding of the course content. The research indicates that facilitating a discourse, reflective thinking, assessment and connectedness contribute to interactions in ODFs.

From the practical perspective, the present study suggests that using multiple mediums of instruction enriches the communication context and leads to enhanced learning capabilities.

The present study contributes to the understanding of the effectiveness of the ODF in student learning. A conceptual model based on the 'theory of online learning' and 'media richness theory' was proposed and empirically tested. We extend the current understanding of media richness theory to suggest that the use of multiple media can enrich the communication context and perceived learning. A hierarchical regression was applied to investigate the relationships between antecedent factors, interactions and perceived learning. The results illustrate that the perceived richness of the ODF has a significant positive effect on student participation, student interactions, and learning, when used alongside a traditional classroom lecture.

ODF is increasingly being used, alongside face-to-face lectures, to augment and support classroom learning. The ODFs have emerged as a common tool and an effective way of engaging students outside of the classroom. In addition, in ODF, there is no loss of data, as students' written messages are stored in a virtual space and can be retrieved and reviewed at any time. ODF also allows students to use online resources at the same time and expand the opportunities to reflect upon their work and experience the course with other students and the instructor.

The flexibility of time and place to reflect on the previous postings to the discussion thread (Anderson and Kanuka, 1997) actively engages them in a meaningful and intellectual experience. However, studies have shown that motivating students to actively participate and contribute in online discussions was challenging. Some students found it difficult to interact when the human interface was not present.

In ODF, the assessment opportunities are more frequent than face-to-face classrooms, as students can simultaneously communicate with each other and with the instructor. It also provides a greater opportunity for the instructor to deliver

feedback more quickly on the student's work. Moreover, students have access to feedback from their peers. The immediacy of feedback in the online environment thus gives a greater opportunity to communicate with the instructor and other students, leading to enhanced interactions.

## M-learning

M-learning is usually considered a further step of e-learning. It refers to learning through handheld devices, such as a smartphone, a tablet or an MP3 player. M-learning offers the flexibility of time and the choice of location. It is equivalent to carrying a classroom in a pocket! M-learning is not the focus of this research. However, the mobile inspired clean Web / application designs are great examples for building the online creative education platform.

### The Future of Online Education

**Gruenberg, S. (2012, November 27). Mobile e-learning: The future of online education. Retrieved from <http://www.knowledgeanywhere.com/blog/news-and-events/post/mobile-e-learning-the-future-of-online-education>**

“The mobile revolution is shaping the future of education. With the growing adoption of mobile devices, including Smartphone, tablets, and handheld computers, people have the ability to learn from a variety of devices. The goal of m-learning is to enable learners to assimilate learning anytime, anywhere” (Gruenberg, 2012).

Learners can access mobile devices and receive feedback and tips immediately.

Major functions that are supported by mobile devices include:

- Delivers educational content
- Conducts assessments and evaluations
- Delivers coaching and mentoring
- Provides on-the-job support
- Logs evidence of learning activity
- Facilitates communication and collaboration

M-learning can deliver educational content and job aids to learners whenever they need it. This may include searching databases and indexes that help learners find answers to their questions on site. “Mobile learning has progressed from being a ‘What if?’ to a ‘What next?’” (Gruenberg, 2012). In the year 2020, it is highly likely that mobile devices will be the platform of choice for workplace learning delivery.

### **Advantages and Disadvantages of M-learning**

**Hajim, M. (2012, December 28). *Mobile learning: 5 advantages and 5 disadvantages*. Retrieved from <http://edudemic.com/2012/12/mobile-learning/>**

According to this article, there are five advantages and five disadvantages of m-learning. The five advantages are educational support, interaction, management, wider access, and special education. The five disadvantages are cost, size of device, battery life, technology and usability.

Handheld devices provide access to knowledge outside of the classroom as **educational support**. People usually think that e-learning or m-learning lacks interaction. In fact, this digital form of **interaction** could encourage shy students to communicate more often than in person. In addition, teachers can help and support students via devices outside of school. More specifically, students can **manage** how they want to learn their material and on their own schedule using methods they are comfortable with, creating a more enjoyable learning experience overall.

M-learning also provides wider access. Instead of limiting students to the classroom, they also have the opportunity to meet and interact with field experts via their devices.

Mobile technologies can also benefit students who have **special needs** in terms of learning disabilities and physical impairments. This gives students with special needs the chance to learn at the rate of other students.

However, there are also downsides of m-learning which should be kept in mind. **Cost** is one of the biggest problems of m-learning. A decent mobile device is not cheap, plus students need to buy data plans from wireless companies to make their m-learning functional. In addition, mobile devices are usually not upgradeable; the only way to upgrade the device usually requires buying a new device.

The **size of the device** is another serious problem of m-learning; this is usually indicative of the screen's size. The size of the screen can really affect the information quality. This is especially important for creative education, as students might miss out on a lot of visual clues and detail.

**Short battery life** is another problem that makes m-learning *no longer mobile*. For example, when a Smartphone's screen is constantly being utilized, the battery will usually last between two to four hours. The only way to keep the device going is to plug it in to recharge it. In this way, the goal of *m-learning* is lost.

**Technology shortage** is another consideration that makes m-learning inefficient sometimes. The technology of mobile devices is still growing; it is not as mature as computer technology. Hence, software that students need to use to complete their studies currently cannot be used within mobile devices, such as Adobe Suite. In addition, there are very limited file formats currently which can be opened by mobile devices.

**Usability** is another problem. This includes small buttons that makes typing difficult.

In conclusion, mobile devices can move education in a positive direction as it advances. However, due to the limited technology of today and how mobile devices are currently designed, m-learning can be a great support tool, but not a 100% reliable device for online education. It might work well for certain types of classes that can be delivered through a lecture, but not for creative education, which relies

heavily on visual communications and hands on interaction. That being said, m-learning for creative education can still be achieved when the technology is more equipped to handle it in the future.

### **Advantages and Disadvantages of M-learning**

**Woodard, R. (2011, January 21). *Advantages and disadvantages of M-Learning*. Retrieved from <http://www.brighthub.com/education/online-learning/articles/36809.aspx>**

“As with distance and e-learning, there are many advantages and disadvantages of letting technology take a complete hold of one's education.”

Advantages of m-learning:

- Flexibility: Students can access support from their instructor, as well as the materials, at anytime and in any place.
- Interactions with the instructors and other students to share information are helpful during the learning process.
- Portability: Compact and lightweight devices allow students to take notes and enter different types of data directly into their devices.
- Psychological factor: Owning handheld devices increases student motivation and deepens the commitment to use and learn with them. The learning materials are usually more colorful and inviting in digital format.
- Most handheld devices are more affordable than computer systems. A majority of the U.S. population owns one.
- Learning at one's own pace: Slower learners can take the time they need, while the fast learners have no need to waste time going through the basics.
- Savings in the cost of learning materials and commuting expenses.

Disadvantages of m-learning:

- Small screen size on a Smartphone or a tablet can be a hindrance.
- Storage capacity is limited.
- Short battery life defeats the purpose of m-learning.

- Difficult to develop content that is compatible with all devices, due to the absence of a common hardware platform.
- Devices become outdated quickly.
- Limited wireless bandwidth.
- Printing could be a challenge.

### Video Gaming Framework

Calvillo-Gamez, E., Cairns, P., & Cox, A. (2010). *Assessing the core elements of the gaming experience*. In R. Bernhaupt (Ed.), *Evaluating User Experience in Games* (pp. 47-71). Springer. Retrieved from <http://discovery.ucl.ac.uk/103914/>

This study presents the theory of the Core Elements of the Gaming Experience (CEGE). The CEGE are the necessary, but not sufficient, conditions for providing a positive experience while playing video games.

“A game is a rule-based system with a variable and quantifiable outcome, where different outcomes are assigned different values, the player exerts effort in order to influence the outcome, the player feels emotionally attached to the outcome, and the consequences of the activity are negotiable” (Juul, 2005).

A video gaming experience is based on a Human Computer Interaction. It can be considered a personal relationship between a player and a video game. It also includes the user experience: the usability of the application and the interaction with the application.

### Apply Gaming Technology to Higher Education

Bayne, S. (2008). *Uncanny spaces for higher education: Teaching and learning in virtual worlds*. *AltJ*, 16(3), 197-205. Routledge. Retrieved from <http://www.informaworld.com/openurl?genre=article&doi=10.1080/09687760802526749&magic=crossref>

“This paper brings together the theory of the uncanny as it emerges in cultural theory, with an understanding of the uncanniness and troublesomeness seen to be inherent in certain understandings of teaching and learning in higher education.

Experiences of learning in virtual worlds, it explores the sense in which teaching in such spaces materializes and extends the positive aspects of uncertainty, strangeness, disquietude and troublesomeness in online higher education.”

This paper used *Second Life* as an example of a virtual world of online higher education.

### **Second Life for Creative Education**

**Terrazas, E. (2010, May 28). Second life’s virtual world proves useful in educational settings. Retrieved from <http://borderzine.com/2010/05/second-life’s-virtual-world-proves-useful-in-educational-settings/>**

*Second Life* is a three-dimensional virtual world created entirely by its users. The users can create their very own avatars, choose an identity and take up residence in *Second Life*. The residents can use tools to design their own environments. This rich and sensory experience offers new opportunities for distance education and workplace training. *Second Life* provides an effective virtual educational space for good quality interactions, such as engaged and collaborative learning.

Professor John Dunn at The University of Texas at El Paso recreates recreated an online critique environment and gathers gathered his students together in *Second Life* and meet with everyone’s avatar.

The *Second Life* 3D gallery has many advantages that a real life classroom does not have, such as students’ works being displayed for a longer period of time, instead of only during a critique period. In this way, students or other visitors can have extra opportunities to visit the works. This also offers opportunities for visiting artists from long distances to join the class and interact with the students. The *Second Life* platform provides a very similar and life-like classroom. “In terms of a graphic design classroom, things are digital so everything works out well,” says Dunn.



## INSPIRATIONS

### Video Games

Games are used for entertainment; they can also be used for educational purposes. Video games bring the essence of games onto a television or computer screen, allowing players to explore worlds created through the imagination of its developers. Online education can be delivered through the same devices that video games can. Using video games as educational tools within online education might help students' learning process, offering students opportunities to work together.

### Environment & Atmosphere

Talking about creative education, every educator and student in this field knows that proper critiques and feedback are essential to helping an artist improve. During the interviews, many participants also mentioned that the biggest challenge of online creative education would be how to provide a sufficient critiquing process and methodology online. The participants also indicated that making creative education “stay visual” is very important.

Most online creative education today does not provide a sufficient critique environment. Moreover, a majority of them skip the entire critique process and only allow the instructors to give the final grade to the students. There is no chance for students to see others' works or compare themselves to each other.

It is recommended that a studio or a gallery space be created for online virtual critique purposes. In the literature, *Resident Evil 4's* gaming environment and interface was believed to have the ability to improve the critique space and online atmosphere.



*Resident Evil 4* screenshots (Capcom, 2005)

*AION* is one of many games that provide the 3D graphics and atmosphere that allows the player to walk close by and choose to review the painting through a first-person-perspective or full screen.



Looking at a painting in the AION 3<sup>rd</sup> person perspective



Looking at a painting in the AION 2<sup>nd</sup> person perspective



Looking at a painting in the *AION* 1<sup>st</sup> person perspective

### Interactions Within the Virtual Environment

A gallery show can be held in *Second Life*, with paintings being displayed in a similar way to the *Resident Evil 4* platform. However, with *AION* and *Second Life* being massive multiplayer online role-playing games (MMORPG), they offer much more in the way players can react with one another than a single player environment, like *Resident Evil 4*, is capable of.



*Second Life* screenshot (Linden Research, Inc., 2003)

This image demonstrates how much a gallery can be duplicated in *Second Life*. It offers great flexibility for different classes and instructors to adjust their classroom or critique environments in the way they want.



The real life gallery, compared to the duplicated gallery in *Second Life* (Curry, 2007)

The additional interactions (such as body language and emotional expression) provided by the virtual environment can be a valuable solution towards improving online human interactions. Instead of pure text communication, they offer emotional cues. This function exists in most MMORPGs.



Dancing and cheering emoted in *Tera* (Bluehole Studio, Inc., 2010)



Dancing emoted in *Star Wars: The Old Republic* (BioWare, 2011)

## Social Functions in Games

Multiplayer games not only offer more interaction opportunities, they also offer the tools to let the players maintain contact with their friends, such as a friend list. The

functions are usually very similar to the general functions of social media. For example, this is the friend list of *World of Warcraft*. The friend list shows a player's online and offline friends. The friend list also illustrates the friends' status and their location in the game world.



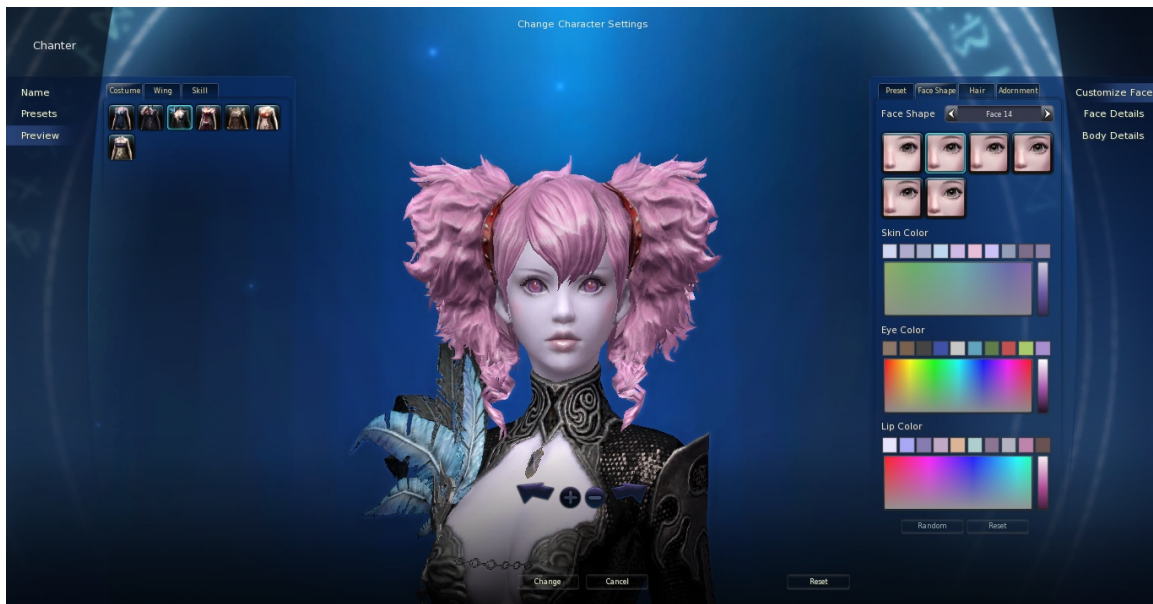
Friend list in World of Warcraft (Blizzard Entertainment, 2004)

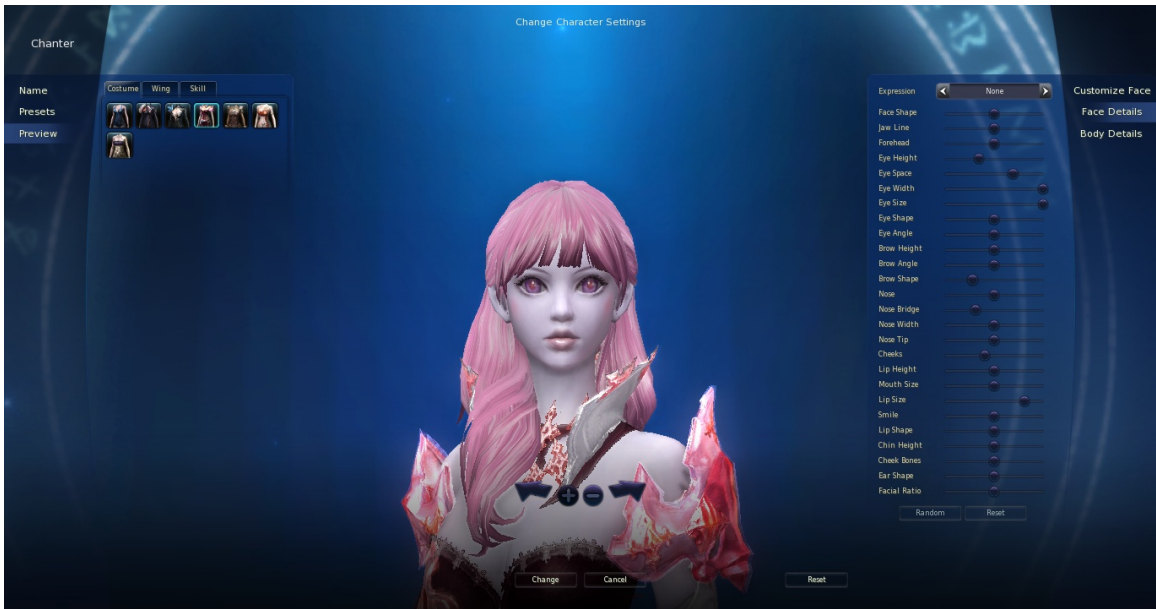


## Personalization

Under the condition of a virtual environment, an avatar becomes another required component. In most multiplayer games or social media, players are allowed to choose and customize their own avatar, which makes the game, or the software, more personal for the people who interact with them.

For example, *AION* has one of the most flexible player character customizations, as compared to other video games. It is so customizable, that players can even duplicate themselves into the game. During the interviews, the participants' believed that using their very own created avatars to interact with others in the virtual classroom could make an online class more fun. They also suggested that rewarding the accomplishment of various challenges with extended avatar customizations could be a great motivation for working on the class requirements and bonus materials.





Extremely detailed character creation /customization system of AION (Aion, 2008)



Characters created based on real people ("Screenshot Aion Open," 2008)

## Achievements: Encourage Accomplishment

According to the survey and the interviews, motivation is a challenge of online education. During the interviews, most participants agreed that rewards could be a great motivation for students to study and work harder for their class requirements. The participants suggested creating an achievement system, similar to video games, by giving virtual rewards when students achieve certain goals on their achievement list. Goals could be: the top three scores of the class for an exam or a project, the first person to complete a project, help a certain number of students within the class, the first person to post a comment on another student's work, or critique a certain number of students' works in a project critique section. The rewards could be outfits, pets or decorations for students' avatars.



Achievements list in World of Warcraft (Blizzard Entertainment, 2004)

## Games with an Educational Purpose

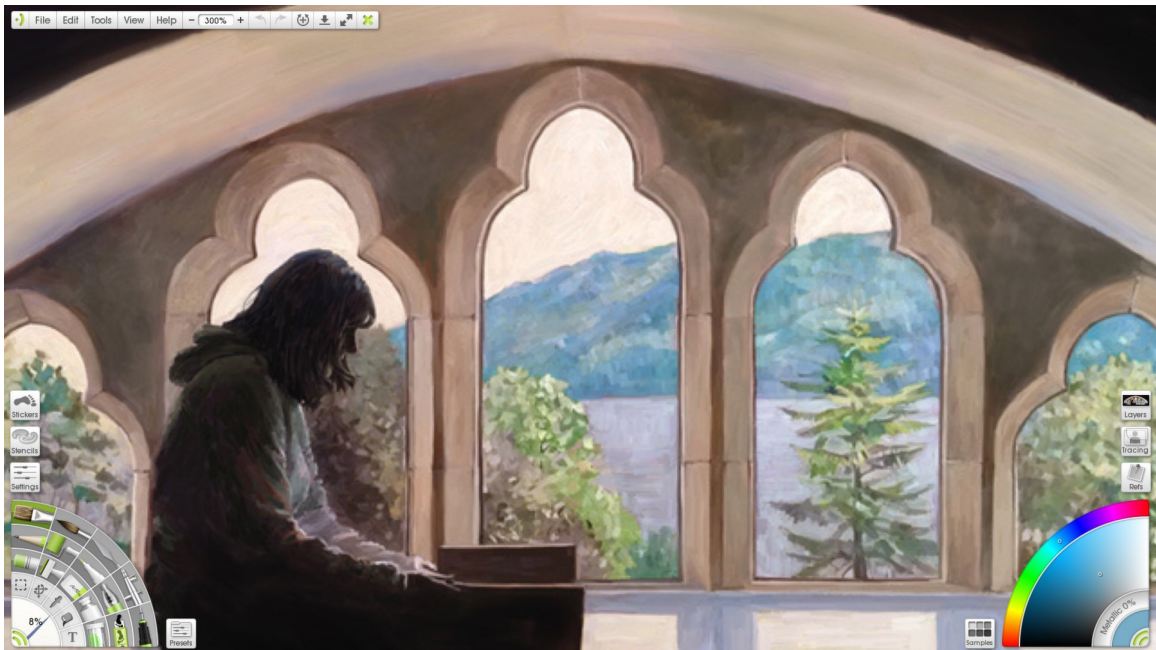
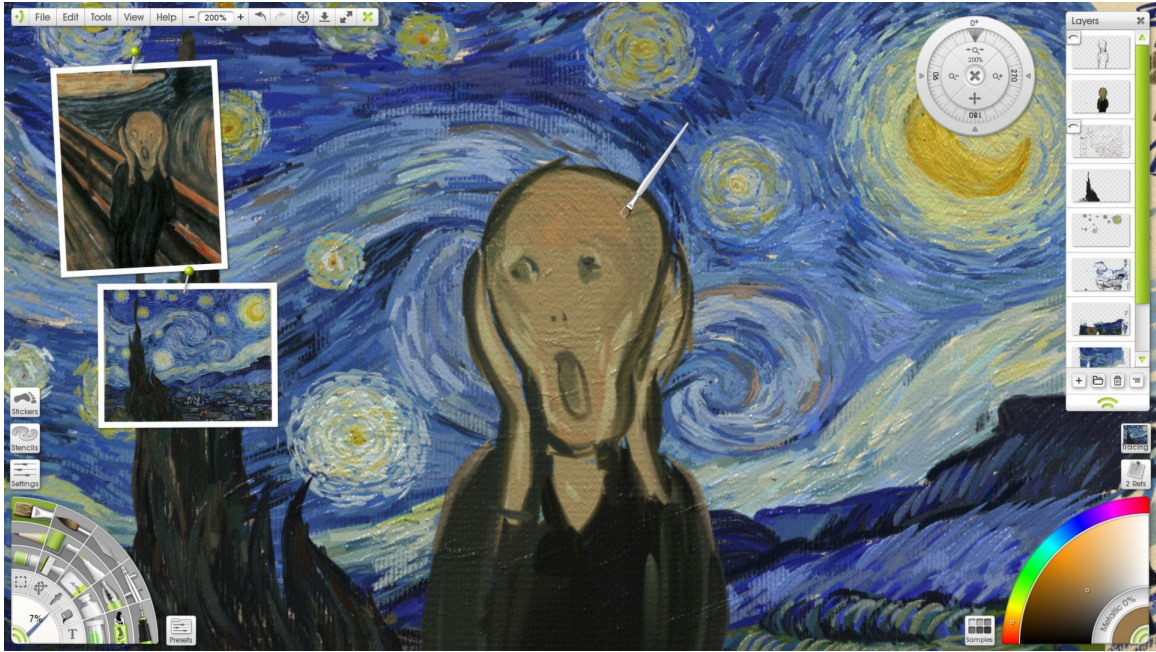
There are some great examples of video games being used for educational purposes, such as *Team Fortress 2* and *Portal*. Valve, an American video game developer and digital distribution company, loves to make players learn while enjoying their games. *Valve has already started introducing their games into the educational field and will continue to use their games to educate their players* (Narcisse, 2012)

For online creative education, there are some games that could serve a specific purpose and train students' creative skills, such as *Kern Type, the kerning game*, made by Mark MacKay.



The game is very plain and simple: move the letters around to adjust them to the right place. It is a very valuable little game to help train students' kerning skill.

Art Rage 4 is a program that was released in February 2013. It has a lot of powerful functions, similar to *Corel Painter* (Ambient Design Ltd., 2013). It was released and sold via the gaming/social media network *Steam*.





The actual operation / game play of Art Rage 4 (Ambient Designs Ltd., 2013)

Steam's environment can greatly improve the work of artists/designers who desire to work together, while Art Rage 4 can utilize Steam's social features to allow projects to be well coordinated. Additionally, this is a valuable notion that online education can be built as a class portal, instead of a webpage, like *Steam*. This offers opportunities to give students extra tools and educational games through the software itself.

According to Stone & Cassidy's studies in 2007 and 2010, they confirmed that paper-based tools usually support higher possibilities of generating new ideas than digital-based tools. However, in their 2010 study, they mentioned that some newer digital marks could be ambiguous in appearance, such as freehand tools, unfinished looks, and smudged and wobbly lines. Software like this provides the opportunity to create new organic forms in the digital format. This hybrid environment pushes paper-based tools and digital tools into a new stage. At the same time, it also encourages students to adapt to the constantly evolving digital markets to become successful in their future endeavors.

## **Minecraft**

“Minecraft is a game about breaking and placing blocks. At first, people built structures to protect against nocturnal monsters, but as the game grew players worked together to create wonderful, imaginative things” (Mojang, 2011). The game provides a great opportunity to let the imagination and **creativity** of its users to run free.

Minecraft has the ability to be played as a multiplayer game. When played as a multiplayer game, players get a chance to improve their environments by working together to plan projects on a grander scale and solve complex problems, such as delegating different roles to players to create a thriving society.

Consequently, Minecraft has been used for school projects, such as architectural and interior design practice and modeling. The scale of plans, designs and creations can vary from a tiny house to a full-sized urban design. The scale depends on the creator’s decisions and the capabilities of the servers it is hosted on.

The Westeros Craft team of Will Blew and Jacob Granberry recreated a *Minecraft Version of King’s Landing* (from the *Game of Thrones*). The team noted that the latest section of George R.R. Martin’s world took some 100 builders 4 months to complete; it includes roughly 3,000 unique buildings (WATERCUTTER, 2013). This is a great example how a design or a plan can be executed and how the combined effort of many players can complete huge projects in Minecraft.



King's Landing (Westeros Craft team of Will Blew and Jacob Granberry, 2013)

According to Professor Jeff Dunn, the Swedish School now has a mandatory Minecraft class. This is a list of the information that students were able to learn from it:

1. City planning.
2. Environmental issues.



3. Maintaining high productivity.
4. Planning future projects.
5. Interactivity.
6. Safe online habits.
7. Creating original structures from their own imagination.
8. Computer skills.

Compared to other creative software, such as Sketch Up, the advantage of Minecraft is that students can work as a group, at the same time, to plan, cooperate and create projects, instead of making up their own ideas on separate sketches or presentation boards. The values of Minecraft are undeniable. That is why an increasing number of school projects are being requested to be constructed in Minecraft.

## Social Media

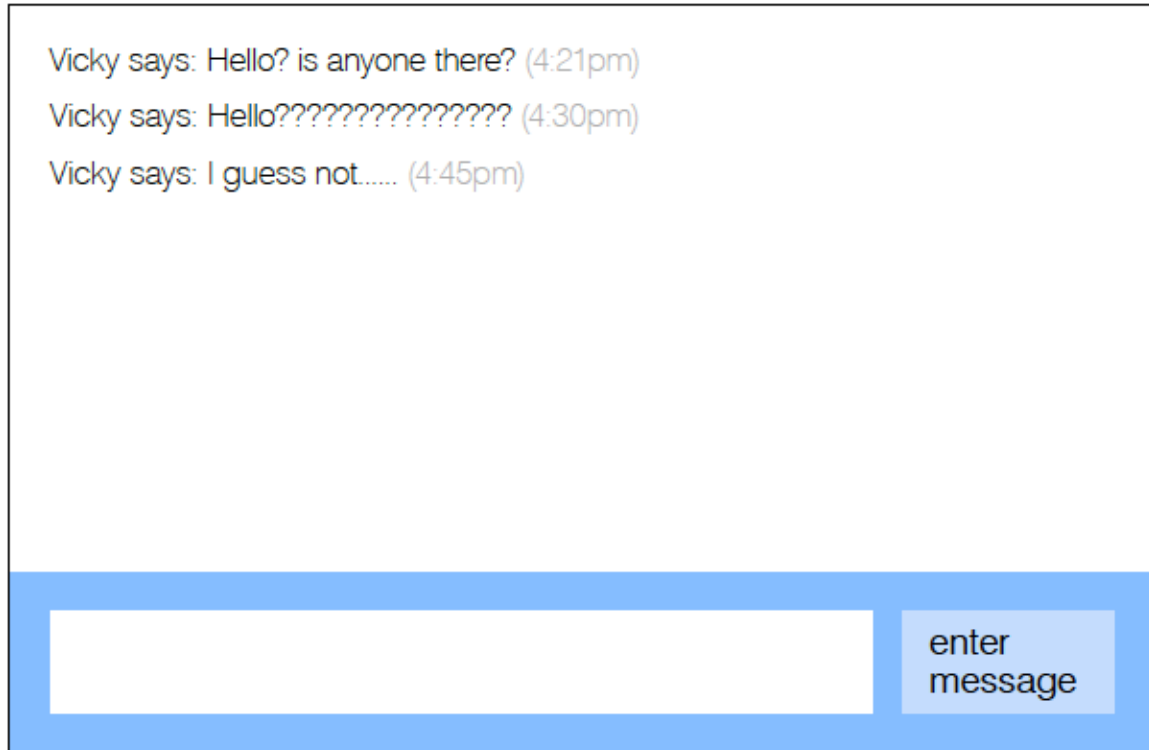
Why does the research consider video gaming and social media experiences to be entwined together? The reason is that, between 2000 and 2006, social media, such as MSN (Windows Live Messenger) and AOL, developed an online gaming system within their instant messengers that enhanced the social atmosphere of their programs. Having a gaming system built directly into their messengers gave their members the ability to play games online with their friends while socializing. In the meanwhile, several video game consoles, such as PlayStation and Xbox, developed online communication functionalities. This helped players play games cooperatively with each other and made games more entertaining.

As we can see, social media developed an online gaming system and video gaming systems developed into systems with online multiplayer capabilities. This is the point in time where video games and social media began to merge. Later on, some of them were built as two in one, such as Steam's "The ultimate entertainment platform. Play, connect, create and more" (Valve, 2012).

Increasing and improving human interactions are one of the most important goals of online education. According to Balaji and Chakrabarti's (2010) study, online education should have the advantages of faster feedback and enhancing interactions. But does it really accomplish what it should?

Based on my research, most participants do not agree with Balaji and Chakrabarti's (2010) study. The reasons for this include both human factors and platform designs. However, the majority of participants agree and believe that improving the functions and designs of the platforms and requiring that their technologies remain current will indeed make online creative education possible and even better than real life education.

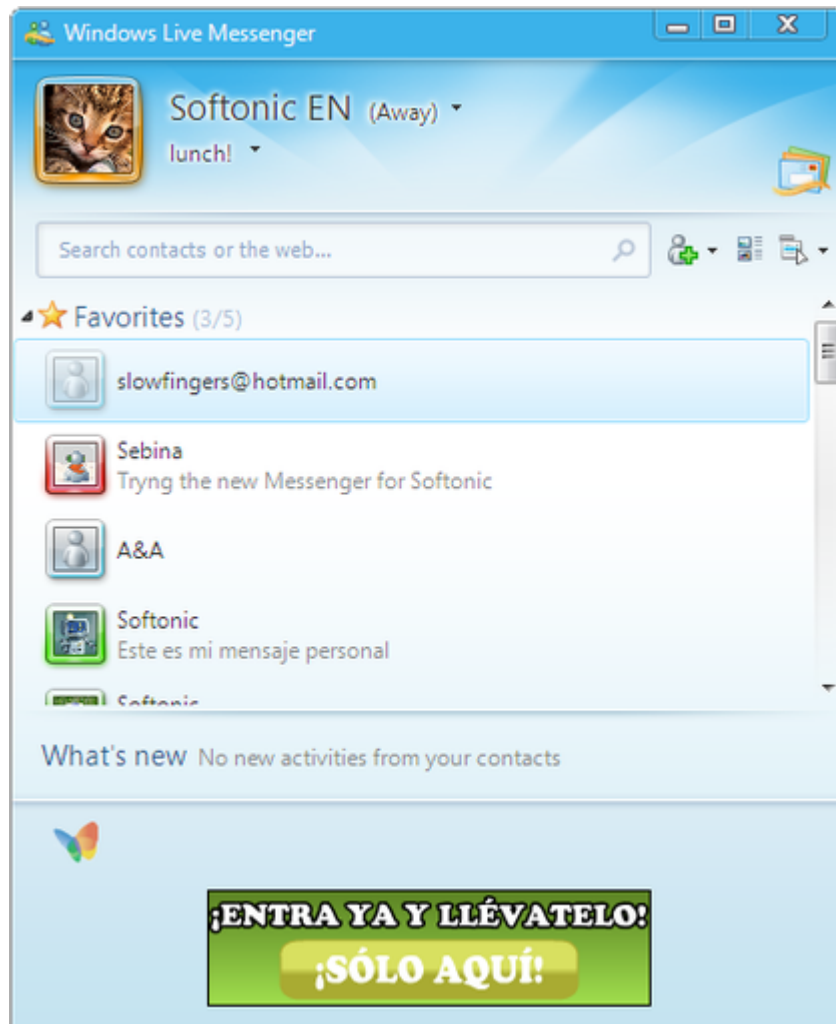
Most online classes do not have a chat room or instant messaging function, such as *Blackboard*. They have the ability to e-mail people within the class, as well as post messages and ODFs, but this limits the speed and efficiency of distributing information. There are some classes that do have a chat room; however, they were usually poorly designed.



This is an example of one poorly designed chat room from an online class. Users can never tell who else is in the chat room unless they respond. It can be very time consuming for a student if they're required to sit around and wait for others to respond when they need help.

## Windows Live Messenger (MSN)

Students can use instant messaging clients, such as MSN, to work outside of poorly designed chat rooms. It allows users to see whether or not someone is online. It also allows users to see if others are available through status updates, such as 'away' and 'do not disturb,' and to understand why they did not get a response from anyone.

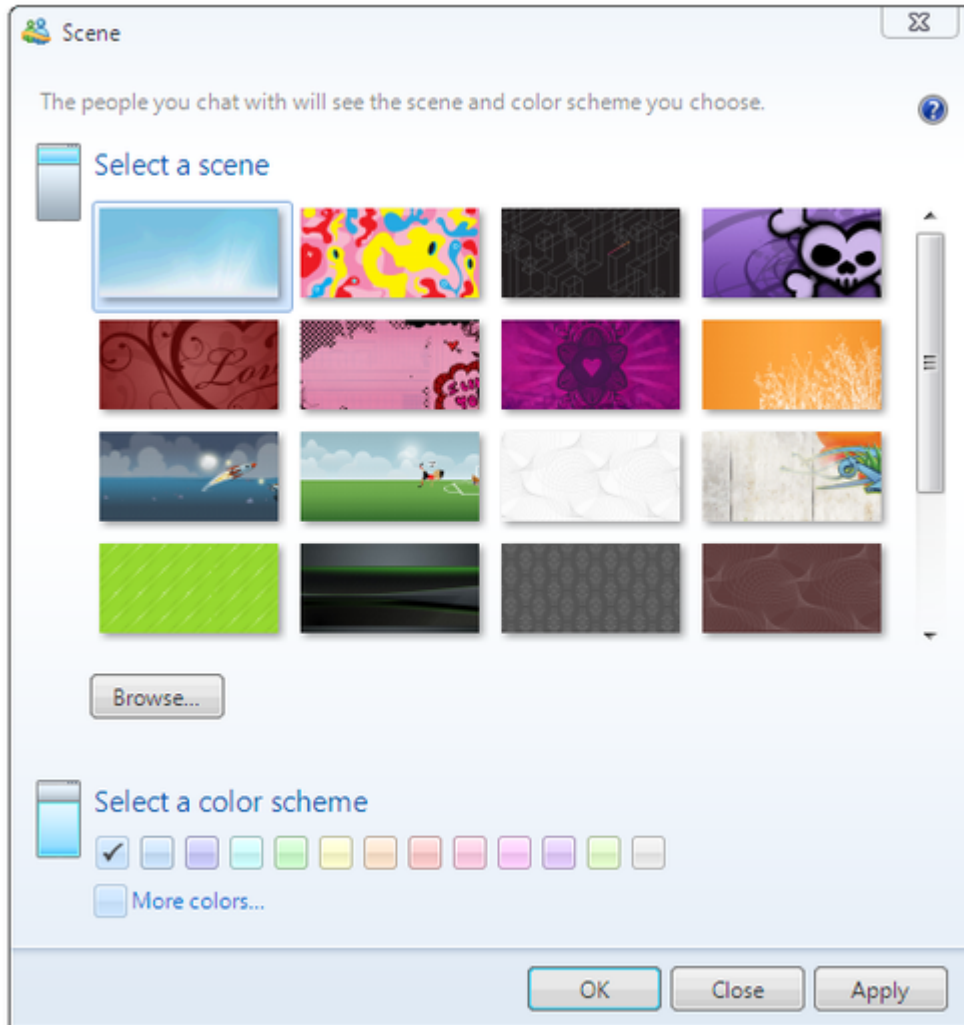


In addition, while in an active chatting window, users are able to see if the other person is replying (typing). The messenger also provides some emoticons that help its users express their emotions outside of text. Moreover, it is not limited to conversations between two people; the chatting window can be shared by a group of people.



Additional functions besides instant messaging include voice chats, video chats and games. Voice chats and video chats provide the opportunity of delivering faster and clearer information. They also allow users to express their emotions and body language. The added games within the messenger allow users to play together or compete with each other while communicating.

There are also personalized settings, such as background and font colors to help users create their own virtual environment, similar to how Google Chrome provides theme selections. These settings might not necessarily affect the communication quality, but they help users feel more comfortable or attached to their instant messenger (IM) client.



("Windows Live Messenger," Windows Live Messenger SCREENSHOTS)

Sadly, *Windows Live Messenger* was retired in April 2013 and is no longer available. The original users can still send IMs and have voice chats and video chats with their contacts via *Skype* and *Facebook*. Their contact lists will remain the same when they update their messenger to *Skype*.

## Skype

*Skype* is another great example of an instant messaging client. It is very similar to *MSN*, except that *Skype* excels with better voice and video quality, screen sharing, the ability to send a short message service (SMS), and the ability to call a phone

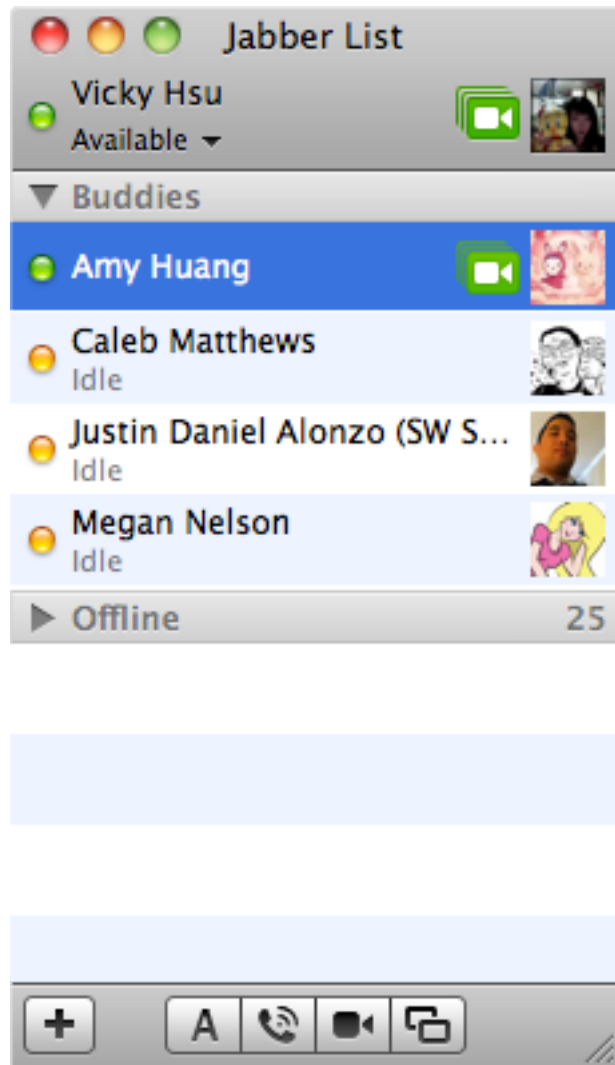
from the client. Additionally, *Skype* users who opt in to their paid services are able to get a *Skype* number to allow people to reach them from a landline or a cell phone. *Skype* users are also allowed to leave other *Skype* users voice and video messages. *Skype* users also have the options to link their *Skype* and *Facebook* account together (Microsoft, 2013).

## iChat

*iChat* is another instant messaging client. It was developed by Apple Inc., but was discontinued in February 2012 and replaced by *Messages*.

During the interviews, Participant 31 confirmed that the function of 'screen sharing' was very helpful. In addition, the function of a 'remote control' should be placed under 'screen sharing', which means the 'remote control' can only be functional after a user agrees to share his or her screen.

"Another thing is to have the screen sharing and let you have the remote thing. I know that in *iChat* and screen sharing is helpful. One time I totally screwed up my Website, and I called someone, what should I do? And he got on *iChat* and we used the remote thing, and I watched him takes over my screen and help me with the file or something. So...



Maybe under the screen sharing, have the remote control option there,” said Participant 31.

In this case, *iChat* has a remote control function while screen sharing, which *Skype* does not currently support.

## **Facebook**

*Facebook* is one of the most successful platforms for social media; many people are familiar with it. Every group interviewed suggested that utilizing some Facebook functions in online education would be a good place to start improving its socializing ability. The reasons given were:

1. It has many personalization options.
2. Most people are familiar with it.
3. Better interactive functionalities than average online classes.

Although *Facebook* provides great interactive opportunities to its users and connects them together, many participants have concerns with some problems caused by using *Facebook* for school matters:

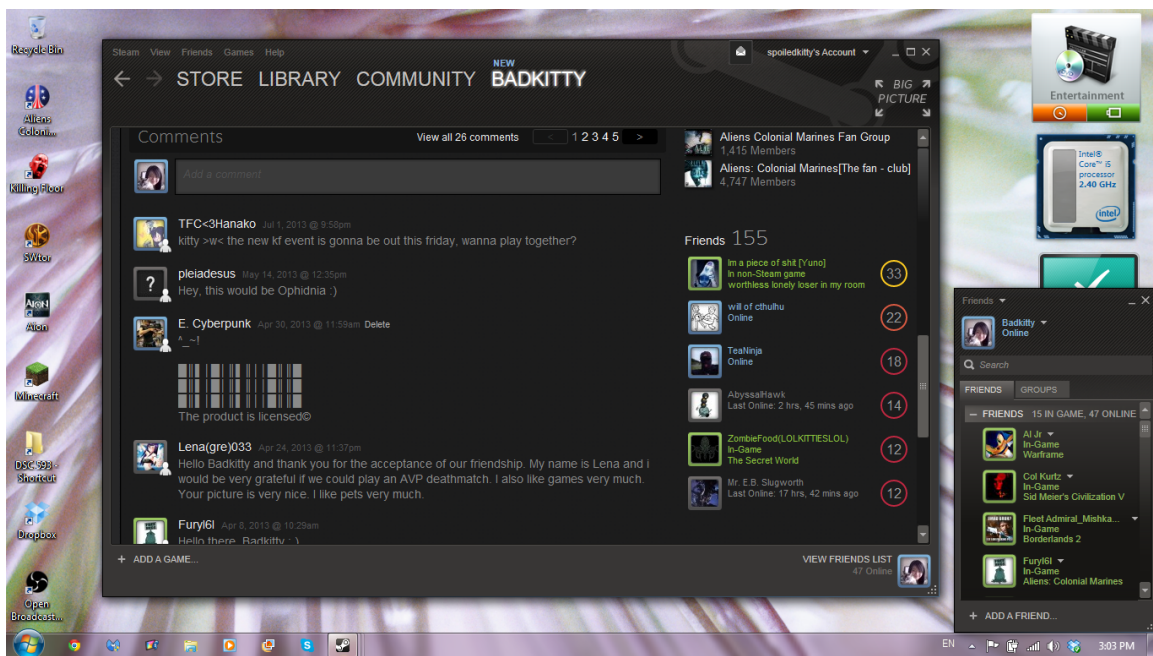
1. Security issues.
2. Privacy issues.
3. Disruption of personal and academic lives.

In conclusion, participants would like to have their online classes with all of these social media features and functions. However, they believe that the features and functions should be included in a platform that is authorized by the school, instead of using extra social media or software that is not under the school’s protection, and might disrupt their personal and academic lives.

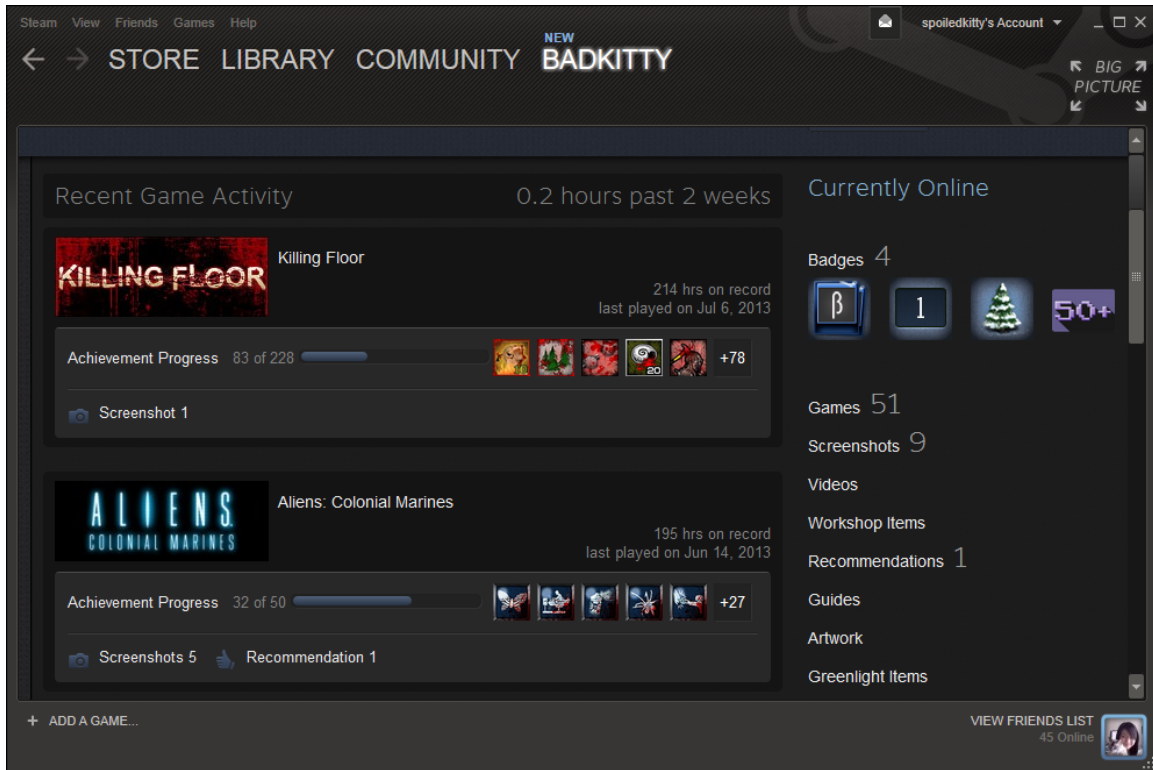


## Steam®

*Steam* was found to be one of the best clients to use during the investigation, because it is a platform that allows people to get together and play games, socialize, and create new projects. It has functions similar to *Facebook*, such as IM, voice chat, a customizable profile page, comment and activity logs, personal game collections and the ability to gift items. When compared to *Skype* or other IM clients, it lacks in its video chat and file sharing capabilities. However, the personal collection section for games, screenshots, videos, workshop items and artwork can be a good section for online creative education and a personal gallery.

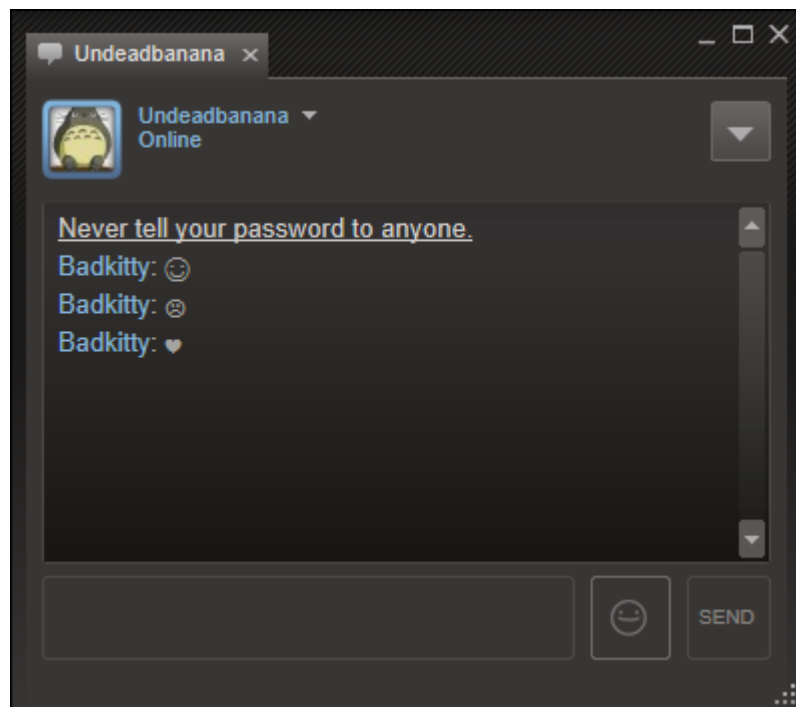


Steam IM and its main window ("Valve," Steam Screenshot)



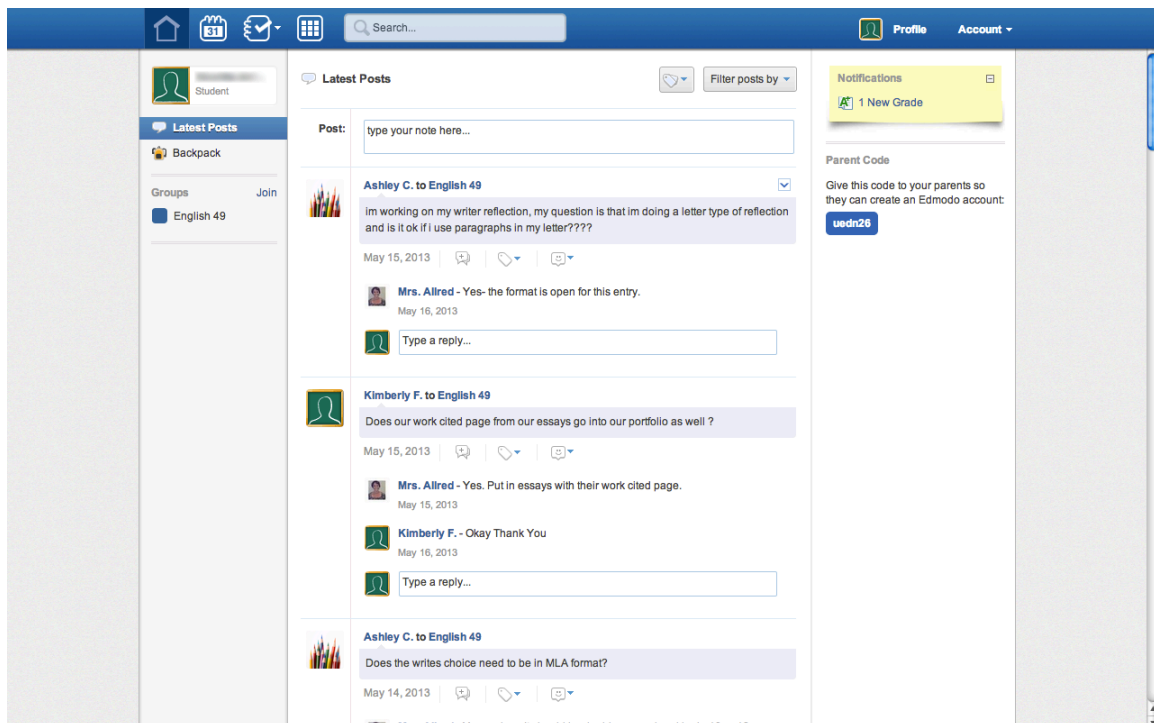
Steam users personal page: Activity logs and collections ("Valve," Steam Screenshot)

Valve added a few new features to *Steam* during June 2013, within their beta version. One feature was emoticons for instant messages, such as a smiley face, a sad face and a heart. However, players can earn new emotes by collecting and completing game challenges. This triggered an idea for the project; it can be another way to reward students' for their achievements of academic activities.

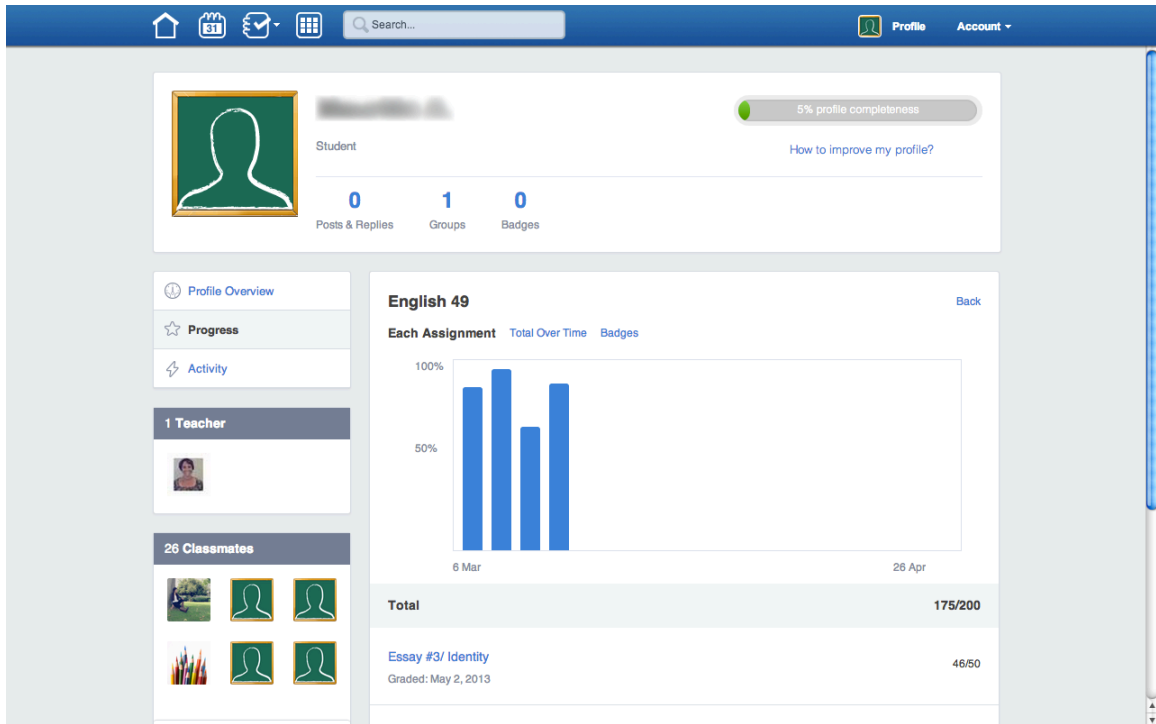


## Online Education Resources

During the group interviews, several participants agreed or suggested that they enjoyed the functions and interactions within *Facebook*. I found that *Edmodo* (<http://www.edmodo.com/>) is an online education support tool that helps connect learners and educators together. It works in a similar manner to *Facebook*, but lacks much of the interactive functions found in *Facebook*, such as IM, voice chat and video chat.



Edmodo user's home page screenshot



Edmodo user's grade page screenshot

One of my favorite designs in *Edmodo* is the visualized grade display. This is very similar to the suggestions that participants made during the interview to help “visualize the grade.” It might look similar to the ‘grade section’ of the first stage prototype, but unlike *Edmodo’s* grade display, it will allow users to see and compare their grades with others.

# RESEARCH DESIGN

## Methodology

1. The literature review identified current and potential problems and advantages that could occur or apply in online creative education.
2. Initiate pilot surveys and interviews to discover and narrow down the research roots.
3. Use the opportunity of being a teaching assistant of the online design class GRA 294 to observe problems and students' learning process.
4. Analyze the data of the pilot surveys and interviews; compare them to the pilot observation results from the GRA 294.
5. Evaluate and consider all of the possible conditions.
6. Construct a survey questionnaire to find out the pros and cons of students' online class experiences, as well as their opinions of online creative education.
7. Build a online creative education platform prototype based on the literature reviews and survey results.
8. Group interviews: The purpose of using group interviews, instead of individual interviews, is to trigger new and richer ideas between participants and the researcher.
  - Present the first stage of the prototype during the group interviews and see what should be kept / changed / improved.
  - Follow up with 5 interview questions.
  - At the same time, allow participants to go back to discussing and suggesting ideas about the prototype, whenever needed.
9. Evaluate and analyze the final data.
10. Build the final prototype.

### 1. Pilot Observation and Analysis

The pilot surveys, interviews and observations are valuable clues that can be used to pin down the research direction. However, they are not official or organized data.

Many of them do not even provide the direct related clues to my final research plan or focus. However, the information from all of the pilot activities helps to nail down the research goals and the research questions.

## Online Creative Education Investigation

The majority of the investigation is based on literature reviews and existing studies. The pilot surveys, interviews and observations offer valuable ideas to compose the formal survey and interview questions. The actual research does not include educators as participants; however, during the pilot interviews, there were several educators that provided opinions and tips about online creative education.

One of the creative educators stated that “Students would like online classes, but the online class research team of ASU found that students did not enjoy being taught the straight recording materials from previous classes. They prefer the online learning materials being visually and vocally designed, such as a tutorial or a vivid presentation.”

Hence, we learned that online education should have the same quality and learning outcomes as traditional classes, but it needs to be delivered and designed in a different way.

## 2. Survey

The purpose of the survey was to better understand the general advantages and disadvantages of online classes today through students’ past experiences. It was also the first opportunity to bring up the idea of online creative education to students. In the mean time, the survey could see what the reactions and opinions of students are when it comes to online creative education. Most importantly, the survey will provide clues to building the first stage of the prototype and composing interview questions later on, to make sure the research process and questions are on the right track.

The participants were senior visual communication students from GRA 424 (Advanced Media) at Arizona State University. There were 21 people total: 16 females and 5 males. They were aged between 18 and 25 years old.

## Development

The survey requires participants to enter their participant number to continue. This is for anonymous data collection and also for giving participants their extra credit.

Q1 Please enter your participant number:

Second part of the questionnaire is for the matrix questions to understand the basic information of my participants.

Q2 Your age group?

18 - 25,  26 – 35,  36-45,  45 and above.

Q3 Your gender?

Female,  Male.

Q4 Your ethnicity?

Asian,  Black/African American,  Caucasian,  Hispanic/Latino,  Middle Eastern,  Native American/Alaskan,  Pacific Islander,  Other (please specify).

The third section is designed to help the research to understand how students' experiences about online classes and what they like and dislike about online classes.

Q5 Have you ever taken any online class?

yes,  No.

Q6 What are the reasons that prevented you from taking an online class?

Never got a chance. The classes I need are not offered online.

Unfamiliar with technologies, such as computer, internet or online blackboard system.

I do not trust online classes.

I do not want to take class online.

Q7 How was your overall experience of taking an online class?

Positive.

Depends on the subjects or the instructors.

Negative.

Other (please specify)

Q8 What did you like about your previous online classes (essay question)?

Q9 What did you dislike about your previous online classes (essay question)?

The last question is to see how students think about bringing a studio class online, and hopefully discover the reasons behind it later on during the interviews.

Q10 Do you think it is possible to take a studio class online if it was offered?

(multiple-choice)

I have taken an online design/art studio or related class.

I think it is doable.

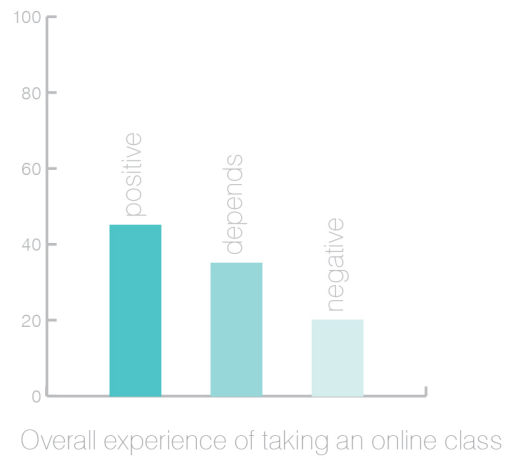
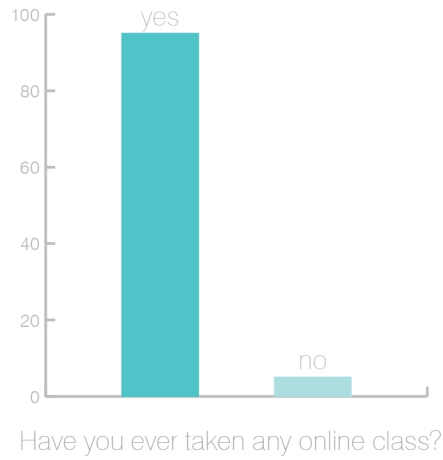
I don't trust any online class.

I don't think it is possible.

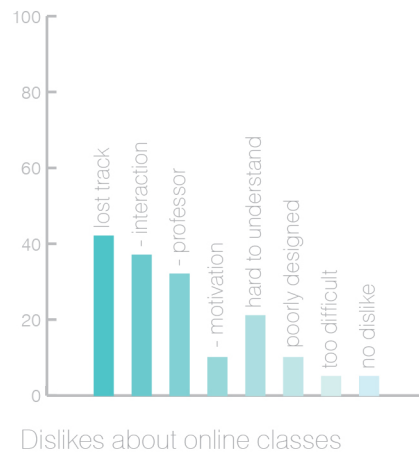
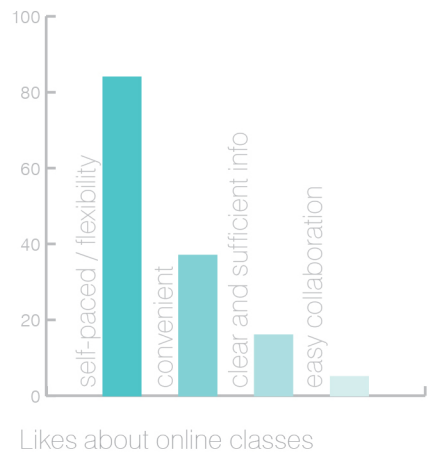
I am not sure, but I would like to take an online studio class.



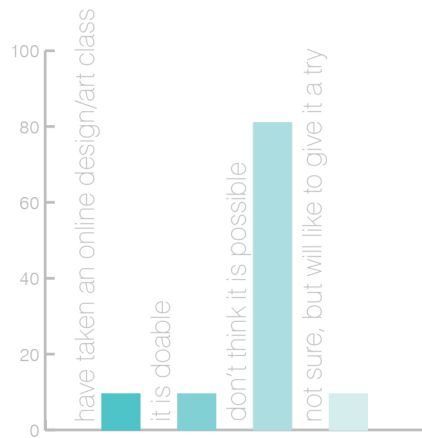
## Response and Results



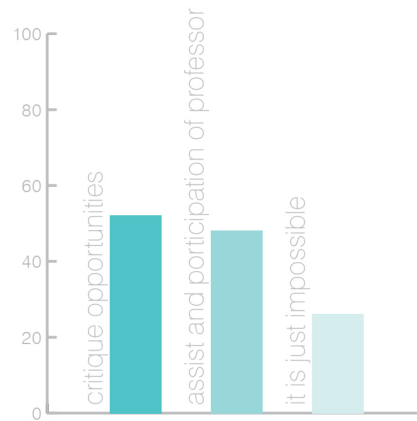
### Percentage of students that have taken online classes / Experience of taking online classes



### What do students like and dislike about online classes



Is it possible to take a studio class online?



What would you suggest to make an online creative class more approachable?

### Student opinions of online creative education

## 3. First Stage of the Online Education Prototype Mockup

The purpose of the first stage of the prototype is for presenting the possible solutions to solve the problems of current online education and future online creative education.

Based on the survey data, the majority of participants have had a positive experience with their previous online classes. However, most of them presumed that online creative education couldn't work as well as traditional classes in terms of personal studio classes.

The participants offered their opinions about why they think that online creative classes don't work. According to their answers, most participants did not seem to know that existing technologies and resources could be applied to online creative education to fix the issues they were concerned with. Even though they knew the technologies existed, they did not think they could be tied together with online education to create a better outcome. Hence, presenting the solutions that can solve the problems that they mentioned before the group interviews will be a good start.

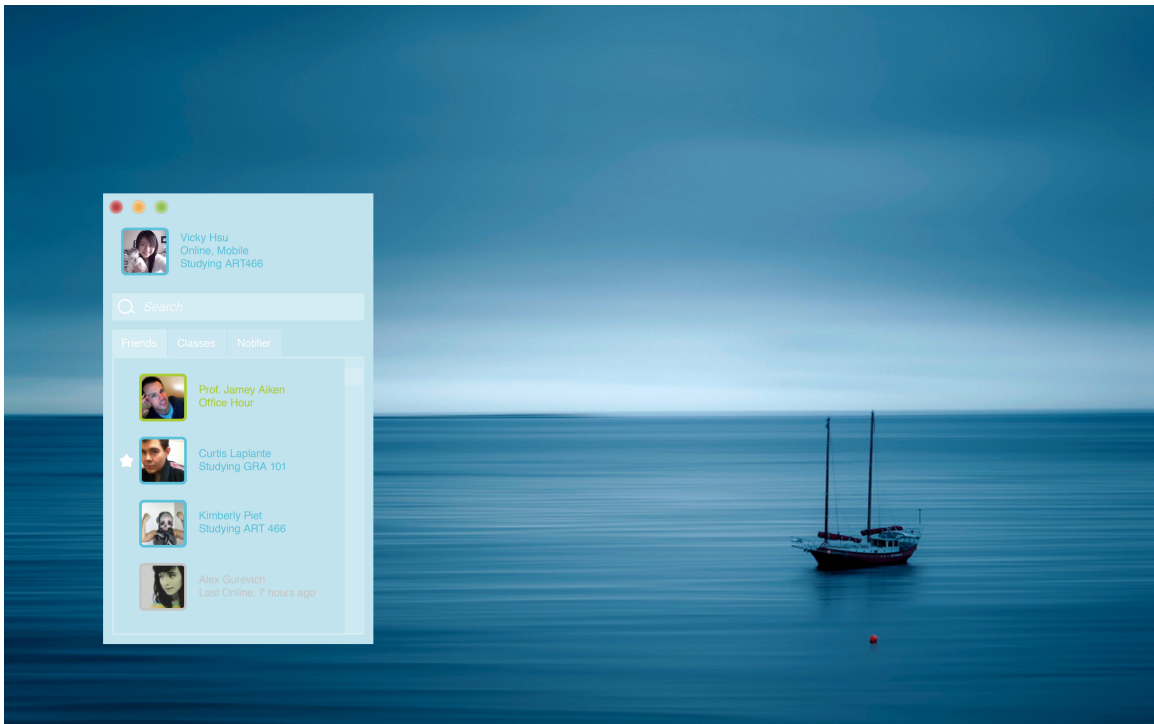
This also allowed participants to help improve and contribute new ideas to the final prototype.

## Inspiration

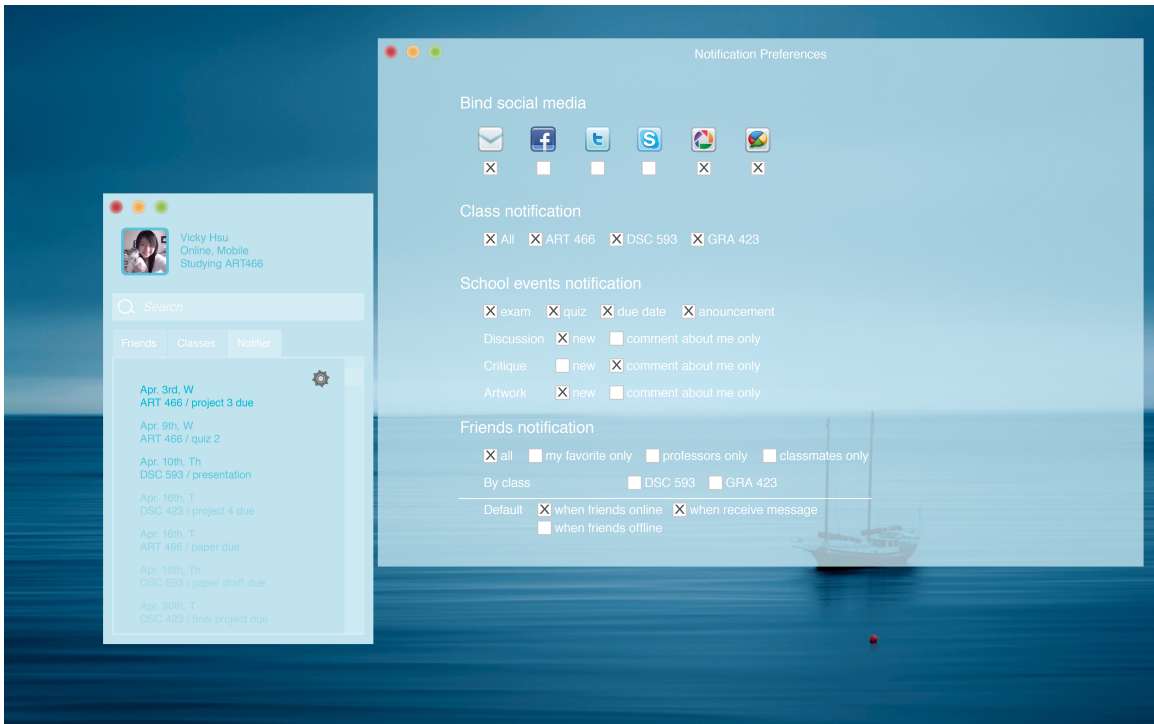
The inspirational sources of the first stage of the prototype were based on MSN, Skype, various gaming environments, virtual galleries, justin.tv and Steam®. Steam® had the most influence on this stage of the prototype. However, the survey data did help in deciding what functions were needed. The research process will continue to determine what existing technologies and methodologies can be helpful assets for building this online creative education prototype.

## Development and the Results

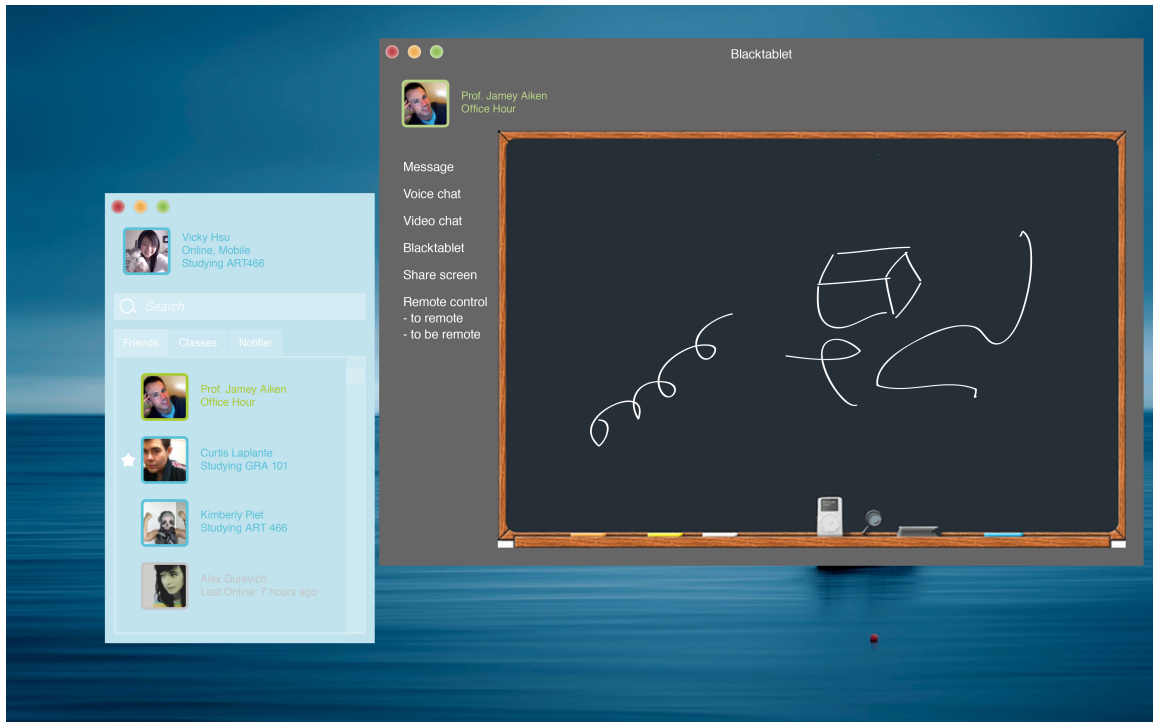
The idea of the application is a standalone application that does not require online classes to be accessed via websites. The benefit is that the users are allowed to multitask (e.g., browsing other websites and operating other software). The biggest benefit is that students can pin the online class client on top of the desktop and watch class tutorials or demonstrations and follow the process on their own computer at the same time. This is similar to all workshop type classes, where students pay attention to the instructors' demonstration and follow along on their own computer at the same time, to boost the learning outcome and make sure they understand the demonstration.



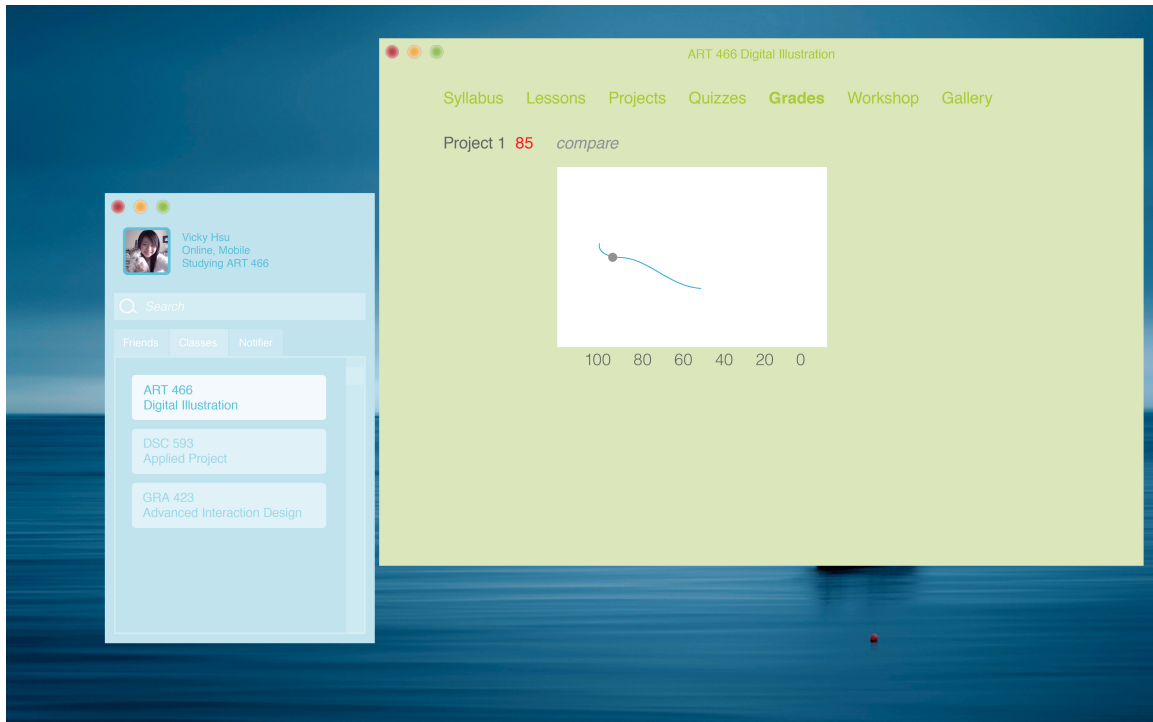
Moreover, the application can be kept running in the background of the computer the entire time, just like in any other instant messengers. Students can continue working, enjoy the entertainment media, or anything else, all while it is running, without worrying about closing browsers. This means that the application can run in the background while it is minimized, so no matter what the users are doing with the computer, even if they aren't opening the friend or class list windows, they can still receive notifications from the application and messages from their classmates and professors.



Based on the issue that most participants had with online classes, which was a lack of notification, the application will support linking the profiles to an e-mail, SMS and other popular forms of social media. The participants can choose how and when they will like to be notified when there are any updates to information or new communications from their classes.

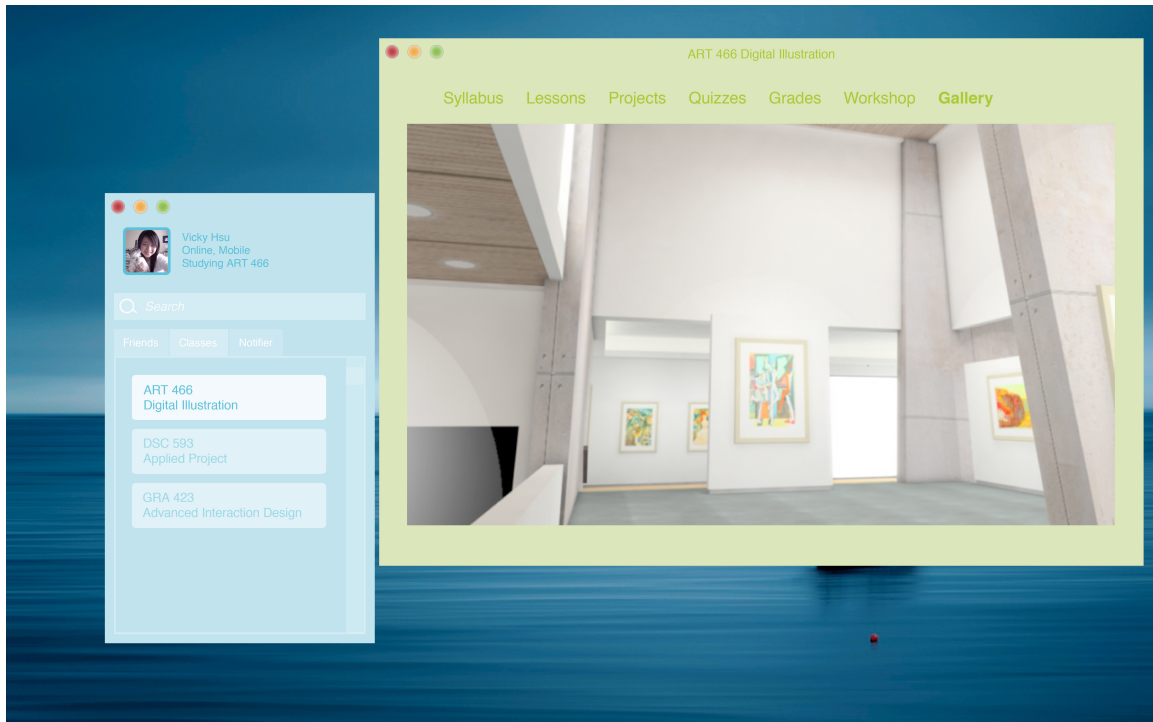


The communication tab should offer the functions of: instant messaging, voice chat, video chat, screen sharing, remote control, and tablet. These are common communication methodologies that exist in different communication software or websites. They are very simple to use and can fix a lot of interaction issues for online education. They can also keep communication more visualized.



Motivation is another problem with online education. One of the biggest reasons is that students cannot see or learn from others. As such, they do not know how their performance is compared to that of the entire class. In addition, no one, besides the professors, knows their learning progress and grades.

This is a way that the research found could be used to encourage and warn students at the same time, but still keep their privacy safe. Every student can see their grades and compare their grades to others to know where they stand amongst their peers.

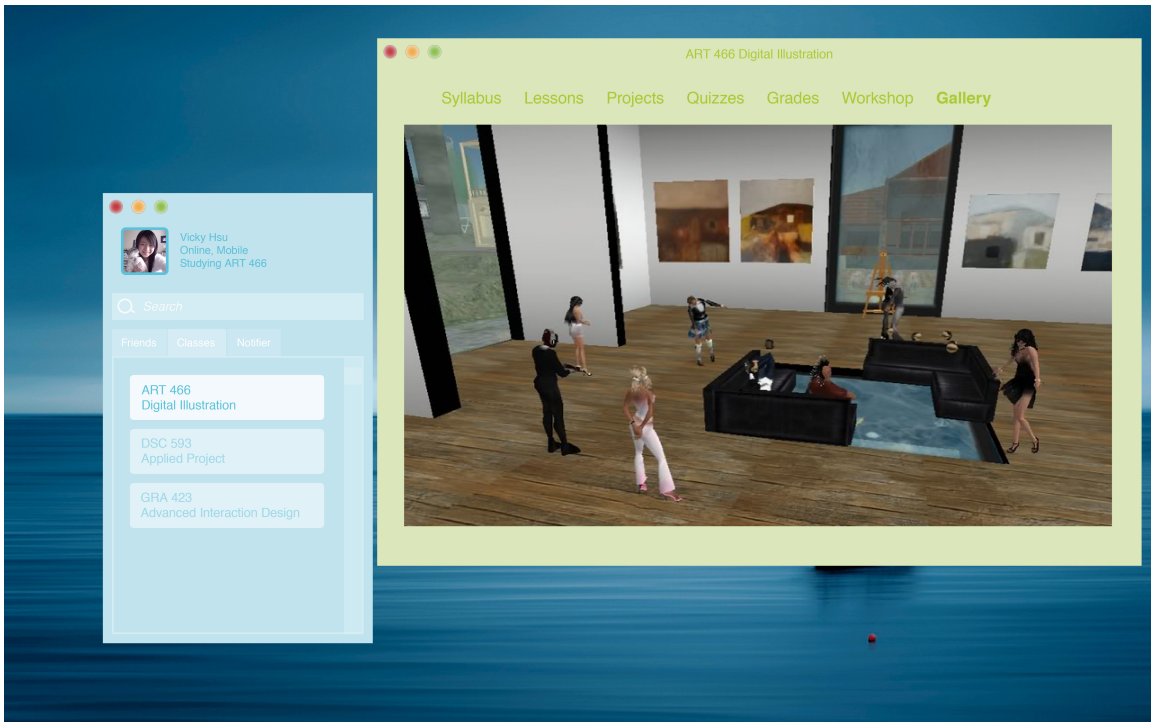


Assistly Inc. (2013). Virtualgallery.com. Retrieved from <https://www.virtualgallery.com/>

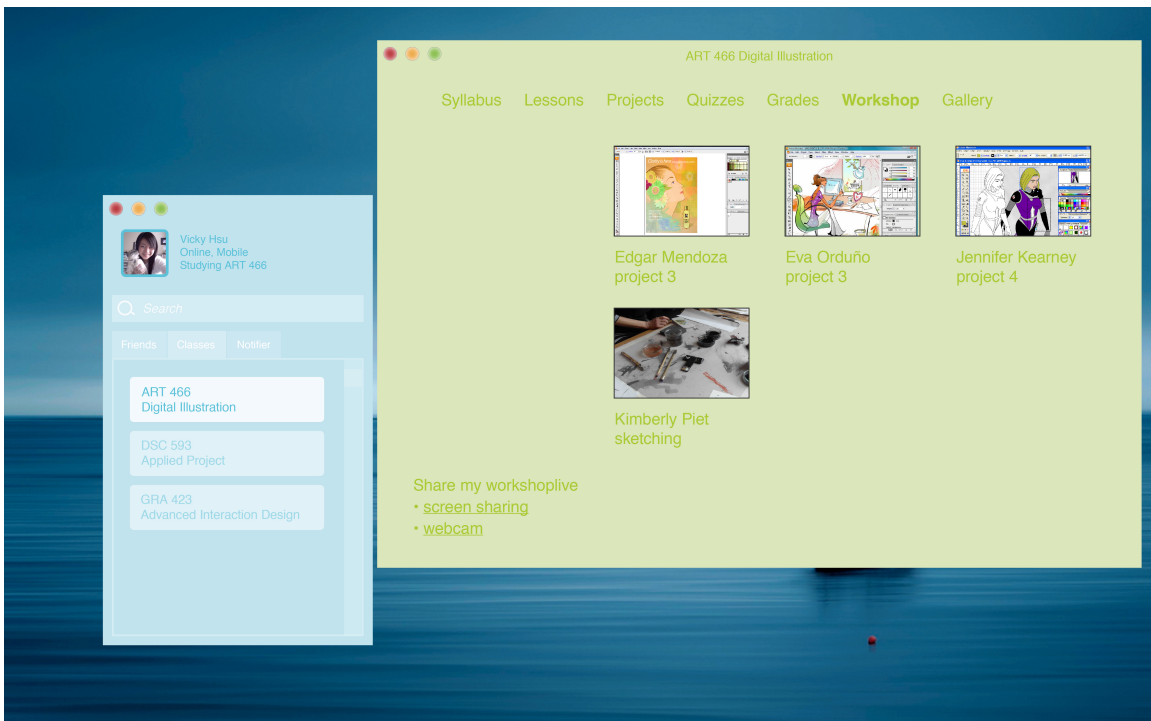
3d Ltd. (2010). Exhibit. Retrieved from <http://exhibit.com/>

While searching for inspiration from games, the research revealed several websites and software offering online virtual gallery services.





Use the gaming environment that is similar to *SIMS* and *Second Life* to improve the virtual critique space for online creative education.



Students believe that online creative education might take away their opportunities to learn from others. As such, it could be very difficult to exchange techniques or see

other people's work in progress to learn from and encourage themselves. The research found that using live streaming software or websites, such as *Justin.tv*, to show others how they applied their techniques could solve that problem.

During the pilot survey, one of the participants mentioned that he taught digital illustration via *Justin.tv*. This platform offers great interaction opportunities for the demonstrator and the people who are learning from him/her. The learners can type their questions and comments in the chat, so the demonstrator can answer right away. Another valuable asset is the ability for the demonstrator to record and save his/her demonstrations to allow for slow learners, learners who want to review the demonstration later or someone who missed the lesson.

#### 4. Interview

The research involved group interviews, instead of individual interviews. The purpose of the group interviews was to trigger richer ideas between the participants and the researcher via extra interactions.

The participants are senior visual communication students from GRA 424. There are 26 people in total: 22 females and 4 males. They were aged between 18 to 25 years old.

#### Development

1. Based on the survey data results.
2. Make the first stage of the prototype based on the data.
3. Build questions that can answer the research questions and that are compatible to present during the first stage of the prototype. The interview questions are:
  - ✓ What are the most important elements of a studio class that you think should be brought into an online design class?

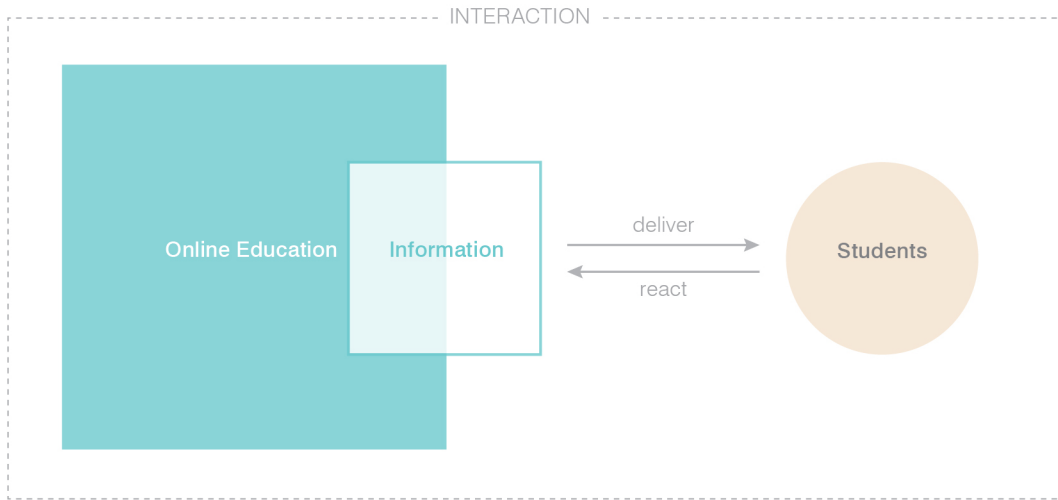
- ✓ How would you bring these elements into an online design class?  
(Please indicate a digital solution)
- ✓ What features and functions would you like to have for your online design class?
- ✓ For people who have video gaming experiences, what are the motivations that keep you playing?
- ✓ From your video gaming experiences, what can be used to improve an online design class?

## Implementation

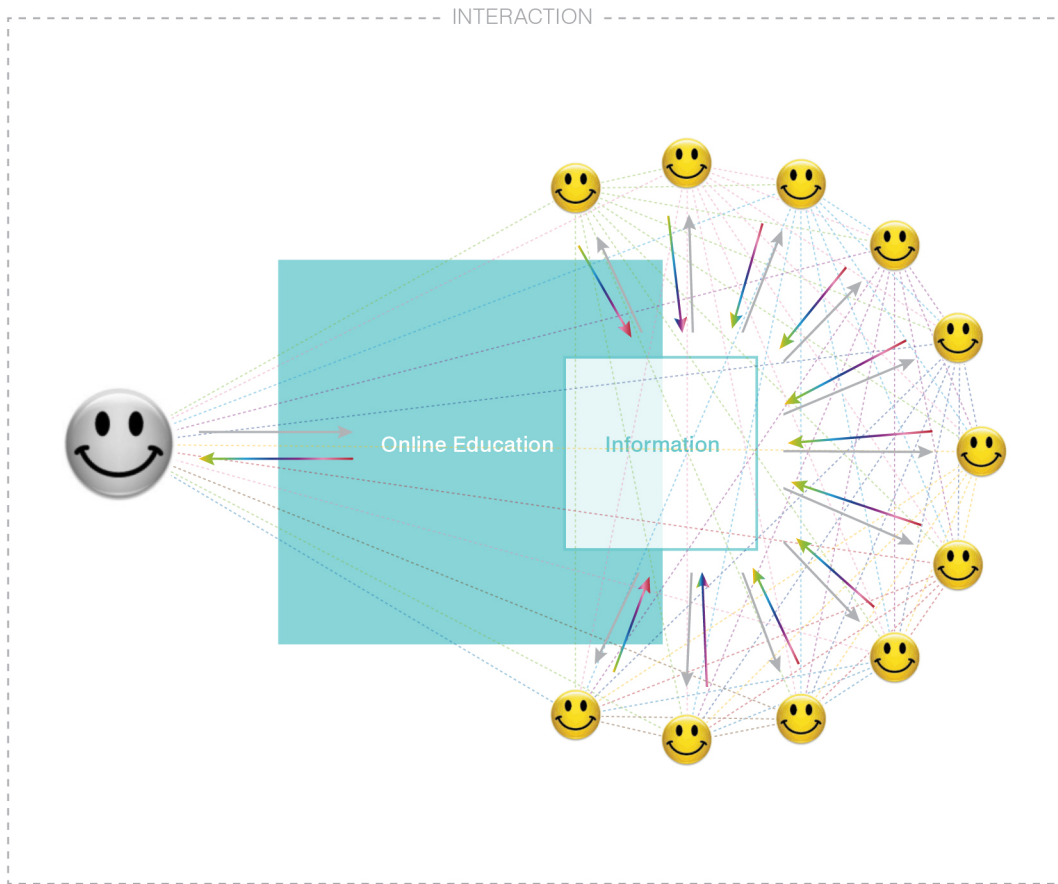
1. Present the first stage of the prototype before giving out the interview questions. Let the participants know what the functions are that are meant to fix the problems they mentioned during the survey.
2. Follow up with 5 interview questions.
3. Allow the participants to go back and forth to discuss and suggest ideas about improving the prototype.

## Findings and the Interpretation of the Results

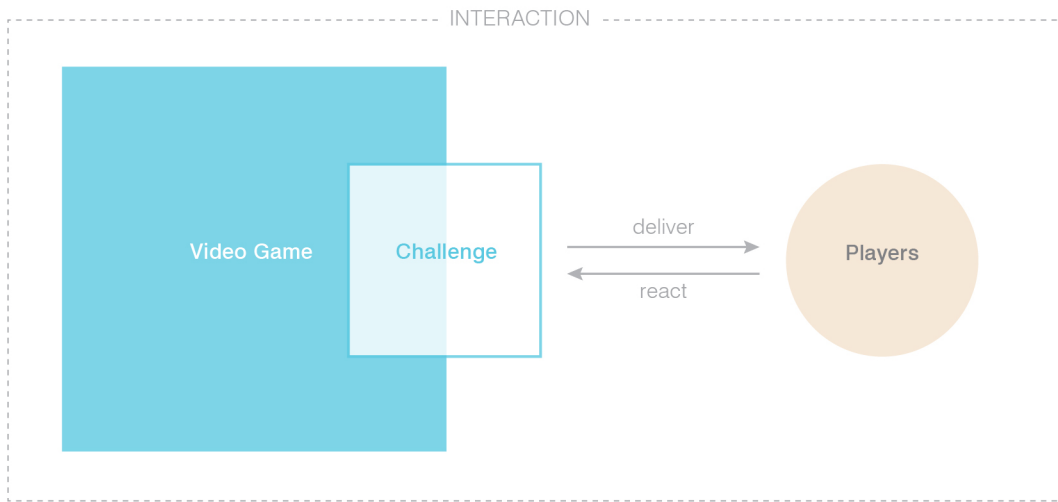
Generally, the idea is that almost 100% of the participants agreed that better human interactions make everything more enjoyable, rather than doing things solo in either online education or during video gaming experiences.



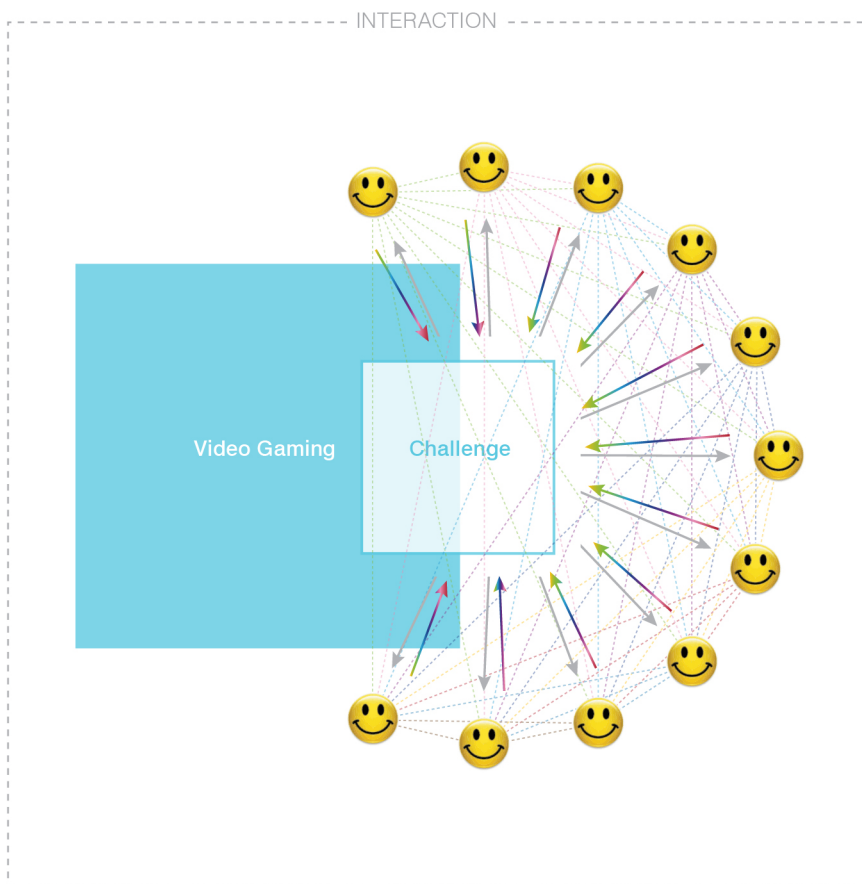
Studying or working on an online class alone



Participating in an online class with sufficient interactions with classmates and instructor

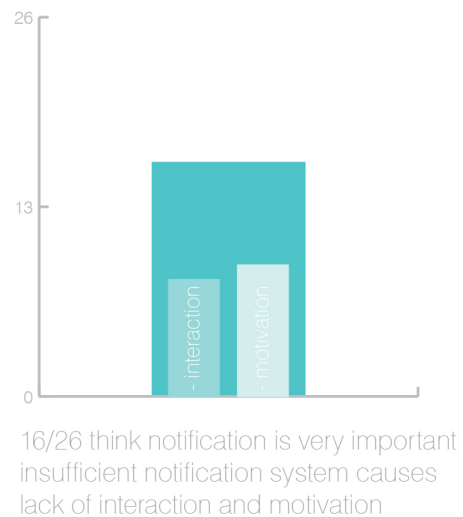
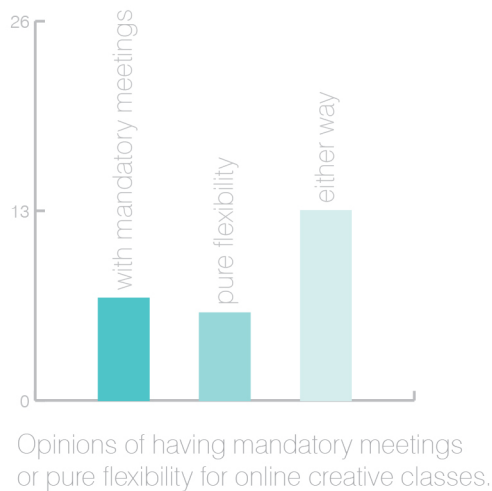
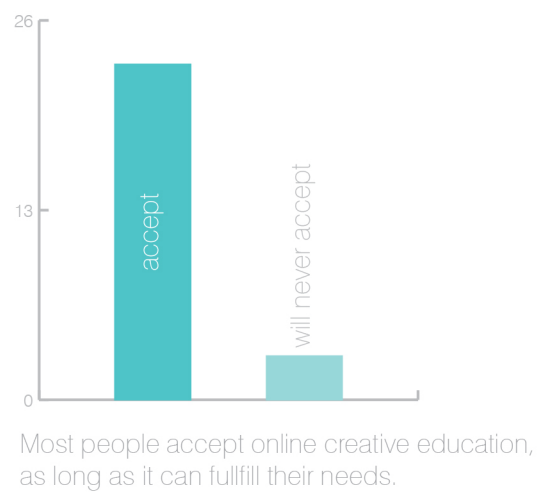
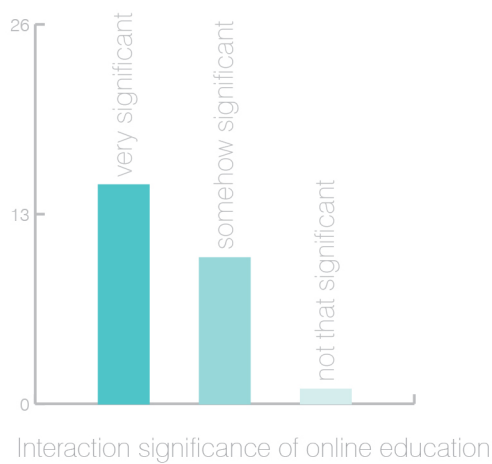


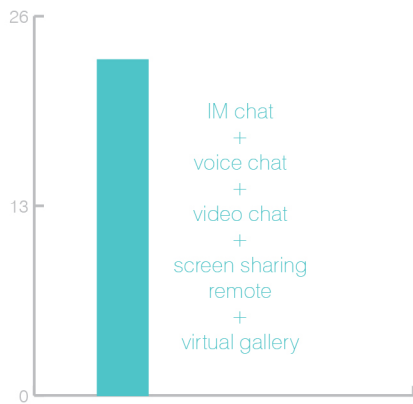
Playing a video game alone



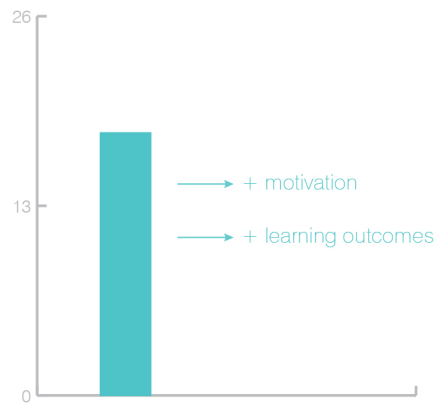
Playing video games that allow you to interact and even cooperate with other players

The interaction issue is the main concern of the students about today's online education, especially for online creative education. The visual presentations, interpretations and critiques are a big part of traditional creative education. Because of this, online creative education would face bigger challenges than other concept classes.





23/26 believe that IM, voice, video chat, screen sharing (remote) and virtual gallery can improve interaction problems



18/26 think that participation of professors and interaction with professors is very important, this affects motivation and learning outcomes

**In the survey Q10 Do you think it is possible to take a studio class online if it was offered?**

- 9.52% 2 I have taken an online design/art studio or related class.
- 9.52% 2 I think it is doable.
- 0% 0 I don't trust any online class.
- 80.95% 17 **I don't think it is possible.**
- 9.52% 2 I am not sure, but I would like to take an online studio class.

Total Respondents: 21

(This is a multiple-choice question, to evaluate each opinion separately)

Compared to the survey data, the interview results illustrated that **23 out of 26** people (who were split into four separate groups for the following statistics: G1, G2, G3 and G4) will accept online creative education. This might be affected by the introduction of the first stage of the prototype and the positive experiences of previous online classes shared by other participants.

**8/13** participants from G1 and G3 mentioned that they would like their online creative education platform to be similar to **social media**. However **6/8** of them have **security** and **privacy** concerns about social media, so they would like to have similar functions, but not use social media as a resource for their school matters.

**19/26** participants believed that as long as the online creative education can **stay visual**, it would work fine.

20/26 participants were very excited and believed that a **virtual gallery**, along with their own avatars, can help bring online creative education to the next level and fix a lot of interaction problems for critiques.

Every group mentioned adding **achievements/challenges** to the class requirements or extra credit and giving virtual **rewards** based on students' academic achievements.

18/26 participants believe this could be a fun and motivating learning experience if these features (e.g., achievements/challenges) are added. Achievements will act as a source of encouragement and motivation. They will also act as a milestone and grade reminder for students.

17/26 participants think learning via creative or design related games is a fun way to learn; it may also cover the part of the in-class activities. They also suggest using multiplayer and cooperative games to boost learning motivation with competitions.

The idea of **endorsing skills and events**, similar to LinkedIn, was suggested by G3 and G4. Once the idea was brought up 100% of the participants agreed that the function should be included in the online creative class platform. This is not only a reward for the students who are willing to teach and help others, it also allows students to know who to ask for help with particular areas when their skills are lacking.

An **anonymous critique** function was suggested by G4. 4/6 participants in this group think this function will offer opportunities for them to get some 'real' help, which would be taking advantage of anonymity in online creative education. They describe that, in person, most of the time they are afraid to give peers suggestions if it involves any negative opinions. They are afraid some people may take the criticisms very personal and sometimes even disrupt their friendships. So they hope to take advantage of anonymous critiquing online to have an option if they want to critique



anonymously or not (only instructors are allowed to see who posts the critique in this case).

Some participants of G4 suggested the option of leaving voice messages as critique feedbacks. This solution would provide a clear and personable expression of their opinions.

13/26 participants think there should be virtual boards or spaces for students and professors to share ideas, inspirations, visual examples and resources. This can help students to make their project goal easier by better understanding the visual examples.

G4 noticed that some of the first stage of the prototype's designs is [Skeuomorphism](#), such as the tablet being presented as a blackboard. They believe that the online class environment should be clean and clear, where everything should look slick and modern.

G3 suggested having a **life bar**, such as that which is seen in a gaming environment, to keep track of the grading and social points from the participation in the activities.

G1 brought up the idea of **virtual groups or sittings**. 3/6 think this would help students socialize with each other and provide better interactions.

One of the participants from G4 mentioned **m-learning**. The participants were concerned about the mobile devices ability to handle many of the interactive functions, especially the avatars and the virtual gallery. Perhaps there should be an additional or secondary gallery critique space for people who need to use mobile or devices with lower specifications. However, they will miss out on the greater interaction opportunities available in the course.

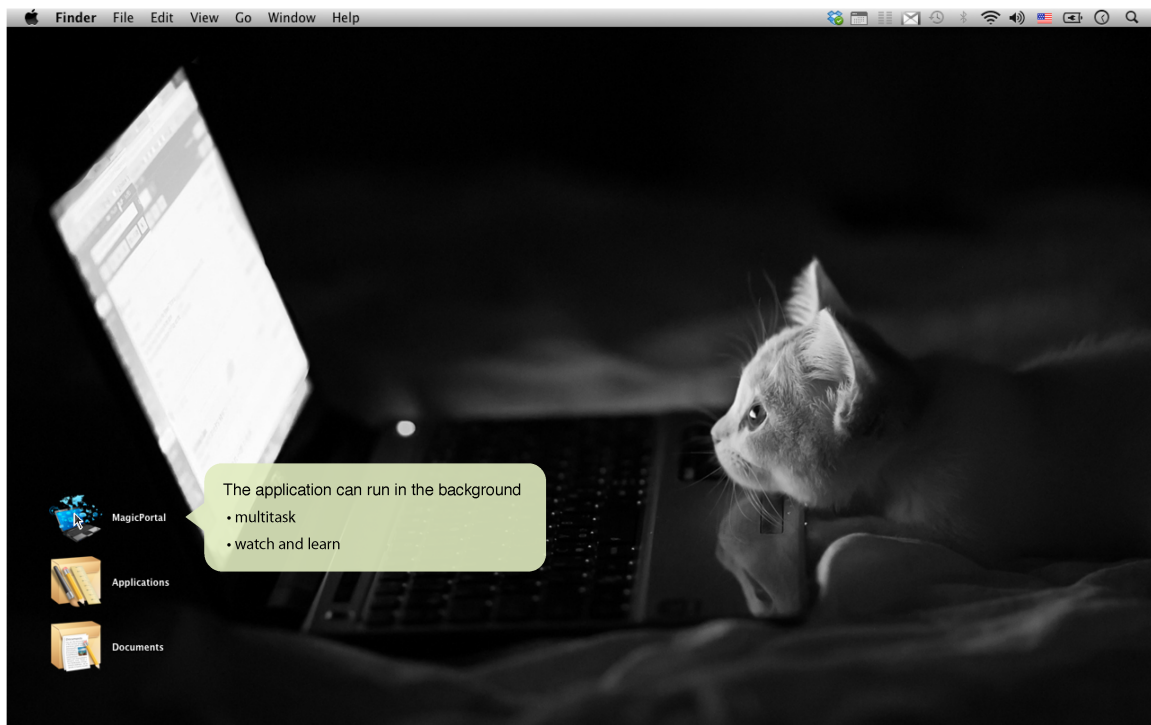
Members of G1 mentioned that it might be an issue if students and professors were not able to see the actual print work. However, one of the group members suggested that presenting the photos of the actual print work could help the issue. This is how most artists show their online portfolios.

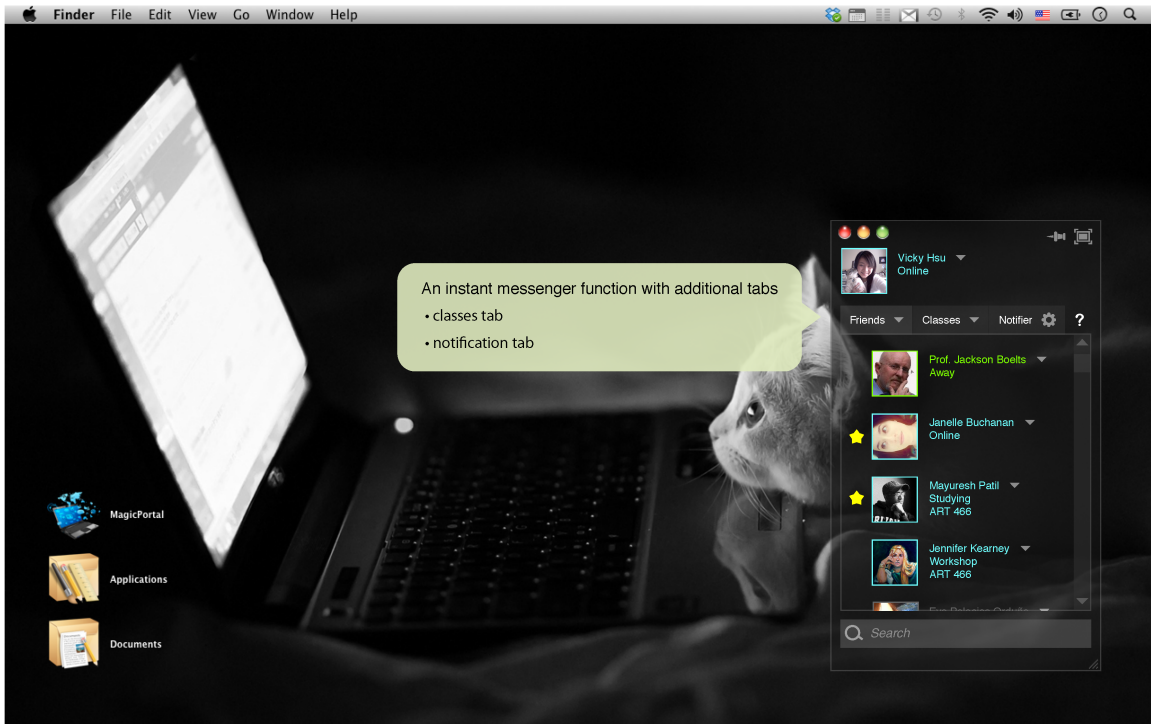
The **academic quality** of online education was brought up by G1. 1/6 said that the online classes are too easy. They are almost like bluff classes. Oppositely, 5/6 said their online classes are usually too difficult, as there is too much reading and they are too hard to understand.

## 5. The Final Prototyp Mockups

The final prototype was developed, based on the interview results and the suggestions made after the first stage of the prototype was introduced.

### Development and Results





Finder File Edit View Go Window Help

“Why don’t you just use existing social media for online education since they are already made?”

Because...

1. Convenience
  - When the application comes as a package, everything students need is being given to them. Students will not spend extra time to install or even learn additional applications, once they go over the tutorial of this application.
2. Security issues
3. Privacy issues
4. Disruption of personal and academic lives

“I am worried about having my school work shared or posted somewhere that isn’t under the school’s protection.”

“I don’t like how Facebook allows others to share or see my things.”

“I would like to separate my personal life and school life.”

“I don’t like to be disturbed while I logged on Facebook just for school matters.”

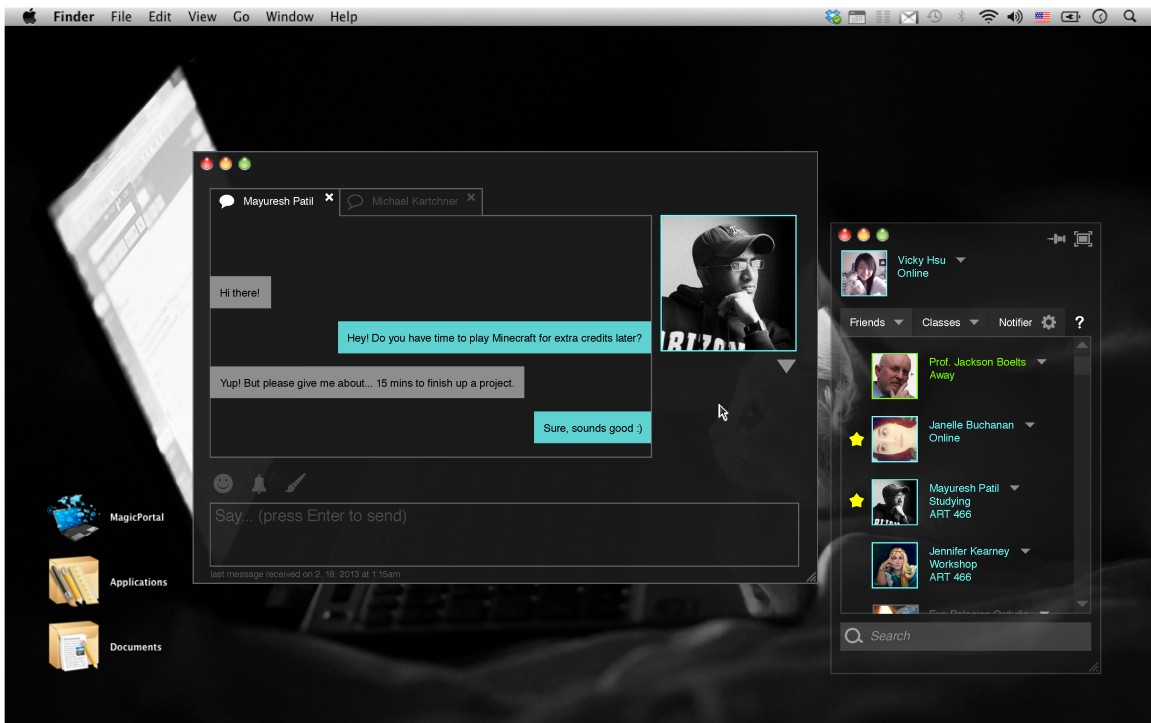
Finder File Edit View Go Window Help

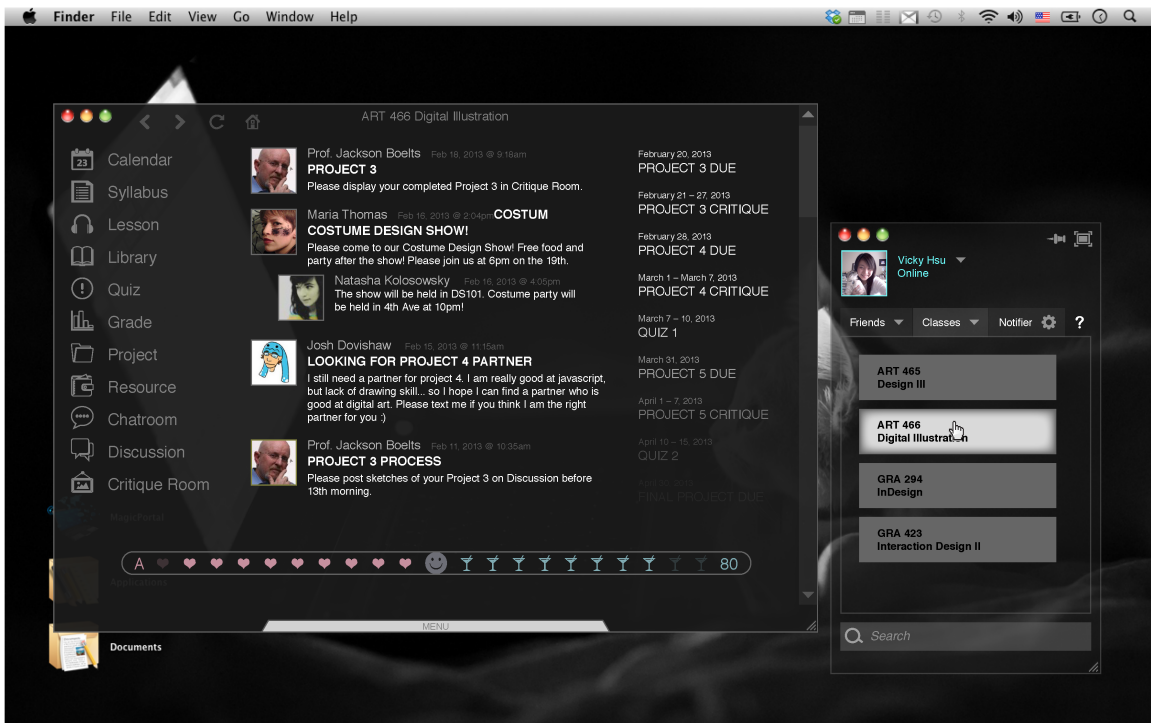
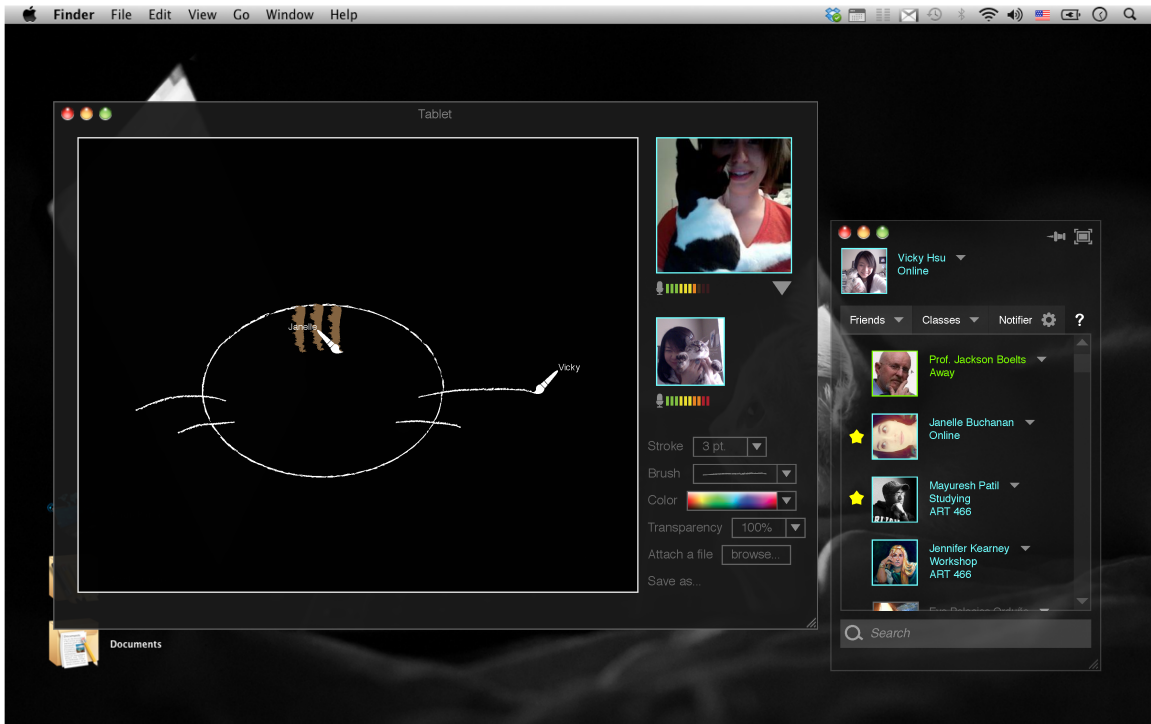
Communication Options

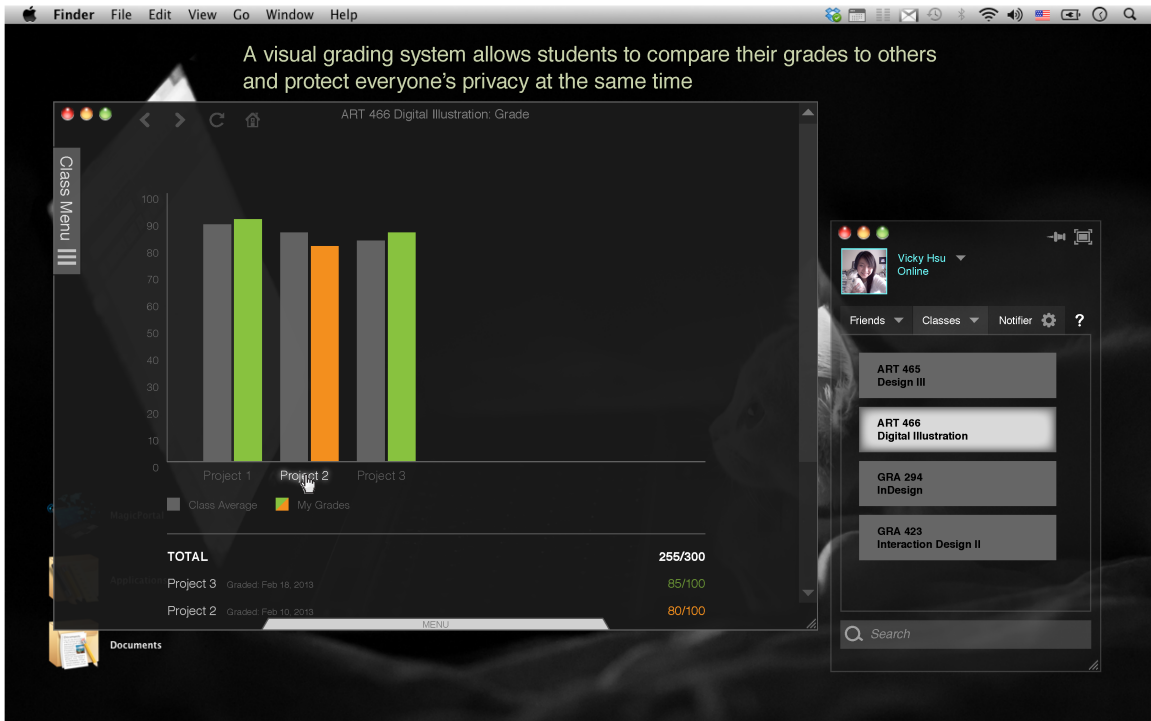
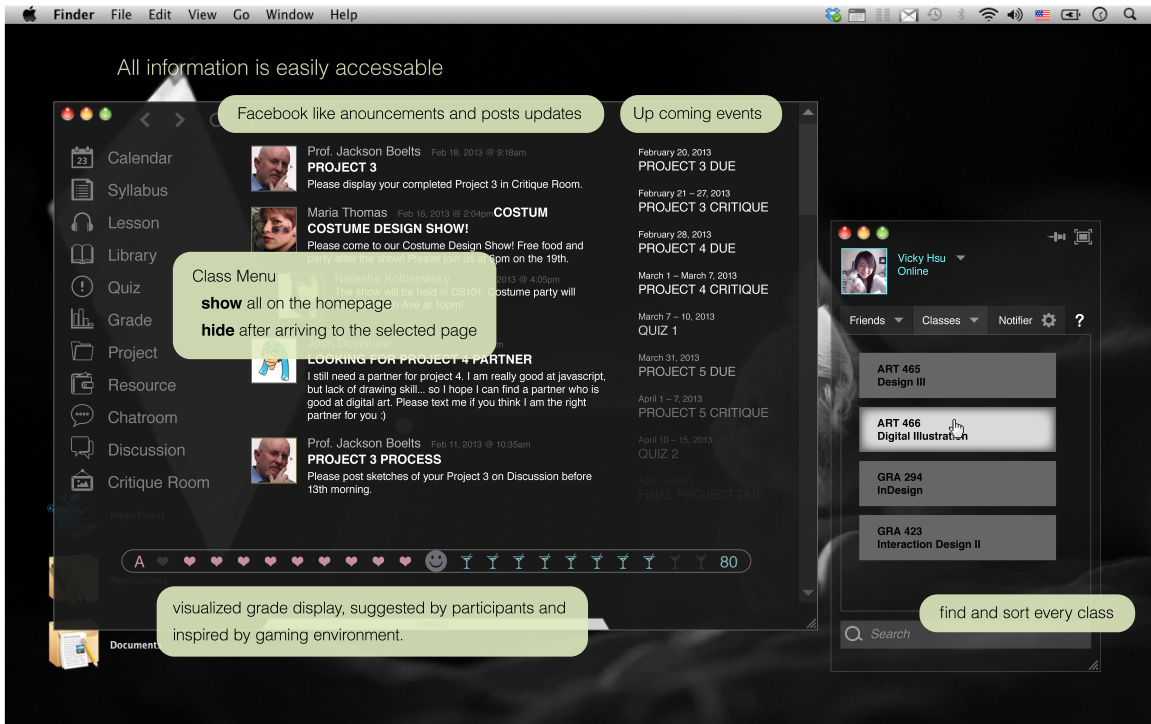
- Increase the speed and details of interaction
- Additional body language and emotional cue
- Indicate more detailed questions and direction of problem solving
- collaboration

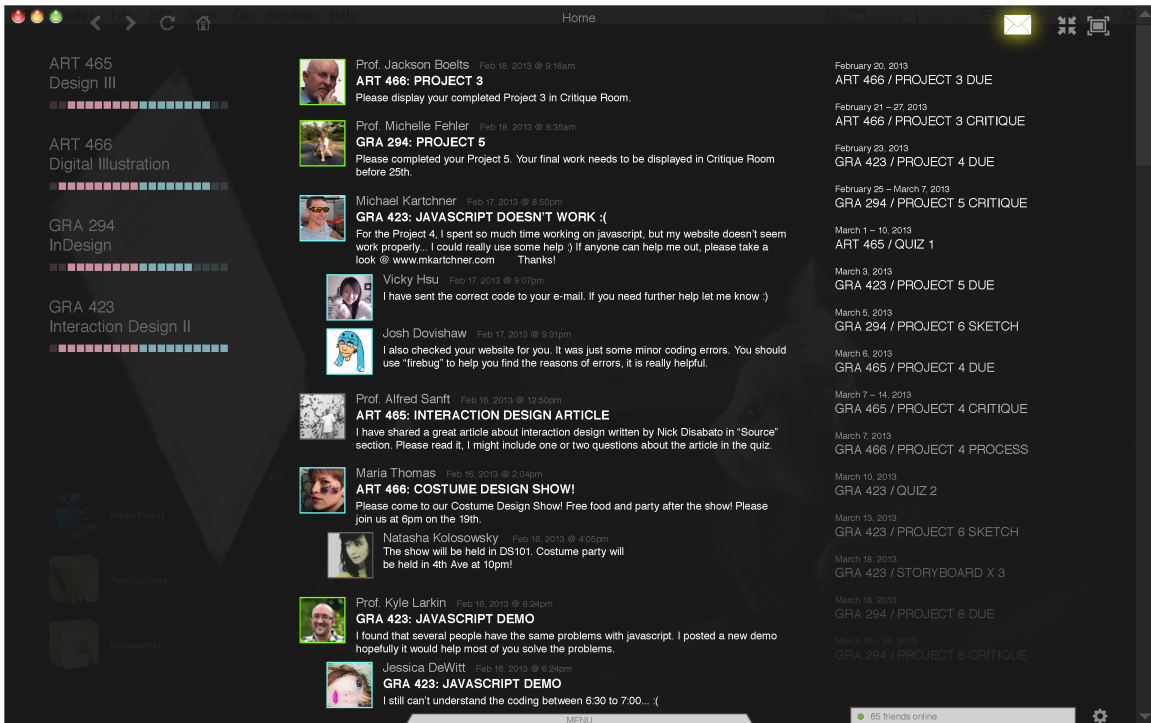
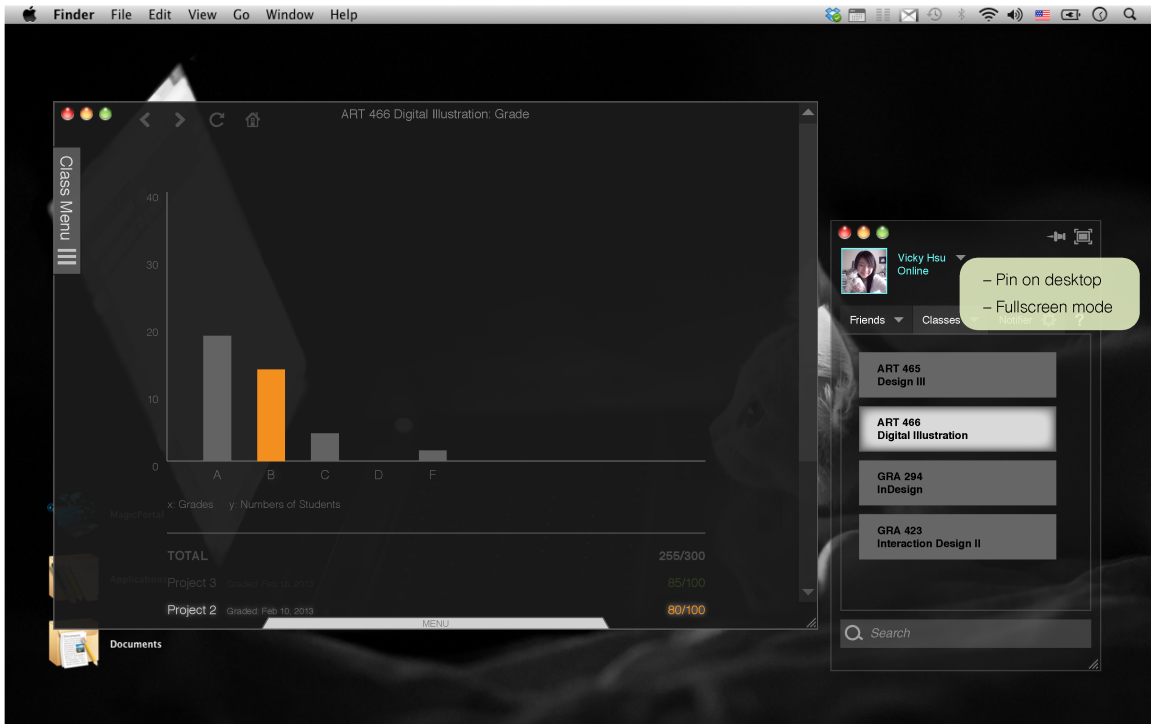
- Encourage students to help and learn from each other

- faster message delivery
- more personal messages than pure text











Finder File Edit View Go Window Help

Due to the lack of notification students forget due dates and miss interaction opportunities

“There really is no push from the professors. You have to keep on track with projects and really push yourself to notice deadlines which is easy to lose track of.”

“I am horrible at remembering when things are due”

“Sometimes it is easy to forget about due dates or miss due dates.”

“I would sometimes forget about when assignments are due since the class was always at the back of my mind. Inaction, deadlines hard to keep track of.”

“Sometimes it was hard to remember due dates, since there wasn't an actual class to go to.”

“I always forget deadlines because it's my responsibility to remember them, and there's no professor to remind me.”

“The response time when contacting a professor, it often took awhile.”

“Sometimes I wouldn't frequently check the site so I would miss out on things.”

There wasn't a notification system when my professor posted topics, or new things to blackboard.”

Applications

Documents

Vicky Hsu Online

February 20, 2013  
ART 466 / PROJECT 3 DUE

February 21 - 27, 2013  
ART 466 / PROJECT 3 CRITIQUE

February 23, 2013  
GRA 423 / PROJECT 4 DUE

February 25 - March 7, 2013  
GRA 294 / PROJECT 5 CRITIQUE

March 1 - 10, 2013  
ART 465 / QUIZ 1

March 8, 2013  
GRA 423 / PROJECT 5 DUE

Search

Finder File Edit View Go Window Help

Customize the way you want to be notified

Settings

Notification

Interface

Friends

Account

Media bound

Class notification

Events notification

Discussion

Critique

Artwork

Documents

Vicky Hsu Online

February 20, 2013  
ART 466 / PROJECT 3 DUE

February 21 - 27, 2013  
ART 466 / PROJECT 3 CRITIQUE

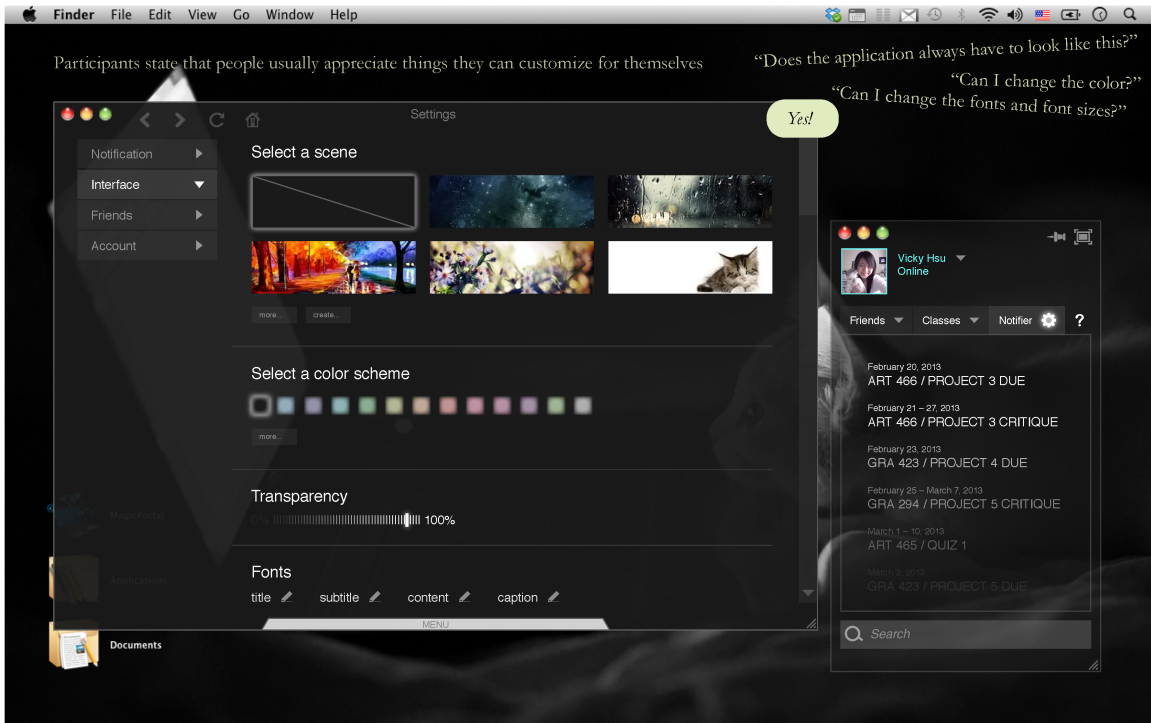
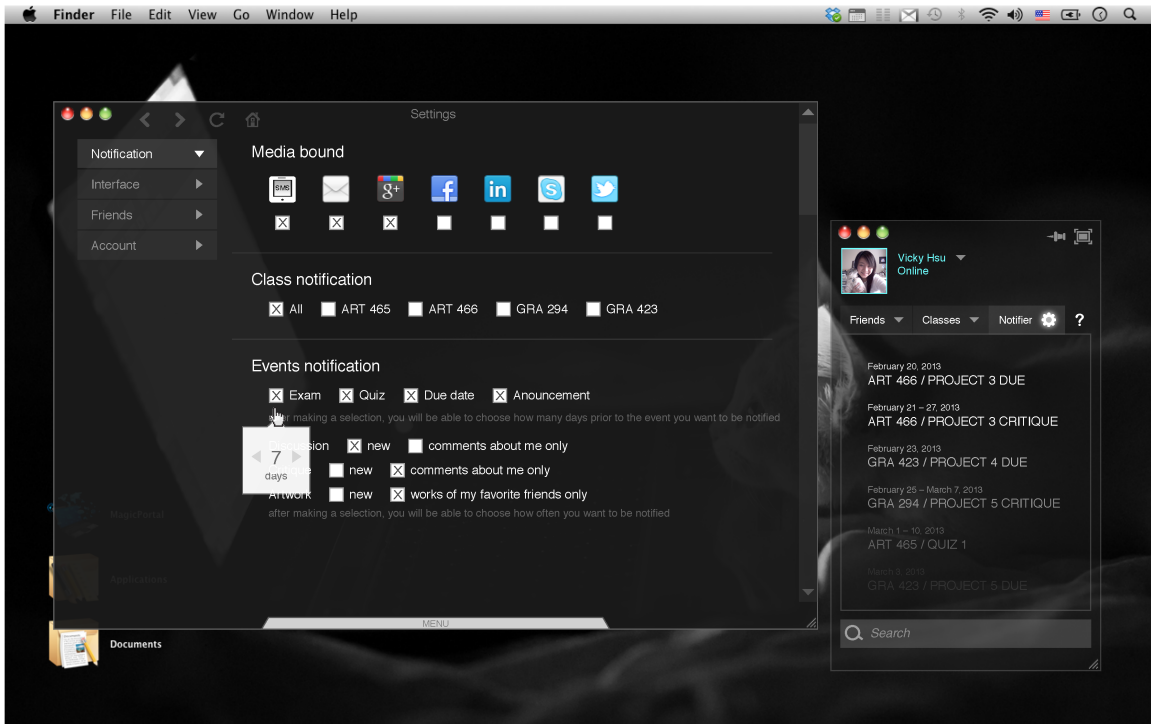
February 23, 2013  
GRA 423 / PROJECT 4 DUE

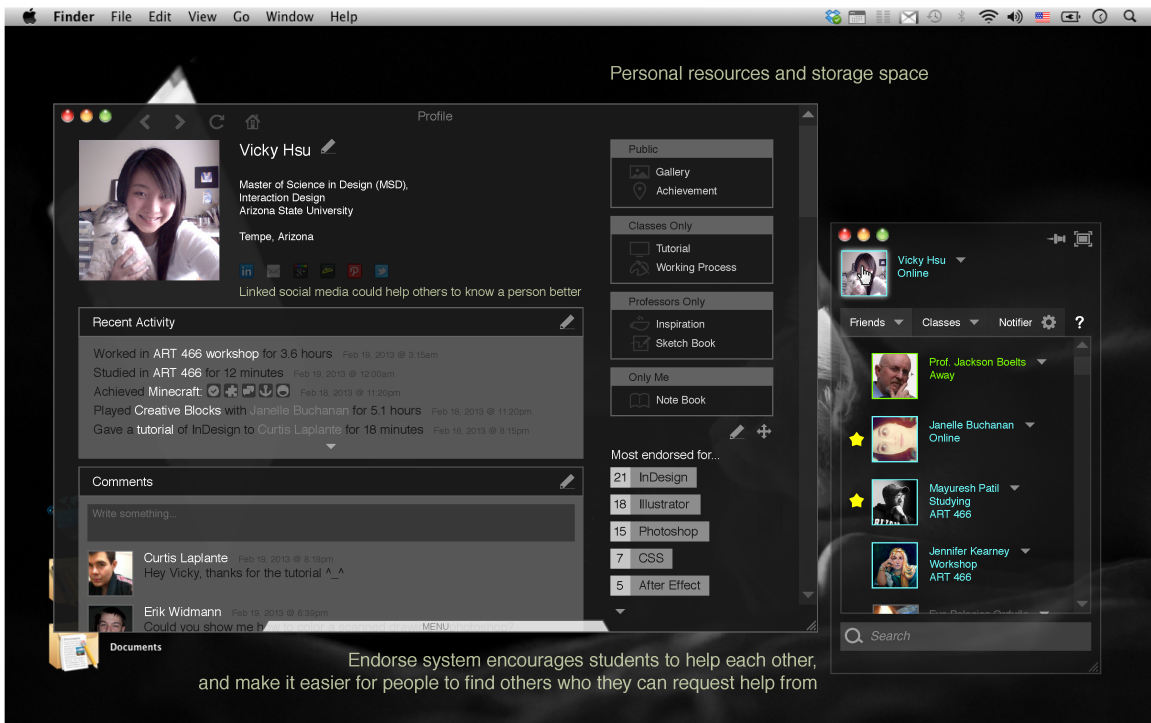
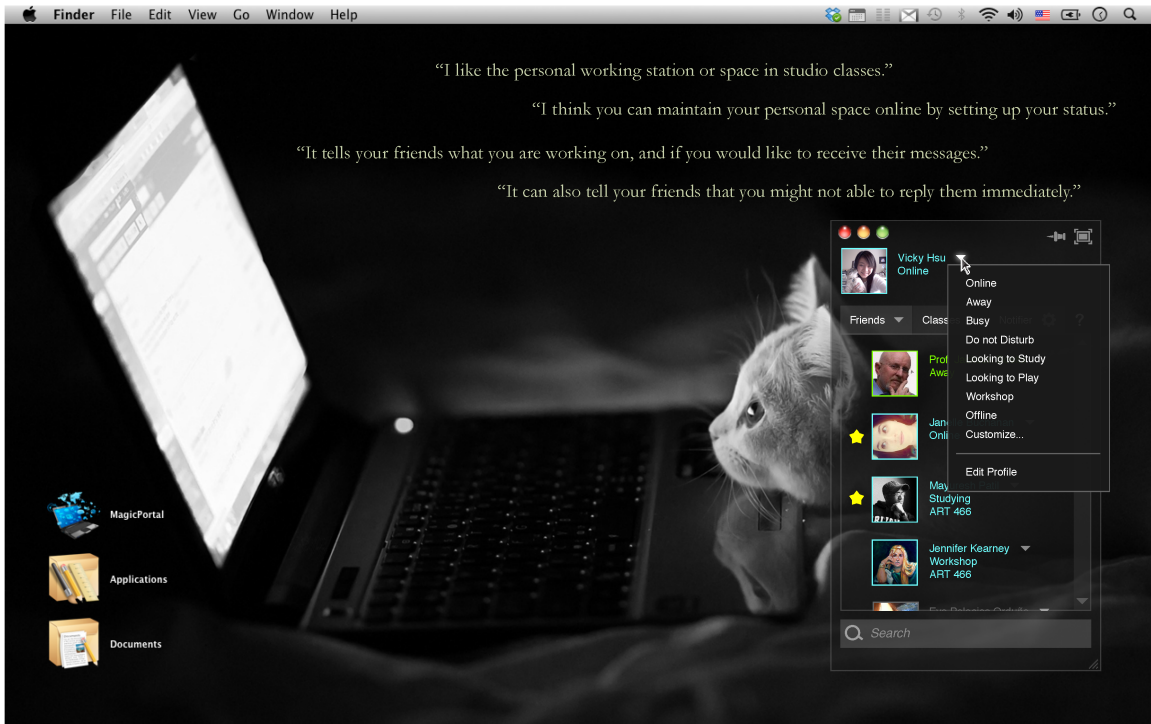
February 25 - March 7, 2013  
GRA 294 / PROJECT 5 CRITIQUE

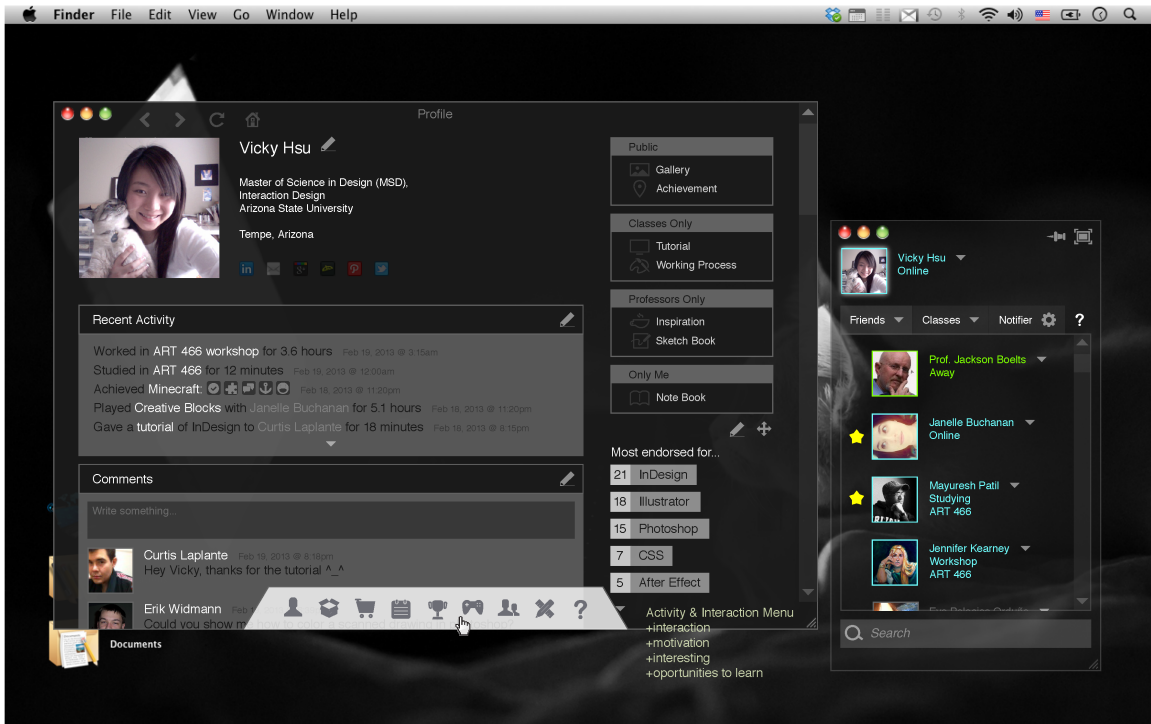
March 1 - 10, 2013  
ART 465 / QUIZ 1

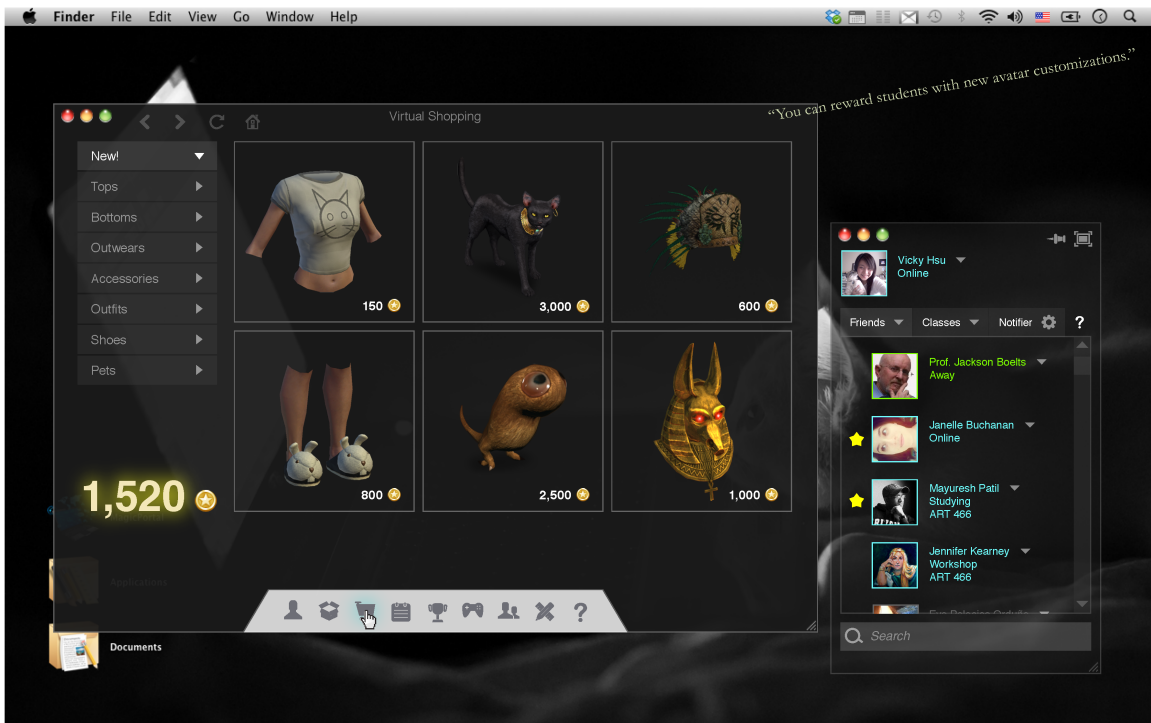
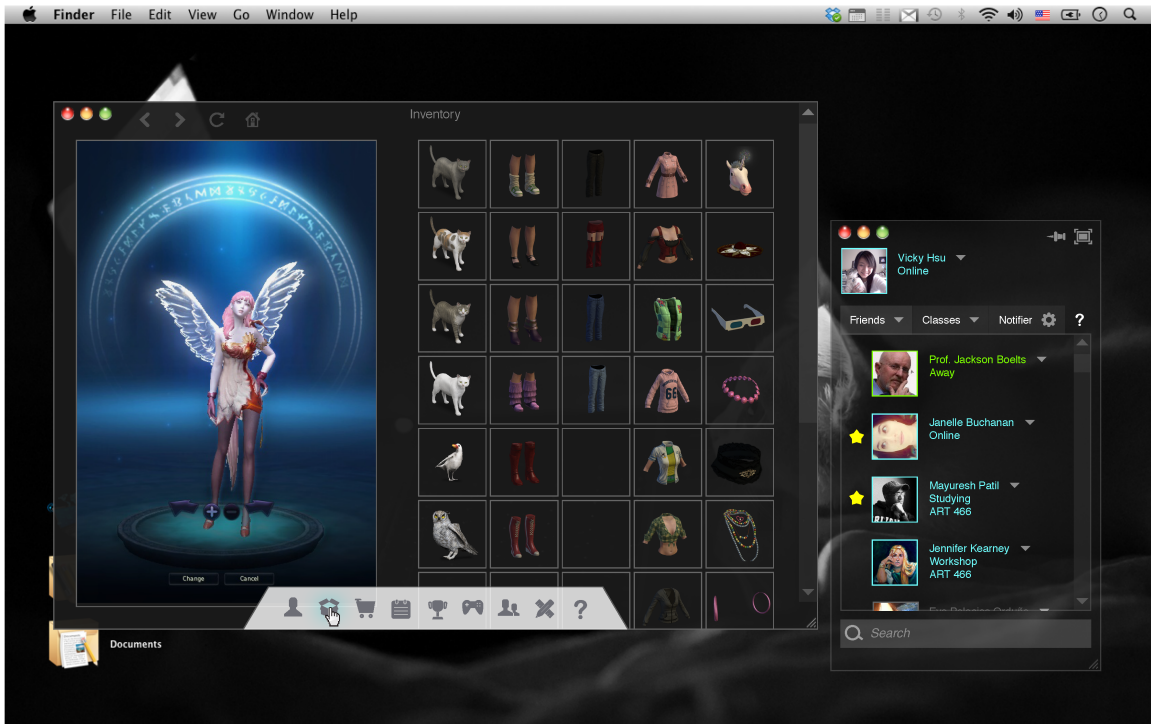
March 8, 2013  
GRA 423 / PROJECT 5 DUE

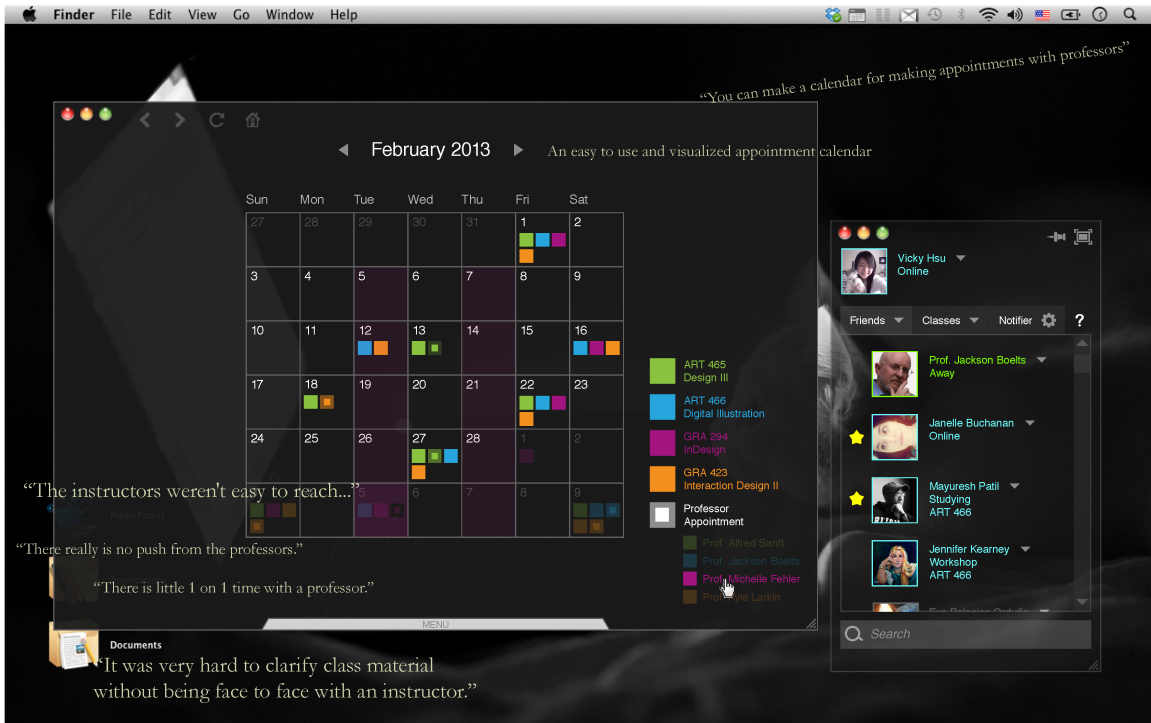
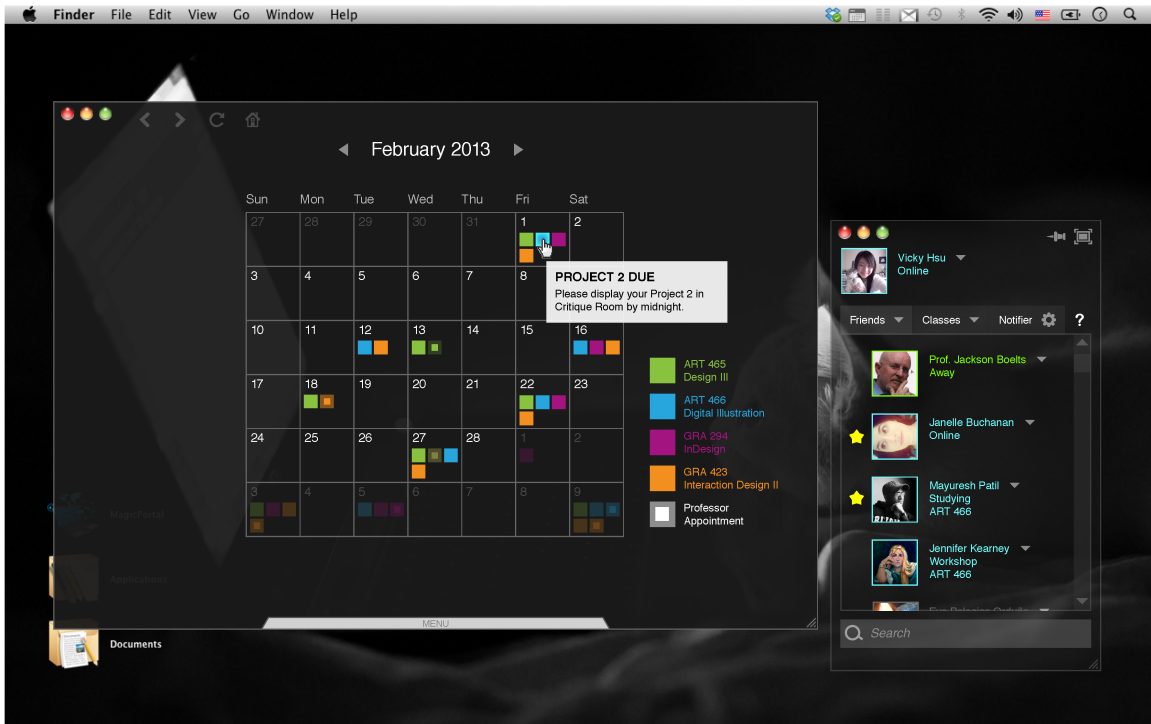
Search

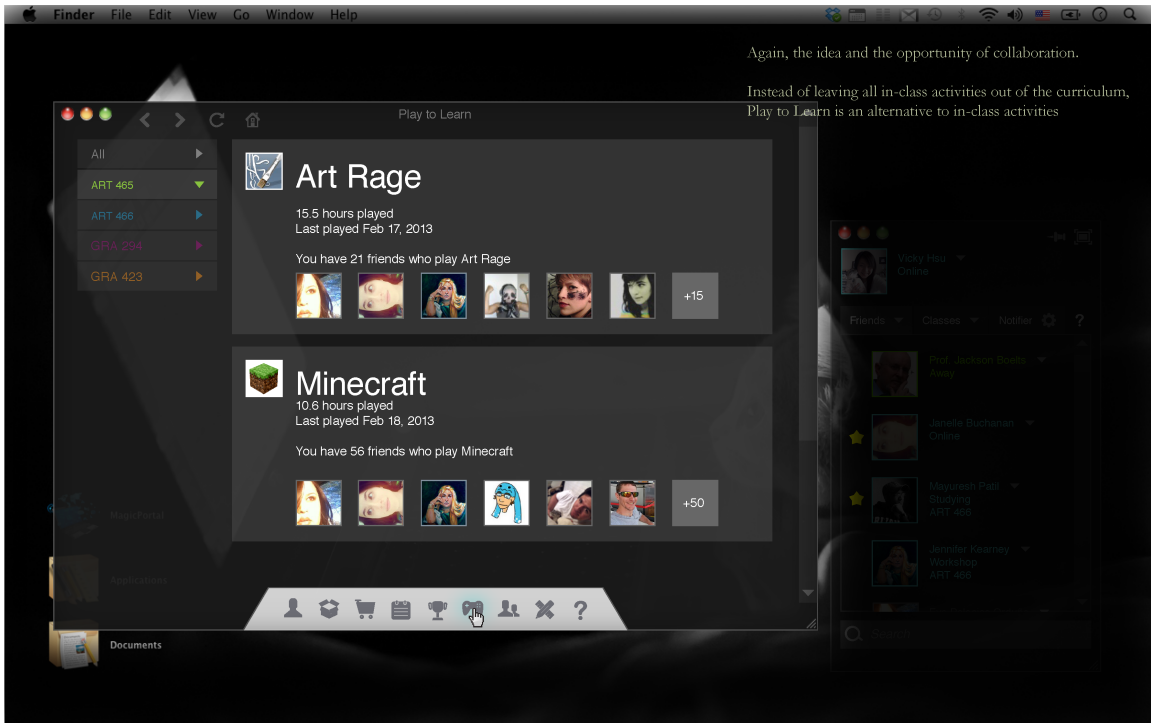
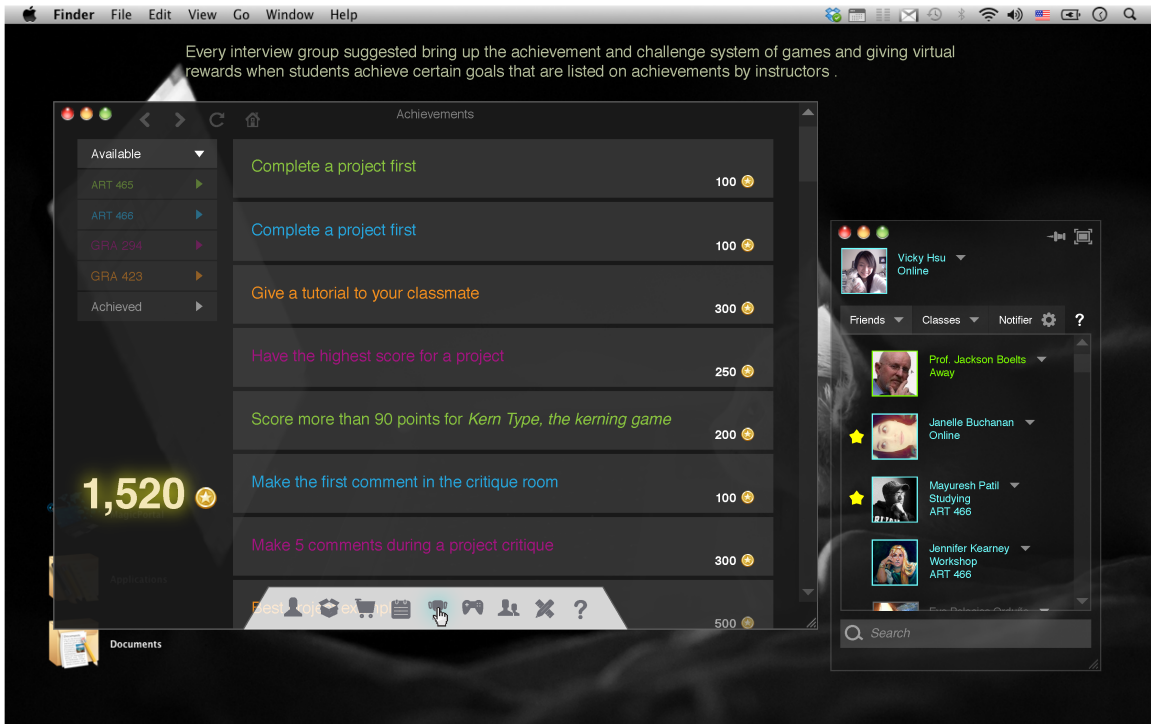


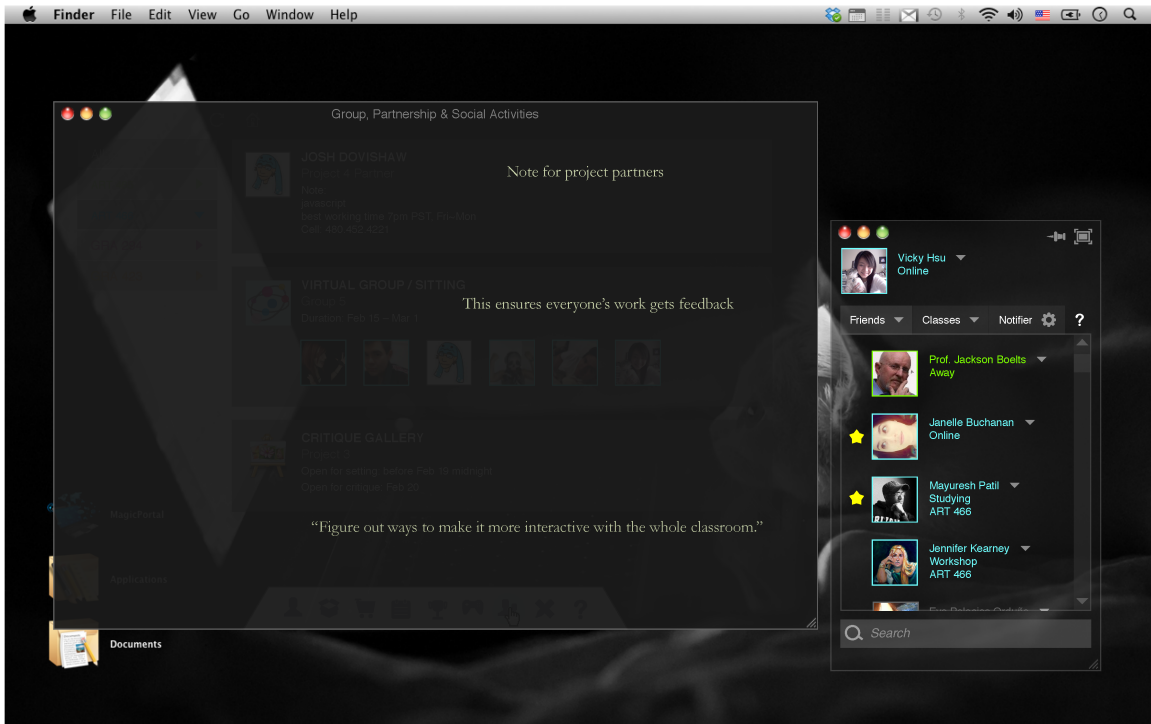






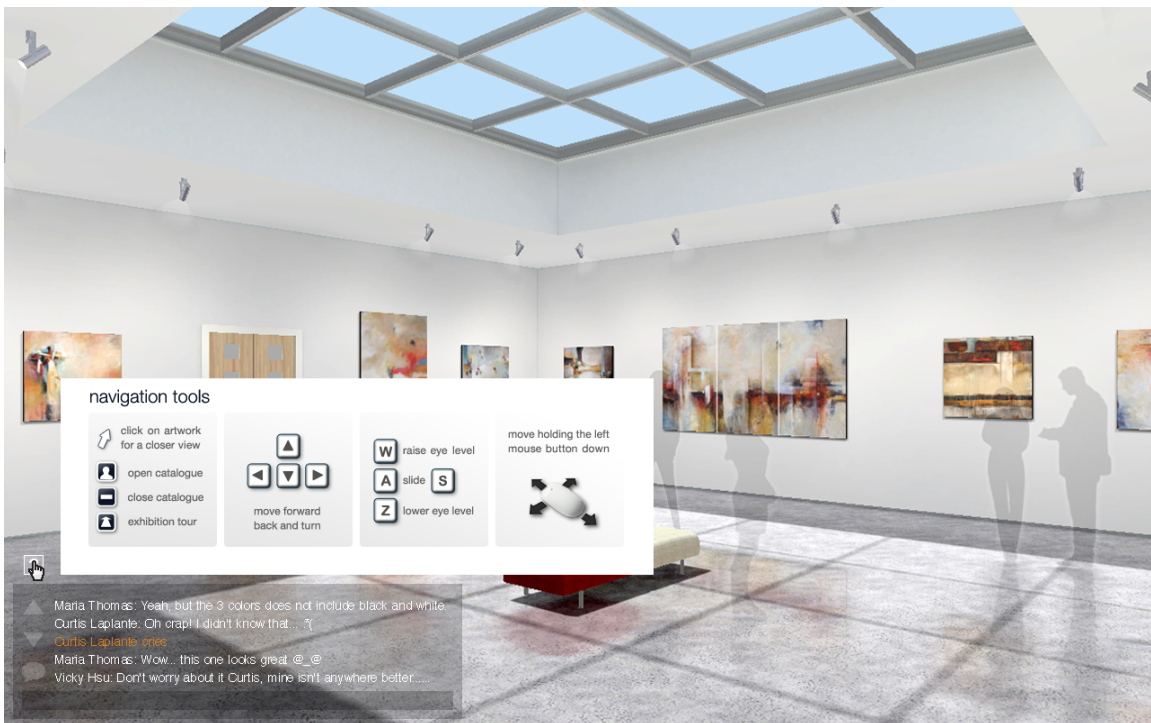
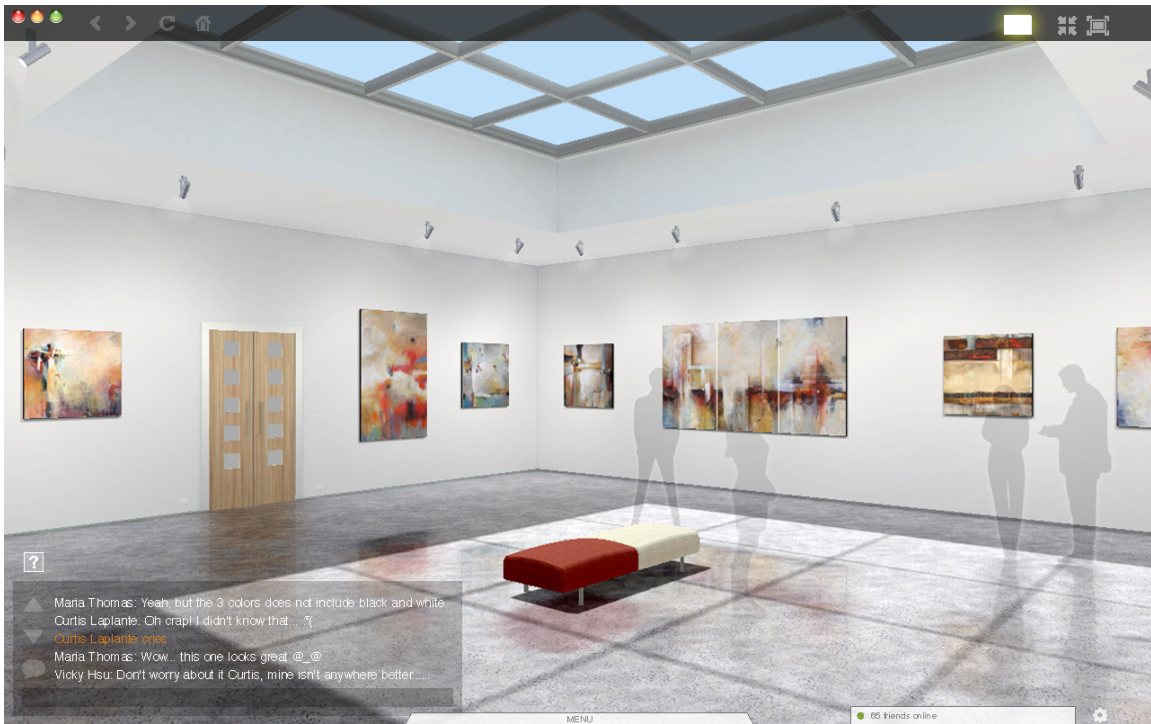


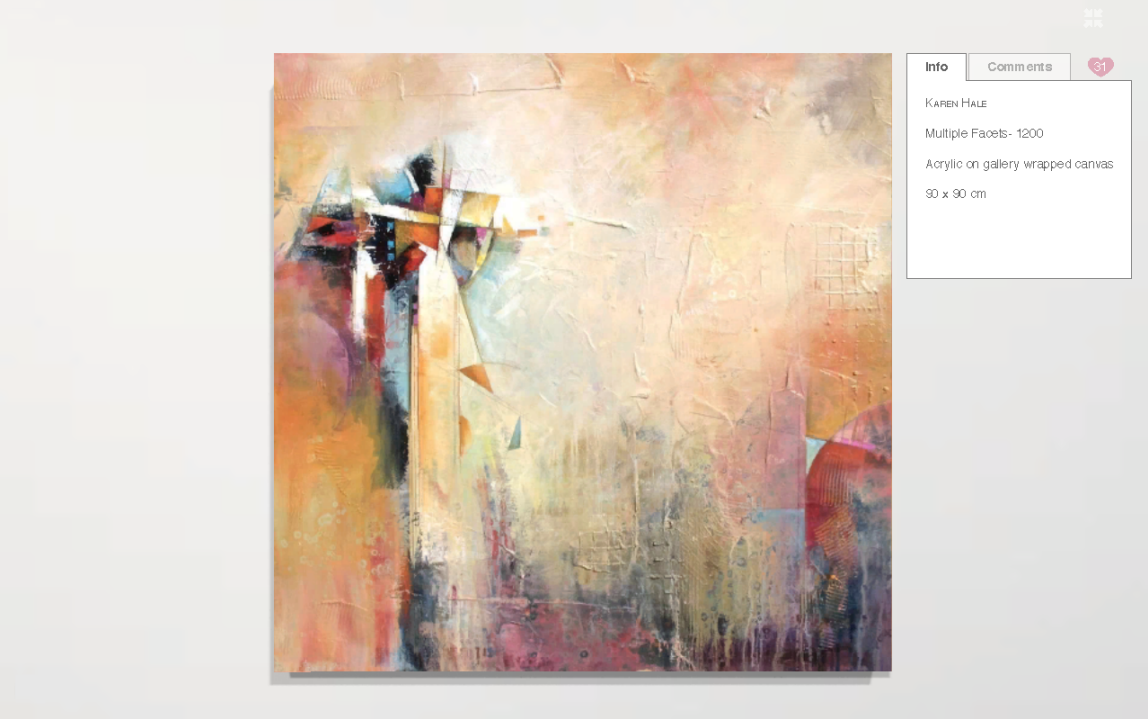












Info    Comments   

**KAREN HALE**

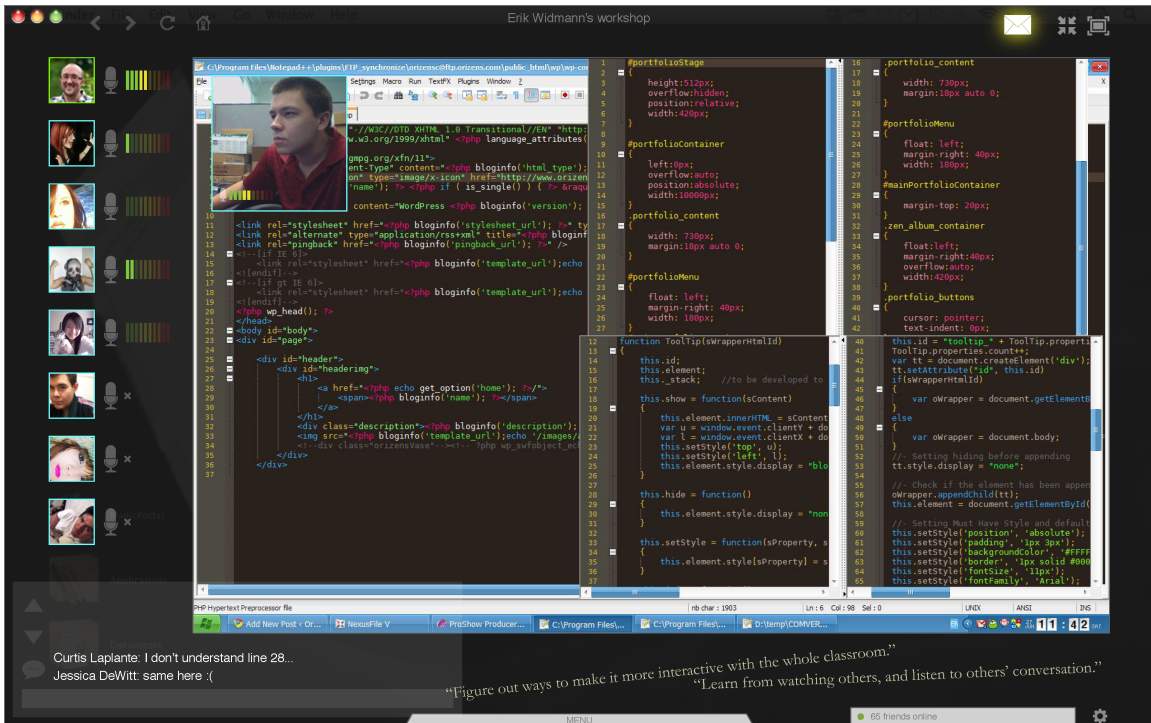
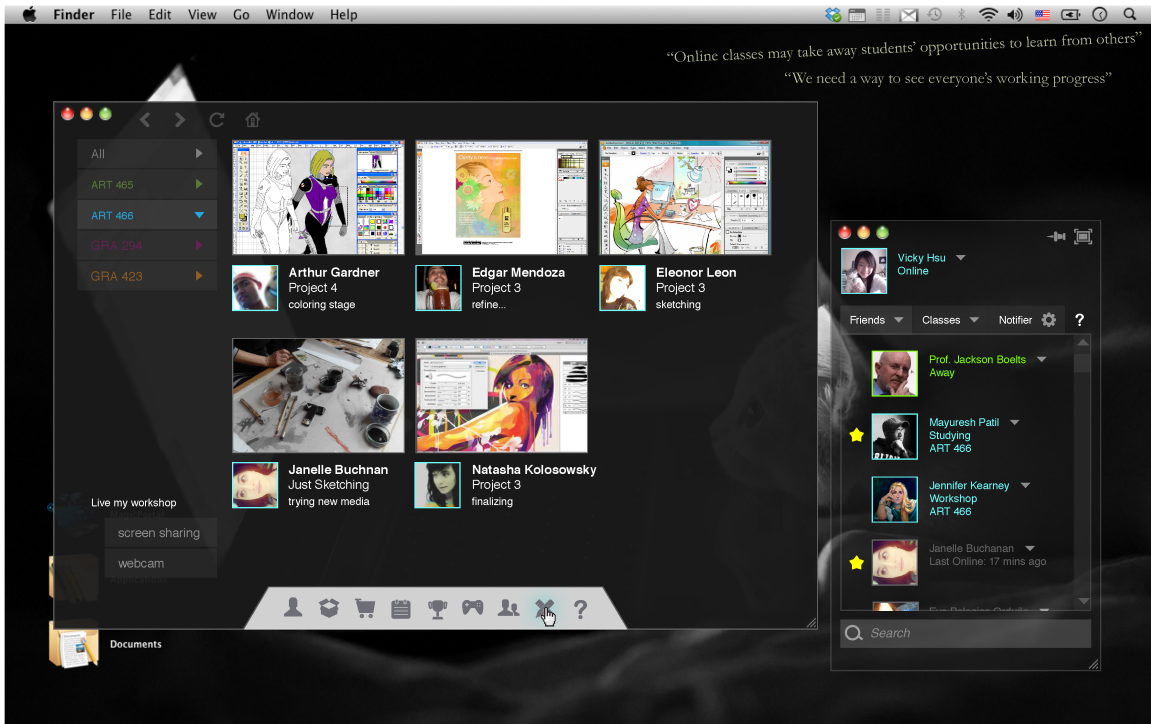
Multiple Facets - 1200

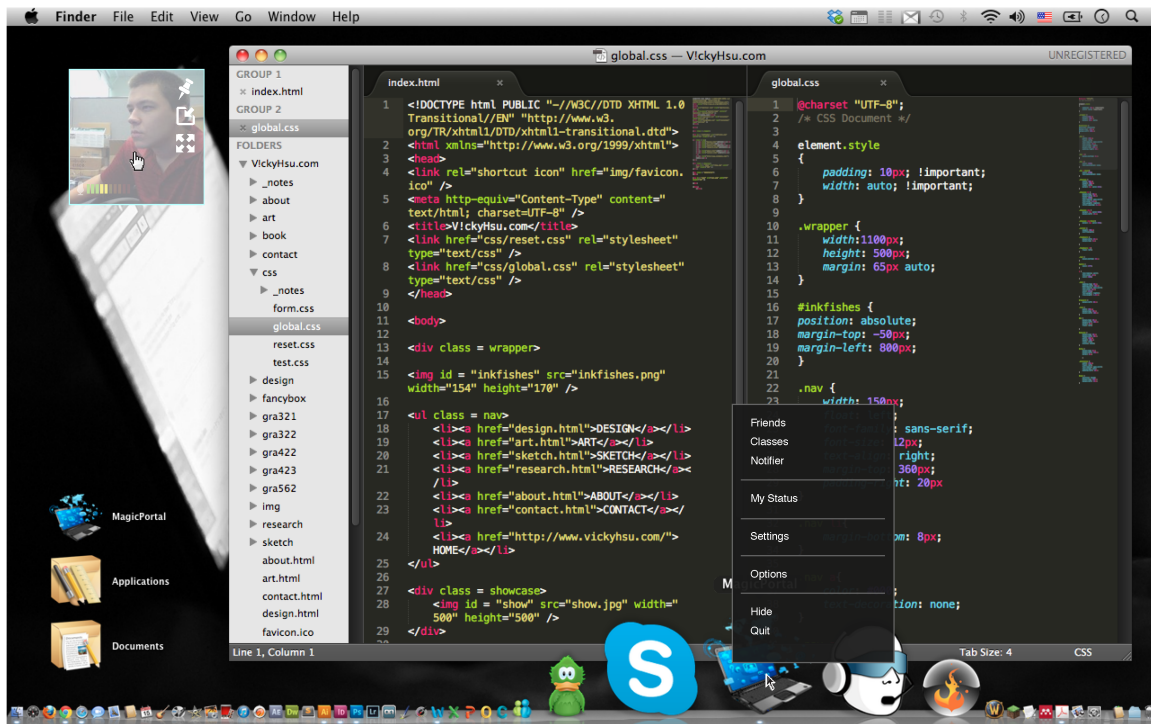
Acrylic on gallery wrapped canvas

90 x 90 cm



- Eva Palacios Orduño**  
Feb 16, 2013 @ 9:18am  
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- JoJo Seames**  
Feb 16, 2013 @ 12:12pm  
Porro elit corrupti vim id? Et nam nihil discere liberavisset! Ea usu fabellas occurreret?
- Alexis Peschke**  
Feb 16, 2013 @ 2:26pm  
Ex quaestio assentior scribentur his, sea audire volumus petentium no. Consequat reformidans no his, posse aliquid impardet ius in!
- Alex Fiamini**  
Feb 16, 2013 @ 2:26pm  
Duo ea mollis legendos recteque, ea vel omnis quaestio. No falli decore dederit eam. Ex tantas accusant vel, quo ex lorem mollis, ad mei ferri altera percipitur. Doming modestae quo eu, timeam conceptam ex vim. Prima altera argumentum vix te, cum novum conseletur voluptatibus et, vim ad petentium argumentum contentiones!
- Edgar Mendoza**  
Feb 16, 2013 @ 4:46pm  
No probo nihil trucidant has, eu saepe homero a ppatere eos, modo dissentet nec an. Ut sit nulla accusam sua vitale. Nulla ex aut a patiri an pro? Quo ad reque dcat erroribus, eam ei regione menandi cotidieque, usu diam augue ridens ut! Ex dico sale percipitur eum?
- Prof. Jamey Aiken**  
Feb 17, 2013 @ 6:35am  
Ueu solum tritani ne. Fugit iudicabit cu eum, justo facilisis salutabis mei ei. Mei bonorum placerat cu? Cum et ferri munere voluptatis, ius ei decore appellantur, qui prompts elefendi hendranti an. Has ut dederit intellegebat consec tetur? No erroribus dssentiunt pi, et pari commodo ever titor, ex est fabellas facilisi suscipiantur. Mei ea facilisis conceptam disputando, sed tique persecuti efficiendi ei, amet omnes placerat ut ius. No has insolens ever titor, in soleat possim delicata sit. Vim eu semitque concluditurque, haecio stabinem voluptatis duo at? Ad mei vero bonorum interpretaris, sit ea diam comprehensam, vel porro aperiri





## PROJECT IMPLEMENTATION

### Human Interactions

The application is like an instant messenger in itself. However, it also includes voice chat, video chat and tablet. These functions cover the issue with the lack of interaction in most online classes. These interaction functions are especially important for **design education**, because design education does not only rely on verbal demonstrations; it also relies on visual demonstrations.

In some creative training processes, such as critical thinking, critiques, breaking learning curves, and having one-on-one meetings with professors, obtaining an immediate reply and having the ability to continue asking questions would be the best way to solve problems. Waiting for hours for a reply by email might let ideas and issues slip away and not be expressed or solved on the spot. This makes instant

messaging, voice and video chat exceptionally important and necessary in online classes.

## Student Motivation

Lost or missing motivation for an online class could be a big issue for about 50% of students. The general reasons are:

1. Lack of participation from the professor(s).
2. Isolation feeling from not having the support of professors and classmates.
3. Inability to learn from others.
4. No way to compare oneself to others or lack of competition.
5. Simply due to the notification system, forgetting due dates or missing interaction opportunities.

During the interviews, most participants believed that when they see the professors are online and they are able to reach them for support, it would eliminate their uncertain and insecure feelings of online education. At the same time, they would push themselves harder to try and obtain valuable feedback from professors.

When the online creative classes are held by a social-media like application, students feel that their isolation anxiety would be reduced. They would be able to see other students or professors' online statuses, know who they can ask for help from (via the endorse system, galleries, the workshop videos, or achievements) and receive the feedback immediately.

During the interviews, most students agreed that competitions could bring motivation and positive learning outcomes for most things in our lives; creative education is not excluded. When students are offered the opportunities to see and learn from others, they are learning the standards of their professional field. In addition, they will know what direction they should push themselves.

Notification is not a small issue itself. When it is not put together well, it causes lower motivation and less interaction from students. For example, when students miss a due date, they may simply not know they were supposed to get something done. Or when there is an online discussion event, if they forget about it, they missed the opportunity to interact with others.

Students understand that checking online class schedules and keeping themselves on track is their own responsibility. However, the lack of notifications becomes a discouragement of students taking online classes. Compared to traditional classrooms, the reminders from professors are not only easier to keep themselves on track, but they also feel like they are being pushed in a positive way. Some students state that some online class professors do recap every upcoming event by e-mailing everyone; they felt that was a great help.

When an online class can utilize its digital and technological advantages, a well-designed notification system should be applied. This can help students stay on the right track. It can also extend the purpose of the flexibility of online classes. Students are allowed to work ahead of schedule or set a certain amount of time to be notified.

## Visual Presentation

The visual presentation involves making the online education platform easy to understand and use. One way to do this is to apply the social media look and following up with the functions. During the interviews, participants confirmed that they would like to have their online education platform more social media like, based on interactions, personalization, and familiarity.

Providing visual clues is another thing that needs to be conducted if a creative class is going to be delivered online, such as a student's personal gallery, inspiration board, and resource board. In addition, in the current online creative education,

students usually do not get a chance to see other people's works, nor any examples of previous students' projects. Most of the time, it is easier to understand the goal of a project when students can see the examples provided by the professors.

The virtual critique gallery is one of the functions that was favored by most students. They acknowledge that a pleasing and fun critique space would entice students and motivate them to participate in their schoolwork.

### Human Implications

To ensure that instructors and students are able to use the application properly and maximize its functionality, a mandatory tutorial is required for everyone in the beginning of the semester. Students will not be able to access the class unless they finish the tutorial and complete the qualifying quiz.

Students should ask themselves if they are suitable to take an online creative class. In addition, the creative educators should decide if they are able to teach one with passion. For the online design education application to work, it is not only a matter of creating great human interaction, a friendly user interface, and a pleasing visual presentation, it is also a matter of the people who use it and if they are willing to use the opportunities of the technologies and fast feedback.

According to Balaji and Chakrabarti's (2010) study, an online supporting forum provides the opportunity of enhancing interactions and fast feedback. However, during the interviews of the students from GRA424, most participants described that it was usually difficult to reach out to and interact with instructors (e.g., slow and late e-mail replies, professors were not being helpful during online classes). The participants also specified that the instructors' attitude and response speed affected their study motivation.



The testimonials of the participants from GRA424 fit Dineen, Samuel, and Livesey's (2005) research data, where 97% of participants (creative educators) considered the teaching style to be either significant or very significant. Participant (L15) stated, "It needs an enthusiastic and engaging approach—the right attitude and motivation on the teacher's part."

The participants in G1 suggested virtual sittings or virtual group functions, as well as occasionally switching groups. They believed that this could help students get to know and be more familiar with other students easier, when they need to work together for a certain period. Virtual groups could avoid the possibility of some artwork having an especially high or low volume of feedback.

According to the interviews, there were 6 participants who felt that online education was supposed to provide flexibility. If it did not, it would defeat the purpose of online education. However, the other 7 participants thought that online education was just offering a different study environment, saving time and resources in terms of traveling, but the routine of the mandatory meetings as a face-to-face studio environment should be kept. To face this issue and support the different needs, instructors of an online design education course could develop a questionnaire to divide the class into two different groups: one with designated meetings and critique times and the other with a wider flexibility for students to arrange their schedule.

## FUTURE RESEARCH

I recommend that future research include educators as participants, to allow the application to cover different perspectives and functionalities to support different users.

The m-learning of online creative education should be, and will be, continued in the future. The current technology has very limited access and abilities for creative education, but the speed at which it is advancing is amazing and might make m-learning creative education possible sooner than we expect. According to *Mobile First* (Wroblewski, 2011), there was 600% growth in traffic to mobile websites in 2010. Hence, mobile phones will overtake PCs as the most common Web access devices worldwide by 2013.

Smart TV applications for online design education should also be seriously considered and designed in the future, since this could be a path of eliminating the problem of small screens, pixel qualities and reality sizes.

Edutainment, which is the mixture of education with entertainment, will be a part of future research, based on the value of increasing motivation and learning results.

Continually improving and looking for inspiration in the online creative education platform is the only way to keep it up to date with current technologies and maximize the creative education outcome. If this platform will be used someday, a survey that gathers its pros and cons should be conducted along with the end of the semester survey. This would be the best approach to receiving suggestions on how to continually improve the platform.

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## BIBLIOGRAPHY

- 3d Ltd. (2010). *exhibit*. Retrieved from <http://exhibit.com/>
- Ambient Designs Ltd. (2013). *Art Rage 4* [PC game]. Henderson, Auckland, New Zealand: AmbientDesign Ltd.
- Apple Inc. (2009). iChat (Version 5.0.3) [Computer software]. Retrieved 2010, from <http://www.apple.com/osx/apps/>
- Assistly Inc. (2013). *Virtualgallery.com*. Retrieved from <https://www.virtualgallery.com/>
- Balaji, M S, & Chakrabarti, D. (2010) Student Interactions in Online Discussion Forum: Empirical Research from 'Media Richness Theory' Perspective. *Journal of Interactive Online Learning*, 9 (1), 1-22.
- Bayne, S. (2008). *Uncanny spaces for higher education: Teaching and learning in virtual worlds*. *ALT-J, Research in Learning Technology*, 16(3), 197-205. Routledge. Retrieved from <http://www.informaworld.com/openurl?genre=article&doi=10.1080/09687760802526749&magic=crossref>
- BioWare. (2011). *Star Wars: The Old Republic* [PC game]. Redwood City, CA: Electronic Arts, Inc.
- Blizzard Entertainment. (2004). *World of Warcraft* [PC game]. Irvine, CA: Blizzard Entertainment.
- Bluehole Studio, Inc. (2010). *TERA* [PC game]. Seoul, South Korea: En Masse Entertainment.
- Borg, N., & O'Hara, J. (2008, September). *Edmodo*. Retrieved from <http://www.edmodo.com/>
- Calvillo-Gamez, E., Cairns, P., & Cox, A. (2010). *Assessing the core elements of the gaming experience*. In R. Bernhaupt (Ed.), *Evaluating User Experience in Games* (pp. 47-71). Springer. Retrieved from <http://discovery.ucl.ac.uk/103914/>
- Capcom. (2005). *Resident Evil 4* [Playstation2 game]. Chuo-ku, Osaka, Japan: Capcom.
- ÇUBUKCU, E., & DÜNDAR, Ş. G. (2007) Can creativity be taught? An empirical study on the benefits of visual analogy in basic design education. *A, Z ITU Journal of Faculty of Architecture*, 4(2), 67-80.

- Curry, A. (2007, August 13). Dresden's world-class art gallery duplicates itself online. Retrieved from [http://www.wired.com/culture/art/multimedia/2007/08/gallery\\_dresden](http://www.wired.com/culture/art/multimedia/2007/08/gallery_dresden)
- Facebook, Inc. (2004, February 4). Facebook. Retrieved from <https://www.facebook.com/>
- Dineen, R., Samuel, E., & Livesey, K. (2005). The promotion of creativity in learners: theory and practice. *Art, Design and Communication in Higher Education*, 4(3), 155-72.
- Dunn, J. (2013, January 18). Swedish school now has a mandatory minecraft class. Retrieved from <http://www.edudemic.com/2013/01/this-swedish-school-now-has-a-mandatory-minecraft-class/>
- DuPont, P. (2013, June 11). *ios 7: Apple moves away from skeuomorphism*. Retrieved from <http://ipad.appstorm.net/general/opinion/ios-7-apple-moves-away-from-skeuomorphism/>
- Edstrom, A. (2008). Art students making use of studio conversations. *Art, Design and Communication in Higher Education*, 7(1), 31-44.
- Gilbert, B. (2012, June 20). *'steam for schools' is a free version of steam for students, facilitates portal 2-based lessons*. Retrieved from <http://www.joystiq.com/2012/06/20/steam-for-schools-is-a-free-version-of-steam-for-students-fac/>
- Gillham, B., & McGilp, H. (2007). Recording the Creative Process: An Empirical Basis for Practice-Integrated Research in the Arts. *International Journal of Art & Design Education*, 26(2), 177-184.
- Gruenberg, S. (2012, November 27). *Mobile e-learning: The future of online education?*. Retrieved from <http://www.knowledgeanywhere.com/blog/news-and-events/post/mobile-e-learning-the-future-of-online-education>
- Hajim, M. (2012, December 28). *Mobile learning: 5 advantages and 5 disadvantages*. Retrieved from <http://edudemic.com/2012/12/mobile-learning/>
- Juul, J. (2005). *Half-Real: Video Games between Real Rules and Fictional Worlds*. MIT Press (p. 243). The MIT Press. Retrieved from <http://www.amazon.com/dp/0262101106>
- Linden Research, Inc. (2003). *Second Life* [PC game]. San Francisco, CA: Linden Research, Inc.

- Lucas, B. (2001), 'Creative Teaching, Teaching Creativity', in A. Craft, B. Jeffrey & M. Leibling (eds.) *Creativity in Education*, London: Continuum.
- m-learning (mlearning)*. (n.d.). Retrieved from <http://www.grayharriman.com/mlearning.htm>
- MacKay, M. (n.d.). Kern type, the kerning game. Retrieved from <http://type.method.ac/>
- Microsoft. (2013). *Messenger has moved to skype*. Retrieved from <http://windows.microsoft.com/en-us/messenger/messenger-to-skype>
- Mojang. (2011). *Minecraft* [PC game]. Stockholm, Sweden: Mojang.
- Narcisse, E. (2012, June 20). *Valve gives away portal 2 for free to teachers with 'steam for schools'*. Retrieved from <http://kotaku.com/5919912/valve-gives-away-portal-2-for-free-to-teachers-with-steam-for-schools>
- NCsoft. (2008). *AION* [PC game]. Seoul, South Korea: NCSOFT.
- Ramsden, P. (2004), *Learning to teach in Higher Education*, London: RoutledgeFalmer.
- Rebenius, U. (2007), *Talet om learner autonomy: sprd2kinlaming autonomi och ett demokratiskt medborgarskap - ett gransland till moralflosofi (The Discourse that Frames the Concept of Learner Autonomy: Language Learning, Autonomy and Democratic Citizenship - a Borderland to Moral Philosophy)*, Orebro Studies in Education 18, Orebro University.
- Screenshot Aion Open Beta Character Creation (2008, October 30). [Online forum comment]. Retrieved from [http://www.aionsource.com/topic/7841-screenshot-aion-open-beta-character-creation/page\\_\\_st\\_20](http://www.aionsource.com/topic/7841-screenshot-aion-open-beta-character-creation/page__st_20)
- Sergio, F. (2012). *10 ways that mobile learning will revolutionize education*. Retrieved from <http://www.fastcodesign.com/1669896/10-ways-that-mobile-learning-will-revolutionize-education>
- Skype. (2013). *Skype (Version 6.5.0.443)* [Computer software]. Retrieved June 21, 2013, from <http://www.skype.com/>
- Skype. (2013). *Stay Together*. Retrieved June 21, 2013, from <http://skypestaytogether.com/>
- Snepvangers, K., & McAlpine, I. (2006). Student learning processes using an online PBL module in an art and design education course. *Proceedings of the 23rd annual ascilite conference: Who's learning? Whose technology?* 779-788.

- Stones, C., & Cassidy, T. (2007). Comparing synthesis strategies of novice graphic designers using digital and traditional design tools. *Design Studies*, 21(1), 59-72.
- Stones, C., & Cassidy, T. (2010). Seeing and discovering: how do student designers reinterpret sketches and digital marks during graphic design ideation? *Design Studies*, 31(5), 439-460.
- Terrazas, E. (2010, May 28). Second life's virtual world proves useful in educational settings. Retrieved from <http://borderzine.com/2010/05/second-life-s-virtual-world-proves-useful-in-educational-settings/>
- Valve Corporation. (2012). Steam (Version v012) [Computer software]. Retrieved June 11, 2013, from <http://store.steampowered.com/>
- WATERCUTTER, A. (2013, January 30). Game of thrones fans create spectacular minecraft version of king's landing. Retrieved from <http://www.wired.com/underwire/2013/01/minecraft-game-thrones/>
- WesterosCraft team of Will Blew and Jacob Granberry. (Artist). (2013, January ). Minecraft Version of King's Landing [Web Photo]. Retrieved from <http://imgur.com/a/XfCkQ>
- Windows Live Messenger [Web Photo]. Retrieved from <http://windows-live-messenger.en.softonic.com/>
- Windows Live Messenger SCREENSHOTS [Web Photo]. Retrieved from <http://windows-live-messenger.brothersoft.com/>
- Woodard, R. (2011, January 21). *Advantages and disadvantages of M-Learning*. Retrieved from <http://www.brighthub.com/education/online-learning/articles/36809.aspx>
- Wroblewski, L. (2011, October). *Mobile first*. Retrieved from <http://www.lukew.com/>

# APPENDIX

## IRB Exemption Document



Office of Research Integrity and Assurance

**To:** Michelle Fehler

**From:** Mark Roosa, Chair  
Soc Beh IRB

**Date:** 02/11/2013

**Committee Action:** **Exemption Granted**

**IRB Action Date:** 02/11/2013

**IRB Protocol #:** 1212008644

**Study Title:** Improve human interaction of online design education by integrating online gaming experience

The above-referenced protocol is considered exempt after review by the Institutional Review Board pursuant to Federal regulations, 45 CFR Part 46.101(b)(2) .

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

You should retain a copy of this letter for your records.



## Survey Questions and Response

### Q1. Please enter your participant number:

### Q2. Your age group?

18 – 25	100%	21
26 – 35	0%	0
36 – 45	0%	0
45 and above	0%	0
Total		21

### Q3. Your gender?

Female	76.19%	16
Male	23.81%	5
Total		21

### Q4. Your ethnicity?

Asian	23.81%	5
Black/African American	9.52%	2
Caucasian	61.90%	13
Hispanic/Latino	9.52%	2
Middle eastern	0%	0
Native American/Alaskan	0%	0
Pacific Islander	0%	0
Other (please specify)	4.76%	1
Total Respondents:		21

### Q5. Have you ever taken any online class?

Yes	95.24%	20
No	4.76%	1
Total		21

### Q6. What are the reasons that prevented you from taking an online class?

Never got a chance. The classes I need are not offered online.

0% 0

Unfamiliar with technologies, such as computer, internet or online blackboard system.

0% 0

I do not trust online classes.

0% 0

I do not want to take class online.

100% 1

Total Respondents: 1

### Q7. How was your overall experience of taking an online class?

Positive.

45% 9  
Depends on the subjects or the instructors.  
35% 7  
Negative.  
20% 4  
Other (please specify)  
0% 0  
Total Respondents: 20

### **Q8. What did you like about your previous online classes?**

Answered: 19

Skipped: 2

- Self-paced

3/15/2013 11:25 AM View respondent's answers

- It's convenient. I can do it whenever I want, without the hassle on going to an actual class

3/10/2013 2:10 PM View respondent's answers

- You could work on things at your own pace.

3/10/2013 1:49 AM View respondent's answers

- I liked how convenient it was for me. I could listen to the lessons whenever I chose to.

3/9/2013 9:41 PM View respondent's answers

- Being able to stay in pajamas and watch lectures.

3/9/2013 4:29 PM View respondent's answers

- The workload wasn't overly heavy and it was convenient to just log on whenever I had time.

3/9/2013 4:18 PM View respondent's answers

- flexibility

3/9/2013 3:18 PM View respondent's answers

- they can be taken at my own leisure

3/9/2013 3:01 PM View respondent's answers

- That they were online--didn't require on site attendance.

3/9/2013 2:23 PM View respondent's answers

- clear instructions, taught sufficient amount of information

3/9/2013 2:20 PM View respondent's answers

- Ability to do work whenever I want to.

3/9/2013 2:10 PM View respondent's answers

- I liked that I was able to read and re-read things if necessary. I was able to take my time and learn at my own pace within the curriculum.

3/7/2013 1:51 PM View respondent's answers

- I liked that there was some flexibility

3/7/2013 12:31 PM View respondent's answers

- The workload didn't feel overwhelming and you could at time work with others which I really enjoyed. It was really work at your own pace and I would take an online class again.

3/7/2013 12:30 PM View respondent's answers

- I thought it was nice that I could do it anywhere at my convenience and on my schedule.

3/7/2013 12:28 PM View respondent's answers

- I didn't feel as overwhelmed since it wasn't a class I had to physically be in.

3/6/2013 2:00 AM View respondent's answers

- Sometimes they are very in depth

3/5/2013 6:49 PM View respondent's answers

- They have been easy to integrate with my busy school and work schedule.

3/5/2013 5:40 PM View respondent's answers

- The convenience to complete it on my own time

3/5/2013 5:06 PM View respondent's answers

### **Q9. What did you dislike about your previous online classes?**

Answered: 19

Skipped: 2

- I procrastinated

3/15/2013 11:25 AM View respondent's answers

- I always forget deadlines because it's my responsibility to remember them, and there's no professor to remind me.

3/10/2013 2:10 PM View respondent's answers

- Lots of reading in short amount of time.

3/10/2013 1:49 AM View respondent's answers

- No dislikes

3/9/2013 9:41 PM View respondent's answers

- Sometimes it was hard to remember due dates, since there wasn't an actual class to go to.

3/9/2013 4:29 PM View respondent's answers

- I would sometimes forget about when assignments are due since the class was always at the back of my mind.

3/9/2013 4:18 PM View respondent's answers

- I missed the physical interaction... sometimes hard to understand things.

3/9/2013 3:18 PM View respondent's answers

- there is little 1 on 1 time with a professor

3/9/2013 3:01 PM View respondent's answers

- Poorly managed courses, the instructors weren't easy to reach either.

3/9/2013 2:23 PM View respondent's answers

- you do not get the personal interaction, deadlines hard to keep track of

3/9/2013 2:20 PM View respondent's answers

- Sometimes it is easy to forget about due dates or miss due dates.

3/9/2013 2:10 PM View respondent's answers

- I didn't like that I had no human interaction. I didn't think I would miss it, but I did.

3/7/2013 1:51 PM View respondent's answers

- It was very hard to clarify class material without being face to face with an instructor.

3/7/2013 12:31 PM View respondent's answers

- There really is no push from the professors. You have to keep on track with projects and really push yourself to notice deadlines which is easy to lose track of.

3/7/2013 12:30 PM View respondent's answers

- The response time when contacting a professor, it often took awhile. Sometimes I wouldn't frequently check the site so I would miss out on things. There wasn't a notification system when my professor posted topics, or new things to blackboard.

3/7/2013 12:28 PM View respondent's answers

- I am horrible at remembering when things are due and the instructor was no help at all...

3/6/2013 2:00 AM View respondent's answers

- Most are poorly designed. This results in very hard to navigate sites. Here's an example: <http://www.mesacc.edu/~edmny04781/psy101/index.html>

3/5/2013 6:49 PM View respondent's answers

- Sometimes there is a communication disconnect since you never meet in person or talk in person some of the written information is easy to misunderstand.

3/5/2013 5:40 PM View respondent's answers

- Sometimes it's hard to understand concepts without face to face interaction

3/5/2013 5:06 PM View respondent's answers

#### **Q10. Do you think it is possible to take a studio class online if it was offered?**

I have taken an online design/art studio or related class.

9.52% 2

I think it is doable.

9.52% 2

I don't trust any online class.

0% 0

I don't think it is possible.

80.95% 17

I am not sure, but I would like to take an online studio class.

9.52% 2

Total Respondents: 21

#### **Q11. What would you suggest to make an online design class or studio class more approachable?**

Answered: 21

Skipped: 0

- I don't think that you would be able to learn the material the same way. Studio is a hands on class

3/15/2013 11:25 AM View respondent's answers

- I think there should be one in-person meeting day for students to have printed designs to be reviewed by the instructor.

3/11/2013 9:33 AM View respondent's answers

- Not sure because I don't think it's possible. There are so many details in design that can be missed if taken online.

3/11/2013 12:31 AM View respondent's answers

- n/a

3/10/2013 2:10 PM View respondent's answers

- Have a lot of online resources that are easy to understand. Also, having a clear layout of what needs to be done would be beneficial.

3/10/2013 1:49 AM View respondent's answers

- The fact that online classes are convenient makes it approachable enough.

3/9/2013 9:41 PM View respondent's answers

- I would not suggest an online design class or studio class ever.

3/9/2013 4:29 PM View respondent's answers

- That's difficult to say. As I said before, it's necessary to have a physical place to congregate. Maybe if the online class had certain times where the class had to actually meet, kind of like a hybrid.

3/9/2013 4:18 PM View respondent's answers

- Figure out ways to make it more interactive with the whole classroom.

3/9/2013 3:18 PM View respondent's answers

- There would have to be sessions where a student and professor meet.

3/9/2013 3:01 PM View respondent's answers

- You could make it a hybrid class where your assignments are online, but you meet the instructor 1-2 times a week to get feedback on your work.

3/9/2013 2:23 PM View respondent's answers

- i just dont encourage it

3/9/2013 2:20 PM View respondent's answers

- Maybe meeting face-to-face with the professor once a week.

3/9/2013 2:10 PM View respondent's answers

- Make a time each week to meet and go over the work that has been done.

3/7/2013 1:51 PM View respondent's answers

- I think that a studio class that had to be online, should have a day where you could meet with the instructor. Not an office hours setting, but one day where you were in a classroom setting

3/7/2013 12:31 PM View respondent's answers

- Meeting times with students and peers/professors once or twice a week to give each other feedback / critiques to help each student grow.

3/7/2013 12:30 PM View respondent's answers

- Hmm..I am not very sure since I am kind of against it.

3/7/2013 12:28 PM View respondent's answers

- Maybe if it was more like a hybrid and you met once a week atleast

3/6/2013 2:00 AM View respondent's answers

- I would not attempt an online studio class. Design history or something like that would be acceptable. It should also require that assignments be submitted on paper, and not online. This will ensure students are thinking about the final product, not just messing around on the computer.

3/5/2013 6:49 PM View respondent's answers

- I think creating it to be a hybrid class mainly online but also have on campus class times available if students need help.

3/5/2013 5:40 PM View respondent's answers

- Make it hybrid (some days online and some days inclass)

3/5/2013 5:06 PM View respondent's answers

## Interview Scripts

### Group Interview 1 –

- ✓ What are the most important elements of a studio class that you think have to be brought into an online design class?

6: I think interaction. I think you can't just be online 24/7. I think at least once or twice a week the students would need to meet the professor and students would need to meet other students for feedbacks, kind of... For example, if Kyle's class was online, I wouldn't do anything; If Al's class, I wouldn't enjoy it as much due to lack of interaction online.

37: I think as far as it is a studio class, even though the technology is moving towards to the future and everything, a lot of things are online or working remotely, but I think there still needs to be some type of interaction in person whether be once a week or once a month where you are able to print out things and talk face to face, just to make it more personal able.

7: I think by the interacting, you kind of feedback from another person, like... maybe you see somebody else's that is better than yours, that pushes to push yourself harder. But like online, you aren't seeing other students' and the rest of class is doing, so you lost the aspect.

2: I think what you are proposing is good, because I like that um... you can still chat with professor and still have... and you have everyone else can see what you are saying, unless it's personal. It is just like an open chat that everyone is able to talk. And you can still share your project and stuff, I think that is really cool, because that's just taking everything that we just said and we want but it's online. So yeah, as long as you have the access to your professor to give you feedback, it would work.

18: I think you would need to have time, no matter how interactive this thing is, you still need some day to meet in person that you can see things printed, like types are so different in screen and in person. I meant, it is just a lot of differences.

7: I think you can even like... it does help a lot to print things out, but you can have the option to post the photo of it, instead of something printed, so you can see like... I feel you can still see what it looks like in printed after printed and take a picture of it.

Me: It's like some designers showing their portfolio online with not just digital pieces but printed pieces in photos.

36: Yeah, but I think if it's all online, you'll miss like... connection cues and emotion cues... somebody can tell you how you doing your work, and you can take it in the way that harder than it would, when a person is standing in front of you and how you doing your work, but it's not bad you know... You would miss all that if it's online.

2: That's what video chats for...

36: Oh? Is it a video chat?

Me: It can be video, or it can be just voice chat.

36: Oh... okay.

7: Is there a time that you suppose to on your computer to meet your teacher and other people like a normal class, or you can do your work whenever?

Me: You can use the function of multiple users or one by one. This technology is what some of art institute using.

6: Is this just like for students that have some issues or just for people like... live in California or wherever else so they can do the workshop?

Me: Yes, it's mostly for people who cannot leave their hometown to go to school or something else they need to take care, or... like I am a grad student, many of my classmates they have a lot a lot of absents because they have meetings, business trips or family issues, they always missed the class, so... even if this will not be fully functional, I hope this can at least help these people to catch up for the school and as a resource to help them out.

- ✓ And how would you bring these elements into an online design class? (Please indicate a digital solution)

37: I think even though you have like... entire class can chat together, I think there should be like... a group function that people can break up into groups and work together.

2: Or maybe like... some kind of function where you can ask your professor to set up a meeting, that's just for one on one, that would be cool.

7: Maybe you could still incorporate like... the group critique stuff, or instead that you can hear everybody's voices, just like... comments or what everyone thinks about it? Because group critiques are really good for projects.

Me: What we are thinking about the online classes, because they might be 10 hours of time zone different, so what I would do is a pin or a post-it system under the works, so everyone can always go back to see people's new work or new thoughts. And you will have the options to be alert to see new comments, so whenever people post new comments, you can always see it. And sometimes when we see things, we wouldn't have reaction right away, but probably after the class or something comes up and we want to talk about it later again. According to my research, some professors also think this is the best thing for online, because sometimes you don't have immediate reaction, but after you go out, read or see something different, you'll have better thoughts to help your classmates then you can go back. But I still agree that if it's possible, to have some time to gather everyone. However, I would still have the post-it notes system to allow people go over everything through whole semester to see the artworks during the semester.

6: I think you could have a calendar to show and track what time to meet up.

Me: Oh yes, I have the notification here, and tells you when is everything going to happen. And yea... I will have to put meeting as an option to be notified.

37: I feel like to have a 'status' type of thing to show other people what you are doing. The job I am having now, we are using Wink Messenger, and you can put on a status that what you are doing just to let your co-workers know, and also have an option to put on 'do not disturb' while you are working on something, or 'away from office' 'available' something like that.



Me: I have the status function so far. It would also show that you are on computer or on mobile, and you can also show status. For example, the professor can show his status as 'office hour,' is that what you are talking about?

37: Yeah, like something you would like people to know even if you are online, but you don't want to be bothered, you can... you know...

Me: That's a good thing to keep people online, too. So they don't feel like because they are online so they would be bothered.

6: Since it is all online and digital, you can probably do much more... to like... bring... resources, like tutorial videos. And to promote students, like 'artwork of the week' or some place you can display students' good works. And also, maybe if you click the picture of a student, it shows their artworks or their gallery pops out (personal gallery).

7: Is there a profile option?

Me: Yes, when you click the picture icon, you go to the person's profile; and if you click the words it goes to their text message. But I need to design something better to make it clearer. There was a funny thing I found is that, some people do not like online class because they don't get to meet new people or friends. It is not unreasonable, because we know that we come to school we all want to meet all these brilliant people and make our new connections and have opportunities to help each other out in the future network; so I think it is very important for everybody to know everybody, at least knowing people from profile and making a bound, but it is not perfect like meeting people in person; at least you would know each person online easier.

18: Another thing is that meeting people... maybe break people into groups ... like you are in a group for 3 weeks, then you switch into a new group. This is for like group critiques, and you could build relationships with people in your group and after switch you can build relationship with new people (virtual group assign).

Me: Do you mean like... for group project?

18: I am not saying for projects, but just for group critique. For example, we have group A, B and C for three weeks, then you can critique each other's work; and talk to mostly those people, and then after three or four weeks, when you go into different group, it means different feedbacks from different students, and that's not too much. Because if you would like to critique everybody in the class, that might be too much, but if you do it in 5 or 6 people would be easier.

- ✓ What features and functions would you like to have for your online design class?

6: Maybe make it more... social media-ish... then just have an online class that you can go post stuff. I do care about the whole interaction issues, too; but I don't mind just have your name in it and you can just look at your grade, then just post your homework or... so you could make it more like Facebook-ish type of deal...

Me: Yeah, this is the purpose of making this, and so I am still working on it, because it is so hard to make the boundary where is the school environment where is the social?

6: Ah... that's true.

Me: Yeah, but I do try to make it that way as you said.

7: Then you also want to like a school environment, to make your online class more secure, than like... social media sites. So it won't like we share something with only one student, and they can share with everyone else... You know what I am saying... so maybe it's not so social media style.

18: One thing I really don't like online class is that once they gave you a syllabus, then you are responsible for everything and without having much interaction with the professor.

Me: Yes, I understand that, that's why I made a notification system to remind both students and professors about their tasks. In my personal experiences, I always had students who forgot to take exam online, and then begging me to reopen the tests for them... so if we have a good notification and interaction system, I believe this issue can be solved.

2: Yeah, that was the worst part for me to actually remember what's the next, since you are not in a class and your professor is not going to remind you.

Me: I know this from the survey; around 90% of you have this the same problem.

7: I don't know if it's just my opinion or what, but every class I have take from online were super easy, like a fluff class... maybe like... to making sure that they fit the academic quality, and don't let people think that 'oh...online class, so it's easy!' In academic standard it should be just as hard as in a class.

6: Well... I think you look for those fluff classes that are easy!

Me: Yeah, I saw several people talking about that some online classes are too hard.

6: Yeah.

18: I don't think they are necessary too hard, just hard to keep yourself up.

2: So... I guess what we are saying is that... like... um... interaction ability, like the way you are going, I think there is. And when you have professor's office hour, and you are online at the same time, you are going to more like... 'oh! I have to show him something! Because we all are online together.' It would be more like a classroom setting.

- ✓ For people who have video gaming experiences, what are the motivations that keep you playing?
- ✓ From your video gaming experiences, what can be used to improve an online design class?

2: There is chat... and I think that you already have that. And I also like the avatar function.

7: Maybe like challenges? That we can challenge another person... maybe like you got 15 minutes to design something.

37: I don't think that would be very motivated though, because there is already a lot to do for your online homework...

7: Well, maybe put that in you assignment and not something extra.

2: Well, I think I really like the avatar function.  
37: You can make it as a screen watcher and watching people... like in Halo.  
6: Well, maybe like not more like a game but more a go learning things about graphic design, something you go play and learn, such as the kerning game; not just play to play. I think that would help.  
36: And maybe you could have a reward system or something like that...  
6: Yeah, extra credit.  
2, 6 & 7: Achievements!  
2: People do working hard to get achievements in games...  
Me: Yeah, I understand that... like some people 'hey! I am the server number one!' Besides that I also thought probably reward students by giving bookstore gift card...  
2: Yeah, maybe coupon codes.  
Me: I think it is definitely to give students something back, since we have already saved the space and electricity. Moreover, it could trigger students' motivation is the most important.  
37: Maybe you can give them a day off from logging on.  
Me: I guess that's pretty much it... Thank you everyone ☺

#### Group Interview 2 –

- ✓ What are the most important elements of a studio class that you think have to be brought into an online design class?

13: Well, I think the biggest thing is between like the real studio and online class is like... you don't get to see what other people are doing; with like your screen sharing, that's really cool, you know what I meant. When I am in a class, I would like to see what other people are doing or like where am I work is. I feel like more push or something I can see like needs more done.

3: It helps when you are able to hear the other... um... like... in studio class, like how you hear someone criticizes something, and you think "Okay, don't do that!" So...you get to like... learning from other people's feedbacks as well.

26: I think the collaboration is nice, too; being able to just get look over how somebody else does, kind of just like how 13 said looking at other people's work being able to be in that environment is very nice. I think everybody got out at one time, and they can communicate with each other and share the work at the beginning, kind of like an open critique (process critique) before you put yourself in a gallery. I think it would be really nice to see how everybody is doing and see if anybody is struggling, because I know I would like to do that, to have some group feedbacks and to see how far they are.

3: I think the one thing that would be missing if... because I don't know in what kind of point you can take online studio... but I know it is helpful, and I know everybody didn't like it, but... to be very physical and moving things around to help building your visual sensitivity, I think without that you might miss out a lot. I know sometimes you can have your program center your logo for you, but sometimes you

have to have that visual sensitivity to know to move your logo a bit. So sometimes just rely on program not doing things yourself...

Me: What if the professor requires this process and use your webcam to record your practice, or take a shot... or a sketch process. Because I know this is how some online class require showing the processes. They turn in the pictures of sketches for their process score. But I think that might take too much of work, than a webcam showing the working process for you. This can also show people how exactly you draw and move things around.

5: I think it would be easier to fake your sketches and process... I meant... if you are in a class and your professor is there to see if you done your homework, if you actually do it.

13: Yeah, that's the thing about online class... it is so much easier to cheat online classes.

3: People would cheat either way a bit I think...

13: Because like... okay... I don't know... like these classes, are they scheduled? Do you think they would still be scheduled or just to do it whenever?

Me: No... there are still project due dates, but you can still finish everything in one day if you are capable, because some people would probably need that because they work everyday and they have only weekend for their school works. Still, there are due dates that you can follow, and then you can do it whenever you want. Some people are not good to do that, they work like part time, so they can work like half hour or an hour everyday, and it really depends on whatever the person needs.

26: How often would the professor be available? So we can set a time to able to see them? Um... because online classes I don't think professor would be on for 24 hours.

Me: What I think is that they would have to have some open hours for students to reach them. In my personal experience, I really dislike that my professor who reply my e-mail only once a week. It doesn't make sense because we pay exactly the same credit hour. I think professor would have to be on certain time and certain amount of time, because they might just work as hard as students but they also need to arrange some time to teach and that's fair for everyone in this flexible condition. You cannot because it is an online class, so you can upload all your online materials and take off.

26: So this would be kind of by appointment sort of thing?

Me: Yes, or you can... depends on professors. Or they can say I have Tuesday and Thursday from 2pm – 5pm. So you guys can come to me, by office hours or by appointment. I found that the problem is that professors would need to devote sometime for students.

5: I guess there would be some time limited also? I meant... how long would professors like or willing to spend time with you?

Me: I think professors would have more time for each students online, because they don't have to deliver the materials and give student feedbacks at the same or in a few hours. As you can see in a lot of studio classes, we don't want to get critique the last, because the first person probably get 15 minutes, and if you are the last...

"Okay, I have 5 minutes for you..." It is a little unfair, sometimes I have more questions, but the school is off so I couldn't do anything about it. But online class is that most information is upload materials, you can study whenever you want. It

doesn't mean that professors don't need to update their material every semester, but this definitely help them to have more time to respond students' needs. Because this save them time from deliver the lectures and at the same time is that they can have more time to critique and give feedbacks to students. I think this is the beauty of online class. It allows time to be more flexible and manageable, compared to divide 3 hours to more than 40 people.

21: The only question I have is that... too much time flexibility might be difficult to work collaborate...with the professor or other people? Because I am thinking like... what if there are only 10 people in the class or something, what are the chances when you log in and always have someone to talk to? Like I said... time with the professor or something like that, especially people are online all different schedule, it seem completely based on flexibility. You might not able to utilize the cool features that you have... you might want to have something for somebody through something... or make an explanation, you know people need to point out something. I feel it is almost feel based on the flexibility, you wouldn't have chance to sit down and talk to somebody, especially if it is a small class...

Me: So would you suggest that there are certain time spot that everybody has to show up?

13: Either that or maybe... just have some certain time where we have a work section, or a study section... maybe for some people they don't want to do it, but to me I think people really need to do that to utilize the item that they would have kind of opportunity to do that.

- ✓ And how would you bring these elements into an online design class? (Please indicate a digital solution)
- ✓ What features and functions would you like to have for your online design class?

1: It would be cool, if it's like... if you have G-calendar and you can download your class calendar and automatically add it.

Me: Yeah, that's a great suggestion. I should add it to the bound. So we can always see it from cellphone; and probably text reminder function.

26: Yeah, I like that. I used to fail my online class because I couldn't remember when and what thing was going to due. When I logged on it told me 'Your project was due 2 days ago.' I was like... Oh shit...

3: Because you are looking for gaming experiences to improve online class system. I would suggest that 'kern type' game type of stuff, that would be really cool. (demonstration the game for the interview group) Use game to practice what you are studying and correct students. So make it more interactive!

13: For what you are doing, I would suggest maybe some competitions between people in that class or something. To like... maybe someone work more hours... and give someone a trophy. Or someone did something first, or got their project done before everyone else thing...

3: Achievements!

Me: Yeah, that's what exactly the last group suggests also ☺

3: hierarchy more score than everyone.

Me: Yeah, that's what some people go to critique for, they are waiting for others to tell them how awesome they are.

- ✓ For people who have video gaming experiences, what are the motivations that keep you playing?
- ✓ From your video gaming experiences, what can be used to improve an online design class?

1: I think the words thing like the cool things in the game. You can see that 'achievements that you can unlock.' It gives you more reasons to try to do things. There are certain games that I found are like... you have to guard their way to achieve something, that's kind of fun.

26: I think like a multiplayer game would be fun... like you go and against somebody else... like they have the same thing on their screen and you have the same thing on yours and whoever get it done first who win. It's kind of points battle match, I think that would be a lot of fun.

Me: Or like a project score competition something like that?

26: Yeah!

Me: We cannot announce who did bad, but we can announce who are the top 3 scores in the class or they are somewhat special, some kind of encouragement stuff.

3: Yeah, bringing the competitor system would be nice, but like... it depends on the person, it could be a friendly competition or someone could take it too seriously... they have to be the best of everything.

13: I really like noises! Game sounds! Sounds are really stupid... but I don't know... just something stimulating. When you play some old school game, such as Mario Brothers, you feel so much cooler when you hear how many coins you got and how much you jump! (making funny noises)

Group Interview 3 –

- ✓ What are the most important elements of a studio class that you think have to be brought into an online design class?

29: Feedback and critique. For me, I think interaction is really a big thing, plus you get all the signals like facial signals when I don't really like it, something like that.

12: And they can't lie to you.

11: But I think for online, I agree with 29 that I would rather have studio in person, but I think your idea of the tablet is a really good idea you know, because you could just like 'oh... this type is weird...' and just circle it or draw an arrow something like that. I think as long as the critique can stay visual, it could be okay.

29: I kind of like your solution of the critique as a museum type of thing, it's kind of SIMS type of thing, I think it is kind of cute and fun.

Me: Yeah, I am trying to make something more like... how to make things more in person, and more personal. So that triggers people have more motivation to do instead like 'uh... none of my business.' That is a big challenge between what is real and what is not real. Some people think that it is not in person, so it is not a real class. Besides that, I am looking for what we can mimic or create virtually to make people more comfortable, because they feel more in control.

11: So when someone is looking at a piece, will it able to zoom in on your screen?

Me: Yes, you can go ahead to choose first or second person perspective to inspect a piece, and probably rolling the center of the mouse to zoom in and zoom out. Also have a key to switch to first or second person perspective of view, so you can see something that is clear, not something that is just faraway.

29: In the sense of that critique mode, what it could be?

Me: Well, some people would suggest that we meet up at the same time, then we can start chatting, go piece by piece spend couple hours to go through whole class. And also, if the class itself needs more flexibility, I would suggest that have some post note or pin things, you can have your little notes to leave your critique and feedbacks with your name on it under the artwork. Good thing about this is the very flexible time and you can always come back to give the person feedback and it is not a one time thing, because sometimes we see a work, we probably don't have much thought about it, but when something triggers us later, we can always come back to give the person more and better feedbacks later. And this gallery thing should be kept and opened for whole semester long, so even if it is project one you can still get very useful feedbacks by the end of the semester, there is always a chance of growing.

12: I am just thinking about the time thing, because the online class is like you can always do it anytime during a day, so you don't have to... So one thing I think is very valuable is that you have the classroom that you can go back and forth discussion with somebody instead set a timer for everyone can meet. But in the sense of online class, it would be difficult to incorporate with people, if allow them to do things on their own time. However, leaving comments seems like a good solution, but the same time, how long is it going to drag on and getting feedback...

10: I think 11 is right, but I think for major critique, it should still have some mandatory time that we all need to go chat, and I think that would be doable. If you set the time far advanced.

34: I actually took an online class that has online group discussion. It was a board that you would type out. And he would draw examples, it was interesting and the way he has 4 different time slots and he would be available for every single one of them, and hopefully I would get the fourth so I can get all hours of the day. So the professor pretty much on 24 hours a day, but it was very helpful because everyone got to be reviewed before their tests.

Me: Yes, I think the beauty of online class is that students could get a lot more sufficient time to get feedback from professor, instead in studio class 44 people had to get feed back in a few hours, and usually turned out that first person might get 15 minutes, but the past person might get only 3 minutes because running out of time.

It is kind of unfair, and compressed the feedback quality as well. So instead that a professor has to deliver everything at the same time, they can upload their lessons and material once and leave the rest time for students as office hour, and as the credit hours it suppose to be. They could say 'I would be here on Tuesday and Thursday between 2pm - 4pm for whoever needs me.' I think this is how it suppose to be, because I really dislike some online class that professor replied me after 7 days, and the exam was passed, and I was simply could not log into the system... I think that's what we should push not only students but also the school and professor, not because it is online class so they just be gone...

- ✓ And how would you bring these elements into an online design class? (Please indicate a digital solution)
- ✓ What features and functions would you like to have for your online design class?

12: I feel like... a place for people to post where their inspirations come from, probably like a group page they can just post in it.

Me: Like a sharing board?

12: Yeah, something like that.

11: Do you have a profile page for everyone?

Me: Yes, but I don't have the layout yet. It would be like, when you click the icon of your friend, and the profile will show. So you can find the basic information of them, where they graduate from, and allow them to introduce themselves. You can know their personality from it, since we don't get to introduce ourselves in person. And you will have options about what you want people to know about you, and what you don't want to.

10: I suggest besides the profile, probably also have some link to show their images, their artworks and inspirations.

29: Like Pinterest!

Me: Yeah, I agree. Some other group also suggests that to have personal gallery functions.

34: I know you have that function of linking the notification to social network, but does it only send to emails or also public in our social network?

Me: Um... that's just an example that you can have different kinds of things to notify you, but it is more like an option for you how you would like it to notify you. I should really remove Facebook and those kind of stuff, because previous groups were talking about those things aren't actually not that secure, and probably not very suitable for school events. I would probably just have the option to bind it in Google calendar, Gmail and your cell phone text. I had an online class that notifies me everything via text, and that was just awesome. I should probably just remove some social media, because of the security issue.

10: Social network is more of... personal... it is cool to have some of those functions, but I probably wouldn't want to have it for my school you know?

Me: Yeah, we would need to draw a borderline. What do you think?



34: Yeah, I agree with 10. Facebook is more of a social... um... like my mom, she took a class online, and they were using Facebook, so she was forced to use it but she was actually unsure for it... so I think that we should have a system that we all can reach our message within it.

Me: Instead borrowing something like Facebook or other software to reach our message?

34: Right. But I think our VCD groups are fun, and they are very helpful, but... we need something formal.

Me: Like a separate system to notify your deadline.

34: The text messaging, it could be less transition. Not like Facebook would keep popping things... and you have to scroll to find it.

31: Another thing is to have the screen sharing and let you have the remote thing. I know in iChat... and screen sharing is helpful. One time I totally screwed up my Website, and I called Joseph, what should I do? And he got on iChat and we use the remote thing, and I watched him take over my screen and help me with the file or something, so... Maybe under the screen sharing, have the remote control option there.

Me: Like swap the category a little bit, right here right?

31: Yes, like the remote would be in sharing screen. Do you guys know that you can do that? Sharing your screen in a chat and you and the other person can both mess around with your desktop?

Me: Which software are you talking about?

31: iChat.

29: Skype allows sharing screen, too.

Me: But you cannot remote from the other side though... you can only show.

31: Right.

Me: So about the iChat, once you share the screen, both people can control the computer?

31: Yes.

12: Also I know you have the video chat, and I know you can have the Blacktablet function, are those like... can you split those screens or... Because I know it is easier to talk when you can see the person while they drawing. Or once you click to see them and the Blacktablet disappears?

Me: That's a good question; I was going to make the video chat that is always on top of the screen, so...

12: Ah okay, that would work.

10: So while you chat you can drawing and see the video screen at the same time?

Me: Yes. We are talking about while we are drawing we can still see the person right?

12: Right, I just don't know where the video is going...

Me: Okay, I would have to do some research... probably the video would replace the professor's picture icon.

- ✓ For people who have video gaming experiences, what are the motivations that keep you playing?

- ✓ From your video gaming experiences, what can be used to improve an online design class?

34: I would like to have some little games that I am able to play and interact with my classmates or friends here.

29: I think, some little challenge games that related to design would be nice, it would be fun and could help students learning some knowledge at the same time.

11 & 12: Probably no body will do it but you...

29: Well... make it mandatory then! Or extra credits!

31: You probably could put little games between every loading screen.

12: No... that would be so annoying... I just want to get my school work done!

Me: Okay, I believe some people like the small games idea but some don't... I would put mini games in somewhere that is optional, such as one of the interaction functions of chat.

29: I also like how you make the gallery with the SIMS and looks and with your own avatar; I think it would be a lot more fun to critique in that instead a traditional discussion board. And you could probably reward students with a new avatar skin or outfit!

10: I think you can display students' grades by life-bar, it could be more interesting and also reminds them they are in a really bad situation more visually. Also, in SIMS there is something called social points, it also indicates a player's life status. When you are lack of interactions with other players, your life-bar will become low which means you are dying! You could use the idea for students for their discussion, critique or meeting professor... all those participation points. It could remind students that they need to participate the classwork more, and make an appointment with professor sometimes.

34, 11 & 12: I agree with that. It would be nice to have some visual warning or notification about students' grades and participation as a life-bar.

Me: Thank you all for coming ☺

#### Group Interview 4 –

- ✓ What are the most important elements of a studio class that you think have to be brought into an online design class?

20: I think collaboration and being able to work with other students, you can get whole new ideas from others.

17: Yeah, definitely being able to work and interact with other people.

25: I like the idea of anonymous critique; a lot of times people don't say things during critique, because they afraid to be hold personally but what they really want to say might be really helpful to the individual.

Me: So you mean you would like to have the function of anonymous critique?

25: Yes, so you can have the choice to critique something without your name.

Me: So the professor would be the only one able to see the name of the poster? And probably have the function of anonymous or not.

25: Yes.

8: Yes, that is the one thing makes critique awkward, you know... Even thought with the anonymous handwriting... you want to give them the critique but you are not sure... You don't want them to be mad at you just because you point something out and say it. So add the anonymous critique option would be helpful.

35: Um... I am just thinking if it's different written format. I remember we did that in junior year when the first info graph project we had to write comment. I know it was helpful to read what someone is saying... but something people said to me, I don't know how to react... maybe it's lack of interaction for just wording... maybe a voice message would be helpful.

Me: Because it is more personal?

35: Mmhmm. (Nod)

20: Anything about studio class?

Me: Yes, something you like that you would like to bring in online, and anything else you would like to bring in without a problem just because of it's online. People might think online class might be difficult for some task in certain level, but they forgot to think about something could be done online easier than in person. For example, our face, voice or handwriting are always there, it is hard to be anonymous in person and tell people truth sometimes.

8: I would like to suggest some personal space, like in studio class; we all have our personal space to work on things there, it would be something that people would like to have.

20: I know, it could be just me personally, but I just like patch type of things, something that physically interact, because sometimes you... right before whenever you can actually discover by talking to somebody, you can just discover something by accident... I meant it's very rare and totally random, but it can happen. I would like to see this happen for online class, but I don't know how.

Me: I would have to think about it as well. This is like what my old professor said, beautiful accident.

20: Yeah, even thought I don't know it would necessarily happen digitally, so I would like to do things physically before...

- ✓ And how would you bring these elements into an online design class? (Please indicate a digital solution)
- ✓ What features and functions would you like to have for your online design class?

20: I like the digital blackboard... but the tablet you have, I feel it's very useful. If I would have the opportunity to be online with Al or Mookesh, and explain this is what I am doing and circle things out, I like this. I am not sure about for them... to feedback to me, and have me to wait... it might be better understood, I may not be cleared when there are something visually involve.

Me: I have experience that when I tried to explain students about drop cap via e-mail, people could not understand what drop cap is after 3 e-mails of explanation. I think... yeah... all what we lack was visual clue, sometimes only vocabulary doesn't help get you anywhere, you simply need point things out by drawing and explain the details.

17: When we had Mookesh's class, we couldn't draw things everywhere, but there was Lisa's sticky notes everywhere, and that was really really helpful. So I can only imagine that what would happen if they can just go in there and draw, it would be a lot clearer.

Me: The good thing is that the blacktablet would automatically save the drawing into a new layer and as a new file, so it wouldn't over write your original work. I know that Lisa told me about the sticky notes, she can post it wherever she wants, but sometimes when there is a tiny spot that you cannot draw a line or circle it out, it might be hard for people to know what exactly you are talking about, you know?

17: Yeah, I think that is a function that would really help. And also the screen sharing would be very helpful to see how to operate a program, and how he brings up the tab... for setting types and stuff. And also the webcam for showing doing work by hands, that's one of the program focus on... um doing works by hands, cutting paper and painting, those would be hard to do via internet, but with the webcam function, it should help a lot with that. Teacher can see what actually you are doing, or students tell you 'oh! You don't wanna cut like that, you wanna cut like this.' You know?

Me: So besides showing professor what you are doing, also a good way to track yourself where is your original idea came from.

Me: Is there something else you would like to add for an online studio class, it can be anything, or something that can't be done in person, doesn't always needs to be traditional.

20: I don't know if there is anything else here that is not covered. I see you are doing and trying lot things here with visual... they are very important and they are what a studio class needs. But there is a place where they can post note, not like a sketchbook, but something that they can write down what teacher says. It would be good to have a place to write down all the information that they need, in the future they can have a short cut to access those, such as Kyle's resource page, with all the resources he showed, and we can always go back when we need it.

Me: Hm... like a references pages?

20: Not necessary a references page, like a sketch page for each person.

35: I have a design question, is this how the color and everything going to look like?

Me: No, color and most things would able to be customized; if you like pink, you can go pink and you can even go transparency. I realize to make this more customized and personalized, so you would feel more comfortable about this thing that's going to always hanging around your computer. And you can also choose always on top of your computer; for example, when you are watching a tutorial video and you also want to operate the software at the same time, so when you are operating, you can still see it step by step. This is like what we like to doing while Kyle is teaching during the class, so just make it more customized.

20: If you are talking about the visual thing, it might be... I don't remember what it called; I had read it a while ago. It has something to do with visual thing. It has to do with digital things mimicking real life...

17: Written by apple?

20: Yeah, this is probably not the feedback that you are looking for, but if you want to do all digital just push it all the way to digital as much as in real life but not the look of it, because when I am looking at that tablet, it's called blacktablet as a chalkboard... I feel like it might be a lot easier to focus on when there is not a piece of chalk in the background; and it does has to look like a chalkboard, it can be just a plain black screen that they can look at, because there is... we are trying to balance things out, while you are trying to make it feels like real life, and it can just be very clean and modern. I feel that's what online studio classes should be. It could have all kinds of real life features that you can feel and show people, but for reducing the online confusions it should be very slick and clean and simple, really simple.

Me: Yeah, I see. It's a good point 😊

20: I wish I could remember the article for you to read, because it really did make an impact on me. Like some calendar and note pad have the features like that.

35: The notifier would tell you...?

Me: All the due dates, yes. And there are many these functions that you can customize how you want it to be.

35: Would they just be due date? Or would they like... your professor just posted a new project or he added something?

Me: That would be here, to choose what kinds of notifications that you would like to receive.

Me: What kind of notification you would like to add up?

8: I don't know... I think when professor is online it would be very helpful. And I wish it would tell you that 'Hey! Don't forget about this, you have a few days...' probably not notice me only a day before, I don't want to submit it at the last minute. But with the setting with extra amount of dates, like 3 days until it's due.

17: Yeah, being able to set how many days before your project is due.

Me: So adding a new options that let you choose how many days would you like to be notified before due dates would be nice.

17: Yeah, that would be very helpful.

20: Will the online studio... mimicking second life or something like that pretty accurately?

Me: I actually don't play second life, so I am not sure what exactly it is...

20: Well, like how you see things.

Me: I am thinking about doing first person perspective, but some people would like to have second person perspective so you can see yourself as well, and would be fun. So I would have both options on. But from my gaming experiences, the gaming environments would be a great way and good ability to show artworks, and it allows you to walk around. I also found that there are many software called virtual gallery, I need to see how many ways it could work, and what kind of perspective could be the best.

20: What I meant it is very interesting and would be fun, but when I am seeing the gallery rendering... it feels like second life, and it almost feels not real... you could do

something with Photoshop and put a real painting there... it makes it feel more like real life and still feel like a gaming environment, because I know that the graphic can be done very well.

Me: You meant that you would like it to go more realistic?

20: Yeah, like in an environment and the first person feeling, like Battlefield 3 or something like that.

17: That just totally looks real.

25: The only problem with that is some devices might not support the graphics.

17: Yeah, I think you would probably want to be able to have two versions of gallery.

One can be online virtual that can be able to walk through it with the high level resolution and realistic; and another version is just able to look all images like a webpage, so when someone is out of town or something, they can still use their mobile device to be able to participate the critiques. Or just for someone who's computer can't handle the higher resolution graphics.

- ✓ For people who have video gaming experiences, what are the motivations that keep you playing?
- ✓ From your video gaming experiences, what can be used to improve an online design class?

20: Some virtual rewards like coins or something.

17: Yeah, even it's something fake but still a reward. So you know that you reach certain milestone or so. It would help you to keep track your grades, too. (use reward points as grade tracker)

35: I really like that achievement thing. It makes me to do something that I don't want to do, but I want the rewards so bad, so I would do it! It is a great motivation to push people to do things.

17: It was like that they brought someone to challenge us during the freshmen year, and we all wanted to win so bad, then everybody got an A!

8: I really like the personalization, like in games when you achieve something then you can personalize your character. And you can do the same to your online class, to reward students with avatar customization.

Me: I found that many people like games because they can make something that belongs to them very personal. But online class, no, nothing... you all go through it with a browser and the only different thing is your student ID.

20: There is another thing that you can make people to help people, like the endorse thing. Like you can give someone 5 stars for illustrator if they help you, and others who doesn't know how to use illustrator they know whom to ask. I am sure if this is working, Joseph would have 20 millions stars for the web coding. It could help people to guide people how things work.