Egame

CompareIt

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Overview

Art history, as a field, requires that students become skilled at the process of comparison. During their education, students encounter numerous tests wherein they must compare pairs of art objects that are separated by time and space. Professors prepare these exams with great care, as they deliberately select the pieces for the comparison. The chosen objects represent a principle, connection, or idea that the instructor expects the students to tease out of the two pieces. These comparisons require keen observation on the part of the student. They also require a broad understanding of the artistic, political, social, technological, and literary history of the pieces, as well as an eye for ambiguity.

CompareIt will help students improve their comparisons skills, as well as help them study for their exams. In this game, students of Art History will compare pairs of objects that appear on their screen in an attempt to create an abstract order from apparent chaos. They must ask 'Why are these two paintings on my screen? What are the connections between them? How are they similar, how are they different?' while taking form, content, or historical context into account.

The gameplay in CompareIt will take place on a website. Faculty can create an account, then upload images for a specific course, and enter clues, information, and tags for each image. They may also specify particular pairs for the course, create groups of images that the computer can choose amongst, or allow the computer to mix and match them based on similarities in image tags. Faculty may also choose to provide hints or starting ideas to guide student responses. Or, they may simply allow students to be creative in their responses and provide less guidance. Faculty will be encouraged to customize the game so that it closely resembles the format of their exams. For example, if they will tell the students the year that the piece was created on the exam, they should include the year as a clue in CompareIt. The professor will then disseminate a link to the site, where students can go to practice their comparison skills.

Students will respond to a pair of images located on the right and left sides of their screen (just as in a lecture hall with dual slide projectors). They will then have five minutes to write a thesis sentence, three points, and a conclusion. After submitting their outline, the game will prompt the player to rank the wording, criticality, and the persuasiveness of responses from three other, random players. Once a response has been graded, this grade is sent to the player as an anonymous email. Additionally, the player can later visit their home page and see how their answers rank compared to other players. Later, a faculty member can offer feedback on interesting or unconvincing responses. The home page described above will be used to track students' responses, as well as the grades associated with their responses.

In essence, CompareIt mimics the existing model of Art Historical education. At the moment, most students practice their comparison skills using flashcards. Flashcards, however, are an isolating exercise. They encourage self-contained study. CompareIt will perform the same function as flashcards, but will allow students to exchange ideas and compare their answers with those of their classmates in a safe but competitive environment.

Instructional Objective

This game will reinforce a player's skills in determining the connection between two pieces of art, especially:

- Recognizing and comparing the artistic, political, social, technological, and literary history embedded in art
- Determining which principle, connection, or idea the pieces represent
- Using form, content, and historical context to determine similarities or differences between pieces
- Identifying and evaluating convincing, well worded, and critical arguments

Users will demonstrate their knowledge by submitting outlines of their ideas to the learning community for judgment. The learning community will score their ideas on three dimensions based on a 1-5 Likert scale. These dimensions will include the wording (an essential element in the formulation of a good argument), the degree of criticality (how 'deep' the argument goes into the connections between the artifacts), and the overall persuasiveness of their argument. These are subjective criteria, and each player will respond differently to the arguments. However, the process of evaluating an argument along these lines is an important ancillary skill that students will need throughout their lives.

Learners

This game is targeted towards students taking art history courses at an undergraduate level. Many of these students (especially those in introductory courses) come from other fields of study (such as biology, psychology, business, etc.). This means that students will possess varying skills or knowledge about the content of their course. They may also lack the kinds of study skills and strategies necessary to succeed in an art history course. CompareIt will show these learners the answers submitted by other students and allow the learners to see the diverse and convincing arguments put forth by more skilled students,

Context of Use

Players would access the game from any computer, either in a computer-equipped class (as part of an instructor-led activity) or at home (as part of a practice session for exams).

Before students can play the game, they must first create an account, log into the website, select their school, and join their class's group. This process can be simplified by having the professor send out an email with a pre-generated link, much like joining a blog on Blogger.

Following the player's session, they may choose to see the ratings that other students have given their answers (if available), the top ranking responses for other pairs, they may compare another pair, or simply log out.

Scope

This game can be played in as little as 15 minutes per round. The player is only given five minutes to review the pair of images, then write his/her response. This time limit is important because this game is designed to encourage players to work as they would during an art history exam. The additional time is used to review the responses made by other players.

The number of questions in the game is determined by the professor or TA who moderates the game. Depending on how many images are uploaded, the player can play the game repeatedly. The moderator could upload many different 'decks' of images based on the role of CompareIt in their course. They could choose to include fewer groups of images that focus on their upcoming test (say, a midterm in ArtHi 6C - Art from 1700 to Now) and specify for CompareIt to create intra-group comparisons. They could also choose to upload many kinds of images (say, decorative arts from 1910-1940, paintings from 1930-1950, and African tribal art) into separate groups. The machine could then generate inter-group comparisons. The moderator could use this constellation of groups to emphasize a particular idea from class (in this case: the importance of African culture in Western painting and Art Deco) These parameters could be saved as separate 'games' that players can select amongst, depending on their needs, interests, or the moderator's instructions.

Competing Products

Surprisingly, there are many art history related games on the market today. Some of them are listed below:

Art History Hangman - This game is used to test your knowledge of art history terminology.
http://www.bellaonline.com/code/hangman/hangman.asp

Art History Word Scramble - This game is also used to test your knowledge of art history terminology.
http://www.bellaonline.com/code/ws/index.asp?id=62

A. Pintura - This game is a branching scenario game that allows you to try to solve the mystery of your grandfather's painting. You are asked to make decisions about a mystery painting, based on sample paintings shown to you. Even for a novice in art history, the game is pretty engaging. http://www.eduweb.com/pintura/

Inside Art - This game is a story, which allows you to explore a painting, before answering questions about the painting and the painter. http://www.eduweb.com/insideart/

Artsology: Art History Memory Test - This game is an oline version of the memory game, where you attempt to match pairs of images. http://www.artsology.com/memory2.php

CompareIt is unique in that it asks players to review pairs of images and give detailed responses. Other games either test a player's knowledge of terminology or guided players to a response. CompareIt is also the only game that does not give a right or wrong answer. The answers are reviewed by other players or professors, eliminating the need to write specific answers, which may or may not conform to the answers given by the players.

In many ways, the game's architecture reflects a product currently available on Facebook. The Compare People App has nothing to do with art history, but it does provide a model for this project. It asks the player to compare two friends (usually random, but sometimes selected based on sex or network) based on a prompted question ('Who would you rather go shopping with?' 'Who is cuter?' etc.). The application then aggregates the data, and ranks people based on their victories. For this project, scoring will take the

Varying the Game

This game can be used for many subjects, in addition to art history. In almost all cases in which you would use flashcards to compare items, you could use CompareIt. For example, in chemistry classes, students are sometimes asked to compare molecules to determine similarities or differences. This can be practiced with CompareIt. Literature classes are also a possible choice for this product. Students could be asked to read two passages from a literature selection, then create a thesis, the supporting points, and the conclusion for an argument about the passages. Whether fashion, food, or furniture, CompareIt could be used to help develop observation skills, as well as testing a student's ability to create a compelling argument in support of an initial idea.

Object of the Game

CompareIt has no 'end-state' in the traditional sense. The game never 'ends' because any viewer can interpret a pair of objects in an infinite number of ways. Players continue to play the game to practice their comparison skills and to study for their tests and essays. In lieu of the 'victories' or 'losses' present in many head-to-head games, players in CompareIt compete against all other players in their course for higher rankings. These rankings are generated based on the simple addition of the three scores (wording, depth, and persuasiveness) anonymously assigned by other students, the professor, and teaching assistants.

Professors or lecture can choose to award bonus points or extra rewards to the students with the highest rankings at the end of the semester.

Design Details

Graphics and Audio

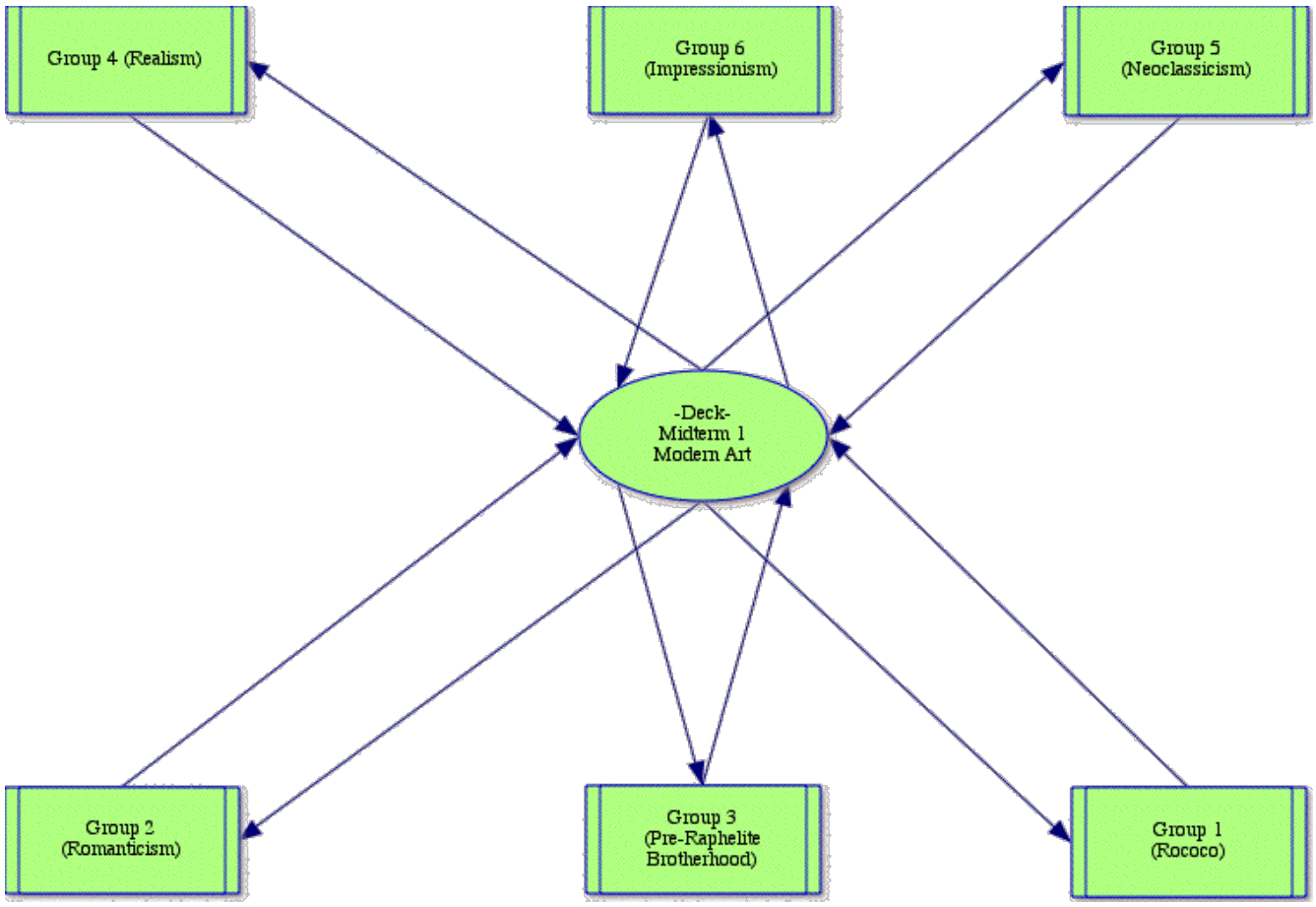
CompareIt will feature a simple interface that incorporates elements from the art history classroom into its design. The program will display the images on a gradient background that simulates the lighting conditions of a lecture hall and the slight darkness that occurs at the edges of slides. Please see the prototype images below for examples of the graphic layout.

The game will also play a short audio clip of a 35mm project moving its slide carousel when the images first appear. This is an unmistakable feature of the art history environment and will serve to make the players' experience more 'real.' Please see the working prototype below to see how the audio integrates into the game's environment.

Game Organization and Scoring

Game facilitators (TAs or faculty) will group the images according the ideas that they hope students will glean from the art. At the start of the gaming period (i.e. the two week run-up to a midterm), facilitators will use their expert knowledge to assemble bodies of art historical knowledge into groups that demand comparison. These atomic groups are organized into 'decks,' with each deck serving a specific instructional purpose. For example, a facilitator may create a deck that simulates a coming midterm, or simply as an exploratory exercise

instructional purpose. For example, a facilitator may create a deck that simulates a coming midterm, or simply as an exploratory exercise that will help students uncover, explore, or recapitulate the differences and similarities between artistic periods and artists discussed in class. The onus of creating meaningful comparisons (whose purpose the learner must uncover or explore) falls on the shoulders of the facilitators.



Potential question structure

Scoring

CompareIt uses a combination of community scoring and trust metrics to ensure that students receive appropriate recognition for their work. After a user answers a comparison, it enters into the community grading sphere, where other users will grade it (among others) before they may another comparison. This answer-evaluate-answer chain promotes two sets of skills: critical synthesis and critical analysis. Both of these skill sets (under the heading of 'critical thinking') are essential to students' success in art history.

The grading system itself uses three scoring catagories, each based on a score of 1-5. The first category, wording, acknowledges the importance of clear and pithy written communication during an art history exercise. The second, persuasiveness, asks users to analyze how convincingly the respondent has synthesized the ideas from those presented in class or in readings. In a post-modern field such as art history, ideas are no longer 'right' or 'wrong,' only more or less convincing based on the evidence at hand. The third, depth, asks users to grade the response based on how far the student has gone beyond the ideas presented in the classroom. The interpretation of what makes a

'deep' argument is left up to the students. However, after reading a number of art historical articles, students should have a qualitative sense of what constitutes a 'deep' argument.

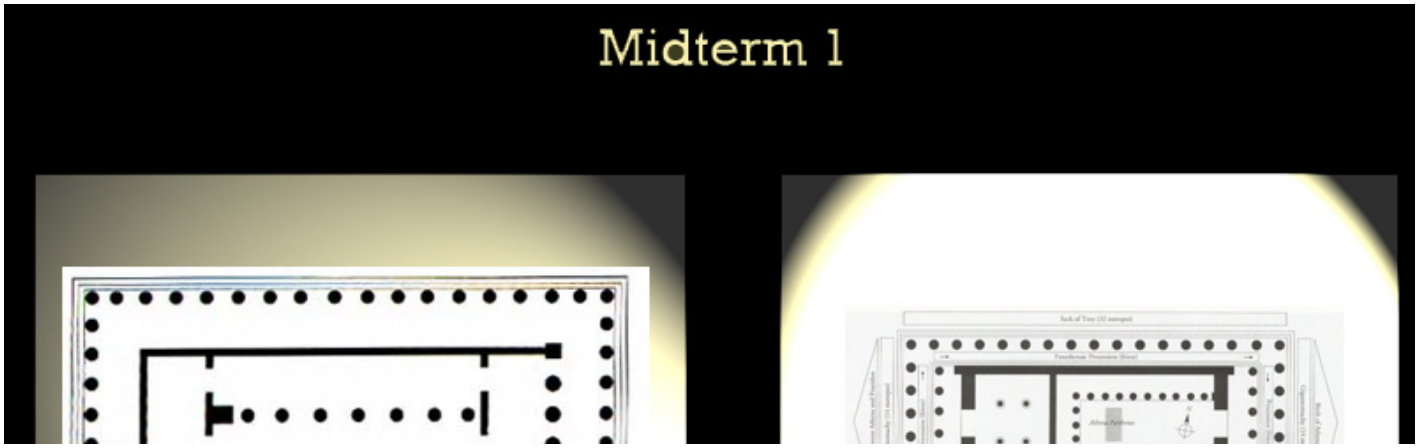
After a user submits their evaluation of the response, the software will aggregate their score. For example, a score of 4, 3, and 5 adds up to a total score of 12, and goes towards the user's total score. Users aggregated scores are displayed on the leader board for all to see (though students will only see a username, while administrators will see both the username and the user's real name).

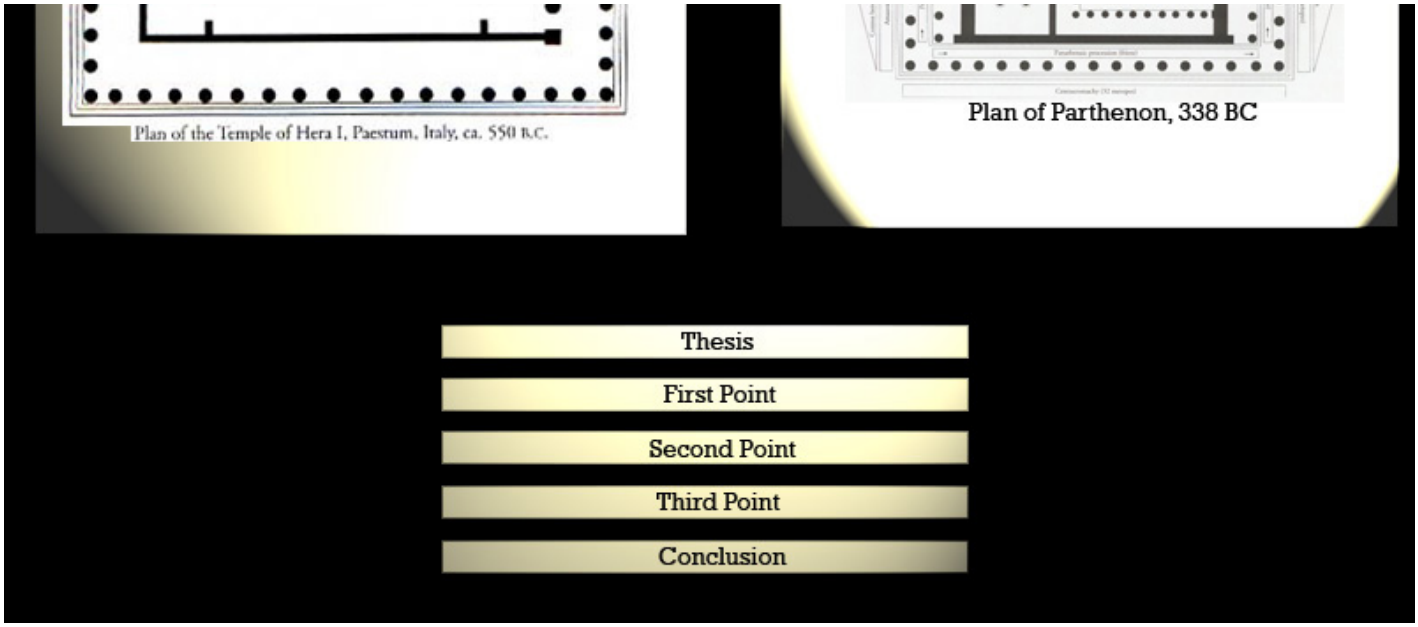
Administrators can also rate a user's overall level of response (called the 'trust metric'). The trust metric weights the user's score so that their ranking increases even if they answer relatively few questions. This ensures that users do not simply 'spam' CompareIt with poor quality answers to inflate their scores. Thus, the ideal high-scorer would have a high trust metric (meaning that facilitators have rated their responses as consistently excellent), and a high score (indicating other users have judged their individual responses as excellent, and that they have conducted many comparisons).

Prototype Images

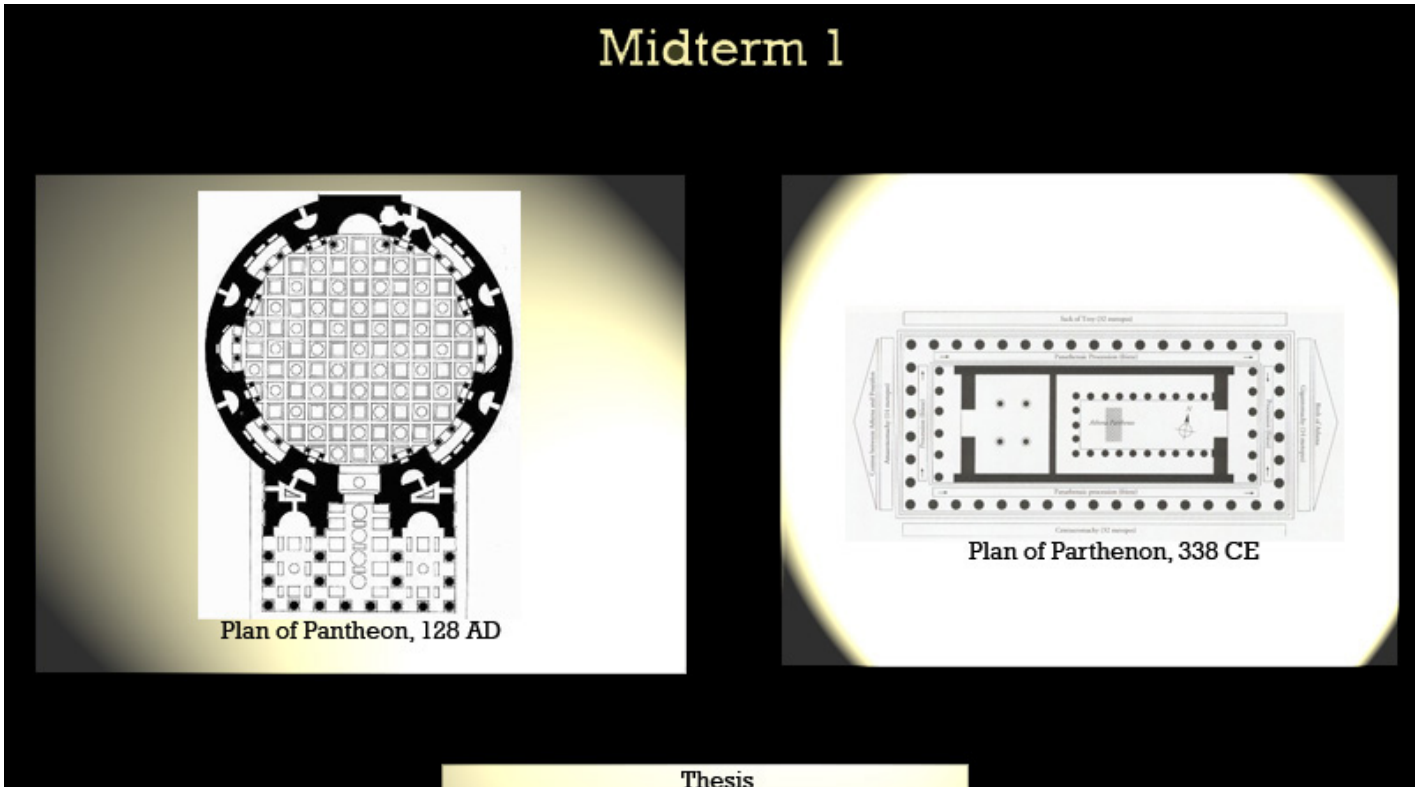
Comparison - Neoclassicism vs. Romanticism

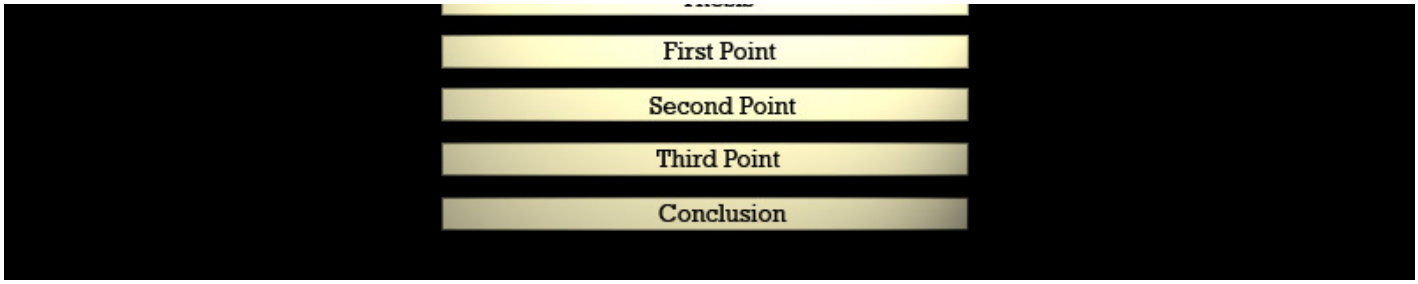
Intra-group comparison - Abstract Expressionism



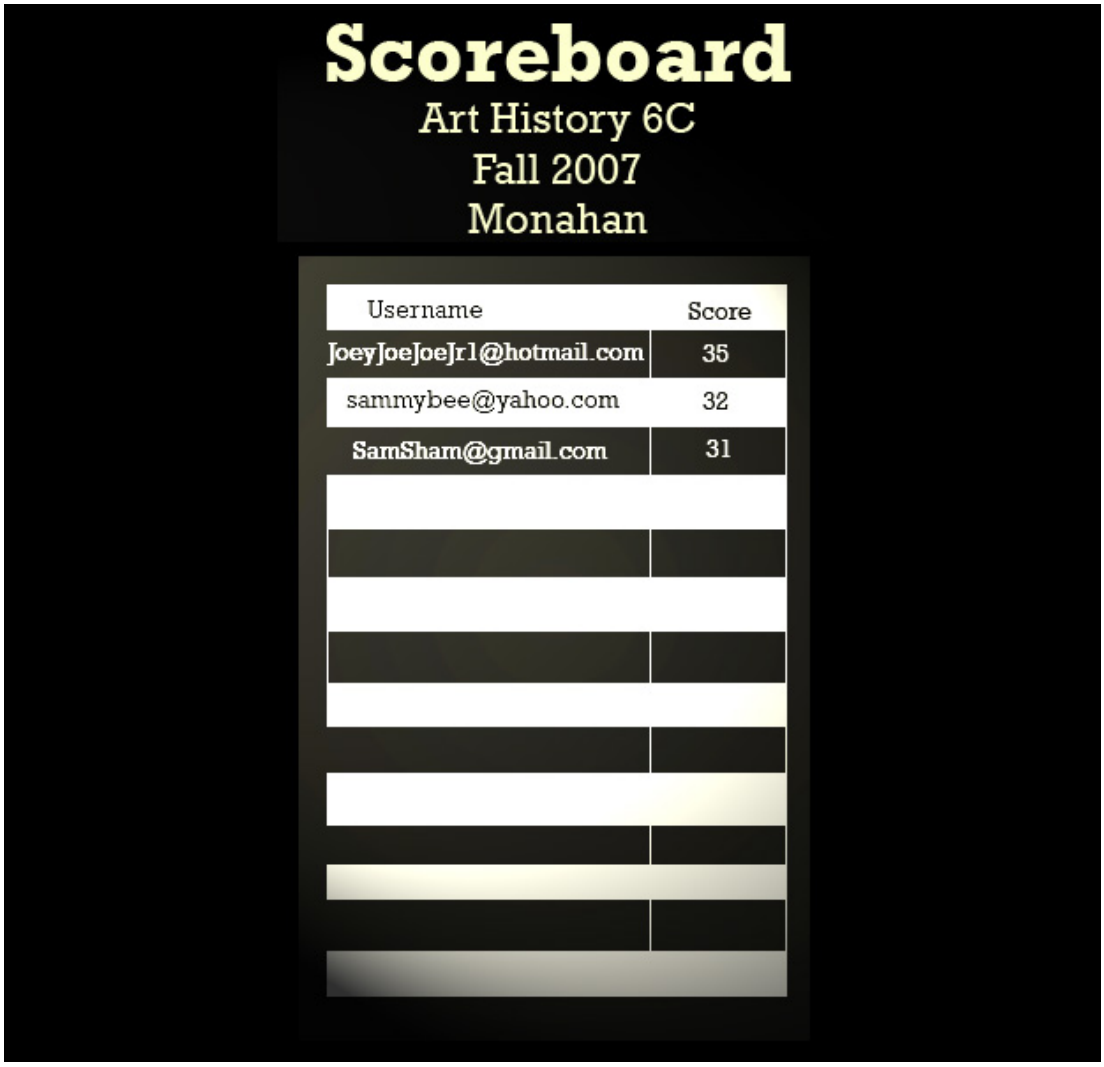


Intra-group comparison - Greek Architecture

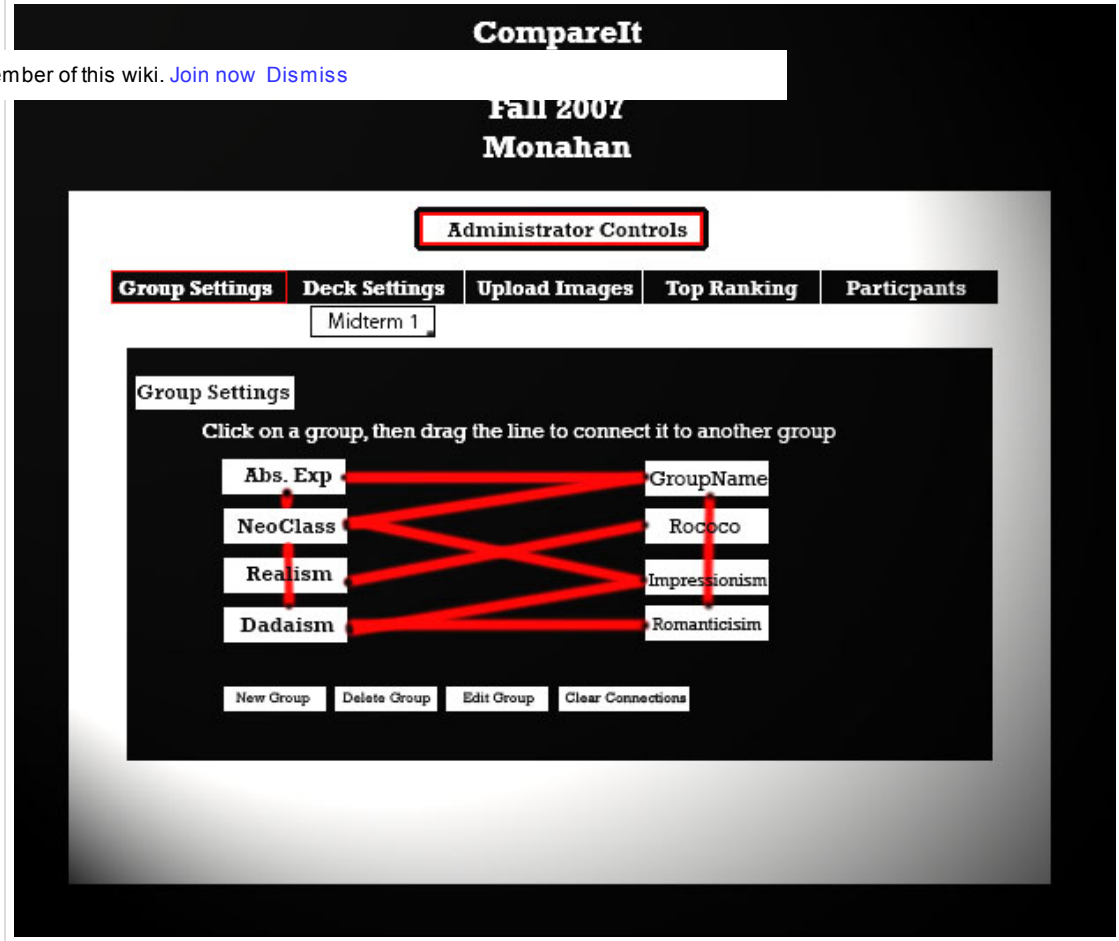




Inter-group comparison - Roman vs. Greek Architecture



CompareIt's scoreboard



CompareIt Administrator Screen - Group Settings

The sound of a 35mm Slide Projector (used when the images first appear)

Technical Elements in Brief

- flash, html, and a php backbone, deployed via the web
- scalable to browser size, from 800x600 to 1024x768
- 72dpi, 68kbps sound
- graphics (.jpg) and sound (.wav) are bound to .swf file, and displayed in a .html frame.
- Image files are named by (group)_(year)_(identifiernumber). I.e. 1_1820_2
- php/mySQL database keeps track of players' account information, score, and standing.

Working Prototype of User Experience

Motivational Issues

Describe how the game engages the learner. How does it make use of curiosity, challenge, control, fantasy, competition, cooperation, etc.? (No one game will do all of these things, so focus on the particular strengths of this particular game.) Make specific reference to the theoretical readings associated with this course.

This game relies heavily on extrinsic motivation, which means that students will play this game in order to receive an external reward or avoid some punishment. In particular, most students will play this game simply because it is required by a professor to do so. However, there may be other motivating factors associated with this game:

- Ranking System - Using a leader board shows how well each student's responses were ranked when compared with the other students' responses. This adds an element of competition to the game, which Malone and Lepper list as one element of intrinsic motivation. This also adds the element of recognition, which means that we like to have our work viewed and appreciated by other people.
- Section Ranking - Depending on the class in which this game is used, professors may want to pit one section of the class against the others. Again adding competition, section leaders may be rewarded for encouraging students or achieving higher scores than other sections.
- Showing Quality Response in Class - Professors may also choose to show quality responses in the class. This element relates to increasing self-esteem, which is one element of the challenge factor of intrinsic motivation. If a student is to be praised in front of the class, they may perform better than if there was no chance of being praised.
- Feedback - This game requires feedback in multiple ways. First, the student is provided feedback on his response by other students.

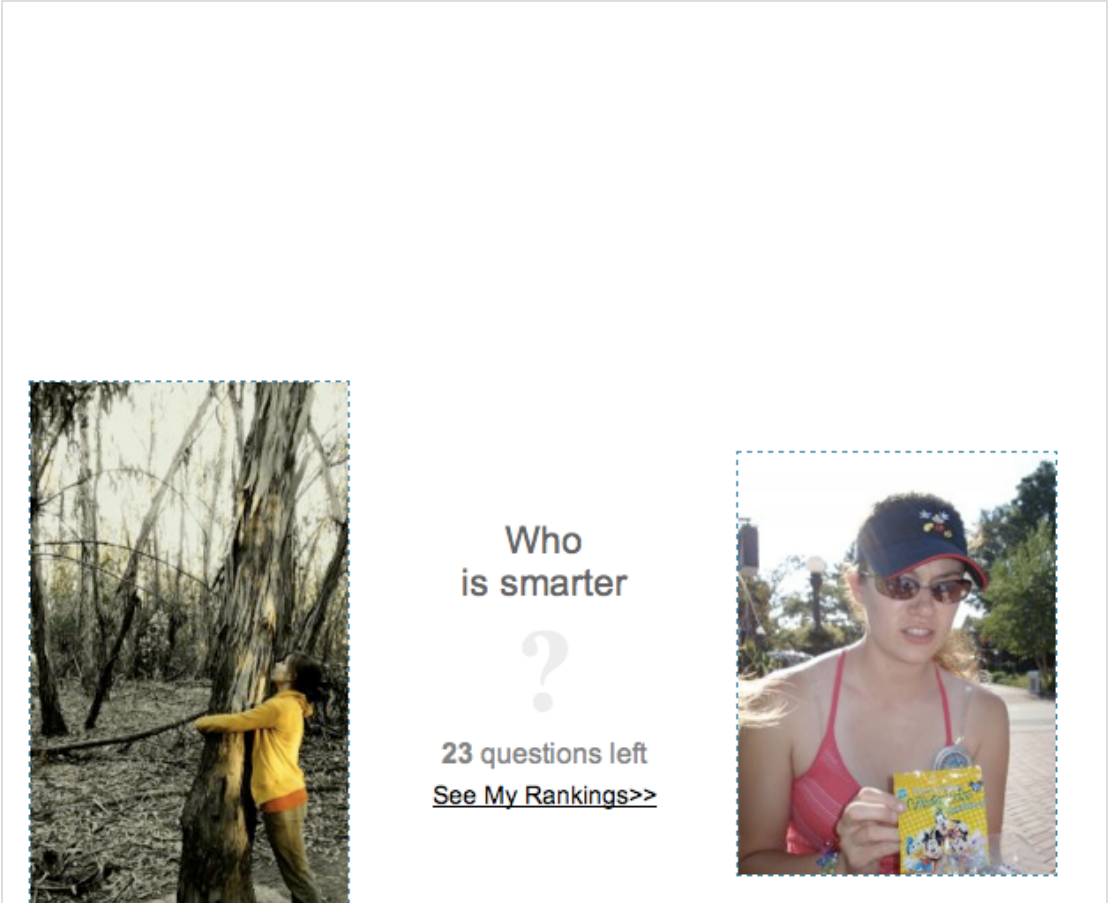
The section leader or professor may also provide feedback. According to Malone and Lepper, this feedback must be frequent, clear, constructive, and encouraging. Or, in the words of a professor I know, we must be each other's "critical friends."

- Challenge - Simply because of the subject matter, this game will be challenging to most students. However, succeeding at this game is not beyond a student's reach. This activity is not impossibly difficult, nor extremely easy, which Malone and Lepper believe increases the challenge of a game.
- Trust Metrics: Administrators, such as TAs or faculty, can rate students based on the overall quality of their answers. This allows an external expert to evaluate the content produced by the community without directly grading responses. If the group is large enough to require differentiation amongst the scoring leaders, or if students have responded to many comparisons with low quality outlines, administrators can choose to use their trust ratings to weight overall scores. For example, two users may have 60 points, but an administrator may find that one of the users has entered several low quality responses that novice students have rated highly. They can then use the trust rating to increase the weight of the better responses to increase the second students scores. In this way, an external, expert source silently ensures that the best learners are rewarded for their answers, and not just for the volume of their responses.

Design Process

CompareIt began as an extension of the Glass Bead game described by Herman Hesse. After hearing the description of the game within the novel, the designers immediately saw a connection between the game and the modern practice of museum curation. Contrary to popular belief, museum curators do not simply throw paintings up on the wall, nor do they place one piece next to another for purely aesthetic reasons. Rather, every work in a museum's show is a locus of connections to every other piece, including those in close physical proximity and those further away. Since museum curators are already experts in their particular fields, the designers decided to focus on art history students. Art History, as a field, requires the same comparison skills used in the game. Understanding why an expert has placed two things next to each other is an essential part of a student's skill set when taking an art history course.

However, the designers quickly encountered a major problem in creating a game based on a qualitative skill: who will score it, and how should the game mediate the scoring? A major breakthrough occurred when one of the designers encountered a Facebook application called 'ComparePeople.' This application randomly selects two of the user's friends, places their pictures side by side, and asks the user to pick which of the two better fit a randomly selected question. For example, it may pick Joe Smith and Jane Doe, and ask the user an inane question such as 'Who would you rather be stuck in handcuffs with?' or 'Who is funnier?' The user then selects one of their friends, or chooses to skip the question. The application then aggregates the data and creates world-wide and user-centered rankings.



Ana Salatino | Skip | Holly Dunckel

The Compare People Facebook Application

Continue comparing

- All questions
- Work related
- Personal
- Dating
- School related

- more likely to win in a fight
- am I more jealous of
- a better laugh
- a better profile picture
- a better sense of humor
- better taste in music
- better dancer
- better friend
- better listener
- braver
- funnier
- kinder
- more adventurous
- more artistic
- more athletic
- cooler
- more creative
- more fashionable
- more likely to do a favor for me
- more loyal
- more popular
- more talkative
- more trustworthy
- more useful
- nicer

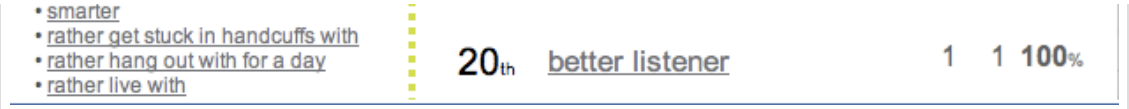
Where Do I Fit | Inner Circle | **My Favorite People**
Friends of Friends | UCSB | San Diego State | San Diego, CA | Hall of Fame

Where Do I Fit

Here is where you stand relative to your friends, based on votes we gathered from them.

Show this in your profile

you	category	votes	wins	win%
10th	funnier	4	3	75%
11th	would make a better father	1	1	100%
17th	rather have dinner with	1	1	100%
17th	studies harder	3	2	66%



The ComparePeople Ranking System

The designers decided to adapt this peer-rating system to serve as a scoring model for their game. Adapting this model appears to have a number of advantageous side-effects. Rather than simply answering a question, users are now required to evaluate other the answers provided by their peers. This forces the users to perform a critical analysis of a text, a skill that will benefit them in any field of study. This use of technology also reduced the need for external grading, and bypassed the issues associated with having a machine grade qualitative answers.

After adapting the 'Compare People' model to their needs, designers recognized a fault in their logic: a player could theoretically produce dozens of poor quality responses and still acquire a rank as high as a player who produces fewer, high quality responses. To address this issue, the designers turned to the idea of trust metrics (described above). By having an outside, expert source (i.e. the facilitators) rank the overall quality of a user's performance, designers found a way to ensure that the best players (those who consistently produce excellent quality responses) achieve higher rankings, without directly interfering with the gameplay.

Though the design and development process for CompareIt went forward smoothly, the designers did learn a few valuable lessons from the experience.

1. Learning games based on community evaluation do require a degree of external guidance by experts. This ensures that the learners produce materials in line with field standards.
2. If the ranking system contains flaws, some percentage of users will move to exploit those flaws. Therefore, designers must anticipate and correct these flaws before they emerge and demoralize or demotivate players.
3. At the present juncture, distributed grading by humans can produce smarter evaluations of qualitative responses more quickly than either facilitator-centered grading or machine-mediated grading.

The use of 'evaluative communities' will continue to grow as educators and organizations turn to interactive online learning platforms grounded in social communities. CompareIt merely serves as an illustration of the power of collective critical thought.

References

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