

Game-Based Learning in Hybrid/Online Instruction:
A design approach for creating GBL college level courses

A Master's Thesis Presented to
Information Design & Technology Program
State University of New York
Polytechnic Institute

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December 2018

SUNYIT
DEPARTMENT OF INFORMATION DESIGN AND TECHNOLOGY

Approved and recommended for acceptance as a thesis in partial fulfillment of the requirements
for the degree of Master of Science in Information Design and Technology

Date

Thesis Advisor

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Abstract

Educators working in the current system of hybrid/online courses have a tremendous opportunity to engage students through the use of Game-Based Learning (GBL) and game mechanics. Research suggest GBL mechanics increase student participation. Design principles suggest that by integrating current online gaming platforms course designers can apply a broad set of GBL principles to match each course learning objective and outcome. Provided in this paper is an example of which GBL principles can be utilized to deliver segments of course objectives and learning outcomes in a college level course.

Acknowledgements

I would like to express appreciation to all of my family, friends and colleagues who have encouraged me to continue my academic goals. Thank you to Mr. Gary Gygax and Dave Arneson for creating Dungeons and Dragons and my subsequent love for games in education. I would like to acknowledge my advisor, Dr. Steven Schneider for his flexible pedagogy as well as his down-to-earth approach to information design. Thank you to C.T Avis and K. Klump for your suggestions and time spent reading this project. Finally, I want to thank my wife for her persistent encouragement during all of my academic programs.

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Game-Based Learning in Hybrid/Online Instruction

Introduction

The concept of implementing game mechanics into learning objectives is an easy one to consider being that most people have experienced a game in one way or another. Games are to be thought of as ‘micro-teaching’ artifacts (Hunicke, et. al 2004) that are designed to teach players **how** to accomplish *the* goal, the **ways** in which one is able to accomplish *the* goal as well as the ways in which taking risks can prove beneficial or detrimental to learning within a situational learning matrix.

Definition of Game Based Learning (GBL)

For the ideology of what a game is, consider the game as a player engaged microsystem of rules, roles, rolls etc. designed for player engagement. Games engage the participants to learn its rules and eludes to ways in which one could master techniques to ‘win’ the game.

Some game designs are simple. Other designs offer intricate rules that aim to teach *something* that integrates multiple systems. All games are designed to give the player the ability to practice taking risks and making mistakes, so that players determine multiple routes of success, determining skill proficiency.

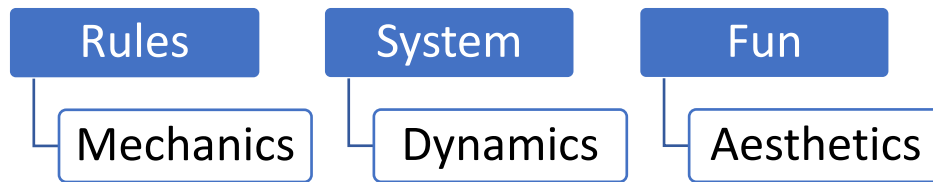
“We make mistakes in a risk-free setting, and through experimentation, we actively learn and practice the right way to do things” (Trybus 2010).

The current trend of digital game-based learning (DGBL) approaches have been interesting. However, this project discusses more traditional game-based learning principles and how they can be used for delivering course objectives and student learning outcomes of a college level course.

Literature Review

MDA design framework

Hunicke, et. al (2004) developed a formal approach to game design and research in which established a framework of design principles (Mechanics, Dynamics, Aesthetics) used in formalizing both the “consumption of games” and the methods to which designers create for consumption.



MDA: Formal Approach to Game Design and Game Research. Hunicke, et. al 2004

This framework relies on the idea that games are thought of as ‘artifacts’ rather than ‘media’. Therefore, as this project relies on the MDA framework, games will be considered as artifacts. The distinction between the two terms is important because with this idea, games are considered systems that build behavior via interaction.

Within an effective game-based learning environment, players work toward an achievable goal, taking risks and choosing actions to experience consequences of those actions along the way.

Research has proven that both males and female students are more are more motivated and engaged in the course material when implementing GBL principles (Papastergiou 2009), (Admiraal, et. al 2011), (Hamari et.al 2015).

Understanding that games have the ability to engage people in risk/consequence-free environments, game-based learning principles applied to learning objectives encourage the student to actively apply learned concepts with situated meaning.

Games and their Education Implications

James Paul Gee had outlined 16 different principles to consider when creating games for learning. Gee, (2005) later refined the list into different approaches of implementing games into education. Defining 3 learner profiles and several different principles, Gee provides examples of popular videogames that support each principle and its educational implications. The three sections are: Empowered Learners; Problem Solving; Understanding.

With Gee's useful distinction of games and their educational implications, a hybrid/online course could be designed to deliver course learning objectives of virtually any course using a game-based educational approach.

Each course designed needs to begin by evaluating the learner profile, reviewing the list of examples of games that fit that profile. Understanding the list of games and their educational implications, the instructor utilizes game mechanics from the game examples listed, and begins to apply GBL principles to their course material on a module-by-module basis.

Not every course will be designed with the same GBL principles. Each course will need to evaluate GBL principles independently to develop course delivery and to remain relevant to reinforce situated meaning.

Moral Implications in Game Based Learning and Education

Kohlberg (1971) suggests that "the best possible society would contain individuals who not only understand the need for social order but can entertain visions of universal principles, such as

justice and liberty (*universal ethical-principle orientation*)”. Kohlberg discusses three levels of moral development. Level 1: Pre-Conventional – How to avoid punishment and self-advancement. Level 2: Conventional – Socially acceptable one with societal norms. Level 3: Post-Conventional – knowing the difference between right and wrong vs. morality and right and wrong vs the rules.

Recent research suggests that imaginative role-playing games like Dungeons and Dragons facilitate stronger development in postconventional reasoning (Wright, et al. 2017).

When considering moral implications and player choice within a game environment, students are free to explore multiple moral implications; in a risk-free - on demand environment.

Adams (2013), finds that the immersive fantasy role-playing game (RPG) “D&D chained-out fantasy themes related to democracy, friendship, extraordinary experiences, and ethics. That report also suggests that scholars may use ‘fantasy themes to explain behavior and understand how groups ascribe meaning to actions’” (pg. 83).

Situational learning matrix

As stated above, every game has a set of Rules/System/Fun. In order to process the basic mechanics of the game innately, a tutorial system of explaining the mechanics and dynamics of the game to the player.

It is suggested to design a good game for education, the designer should incorporate a system to teach the basics of the course – a tutorial. The GBL principle **Just in-time/on-demand** aims to provide relevant course material just in time to the student so that they can continue course progression.

Incorporating a tutorial to game play as the need for understanding the game mechanic presents itself will provide the learner necessary tools to progress within the narrative. Tutorials are what create a foundation of knowledge that the player will need to call upon regularly to achieve success.

Once the foundational learning is proved to be proficient, the game should slowly begin to introduce some of the other GBL principles that are designed to enhance the players experience.

Creating flow systemically

“Flow invokes a growth principle in which a more complex set of capacities is sought after and developed, leading to long-term learning effects” (Admiraal et. al 2011).

When in flow; people experience complete immersion within the activity in which time and space is distorted in an enjoyable outcome. In order to achieve flow, a combination of factors need to be considered to help foster concentration, interest and enjoyment in any activity. Csikszentmihalyi (1990) suggest that enjoyment intrinsically has eight major components and not all need to be present to experience flow.

Chen 2006, discusses three core elements that create the experience of designing a challenging and engaging activity that merges action and awareness, outlined by clear player goals with direct game feedback to create a sense of control on the task at hand. Those three core elements are, 1. Players want to play and the game is rewarding. 2. The game challenge and player ability are equivalent. 3. Players need to experience a sense of personal control over the game activity.

Chen further states that to create a game experience that different people can enjoy, the game needs to retain four elements. They are as follows:

Dynamic Difficulty Adjustment (DDA) is the games ability to adapt to the player, based on the individual player skill and performance. In most major video games, this element is not typically incorporated in its game design as current computing has difficulty evaluating individual player skill and performance on a human level. Some table top games have the mechanics for a dynamic difficulty adjustment system built in or written into their core rules and information. For example, within the core rules and mechanics of *Dungeons and Dragons*, the ability to incorporate a DDA system is suggested to the Game Master; “Describe to the players how you envision the game experience and let them give you input. The game is theirs, too. Lay that groundwork early, so your players can make informed choices and help you maintain the type of game you want to run” (Crawford, Perkins, & Wyatt, 2014).

With a collaborative educational approach,

Flow zone is the evaluation of a player’s desire to continue an activity regarding difficulty or play type. “Like fingerprints, different people have different skills and Flow Zones” (Chen, 2006). Using different tasks, objectives, difficulty settings or challenge ratings vs. a Player Character (PC) needs to be regularly evaluated to provide each student their individual academic performance reports.

Dynamic Flow is an attempt to induce the state of flow on a controlled level. The instructor can include or alter materials to supplement or enhance each individual student experience. There are two adjustment methods discussed the Passive Flow Adjustment and Active Flow Adjustment, see figures below.

“Flow can be understood as invoking a growth principle in which a more complex set of capacities is sought after and developed, leading to long-term learning effects” (Admiraal, et. al 2011).

Embedded Choices in gameplay offer a mechanic for players to control their engagement.

Choices should be adjusted to the player’s level of engagement.

Choices are integral for imaginative/narrative RPG based games. Choices are what make the character ‘a character’. As this is what is used to partly define a character, choice in games help to reinforce a player’s identity and agency over their experience.

Design Principles

In considering design principles for education, Lidwell, et. al (2010) outline several principles to consider when designing a system for learning. Particularly for this project the principles that apply are, Immersion, Personas, Progressive Disclosure, Stickiness, Storytelling and Wayfinding.

Immersion: when the perceptual and cognitive systems are challenged, without being exceeded whereas the player experiences extreme joy and satisfaction. During the “Synchronous Sessions” the students will experience immersion.

Personas: Designing with role playing and character customization in mind, incorporating persona principles are going to play a large role of character development.

Progressive Disclosure: As players progress through the learning modules, they will be awarded specific “boons” to help learn extra information, easier. Using progressive disclosure, the recorded game play from each student in the GBL section will be *potentially* discoverable by other students.

Stickiness: *Story.* The idea is expressed in the context of a story, dramatically increasing its memorability and retelling.

Storytelling: As this is a RPG style game, storytelling is a fundamental mechanic that needs to be developed as the course narrative. The setting, characters, plot, invisibility, mood and movement will need to be developed to provide rich context to further enhance learning.

Wayfinding: Due to the nature of this particular course delivery concept, wayfinding will occur during the “Synchronous Session”. The four stages of wayfinding are orientation, route decision, route monitoring, and destination recognition.

GBL Principles

In considering GBL principles, Gee (2005) outlines several principles to consider when building a GBL based learning platform. Particularly for this project the GBL principles that apply are Customization, Identity, Risk-taking, Cross-functional teams, Situational Meaning and Think laterally/rethink goals.

Customization by incorporating a dynamic difficulty adjustment system (DDAS), users are able to customize their experience to fit their learning style. The feedback and ‘story recap’ session, provide students with the opportunity to discuss some of the key events of what has happened during their time as a character. Students are able to direct concerns regarding the course or their experience at the end of each module.

The Instructor is then able to adjust the player’s experience by adjusting mechanics to fit the students’ playstyle: Empowered Learners, Problem Solving, Understanding (Gee 2005).

Identity: Instructors will need to develop a robust cast of characters so that players are able to choose from a cast of historical icons to begin to create a sense of identity. The Instructor should

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create an even balance of characters for both of the Primary Characters and the Secondary Characters. Particular attention needs to be directed to **character development** (goals, morals, alignment, etc.) and **world detail** (political, economic, social and cultural impact) so that students can develop Student Learning Outcomes: 1, 2, 3, and 4.

After students are assigned a player group (Primary or Secondary), they are able to select a character to play out for the duration of the learning module.

Risk-taking principles are the basis of education. Games are designed to mitigate the consequences of failure to the player so that they are encouraged to seek alternate methods of problem-solving.

For example, if using mechanics from imaginative RPG games, Students can take on the role of a *Time Agent* – their role is to research and report back on the history learned regarding specific key information. The information learned will be utilized to determine the success rate of ‘Major Events’ (battle mechanic) within game play. Failure is possible.

For *Time Agents*, failure informs the *Agents* of their mis-steps and offer an opportunity to re-attempt the ‘Major Events’ after they have completed ‘side-quests’ that relate to the missing work from the first failure. Resetting time comes with its consequences; you may only reset time 3 times before your reset button no longer works.

This GBL principle satisfies Course Objective 4: “Provide opportunities to demonstrate an understanding of academic and research methods to synthesize, evaluate and think critically about ideas, concepts and evidence used by historians as well as develop well-reasoned arguments of their own” (SS121 HCCC)

Cross-functional teams are defined by the following roles; Instructor, Primary Characters, Secondary Characters. Each have different roles during the module that achieves the same course objectives and learning outcomes. While one group may be playing out a scenario, the other group may be collecting and reporting on information needed to achieve the overall module goal.

Course Objective 4; SLO 234

Situational Meaning principles are being utilized via the course role play section. By ‘acting’ out the [EVENT], players will have an opportunity to play out the course narrative, and evaluate the overall impact [EVENT] had on the development of the United States.

Explore ‘think’ laterally, and to rethink goals. As this is using role playing mechanics this course delivery method encourages students to **explore ‘think’ laterally, and to rethink goals.** As each game play interaction is recorded, students are encouraged to seek out further information regarding other player characters. Doing so, players may learn more information to help with their written assignments – which would then help in the success of the specific ‘Major Event’ battle mechanic. Encouraging this play reinforces SLO 1, 2, 3, 4.

Information ‘On Demand’ and ‘Just in Time’ principles are being used with the tutorial, the instructional ‘pop up’ messages that are given to the player just when they need it.

As the course emulates a college level course, the objectives and SLOs need to be completed in a timely manner. Using this principle will help motivate students to complete required work by the date the assigned work is due.

Methodology

Designing to learn

This project is designed to create an online/hybrid platform that utilizes tools already being used for online learning and online RPG gaming to create educational game sessions that integrate college level course objectives and Student Learning Objectives (SLO) with GBL principles to engage student participation and increase situational meaning experiences. Incorporating GBL principles to a course outline should not aim to replace any portion of the course other than its instructional delivery. The process of implementing GBL principles into course delivery should be conducted at the beginning of the instructional design process.

As course designers are used to incorporate learning theory and technical knowledge, creating an entire course will take a considerable amount of development in collaboration with the Instructor. However, after the initial development of course deliverables are defined and deployable, the continual implementation of the course will be reliant on the information gained from each modules story feedback and dynamic difficulty adjustment systems.

When developing the course, instructional designers and course instructors should consider;

- **Determine GBL principles and their appropriate educational implications**
- **Incorporate GBL principles to course subject matter (story narrative, key points/topics, important/relevant information).**
- **Create systems of cross-functional teamwork. (collaborative essays and battle mechanics)**
- **Create Feedback criteria for student assessment (grades, dynamic difficulty, etc.)**

The GBL principles used in this example may not apply to any/all other courses. Each course should be independently evaluated for GBL principles that are conducive to learner engagement and participation.

Designing with objectives and outcomes

Using an example from a local college, a three credit American History Selective has the following: (Steele, rev2017)

Course Objectives

1. Introduce students to a basic narrative of [EVENT].
 - Discuss the political, economic, social and cultural impact [EVENT] had on American history.
2. Introduce common institutions in American Society, and explain how they have affected different groups in relation to [EVENT].
3. Provide students with opportunities to develop an understanding of America's relationship with the rest of the world because of [EVENT].
4. Provide students with opportunities to demonstrate an understanding of current academic and research methods to synthesize, evaluate, and think critically about ideas, concepts and evidence used by historians as well as develop well-reasoned arguments of their own.

Student Learning Outcomes

1. Display knowledge of the basic narrative of American history, its different components, as well as its unity and diversity in US society.

2. Integrate knowledge of common American institutions such as the government, economics, religion, etc., with how those institutions have affected the different socioeconomic groups.
3. Demonstrate an ability to discuss how America's relationship with other parts of the world has changed over time.
4. Identify, analyze and evaluate arguments as they occur in their own or other's work and will develop well-reasoned arguments of their own.

Grade Determinants

Each instructor will determine the relative importance of the evaluation strategies used in accordance with their pedagogical preferences and course assessment results, as well as the specific grading scale used to determine course grades. Most importantly, student achievement will be evaluated using a variety of objective and subjective instruments that are determined by the instructor's syllabus.

Course Assessment

Each course instructor is committed to modifying and improving the course learning activities based upon the feedback provided by the course assessment process. Students will have achieved the learning outcomes if they demonstrate master at the 70% level.

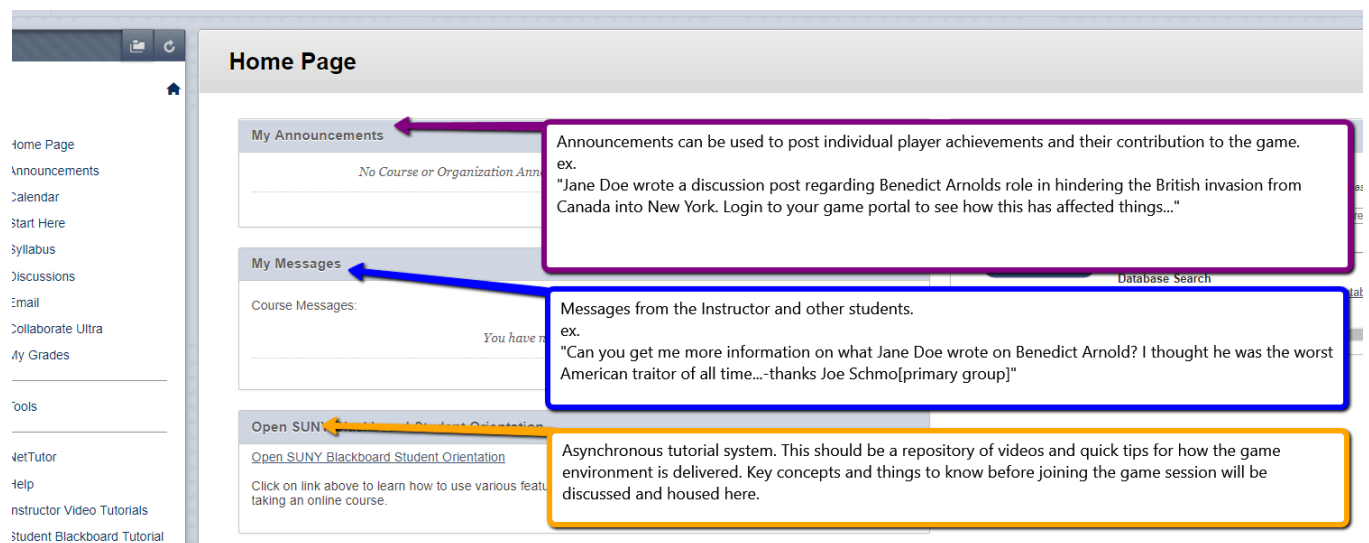
Platform integration

Learning Management Systems

The platform should utilize existing learning management systems for its course information, communication, grade reports, assignments and other institutional related information. This will

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be the platform for all course related information asynchronously. A tutorial should be created on how to use each of the systems.



*Extra credit should be awarded for each student who interacts with each segment of the LMS on a regular basis (i.e. each announcement/message/discussions/etc... the student reads/responds/confirms etc. grants the student 'luck points'.)

For the **Online GBL Section:**

- * All course information housed in traditional locations.
- * All story related information located in a shared file.
- * Synchronous sessions conducted online. (different day than *Hybrid* section)
- * Each session is recorded; meaning every story-based communication is saved so that so that students can have an opportunity to learn about each event as well as others' character roles.

For the **Hybrid GBL Section:**

- * All course information housed in traditional locations.
- * All story related information located in a shared file.
- * Synchronous sessions housed on campus (different day than *online GBL* section)
- * Each session is recorded; meaning every story-based communication is saved so that so that students can have an opportunity to learn about each event as well as others' character roles.

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- * Tech requirements for student will be dependent on the institution tech requirements for their LMS as well as the minimum tech specs for the online platform used for the synchronous sessions.
- * Tech requirements for student will be dependent on the institutions LMS synchronous session is on campus.

Synchronous Gaming Platforms

Synchronous sessions will be utilized for battle mechanics and a method to reinforce learned material. An ideal platform will have tools to foster design, communication, evaluation and resources.

The GBL option of the course will be accessed through the institution's Learning Management System utilize a similar platform to Roll20's online virtual tabletop; a platform designed to play 'pen and paper' games within a virtual environment.



roll20.net delivers the traditional pen and paper experience digitally.

This project, aims to incorporate popular game design principles and mechanics into an online/hybrid college credit class. The benefit to current online learning management systems

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are that they offer options to participate and interact both synchronously and asynchronously with course materials and objectives.

Web Based:

Using popular table top to digital RPG platforms like Roll20.net, instructors can create the narrative for their modules. While all of the fantasy tools that are integrated with www.roll20.net's platform, the instructor will need to begin applying the GBL mechanics with course objectives to define the course outcomes.

Campus Based:

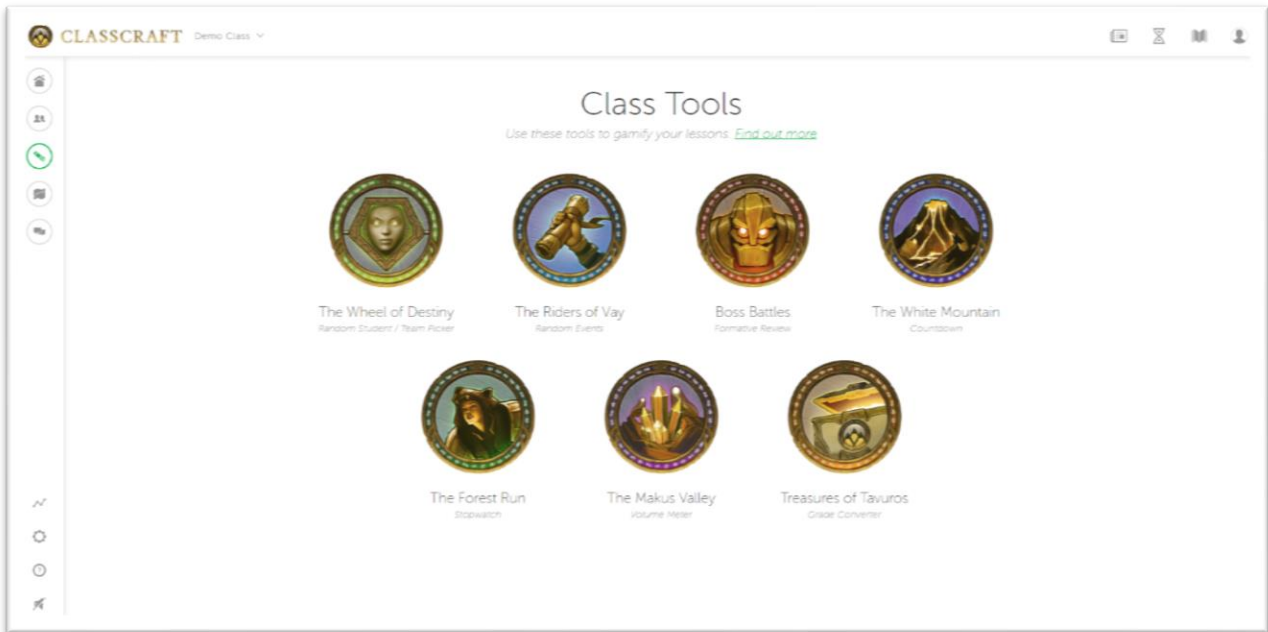
Using popular table top RPG mechanics, instructors can create a synchronous session for students to play the game live. Character sheets (character stats and achievements), maps and other physical material may be incorporated into gameplay to engage in player immersion. Using information gained during the module, players are evaluated on learned material and play performance.

Platforms like Classcraft.com can be an area for

Tools for Instructors (Game Master, GM)

Similar to platforms such as Classcraft (www.classcraft.com) and Roll20 (www.roll20.net), educators need to have the tools necessary to build a proper platform.

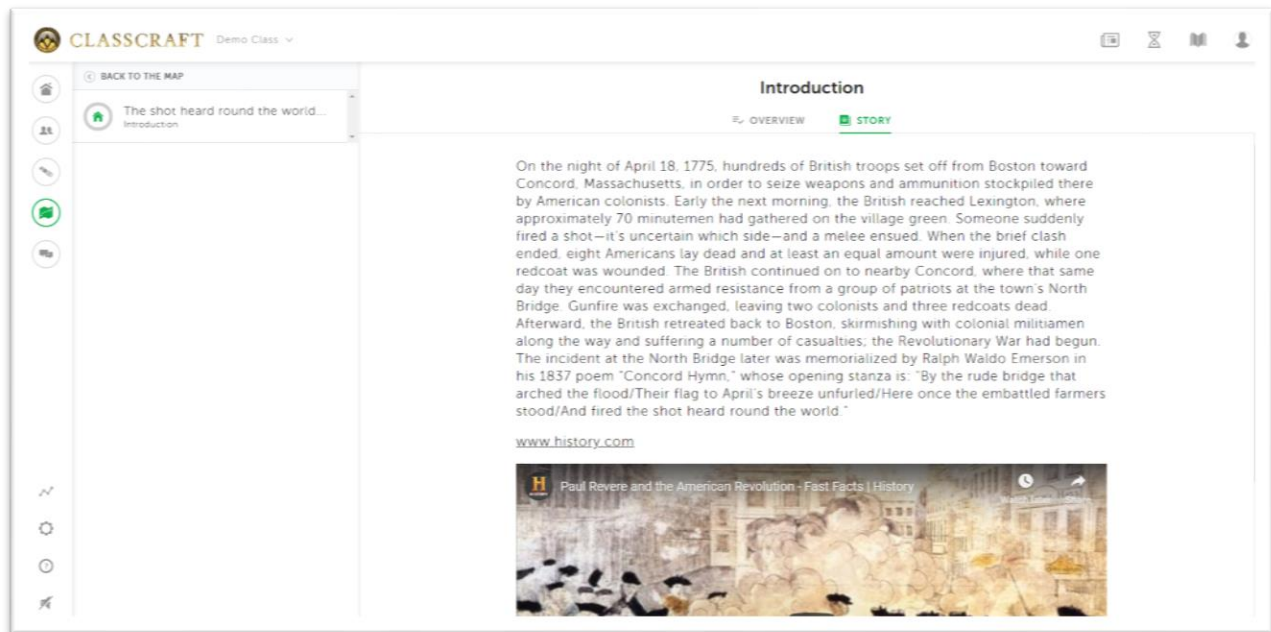
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Classcraft's educator tool menu

Course design tools that encourage course designers with a range of skills ranging from novice skills like creating simple text-based adventure using images and links to video; to advanced skills like *created animated dialogue scenes with ambient sounds, deep character biographies with a rich detailed historical fact to be used as side quests.*

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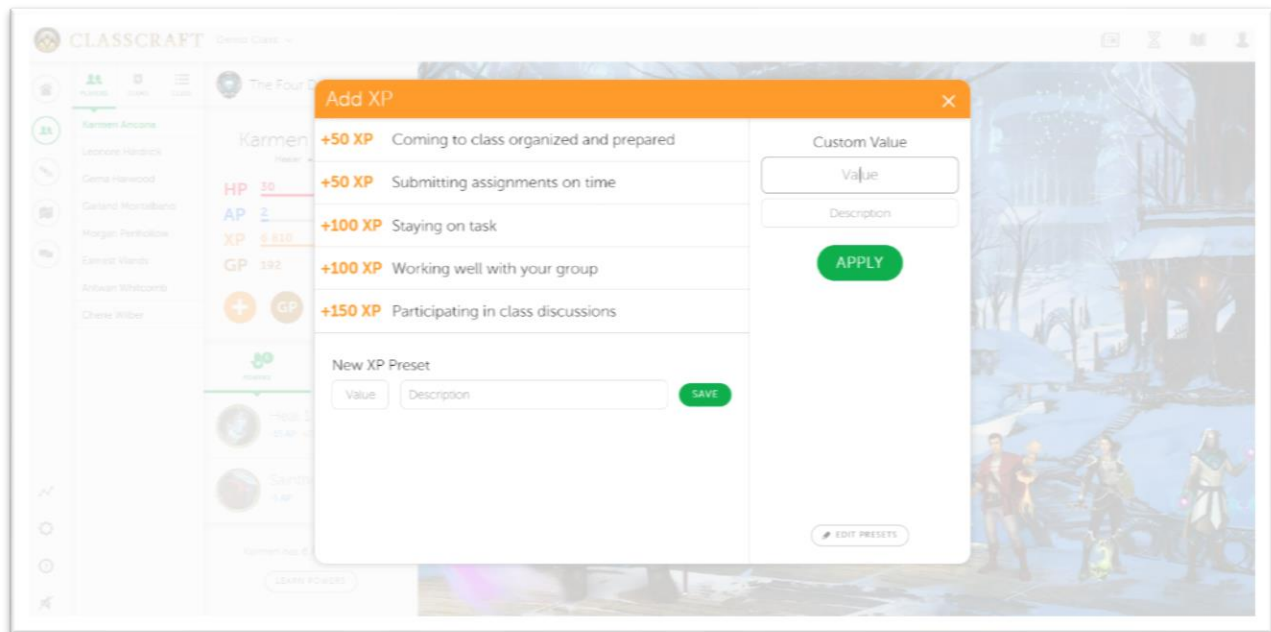


Tools for educators to incorporate a multimedia approach

Communication tools that serve as a major element in the user experience for the instructor and student. Communication and participation are crucial to plot progression and needs to be evaluated regularly. If the student/PC is not engaged, they can opt out of the game-based section and return to the traditional class delivery. The GM is encouraged to reach out to the student/PC to ensure that they are still willing to participate. The instructor/GM may have an opportunity for the student to make up the missing work by completing additional work (side quests).

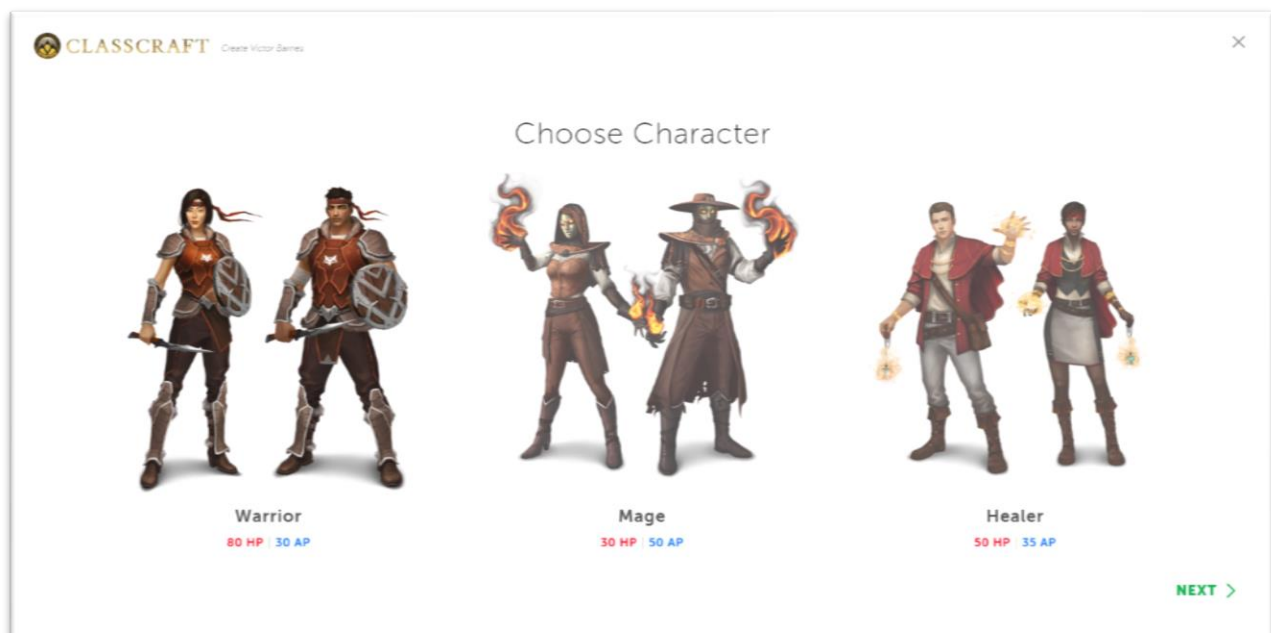
Grading/rubrics tools that evaluate the students and their knowledge of the courses learning objectives. Student engagement and participation should be evaluated to see if positive engagement and participation influence increased knowledge from categories outside of the courses learning objectives. This system is called Dynamic Difficulty Adjustment.

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Gamifying the gradebook

Student (Player Character, PC) tools



Classcraft's Class Customization

Player **character profile** with customization options. Students who create character profiles and rich backstories will be given extra credit to use for other elements of the game. This will foster a sense of community and cross-functional team systems.

Evaluation and feedback systems need to be established. Game publishers have struggled to incorporate a dynamic difficulty element in their products. That is because games designed for mass publication are not created for individual assessment. This particular Learning Platform is designed to be for the college student enrolled in this online or hybrid course, who elect to the GBL course delivery over traditional methods. Therefore, this method of course delivery is fundamentally designed with the ability to incorporate a dynamic difficulty system giving the instructor the ability to approach each learner with an individual approach.

A built-in feedback system of main events and recorded student interactions will be created to allow for deep cognitive learning (Erhel, Jamet 2013). Instructor and students will discuss the game after each module to be given the time to react to the game events and learning objectives. Upon the completion of each module, the instructor will incorporate a dynamic difficulty adjustment system to accommodate individual learning profiles.

Using a **Cross-Functional team system**, student will have the choice of the “Story play” and Regular Class. The course content is the same just delivered in two different styles. Both methods of delivery will consider the curriculum’s learning objectives. Each delivery method will differ in overall content and learning objectives, yet will retain similar structure.

Designing each class will require its own examination of the GBL principles. Each design process will need to begin by identifying a set of GBL principles that can be incorporated with its subject matter to deliver course objectives and learning outcomes in a game like experience.

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For example, Introduction to Case Studies may benefit from simulated based encounter mechanics to incorporate situational meaning; Algebra courses may benefit from “Escape Room” games with puzzles built in to reinforce challenge and competency. Therefore, each instructional designer and instructor should begin the GBL integration process by examining GBL principles and their educational implications.

For the traditional class instructional approach, students can expect the same method of course delivery as in previous online learning delivery.

For the GBL approach students can expect to become immersed within the course narrative, similar to mystery dinner events, or player characters in *Dungeons and Dragons*.

Game Play

Major subjects of division matter will be explored using GBL principles integrated with course objectives and evaluated by student learning outcomes within an American History college level course. Below is an example of the GBL delivery.

To create a Game-based narrative, class development will require a considerable amount of time to create the elements of the story. However, course maintenance will require little invested time if each module is conducted with the feedback system. Instructors should evaluate each module at the conclusion of each module noting mechanics that may need altering.

Correspondence 1

“Good day,

Your application for temporary re-assignment with The Historical Company has been accepted. We are eager to begin the next step of the hiring phase.

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The Historical Company is *the* premier organization dedicated to the preservation of historical events. Each *event* in our database is determined to be the most accurate telling of history as each major event has been verified by multiple reports of each major event.

Included in your application for temporary employment, you were instructed to read about;

To prove that you are capable of working out in the field, we need you to describe in a short report the events that is famously known as
the initial cause of the Revolutionary War These facts
will prove your ability to ascertain important events.

Hint; make sure to add key people, places, organizations, governments, etc.
As this is your first written report, let me explain the rules:

There is no length requirement (*up front*)

You will need to get certain information before you can continue.

Working with others is a good idea.

's can be broad-vague statements that can include helpful information

Hint

Eventually, your job is to go back in time and report on key people places and things that had occurred, meet with other Agents to develop a full report to help to determine the political, economic, and social events that attributed to the [EVENT].

Of course, there are other duties you will be assigned if you become a full agent. As for now, submit your written report.

If you fail to succeed at reporting proficient information needed to update our logs; you will need to gain that information before you can continue...It usually means becoming a "fly on the wall" of important historical meetings and then reporting back on those meetings; but more details on that *if* failure should occur.

Correspondance 2: After they submit the initial assignment

Excellent, you have submitted your work and it was acceptable for the approval process for your *time clearance*.

Your next job will ask you to perform with other agents. Don't worry, its all via this communication device.

Sometimes you will serve on the Primary team and the other times you will serve on the Secondary team. You and your team will work as a cell, so that historical data doesn't get crossed. Each cell has at least one Primary Character.

Are you up for the task?"

[[Yes – Continue]] [[No – This isn't for me]]

Instructors role is the development of the course narrative, implementation of course objectives with major divisions of subject matter to evaluate student learning outcomes.

Characters: Roles in the game that are relevant to the students and the learning objectives. Each student group will play a character within the module. The more information there is available on each character offers the participating students the ability to learn more information on each story character.

Using the **storytelling** design principle, the instructor will need to include the following components within the learning module:

The **Setting:** A narrative description, accompanied with pictures, different video clips and detailed events that the student can become familiar with. Secondary Characters can earn additional credit if they include images that are accurate and relevant to the learning module.

The **Plot:** Main events of the Learning Module that are broken into segments for each of the character groups. This section can be rather large and should incorporate several layers to include the Learning Outcomes directed by SUNY (political, economic, social and cultural elements etc.).

The **Conflict:** This is the call to arms for the student/player that directs action, and requires solutions to specific parts for the Learning Module to conclude. This section should be engaging and can include some creative elements.

The **Resolution:** The conclusion of the Learning Module. During this section, the Instructor should be re-framing major events that had happened during the module and evaluating learning outcomes.

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At the beginning of each Learning Module, each student participating within the GBL section is selected to play as either the “**Primary Character**” or “**Secondary Character**”. After a learning module is complete, roles will be re-assigned so that each participating student will have an opportunity to play as each role.

Primary Characters are students who will be required to bring all of the working parts together.

Rich character development will attribute to a complete history, and the Primary Character’s ability to bring the other characters together to complete the assignment will be evaluated.

Students acting as primary characters will work with the Instructor to complete objectives and write about their story to the rest of the class..

*For more of a challenge, Primary Characters will seek out the assistance from their peers and will work with others to complete a more detailed historical report.

Gather Information: During this section the instructor will give students an objective to research. Students demonstrate multiple learning objectives within this section.

(Optional) ask the Secondary Characters for more detailed information.

Report and Evaluation: After you have *gathered information* you need to report back to your instructor in the required format so that your work can be evaluated. If the report is lacking critical information or does not completely fulfill the learning objective with a 69% or below, the instructor and Primary Character will evaluate the state of the story and determine a necessary path to acquire the information.

If the report is accurate (70% or above) the instructor will also give the opportunity to the Secondary Characters and the Leads to make corrections to help the final overall grade.

Final Report (“*Writing History*”): The final write-up will be “*written to history*” and graded by the instructor. Each story will be published for the entire class to read and comment on after the module is complete. Open discussion and reflection on the module where the Instructor should include the actual content of the learning objective and relate it to events experienced during the module.

Primary Characters are ultimately responsible for,

- Discussing the political, economic, social and cultural impact of the [EVENT].
- Explain how different groups have been affected by the [EVENT].
- Developing an understanding of current ideas, concepts and evidence used by historians as well as develop well-reasoned arguments.

Major responsibilities are incorporating another class-mate’s work into the final module narrative.

Minor responsibilities are leadership skills evaluated by the player’s ability to collaborate and integrate the research from the Secondary Characters.

Secondary Characters are students who will be required to research and develop character profiles and determine historical fact to be reported back to the Primary Character for the final module report.

The Instructor will give tasks to the secondary characters to help create a Cross-Functional Team system within the class and game world. Secondary Characters will often help the Primary Characters with assigned duties consisting mainly of research or gathering information in regards to the story’s *characters, setting, plot, conflict, and resolution*.

If the Secondary Character should want to research more on their character, there will be options for students to complete additional course work to help earn bonus points for whole teams' Overall project.

During the module, the Instructor will give the students a discussion question that is relevant to the objective given to the **Primary Character**. Each Secondary Character has to participate independently for the discussion question as this helps to evaluate concepts learned.

Secondary Characters can distinguish themselves by their performance throughout the module by completing or producing factual information that adds merit to the story. This would lead to extra credit options and potentially student avatar customization options.

Analyze and Evaluate: During this phase the Instructor will give the students the reports from the Primary Characters. At this time, it is the Secondary Characters job to read each report, analyze for errors in information and report back to the Primary Character with comments, suggestions and/or corrections.

Final Report (“*Writing History*”): The final write-up will be “*written to history*” and graded by the instructor. Each story will be published for the entire class to read and comment on after the module is complete.

Secondary Characters are ultimately responsible for,

- Discussing the political, economic, social and cultural impact of the [EVENT].
Explain how different groups have been affected by the [EVENT].
- Developing an understanding of current ideas, concepts and evidence used by historians as well as develop well-reasoned arguments.

Major responsibilities are reporting back to the Primary Character any historical findings that are relevant to the course objectives and learning outcomes.

Minor responsibilities are researching concepts that help create a final narrative report for the module narrative.

Instructors for this course will design a Hybrid/Online course/RPG based Adventure Module to provide a historical course narrative on the American Revolutionary War, to college students. For this particular project, assessment of the learning outcomes will be evaluated using tests/quizzes, a rubric for written assignments, and students' course participation and story feedback score.

Players will experience an immersive course narrative so that students can feel a sense of community and agency over the course material.

Open discussion and reflection over the completed the module will create a sense of agency with the learned content. Students will relate what they have learned and relate it to events experienced during the module and reflect upon each other's experiences.

If the instructor sees the need for side quests (extra credit), the instructor can implement extra challenges as needed.

Regular traditional based online class:

Admiraal, et. al. (2011) has stated, that students playing the game did not show an increase in understanding over those who did not play the game, meaning that the game shouldn't be used for every student.

GAME BASED LEARNING IN HYBRID/ONLINE INSTRUCTION

Some students feel more comfortable with the established form of the way their content is currently being delivered. This section of the class is designed with that in mind and made for the more traditional student who do not wish to participate in a Game-Based Learning Platform.

Learning Modules

Topic at a Glance: This is the module in a snap-shot. What you will be learning.

Overarching topics and important learning outcomes.

Discussion: Students will need to report on the Instructors assignment and objectives should include secondary and tertiary concepts courses learning objectives. Other learning objectives could include a deeper discussion on additional relevant information.

Students will need to respond to other students in the class to show applied learning and peer-to-peer course participation.

Research/Essay: Students will need to further their understanding by writing a short essay about a topic assigned by the instructor.

Test/Quizzes: Students will need to evaluate their learning by completing tests/quizzes assigned by the instructor.

Module Final Thoughts: The instructor and students can talk about the module in its entirety. This will be required; instructors will be encouraged to reward this discussion.

Conclusion

Educators working in the current system of hybrid/online courses have a tremendous opportunity to engage students through the use of Game-Based Learning (GBL) and game mechanics. Integrating Gee (2005)'s list of GBL principles and their educational implications with Lidwell (2010)'s design principles and their use in education, instructional designers and course instructors can begin to create an enjoyable educational experience. Challenge, flow and student engagement had a positive association with learning (Hamari et. al 2015).

The interactive RPG mechanic incorporated within the delivery of this course provides benefit to the design and GBL principles utilized in that offers flexibility. RPG mechanics also offer the player the agency and customization over the narrative providing increased engagement and enjoyment.

As research has stated, the collaborative learning experience accompanied by correct methodology helps students demonstrate deeper knowledge as well as a higher level of motivation. Moreno, et. al. (2007)

GBL, design principles and instructional methods need to work collaboratively to deliver student learning outcomes from major divisions of subject matter and course objectives. Multiple methodologies being considered, Game-Based learning can provide educators the necessary tools to engage students within online/hybrid course environments.

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