

LEARN4FUN

Gamification theory used in the learning process

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1. Project Specification

This project is aimed at stimulating the participation of students to the educational process and at proposing solutions for an increased awareness on their part. The aims of the project are approached by applying principles from the gamification theory in the recurring teaching activities and by proposing simple and efficient management instruments to the teaching staff and the students as well.

Regardless of the game type, be it a shooter, sports, roleplaying, etc. some features always stand out: a challenging competitive environment and a compelling reward system. The online platform that we envision plans to use these features in order to stimulate various audiences, through the appeal of games, to use their energy into a more productive way, that is, a learning environment.

2. Audience

- Q: Who is going to use the application?
A: Both students (at university level) and professors will be using the application for educational purposes.
- Q: What technologies do users need to be familiar with?
A: The regular Personal Computer (PC) user will be able to use the platform with ease, no additional requirements needed.
- Q: What would users be able to do with the application and why would they use it?
A: Users of the application would be able to reinforce the things that they learn during classes as well as discover many other interesting facts that they did not know beforehand, everything in a more pleasant and interactive environment.
- Q: Where and how can users use the application?
A: Wherever a PC/laptop with internet connection is available.
- Q: I do not like this product! Do I have any alternatives?
A: No other platform would provide the exact services as this one, but for viable alternatives, Coursera and Moodle can be used.
- Q: Sounds complicated! Is any other tool needed in order to use the application?
A: No! The regular (updated) Google Chrome, Mozilla Firefox or Microsoft Edge is enough.

3. Task analysis

Task #1: Creating quizzes;

Type of users: Mainly teachers, limited student ability;

Activity: Creating quizzes on various topics, creating combined quizzes, creating quizzes on tutorials;

Goal: The main purpose is to create a competitive environment from which students can learn as much as possible.

Description: Quizzes can be created by both teachers and students, with some specifications. Competitive quizzes (will contribute to the leaderboard, can be used in tournaments, etc.) can only be created by teachers. If a student wishes to create such a quiz, he will need the approval of a teacher (the teacher will still have to post it). On the other hand, students will be able to create quizzes on tutorials that they post, but these will only contribute to achievements (e.g. Solve 1/5/10 tutorial quizzes) or lesser rewards.

Steps:

- Visit the “Create quiz” page;
- Give it a name, a brief description and add related tags;
- Select the type of question you wish to add: Multiple/single choice, fill-in the blanks or free-answer questions;
- The previous step can be repeated as many times as needed;
- Review the quiz and submit it.

Task #2: Solving quizzes;

Type of user: Students;

Activity: Solving quizzes that can have multiple questions and various rewards;

Goal: The main goal is to learn from the quizzes and to collect points and achievements;

Description: The website will contain quizzes with interesting and tricky questions for the students to solve. After each answer, the student receives a feedback. At the end of the quiz, a score is computed and added to the user’s profile. Also, users receive achievements in case of completing different milestones in these quizzes (for example top score in Java quiz, 10/50/100 completed quizzes).

Steps:

- Select a quiz from the dedicated quizzes page;
- Answer the questions from the quiz;
- Submit the quiz and receive your score and rewards.

Task #3: Posting fun facts;

Type of users: Both students and teachers;

Activity: Creating and posting fun facts;

Goal: The main goal is to share interesting facts, on the website, with other users;

Description: Both teachers and students can post fun facts. A fun fact can contain text, images, videos and links. On the website, a page is dedicated for these types of posts, where both students and teachers can share, view and react to fun facts with comments and other reinforcement tools (e.g. smiley faces, likes, thumbs-up, etc.).

Steps:

- Visit the “Add a fun fact page”;
- Add a title and a brief description;
- Add the content of the fun fact which can be a combination of: text, images, videos, hyperlinks;
- Submit the fun fact.

Task #4: Fun fact of the day;

Type of users: Students, teachers, guests;

Activity: The ability to view the fun fact of the day;

Goal: To randomly select a fun fact and display it on the main page;

Description: From the pool of created (and approved) fun facts, one will be chosen randomly, each day, and it will be displayed on the main page. The section will contain a video, image, some text or a combination of these, the ability to click it and be redirected to the fun fact archive where users will be able to access extra information on the fun fact.

Steps:

- Visit the main page and notice the fun fact of the day;

Task #5: Reviewing fun facts;

Type of users: Students, teachers;

Activity: Creating a review on fun facts;

Goal: The main purpose of this activity is to offer reinforcement (whether positive or negative) and feedback on fun facts, that other users can see;

Description: All users can review fun facts. A review can consist of either or multiple of the following: reinforcement through a like/dislike, a comment or the ability to share it on different other media. Getting positive or negative reviews will influence the user's standings on the leaderboards and will be reflected on his account.

Steps:

- Select a fun fact either from their specific page or from the “Fun fact of the day” section;
- Choose to leave a like/dislike or a comment.

Task #6: Posting tutorials;

Type of users: Students, teachers;

Activity: Creating and posting various tutorials;

Goal: The main purpose of this activity is to share various how-to-s in order to have a centralized information hub;

Description: Both teachers and students can post tutorials. These tutorials can either be in written format or video format. These tutorials don't have to be created by the person who posts them, but they can be. Tutorials will be posted in a special, separate section of the website. The tutorials may also come in an e-book format.

Steps:

- Visit the "Add a tutorial";
- Add a title and a brief description;
- Add the content of the tutorial which can be a combination of: text, images, videos, hyperlinks or an e-book;
- Submit the tutorial.

Task #7: Viewing and reviewing tutorials;

Type of users: Students, teachers (view and review) + guests (view only);

Activity: Viewing, reviewing and answering to available reinforcement quizzes;

Goal: This activity entails the ability of viewing tutorials, participating in various reinforcement-learning activities and offering feedback on them.

Description: Any user is able to view the available tutorials. This is mainly targeted at the students, but teachers can benefit from this ability as well. A review can consist of either or multiple of the following: reinforcement through a like/dislike, a comment or the ability to share it on different other media. Quizzes may also be related to tutorials, thus helping the users assimilate the information in an easier way.

Steps:

- Visit the tutorials page;
- Select a tutorial;
- Enjoy what the tutorial has to offer;
- Leave feedback in the form of either a comment or clicking a like/dislike button;
- Optional step: solve a reinforcement quiz related to the tutorial.

Task #8: Accessing the global leaderboard/ranking;

Type of users: Students, teachers, guests;

Activity: Viewing the total score for any of the users as well as the rewards accumulated over time;

Goal: This activity allows users to see both their overall ranking and that of other users, ranked by total score and various rewards;

Description: Anyone is able to access the ranking. This is an important part of the application because it stimulates the users to complete as many quizzes as possible and gather badges in order to be at the top of the leaderboard. It also offers an overview of all the students and professors, thus one can find the most suitable person for when he requires help.

Steps:

- Visit the leaderboard page;
- Scroll through the page;

Task #9: Access to personal profile and viewing statistics;

Type of users: Students, teachers, guests;

Activity: Viewing, in a more detailed manner, a user's rankings, strengths and other user-related data;

Goal: This activity allows users to see the overall ranking of the targeted profile as well as additional information, such as: personal preferences, interests, all the completed achievements and level of expertise in different technologies/fields;

Description: All profiles are public, thus anyone can see them. A user can only fill in personal data about himself. All the other statistics (scores for different columns etc.) are automatically computed based on the user's activity and results on the platform. This functionality can be very helpful for choosing partners for team projects, finding the right professor for a license thesis or other personal projects.

Steps:

- Access either the leaderboard page or the personal profile;
- See all the statistics related to the user (global score, number of positive/negative reviews on various website features).

Task #10: Contact-the-developer;

Type of users: Students, teachers;

Activity: Submitting feedback and/or requests to the development team;

Goal: Keeping the development team in contact with the users, in order to fix bugs and improve the overall experience;

Description: Both students and teachers can submit feedback about their experience with the platform, report bugs or make suggestions about features they would like to be added. Once submitted, the information is stored in a database and is only accessible to the development team.

Steps:

- Go to the “Provide feedback” page;
- Complete the form and submit it;

Task #11: Posting a question on the QA page;

Type of users: Students, teachers;

Activity: When one has a question related to computer science and needs help with finding the answer, he or she may ask the community;

Goal: Helping students with their projects and trying to overcome any hurdles that may arise in the learning process;

Description: A student in need of help can post a question and add several tags so that others can find it easier. If someone encounters a problem with a project, chances are somebody else will have or has already solved it. This way it would be easier to find a right or better answer for the same question, even better: a TA or professor would be able to provide a correct solution.

Steps:

- Visit the QA page;
- Provide a title and a description to the problem;
- Select the appropriate question-related tags;
- Submit the question.

Task #12: Answering a question from the QA page;

Type of users: Students, teachers;

Activity: Help others solve errors/bugs or even find a right solution for a problem;

Goal: Increase the cooperation between users and at the same time share valuable knowledge;

Description: Any logged user can answer a question on the QA page. However, the comment may be deemed valuable or not by the rest of the community by using “helpful” or “not helpful” buttons. This contributes to a user’s total score and depending on the tags, it increases or decreases the score for particular skills.

Steps:

- Visit the QA page;
- Select a question that is to be answered;
- Provide an answer/solution;
- Submit the answer/solution;
- Answers can be rated as either being helpful or not helpful.