PROG 3B TASK 1

Part 1 - Research

Application: Dewey Training
Application ID: DT1.16

Version: 1.16
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Introduction

Our PROG 3B Task 1 describes an application which would help to familiarize librarians with the Dewy Decimal system, which is a classification system used by libraries to group books together by broad topic (number before the decimal), and then use further numbers and letters to group books into more specific topics and subtopics (numbers and letters after the decimal). (Washington State University, n.d.)

Each book is issued a "Call Number", which determines it's subject or topic, and other identifying information (e.g. author and subcategory).

The books are arranged into ten broad classifications, shown below:

000	Computer science, information and general work
100	Philosophy and psychology
200	Religion
300	Social Sciences
400	Language
500	Science
600	Technology
700	Art and recreation
800	Literature
900	History and geography

(Sixthformstudyskills, n.d.)

In order for the application to be engaging, and mentally stimulating, the application should implement a number of learning techniques, which is often referred to as "Gamification". Gamification is the process of making an application or process into a game, which often enhances learning. The application therefore uses game elements and game design techniques in non-game contexts. (Quicksprout, 2016)

Gamification is the concept of applying game mechanics and design techniques to motivate and engage people to achieve their goals (in this case understanding the Dewey Decimal system). Gamification taps into the basic desires and needs of the user's impulses, which revolve around the status of achievements. (Quicksprout, 2016)

In order to make my application engaging, and encourage the efficient and effective use of the Dewey Decimal system, I will describe a number of gamification techniques, and then detail which ones will be best suited for use in my own project. (Quicksprout, 2016)

Gamification Feature List

There are a number of ways in which you can implement gamification in an application, including the below features:

- **Leaderboards / Recognition**
  A leaderboard system would provide a competitive aspect to the training application, where "game" completion times will be logged and displayed on the main menu, so that all users of the application may view the top ten high scores, and their usernames.
  A natural desire that most people have is the urge to compete with one another, and by timing game sessions, this potential for competition can be implemented. (Quicksprout, 2016)

- **Progress**
  One of the simpler gamification techniques would be to show the user how their game times have improved over time. For Task 1 of our project, we are to develop a system where a user can correctly order call numbers, and the time it takes to order a list of call numbers determines how efficient the librarian or student is at "replacing" or correctly ordering books on the shelves.
  By showing a list of personal best times, ordered by time ascending, the person can get an understanding of their own progress. (Quicksprout, 2016)

- **Challenges**
  The application will implement different levels of difficulty, so the user has different time limits to complete the tests or "games" within.
  This provides different challenges depending on the difficulty setting selected by the user – set on the home screen.
  For example, the user may choose to compete on the "Hard" difficulty setting, which only provides thirty seconds to correctly order the ten call numbers, or "Medium" which allows for forty seconds.
  If the user does not complete the game within the stipulated time, they will have to restart the game. (Quicksprout, 2016)

- **Rewards**
  A reward system could be implemented, where certain virtual "medals" or "trophies" are given to the top three scores in the leaderboard. This will implement a podium-like reward system, where only the top three scores will receive these rewards or trophies.
  This further encourages the librarians or students to compete on the application. (Laja, n.d.)

- **Feedback**
  Continual feedback will be provided to the user, in the form of a timer, which will be displayed during the game. It will show the time remaining, depending on which difficulty setting was selected by the user. (Laja, n.d.)

Gamification Features for Dewey Training

I would recommend that the Dewey Training software implement the following gamification features:

- **Leaderboards / Recognition**
  A leaderboard system would provide a competitive aspect to the training application, where "game" completion times will be logged and displayed on the main menu, so that all users of the application may view the top ten high scores, and their usernames.
  A natural desire that most people have is the urge to compete with one another, and by timing game sessions, this potential for competition can be implemented. (Quicksprout, 2016)

  Once deployed, the system will use an online hosted database, such as Azure SQL Database, so that all users in the library can compete with one another, and not just on a single computer.

  I would recommend this gamification feature, as it would provide a way for both librarians and students to compete with one another, while also actively learning the system in the process.
  This feature would provide a great way of competition and therefore active learning of the Dewey Decimal system.
  In addition to this, the aim of the feature is to shorten the duration of time required to order the books, and therefore if librarians can correctly order them faster, then they will complete their job faster.

- **Progress**
  One of the simpler gamification techniques would be to show the user how their game times have improved over time. For Task 1 of our project, we are to develop a system where a user can correctly order call numbers, and the time it takes to order a list of call numbers determines how efficient the librarian or student is at "replacing" or correctly ordering books on the shelves.
  By showing a list of personal best times, ordered by time ascending, the person can get an understanding of their own progress. (Quicksprout, 2016)

  This feature will be developed and implemented so that the students or librarians learning the Dewey Decimal system can see their progress over time, and see how efficient their ordering skills have become, after using the system for a while.

- **Challenges**
  The application will implement different levels of difficulty, so the user has different time limits to complete the tests or "games" within.
  This provides different challenges depending on the difficulty setting selected by the user – set on the home screen.
  For example, the user may choose to compete on the "Hard" difficulty setting, which only provides thirty seconds to correctly order the ten call numbers, or "Medium" which allows for forty seconds.
  If the user does not complete the game within the stipulated time, they will have to restart the game. (Quicksprout, 2016)

  This provides a competitive aspect to the training software, as the user can set their desired difficulty, and attempt to beat it, eventually being able to win the games at "Hard" difficulty.

- **Rewards**
  A reward system could be implemented, where certain virtual "medals" or "trophies" are given to the top three scores in the leaderboard. This will implement a podium-like reward system, where only the top three scores will receive these rewards or trophies.
  This further encourages the librarians or students to compete on the application. (Laja, n.d.)

  Simple virtual "trophies" will be provided to the top three students or librarians who order the books faster than other users. For example, the application will show the top score in gold, the second in silver, and third in bronze.

- **Feedback**
  Continual feedback will be provided to the user, in the form of a timer, which will be displayed during the game. It will show the time remaining, depending on which difficulty setting was selected by the user. (Laja, n.d.)

Conclusion

In conclusion, these five gamification features will be implemented in the application, so that the training becomes more game-like in that the users become competitive, and the learning experience is more enjoyable and interactive. This will likely result in a higher level of use, and therefore students and librarians will learn from the training software more efficiently and effectively.

As mentioned in the introduction, the application is a training system for the Dewey Decimal ordering system, which needs to be efficient and effective at teaching librarians and students how to use the Dewey Decimal system, and with the above gamification techniques implemented, the learning process will become more enjoyable, and produce better results than if these techniques were not implemented.

References

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