Jeopardy! Reengineered to Maximize Recall and Participation

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Background/Introduction: The classic American television game show “Jeopardy!” has long provided a fun and engaging format for quiz competitions. Contestants of this game are given clues in the form of an answer and they must respond with the corresponding question. Anesthesiology conferences and training programs have also adopted this format to test knowledge in a fun and interactive manner. However, the fundamental design of this game only allows for the participation of three contestants, thereby not allowing audience participation. Our goal was to use technology to modify this game in order to allow all audience members to partake. Additionally, we aimed to overcome the technical challenges of grading short, open-ended responses as opposed to a multiple-choice format, which is simpler to grade.

Methods: A set of web applications were developed with PHP as the server-side programming language, and a combination of HTML and JavaScript for the dynamic client-side scripting. The website consisted of two main components: game host and contestant applications. To speed the development process, the host application incorporated an existing open source HTML5 Jeopardy® with substantial modification. Contestants start gameplay without the need to download any application. By scanning a QR code on their mobile device, the contestant is directed to a website where they enter their name. The contestant’s mobile device now continuously communicates with the web server, allowing them to buzz-in and type in their response for a provided game clue. As contestants type their response, auto-fill suggestions appear based on a medical terms word list library, which was expanded upon to include anesthesiology-specific terminology. Scores are tallied and stored on the server’s MySQL database and are available for display by the host. Prototypes of the software were tested in department meetings and a regional conference to identify problem areas with the game’s design changes and optimize the gameplay experience.

Results: We reimagined and developed an interactive Academic Jeopardy® software for use by anesthesia staff and trainees. Contestants reported that the application is easy to use, and the auto-fill feature makes the game more efficient. Additionally, they reported increased engagement with heightened sense of competition.

Conclusion: Our application encourages audience participation wherein all audience members may participate rather than spectate. By requiring short, open-ended responses, we make the game more challenging and engaging. These responses also generate data which is analyzed to optimize game clues for future games. We limit inadvertent wrong spelling by offering suggestions from a medical terms library. The software will accept inexact responses by utilizing pattern recognition. Future enhancements will aim to add host and contestant functionalities to make gameplay even more engaging.

Figure 1. Game host web application projected onto the big screen. Contestant with the fastest correct response will be granted the opportunity to select the subsequent game clue. Functionality not shown includes countdown timer, correct response, winner of current round and score board.
Figure 2. Contestant response entry with phrase auto-fill feature. Functionality not shown includes the buzz-in button.
References:


