Time Zone X: Play and Learning

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Short Game Description: Educational games can engage students (Gee, 2007) to drive learning and intrinsic motivation (Przybylski et. al, 2012), and provide embedded assessment (Shute and Ventura, 2013). *Time Zone X* realizes these potentials within the broader context and learning opportunities of the popular educational website BrainPOP. With the core mechanic of sequencing events in history, and content that highlights causal relationships, *Time Zone X* encourages contextual reasoning spanning time periods and content areas while also providing formative assessment to guide further instruction.

Game Overview

Moby has disrupted the order of Time Zone X and, with it, all of history! You must help Tim reconstruct Time itself by placing historical events in their correct order. Play begins by selecting a starting topic from the 800+ movies on BrainPOP (Figure 1). You receive one deck of 5-12 events related to your chosen topic and the timeline starts with one random event from the deck.

Figure 1.

Each turn, you place an event from the top of your deck(s) into the timeline. Correctly place an event and you get a bump on your Flux Meter. Incorrectly place an event and you're told "try earlier" or "try later," the event returns to the top of the deck, and your Flux Meter bumps down. If you get your Flux Meter to the top (Figure 2), then you get to choose a new and related topic deck to bring into play.
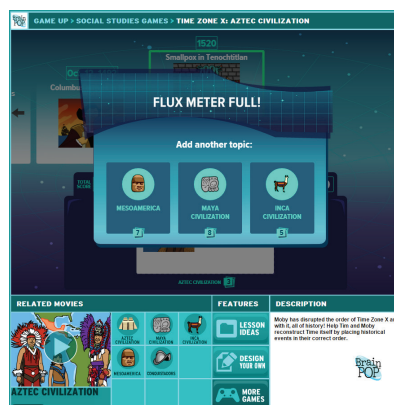

Figure 2.

Incorrectly place 3 events in a row or run out of events and the game is over. Complete a topic deck to collect its hidden artifact. You win by completing all the topic decks on BrainPOP. This Tetris-style "endless" gameplay is designed to encourage individual goal setting and gradual improvement.

Learning Dynamics

The game appears focused on historical dates. However, the expansive range of content across topic decks and granularity of events within topics mean it's very difficult to remember all the dates, so players decipher events' relative order based on context clues and causal relationships. This dynamic promotes higher-order historical understanding through sourcing, contextualization, and corroboration, such as within the Reading Like a Historian curriculum (Reisman, 2012). Connections between events include causality in geologic events, political shifts, inventions, discoveries, etc. Players often cannot place events with absolute certainty. Instead, they must hypothesize based on available background knowledge and test these hypotheses multiple times.

The background knowledge that enables this sequencing as a problem-solving exercise comes from a few different sources. First, the player must activate prior knowledge about the topic (Schwartz and Bransford, 1998). Second, players read a short event description that links related events with subtle contextual clues. These descriptions are written with a careful signal-to-noise balance, giving players practice with critical reading and picking out relevant information. The game creates a "time to tell" (i.e preceding instruction with inquiry-based activity) for this valuable exercise in reading comprehension, a method shown to improve engagement and retention (Schwartz and Bransford, 1998). Third, multiplayer games of *Time Zone X* lead to rich discussions between players of historical events and periods, supporting the social construction of knowledge (Kim, 2001).

Game Link

https://www.brainpop.com/games/timezonexamericanrevolution/ Note: This build is still in beta and missing a few features like (a) the ability to create your own cards, (b) see your progress completing topics across gameplay sessions and (c) unlock topics across subjects.

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Acknowledgements