

# Learning Outcomes In Adults Playing and Self-debriefing *Get Water!*, a Game for Change

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**Abstract:** This poster presents an experimental study examining how playing *Get Water!* (Decode Global, 2013), a water-scarcity themed casual mobile game, affects attitudinal, behavioral and cognitive learning outcomes. Using a three-group design (n=251), we asked (1) how playing the socially-themed game influences players' knowledge, attitudes and advocacy behaviours relative to a control group that played *Little Amazon* (Bulkypix, 2013), a mechanically comparable game without a social theme, and (2) how a self-debriefing exercise administered post-play influenced those player outcomes. We will discuss role of prior civic engagement and guided reflection on the educational and persuasive effectiveness of games. The results of this study will provide directions for the design of games for social change by identifying conditions that impact the attainment of the game's goals.

## Introduction

In this study, we examine *Get Water!* (Decode Global, 2013), a water-scarcity themed mobile game. The game was conceived within a growing trend of digital game development and sponsorship by international governmental bodies and non-governmental organizations, which hope to harness the engaging qualities of interactive new media to increase public awareness of global public affairs. Other games exemplifying this trend include the World Food Program-sponsored game PC game, *Food Force* (Konami, 2005), and MTV's *Darfur is Dying* (MTV, 2011). This trend in digital game development will likely continue, as organizations such as UNESCO continue to sponsor design competitions (e.g., the UNESCO MGIEP Gaming Challenge). Yet as organizations increasingly turn to digital games to educate the public, there is a need for empirical examination of the effectiveness of the games-based learning experiences that these tools afford, and to identify design elements that support sustained engagement in the international civic sphere.

Casual games like *Get Water!* offer simple gameplay that nearly anyone can pick up and play in a short period of time (Juul, 2012). The promise of casual games with civic content is that they may provide accessible learning experiences that build awareness and understanding of complex social problems. However, casual games are typically light in both playable and educational content, leading some (e.g., Arora & Ito, 2012) to question whether or not such games really do more than preach to the converted. It follows that two important empirical questions are (1) what – if anything – players learn or change from playing these games and (2) how they function as informal learning tools. Further, it is important to address the issue of debriefing; the inclusion of debriefing post-play has long been considered an essential aspect of game presentation in the Simulation and Gaming community; debriefing activities post-play are recommended to facilitate player reflection and meaningful integration of new concepts and experiences encountered through play (Crookall, 2010). Debriefing activities guide players to (1) describe and analyze what was done in the activity, (2) reflect on their current state of knowledge, and (3) reflect on how their learning could be applied elsewhere (Nicholson, 2012). Many “activist entertainment” games do not explicitly include debriefing as part of the player experience; although some well-funded projects such as *Food Force* have external resources available for teachers to use in class, post-play debriefing activities for the general audience of players are rarely incorporated.

## The Study

Our study is intended to investigate two questions. First, we are interested in seeing how effective the game *Get Water!* is as an educational and persuasive tool for adults. Second, we also hope to investigate the persuasive and educational effectiveness of *Get Water!* in combination with a brief reflective exercise.

## The Game

*Get Water!* is a mobile game available for iOS, Android and Windows devices, released in 2013 by Decode Global. It is a side-scrolling endless runner game; the player guides the protagonist, Maya, by drawing her path on the touchscreen. Maya runs through a procedurally generated 2D cartoon landscape, collecting water and special items, and repelling or avoiding obstacles. Maya, the protagonist, must leave school because the local water pump is broken, and her mom needs her to help collect water. Most of the civic and social justice content is not explained

during core gameplay but rather through the metagame experience: animated storylets depicting Maya's life, a screen shown between levels that presents factoids about the importance of water, and quotes in support of the game's cause contributed by users. From the game's home screen, players can choose to click "Learn More" to access more information about water scarcity and the charitable partner, charity:water.

## Debriefing Intervention

Our aim was to add a debriefing element that encourages active processing of the play experience but does not overwhelm the player. We wanted the players to practice reflection skills that are actually used to participate in discourse about public affairs, including expressing and defending positions on public issues, and thinking constructively about how to improve current conditions. Based on these requirements, we determined that a mock "Tweeting" exercise would provide an authentic and appropriately brief post-play exercise. Prompts instructed players to compose brief microblog messages identifying one key idea from the game, and identifying opportunities to apply this idea in one's life. The players were then prompted to evaluate the messages they had composed, indicating whether or not they would want to disseminate each message, and whether they thought they needed to learn more about the subject matter.

## The Pilot Study

Prior to running a pilot study with 22 participants, we had some doubts about the effectiveness of the game due to the placement of water scarcity content outside of core gameplay. Yet most pilot participants responded positively to the experience; one said, "When I answered that survey before, I know I answered [that] gender inequality and access to water ... weren't really alike ... Seeing how the game worked, I mean, you can kind of see where they're leading in that there is a correlation between them ... So it made me more aware of that." Another suggested that "the game makes you feel like your actions help this person, and then maybe [you] would take that to the next level and think, 'Well, what can I do to help?'" Of the 18 participants who returned the one-month follow-up questionnaire, 16 discussed the game with someone else, and 8 tried to learn more about either women's access to education or water scarcity. The larger control trial will enable us to determine whether or not these promising outcomes are typical and whether or not they are attributable to playing the game, and not an effect of contact with the research team. Additionally, we found that some participants did not think they had extracted a clear, actionable message from the game. We thought that the debriefing intervention might focus players on either taking action or learning more.

## Methods

Participants were randomly assigned to three groups: a game-only group, a game-plus-debriefing group, plus an alternative-game control condition that we included to control for the potentially biasing effects of repeated assessment on the participants. Participants recruited from the local area were invited to a laboratory to play an iPad game of an undisclosed nature. Participants' knowledge of water scarcity and attitudes regarding participation in water-scarcity-related activism were assessed using a pretest, post-test and delayed post-test one month after they first played the game. As control variables, we also profiled our participants in terms of demographics and prior civic experience.

## Anticipated Results

Data collection is complete but analysis of the results of the larger study is ongoing. However, based on the pilot results, we anticipate that participants with relatively high prior knowledge of the issues will not show much change in terms of their attitudes and knowledge. Players with little prior knowledge but who have an interest in social justice and global issues may shift in terms of knowledge, their ratings of the importance of water scarcity and their attitudes towards advocating for access to potable water. We also expect that the larger study will reveal a gender difference in how effectively the game promotes awareness of its two major themes: gender inequality, and water scarcity. Prior civic experience also seems likely to influence how participants respond to the interventions. We hypothesize that people with prior civic experiences will be especially likely to attend to the civic content and follow up by learning more. We hope to discuss the findings from the control trial with other attendees and contribute to the larger conversation about how and for whom casual civic games promote learning.

## References

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