

# WORKING P A P E R

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## Better Financial Decision Making among Low- Income and Minority Groups

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## Executive Summary

A prerequisite for having money left over to save is excellent day-to-day money management tools. Yet low-income Americans live on razor thin margins so they need to learn how to avoid, for example, a \$39 credit card late fee that effectively raids their saving budget. Doorways to Dreams Fund (D2D) is working to develop and test videogames attractive to this segment to provide training in critical financial literacy areas including household budgeting, consumer decision making, and cost-effective use of financial service providers. During the last year, D2D has conceived, developed and delivered the third and fourth titles in its growing library of financial literacy casual video games: *Farm Blitz* and *Bite Club*.

*Farm Blitz*, which is inspired by two of the world's most popular casual video games – *Bejeweled* and *FarmVille* – combines elements of a resource management game and a farming simulation (e.g., *FarmVille*) with those of a “match-three” game, in which the objective is to line up 3 or more matching objects in a horizontal or vertical row (e.g., *Bejeweled*). To facilitate game play, players take on the role of a farmer working to make her farm successful by harvesting crops to generate earnings, managing debt, saving money, and weathering unexpected emergencies.

*Farm Blitz* is designed to focus players' attention on how high-interest, short term debt can undermine consumers' efforts to build long term savings, typically earning interest at much lower rates. The game explicitly seeks to improve players' confidence, knowledge, and behavior related to two foundational concepts: keeping high cost, short-term debt in check and saving for the long-term. In addition, the game implicitly teaches how compound interest works, both as a negative force (accumulating finance charges) and a positive force (interest on savings). Finally, the game challenges players with unanticipated emergencies, represented by, for example, tornadoes and similar events; these “shocks” force players to use short-term debt to maintain strong farm earnings and remain in the game, while exposing players to the pitfalls of this type of borrowing.

*Bite Club*, which is inspired by one of the most popular casual games of all time, *Diner Dash*, offers players a simulated game experience in which they face the real-world tension between managing debt payments and current spending needs on the one hand, and saving for the long-term goal of retirement on the other. To facilitate the experience, the game play experience involves running a “day club” for vampires which offers patrons conversation, drinks, and dancing; making financial management decisions related debt, spending, and retirement; and reacting to a variety of savings offers. Like all casual video games, *Bite Club* features a straightforward but engrossing approach to game play, but it also includes core instructional design that teaches the value of three important real world behaviors: (1) saving for retirement; (2) paying down debt, and (3) managing current consumption.

While *Farm Blitz* and *Bite Club* were created by game designers and professional developers, these games were also made with and for lower-income adults. At three key milestones during development (delivery of a “First Playable” game, an “Alpha” version and a “Beta” version), D2D convened user-testing groups in partnership with a local community based human service agency in Boston. At each testing participants were asked to play the current version of the game, provide feedback throughout play, and contribute to small focus groups post-play. Over 80 low-income and minority adults participated in these user-testing sessions.

At the “Beta” milestone (the last key development milestone), D2D conducted quantitative development testing and observed significant gains in financial skills self-confidence and knowledge related to topics *Farm Blitz* and *Bite Club* seek to address. While *Farm Blitz* and *Bite Club* were not quite complete at the Beta milestone, testing at this stage offers the possibility of measurable results. However, the quality of results generated depends, in part, on the quality of game “balancing” (fine tuning the degree of game play difficulty) in the simulated experience, a process that can consume several weeks and the length of which is hard to predict.

Following development, D2D completed preliminary effectiveness testing for *Farm Blitz* and *Bite Club*, the two newest financial entertainment game titles. The games were tested with 84 low-income adults across six locations in the US. While only small sample testing, each game generated a significant increase in financial skills self-confidence and knowledge.

In terms of financial skills self-confidence, *Farm Blitz* is having the most significant impact on savings metrics—saving regularly, allowing savings to grow, and saving for emergencies. To a lesser degree, the game is also having a positive impact on debt measures. The sharpest gains in the testing were observed in the knowledge gained by participants playing *Farm Blitz*; many of the knowledge questions relate to the core concept of interest compounding, whether negatively for debt or positively for savings. The difference between pre and post testing were strongly positive, ranging from 16% to 67% improvement in the number of correct answers given by participants. In terms of financial skills self-confidence, *Bite Club* is having a positive impact across all the metrics—general savings, debt/spending management, and retirement; increases range from 11% to 22% reflecting the impact of the simulated experience. The knowledge gains for *Bite Club* were lower than expected, especially given the development testing results; this result appears to be driven by higher than average pre-test knowledge for the small sample studied.

While the preliminary testing results for *Farm Blitz* and *Bite Club* are quite positive, the next important step for financial literacy casual games is a more comprehensive randomized treatment and control evaluation. In addition, the reach of these games should be expanded; for example, Americans with limited English-proficiency could also benefit from this form of financial education. Finally, further work should be done to strengthen the link between game play and cultivation of financial capabilities that lead to improvements in individual financial outcomes.