

Abstract

Feasibility and Usefulness of Evidence-Based Gaming to Deliver Health Messages to Tweens in a Classroom Setting

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Abstract

Background: Our interdisciplinary team developed a publicly available online game—*Eat and Move as I Like* (EAMAIL)—for tweens based on the MyPlate evidence-based representation of the Dietary Guidelines.

Objective: We aimed to test the feasibility of using EAMAIL in a classroom setting to promote engagement and self-awareness and motivate healthier diet behaviors in tweens.

Methods: Teachers in one middle school offered EAMAIL on school Chromebooks (institutional review board–approved). The researcher introduced EAMAIL’s login instructions, including nonidentifiable usernames, basic demographics, and home zip codes. Children were instructed to enter EAMAIL’s *Story Mode*, which had 5 MyPlate-food group levels; children caught healthy foods in color-matching buckets and avoided sweets. Each level delivers informational and motivational messages, asking users to report liking or disliking food groups and making dietary improvements on 7-point facial hedonic scales (from *Love it* to *It’s okay* to *Hate it*). At game completion, children rated the game based on whether it made them want to eat better and play again. Aligned with the Design, Play, and Experience Framework, the researcher made observations to assess child engagement, feelings about the game and the messages, and the motivation to make dietary improvements. Children were encouraged to complete the *Story Mode* before advancing to *Free Play Mode*, which had greater game challenges and 15-second interruptions every 2 to 3 minutes to deliver physical activity and health messages. Finally, each child completed a 13-item online survey to assess game-playing experiences, the desire to play again, new knowledge learning, and whether the game motivated healthier behaviors.

Results: EAMAIL was administered to five 30-minute classes involving 54 children (age: mean 11.6 years; female: 75%; White: 58%) and 105 users, and 1187 games were played. By the highest user level reached in *Story Mode*, 10% of users completed level 1 (*Grains*), 14% completed level 2 (*Vegetables*), 11% completed level 3 (*Healthier Protein*), 17% completed level 4 (*Fruits*), 15% completed level 5 (*Dairy*), and 31% completed all levels. Across users’ highest levels, *Healthier Protein*, on average, was the most liked, and *Vegetables* was the least liked. Most reported at least *Like it* to eating more fruits and vegetables (82%), vegetables (73%), healthier protein (79%), fruits (84%), and dairy (80%). All users responded to end-game questions; 64% reported at least *Like it* to “The game made me want to eat better” and “I would like to play the game again.” These responses were unchanged for most users who completed *Story Mode* and entered *Free Play Mode* (n=24); 6 reported *worse* and 3 reported *better*. From the postgame online survey, *somewhat agreed* to *strongly agreed* was reported by 76% of children with regard to learning about healthy eating and by 50% with regard to the game being fun, the game having positive attributes (pace, challenge, and flow), and whether they would share their game experiences. Researcher observations were consistent with children’s online responses.

Conclusions: EAMAIL appears feasible for teaching tweens in classroom settings about MyPlate, encouraging self-reflection, and motivating healthier eating, with *Story Mode* maximizing health promotion messages and engagement.

Conflicts of Interest: None declared.

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KEYWORDS

digital gaming; nutrition education; adolescents; motivation; health promotion; school-based; healthy eating

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