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Innovative Engagement: Evaluation of Phase 1
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Question: How effective are Subway Ad Spaces at engaging Bostonians with climate change?

Introduction

Scientists agree that anthropomorphic climate change is real, but the general public seems disengaged, and skeptical. *ScienceToGo.org* is an innovative model designed to improve the public understanding of science by utilizing out-of-home media (OHM) and digital augmentations. In this approach, audience learning should result from reading signage and participating in online. We hypothesize that the digitally enhanced medium will be effective at improving awareness and understanding of science. The project team consists of expertise from Science Education, Cognitive Psychology, Informal Science Education, Communications, and Geochemistry.

Background

An open letter in *Science* (Bowman et al., 2010) called for new efforts to communicate science to the general public in non-partisan, trustworthy, collaborative, multi-disciplinary, and "non-persuasive communication" (p. 1044).
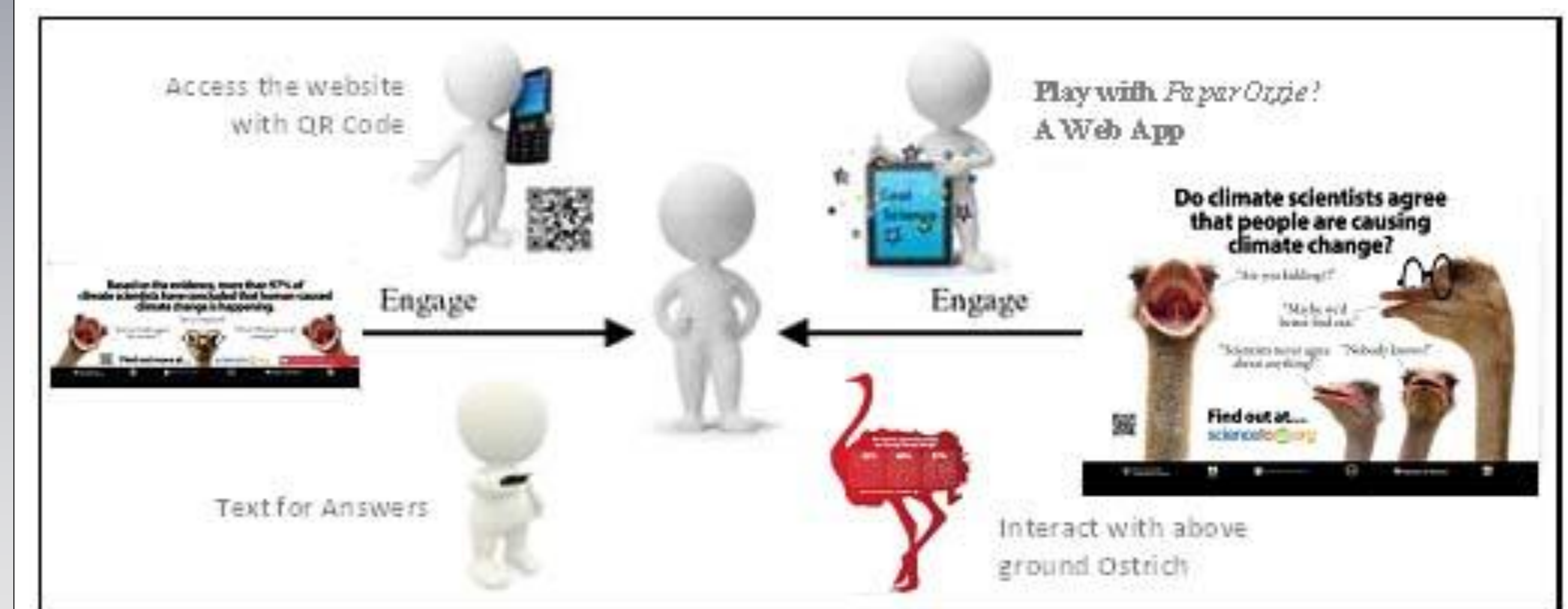
ScienceToGo.org is such an effort and presents a practical and inexpensive strategy for engaging adult audiences with informal science learning. Out-of-home media such as the posters and placards have experienced renewed popularity in commerce due to QR Codes, texting, and other technologies (OAAA, 2011).

Most research on OHM focuses on impact upon sales and awareness among consumers. OHM campaigns that explicitly target science understanding are less common, but no less significant. Projects such as Science City (Friedman, et al., 1992), Science Underground (Naylor & Keogh, 1999), and Science on Buses (Hisa Eksperimentov, 2007) aimed to extend informal learning to daily routines of commuters. Message Response Involvement Theory (MRIT) is used to explain how messages are processed by the audience (MacInnis & Jaworski, 1989).

Methodology

We used a quasi-experimental design with riders on two lines designated as treatment and riders on two other lines as control. Boston's T (the 4th largest metro system in the United States) brings a wide spectrum of people from different socio-economic backgrounds, education levels, ethnicities, and lifestyles together for the common purpose of getting from one place to another. The public audience is very large with the Red and Orange lines (experimental group) transporting approximately **427,000 riders daily** (MBTA, 2010). Riders from all four lines were surveyed at the beginning of the campaign (N = 410) and after the first phase of implementation (N = 515) regarding their beliefs, knowledge and feelings of agency toward climate change.

Results

A factor analysis yielded three factors used as dependent variables (beliefs, Boston knowledge and agency toward climate change) in a MANOVA with survey time, group (control or treatment) and age group as independent variables. The MANOVA indicated a main effect of Group on the Beliefs and Agency Factors ($F_{(1, 851)} = 7.65$; $p < .01$ and $F(1, 851) = 6.00$, $p < .05$, respectively). There were no other significant main effects.

Significant relationships between group and whether respondents had seen the ostrich posters, ($\chi^2 (2) = 49.281$, $p < .001$), as well as between survey time and whether respondents had seen the ostrich posters , ($\chi^2 (2) = 9.942$, $p < .01$).

Engagement Model

Discussion

The evaluation of Phase 1 reveals some unexpected and confusing results. It could be that the significant issues encountered during the first 3 months of implementation negatively impacted the efficacy of the model. However, the results could mean that riders are still adjusting to a new form of messaging. The target audience may have learned to 'tune out' placards and posters as a constant form of cognitive noise. Nearly all of the signage on the T tries to sell a product, promote an event, or solicit a service. Signage that offers entertainment for the sake of science learning is a foreign concept. Further exposure may be needed before the audience learns that our use of the space represents something new, different, and worthy of consideration. In the months ahead, we will collect further evidence after phases 2 and 3 respectively. The additional data should help clarify the efficacy of the ScienceToGo.org model for informal learning.

References

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