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Assessment of Learning Gains from Educational Animations versus Traditional Extension Presentations among Farmers in Benin and Niger

Authors: Julia Bello-Bravo[1], Elie Ayitondji Dannon[2] , Ousseina Zakari[3], Amadou Laouali[3], Ibrahim Baoua[4], Manuele Tamo[2], and Barry Robert Pittendrigh [1]

[1]Michigan State University, USA; [2]International Institute for Tropical Agriculture, Benin; [3]INRAN, Niger; [4]University of Maradi, Niger

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Legume Innovation Lab

Feed the Future Innovation Lab for Collaborative Research on Grain Legumes

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Scientific Animations Without Borders (SAWBO)

- Is an academic exploration of how one can connect global experts and on-the-ground actors in a virtual manner to create educational content for use with low-literate learners
- Is a program that produces educational content that can be tested and used in the field
- Is a platform that is a researcher to field deployment strategy
  - Deployment can happen through a diversity of electronic mechanisms (cell phones, pico-projectors, etc.) and with a diversity of actors

Educational Platform

Scientific Animations Without Borders

Experts | **Content** | **Scalable Deployment Strategies** | **End Users**

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1. The Overall Question

Can animations be an educational tool that are as effective as extension presentations, in terms of learning gains with low literate learners, within a developing nation context?

Steps in the questions that need to be addressed for the Overall SAWBO program

- Can animations be created, placed into new languages, and used across a divergent cultures, communities, and countries? **Work with INRAN in Niger, IITA in Benin, IIAM in Mozambique, and others.**
- Do people learn, in the short-term as effectively, from animations as they would from a traditional extension talk? **Current talk.**
- What do people retain in the long-term? **Work with Iowa State University led team (Mazur) with IIAM in Mozambique. Eric Abbott's talk.**
- Are people intent on adopting the new technique/technology? **Work with MSU led team (Maredia) with INERA in Burkina Faso.**
- Is there adoption 2 years later? **Work with Iowa State University led team (Mazur) with IIAM in Mozambique. Eric Abbott's talk.**
- What are the most effective scaling deployment strategies? **Work with INRAN in Niger – Current talk. Next researchable steps.**

Research Questions regarding the usefulness of SAWBO educational animations

(1) Are the learning gains with SAWBO animations in target populations worse, similar or better to that of extension agents presenting the same material?

(2) Will target populations in Benin be open to learning such information with animations on cell phones?

(3) Would they prefer or not prefer learning from animations as compared to an extension agent presentation?

Educational videos used in the study

- To answer these questions we used three educational animated videos
- Three divergent topics were assessed, in order to confirm that learning gains were not depended on any given topic
- One animation was on how to use neem seeds to create a natural pesticide that can be used to spray crops and avoid insect damage
- Two other animations on other topics

Study Design - Benin

- Pre- and post-testing of farmer knowledge on key issues presented in the animation and extension talk
- Extension talk and animation content/concepts were standardized, so that same concepts were presented in both.
- Animations and extension talks in the local language
- 248 small-scale farmers in 8 villages in Benin split with each farmer being assigned to one treatment only – a given extension talk or a given animation

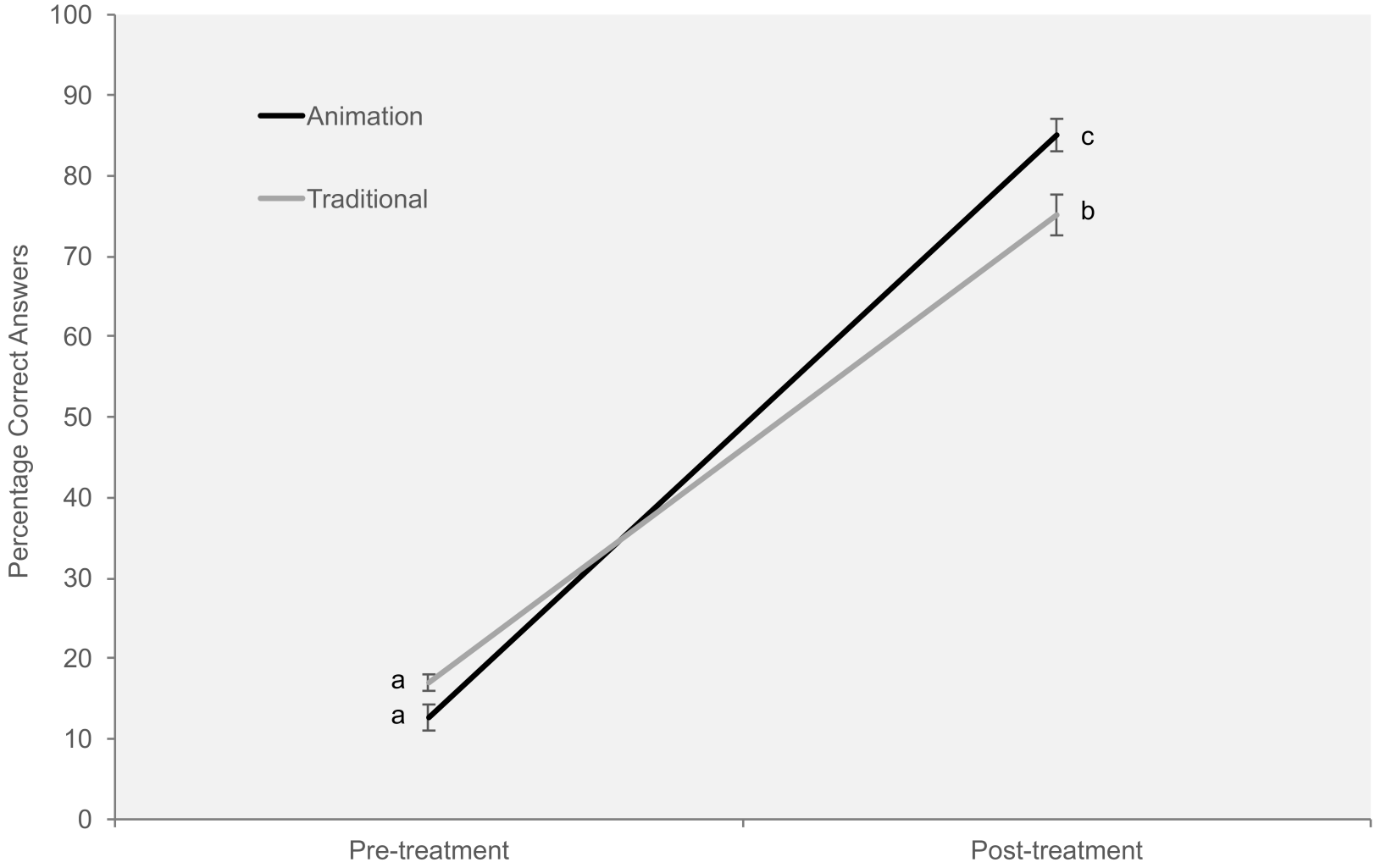
Results

- Both, videos and traditional extension demonstrations were effective in transmitting knowledge (Bello-Bravo et al., 2017)

- Overall animations were significantly more effective in fostering detailed knowledge retention among participants (Bello-Bravo et al., 2017)
  - This held true across all three animations

- Participants preferred the animated videos, which can be placed onto mobile phones and easily shared and watched several times (Bello-Bravo et al., 2017)

Neem Animation



Study in Niger

- Animations only versus animations followed by extension agent discussions (two cowpea IPM animations)
- The extension agent discussions "topped off" knowledge in pre-/post- learning gain assessments (animations followed by discussion were the most effective)

Conclusions

- Animations translated into local languages were as or more effective as compared to extension talks.
- This was consistent across animations and topic areas
- Willingness to learn through animations
- Our findings suggest there is potential to create educational materials in the form of animated videos translated into local languages and deployed through mobile phones or any other electronic devices that suit farmers or other populations
- Potential for integration into extension systems

Further details, please see our 2017 publication…

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An assessment of learning gains from educational animated videos versus traditional extension presentations among farmers in Benin*

Julia Bello-Bravo[a], Manuele Tamò[b], Elie Ayitondji Dannon[b] and Barry Robert Pittendrigh[c]

[a]Department of Food Science and Human Nutrition, Michigan State University, East Lansing, MI, USA; [b]International Institute of Tropical Agriculture, Cotonou, Benin; [c]Department of Entomology, Michigan State University, East Lansing, MI, USA

ABSTRACT

This study compared the efficacy of linguistically and dialectically localized animated educational videos (LAV) against traditional learning extension (TLE) presentations for learning gains of knowledge around agricultural- and healthcare-related topics within a rural population in Benin. While both approaches demonstrated learning gains, LAV resulted in significantly higher test scores and more detailed knowledge retention. A key contribution of this research, moreover, involves the use of mobile phone technologies to further disseminate educational information. That is, a majority of participants expressed both a preference for the LAV teaching approach and a heightened interest in digitally sharing the information from the educational animations with others. Because the animations are, by design, readily accessible to mobile phones via Africa's explosively expanding digital infrastructure, this heightened interest in sharing the animated videos also transforms each study participant into a potential a learning node and point of dissemination for the educational video's material as well.

KEYWORDS

Educational animated video; cell phones; multimedia learning; malaria; cholera; neem; Benin

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