**////Title: Animated Educational Videos Promote Learning Among Farmers**

**////Standfirst:**

There are up to one billion people with low literacy globally, many of whom live in rural areas and only speak their region’s local language. In Africa alone, there are an estimated 2000 local languages. Researchers are exploring new ways to make knowledge accessible to isolated communities that only speak local languages. One approach involves the use of animated educational videos, which can be dubbed in any language and can be shared in rural communities. In a study conducted in Benin [beh-neen],Dr Julia Bello-Bravo of Purdue University compared the effectiveness of animated educational videos to traditional presentations. This work was performed in collaboration with Benin’s International Institute for Tropical Agriculture. Dr Bello-Bravo’s team found that, not only did participants prefer videos, they actually learned more from them too.

**////Main text:**

Over the past decade, there has been considerable rise in the use of information and communication technologies, known as ICTs [I-C-Ts], to increase access to education for remote communities. ICTs leverage technology, such as videos or the internet, to relay information to target learners. In this sense, these methods are different from traditional teaching strategies, which typically involve in-person lectures and printed material.

ICTs can be particularly effective in disseminating critical agricultural and healthcare information to rural farming communities. This is because it can be difficult for educators to reach such remote communities, meaning that many residents miss out on learning about the latest farming practices and healthcare information. Traditional in-person education can also be ineffective due to cultural differences and language barriers.

Benin, a small country in West Africa whose economy is largely based around agriculture, could particularly benefit from enhanced access to agricultural and health education. Although 55 languages are spoken in Benin, literacy rates in French, the national language, are some of the lowest in the world. As smartphone use has exploded in recent years, animated educational videos, which can be dubbed in any local language, could be a highly effective way to provide education to remote Beninese communities.

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In a paper published in *Information Technology for Development*, Dr Julia Bello-Bravo of Purdue University and her colleagues compared traditional in-person teaching with animated videos to evaluate the effectiveness of both methods on diverse learners. Using a study group from eight communities in Benin, the researchers found that watching animated videos conferred higher knowledge retention and, in general, greater participant engagement.

The study used animations created by a Purdue-based program called Scientific Animations Without Borders, or SAWBO [saw-boe], which Dr Bello-Bravo co-founded and co-directs along with Dr Barry Pittendrigh [Pitt-en-dree], also at Purdue University. The mission of SAWBO is to produce free, easy-to-use animated educational content that can be disseminated rapidly. SAWBO animations use cross-culturally acceptable animations that can be dubbed in any local language or dialect.

To deliver such content, researchers at SAWBO developed an app that allows anyone to download the animations on an Android phone with internet access. Once downloaded, the videos can be played at any time, without an internet connection. Animated content is also available on SAWBO’s online library for others to download and use, duplicate and share ‘as is’ for educational purposes only. SAWBO content is available in over 100 topic areas in over 240 language variants from around the world, with new topics and languages being routinely added to their online library.

For their study, the SAWBO team created three videos addressing topics relevant to the farmers in Benin: the prevention of malaria, the prevention of cholera, and the use of neem seed as a natural pesticide. Each video is two to four minutes in length, and is dubbed in the local language and accent of the target groups.

The researchers collected data in eight villages within five sub-districts of Benin. Around 30 people from each village participated, with a total sample size of 248 men and women who are involved in some type of farming-related activity. All participants had limited knowledge on the topics and had never received video or traditional training in the relevant study areas. However, all expressed a desire to learn, with a hope that the information would help them to increase their community’s food security and economic opportunities.

To evaluate the participants’ existing knowledge on the topics, the research team administered pre-test surveys orally in the local language. Then, the participants either received animated video training or traditional in-person lectures. After receiving the training, an oral test was given to each participant to assess their learning gains. The researchers also polled participants on their opinions regarding the learning method they had been exposed to.

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For all three topics – malaria prevention, cholera prevention, and the use of neem oil – post-learning test scores were significantly greater in the group that had watched the animated videos, compared to the group that had received traditional instruction.

Participants also preferred watching the animated videos over traditional methods. For example, more participants who had undergone video-based learning expressed that the method was an appropriate tool, compared to those who had received traditional training. Additionally, more video learners stated they were motivated to share the information presented, compared to participants who were taught the same material via traditional lectures.

These results bolster other studies conducted in countries including Burkina Faso, Niger, and Ethiopia, which suggest that animated videos are well-received, and that learners would use and share such videos with their communities. To explain this trend, Dr Bello-Bravo points to the convenience of the videos, as well as their ability to be re-played as many times as needed.

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While the high potential of educational animated videos in reaching rural farmers has long been recognised, this study is one of the first to directly compare the effectiveness of video-based learning to that of traditional learning. The results suggest that, while both methods confer significant gains, animated videos are better received among learners, and leave them with higher knowledge retention.

Dr Bello-Bravo and her team stress that these resources could be modified to disseminate other types of important information to communities worldwide, allowing educators to overcome linguistic and geographic barriers. In this sense, anyone with a high-quality educational video can transform oneself from learner to teacher – simply replay the video and reproduce the original learning environment on the spot.

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This SciPod is a summary of the paper ‘An assessment of learning gains from educational animated videos versus traditional extension presentations among farmers in Benin’ from *Information Technology for Development.* doi.org/10.1080/02681102.2017.1298077

For further information, you can connect with Dr Julia Bello-Bravo at mbellobr@purdue.edu