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Enhancing Extension's Impact: Exploring the Effectiveness of Farmer and Educator Teams in Video-Based Outreach

Abstract

This study examines the impact of video-based outreach featuring a team of Farmer Peers and Extension Educators on farmers' engagement with Ohio State University (OSU) Extension. Conducted over six years with farmers attending pesticide recertification meetings, the research found that 57.98% of participants were more likely to partner in research with OSU Extension, and 84.91% were more likely to use Extension as a resource after viewing the videos. The findings suggest that such team-based videos enhance credibility and engagement, highlighting the potential for this approach to improve Extension programming.

Keywords: agricultural Extension, credibility, engagement, Extension Educator, Farmer Peer, on-farm research, video-based outreach

Introduction

As Extension Educators, we always look for innovative ways to improve client engagement. Given the widespread use of video in adult learning (Pew Research Center, 2018), in the review of literature we explored how video can enhance interaction and impact. Our review of research literature included examining how information provided by peers influences attitudes toward that information. We specifically investigated whether peer involvement in videos boosts credibility and, more importantly, whether such involvement in Extension programming enhances the overall impact of the information shared.

When considering education and information credibility, research has consistently shown that individuals are more likely to relate to and engage with their peers, significantly impacting behavior and attitudes in educational and professional settings (Bandura, 1977; Topping, 2005). This peer connection enhances the perceived credibility of information, as peer validation plays a crucial role in shaping trustworthiness. Studies indicate that individuals are more likely to accept and believe information endorsed by their peers due to the inherent trust within peer networks (Petty and Cacioppo, 1986). However, research has also shown that peer endorsement alone is not enough (DeAndrea, 2014). It is also important that a credible, non-biased individual is also involved in the information delivery to provide validity in the research information. Research has indicated that audiences doubt information that can be perceived as manipulated (DeAndrea, 2014).

Research shows that peers presenting in video formats significantly influences the perceived credibility of the information presented. Video viewers are more likely to believe and engage with information when it is presented by individuals they perceive as relatable or trustworthy, such as peers or community members (Cheung and Vogel, 2013). When peers share personal experiences or testimonials through video, it creates a sense of authenticity (Petty and Cacioppo, 1986). Additionally, visual, and emotional cues provided by peers in videos can strengthen the persuasive impact of the message, making it more compelling and credible to the audience (Joffe, 2008).

When specifically exploring peer involvement in Extension programming, studies suggest involving Farmer Peers increased engagement with the information presented (Emm et al., 2024). Increased trust and relatability brought by peer mentors are evident in programs like Nevada's Beginning Farmer and Rancher Program (Emm et al., 2024). A video-mediated peer-to-peer Extension approach has been shown to effectively leverage peer influence to enhance the trustworthiness and impact of agricultural information (Slotznick et al., 2021). These findings highlight the importance of peer involvement in increasing clientele engagement and increasing Extension research and programming credibility.

While extensive research exists on peer influence and learning, there is limited understanding of whether this influence extends to the peers' research partners. This six-year study aimed to fill this gap by investigating the impact of Farmer Peer and Extension Educator team-based videos on farmers' willingness to engage with Ohio State University (OSU) Extension as a resource. Understanding this dynamic can help Extension Educators design more effective outreach and educational programs that leverage Farmer Peer influence to enhance engagement.

This study hypothesized that videos containing an Extension Educator and Farmer Peer team positively affect viewers' likelihood of engaging with OSU Extension.

Methodology

This study used a self-selected sample of individuals who required pesticide applicator recertification credits and chose to attend meetings. Due to the self-selected sampling of the study, some individuals may be duplicates. The meetings were held in the Ohio counties of Delaware, Morrow, and Knox over six years (2019-2024). Participants were informed that their responses would remain confidential.

During these meetings, participants were shown four, 5–7-minute videos featuring OSU Extension Educators and Farmer Peers discussing on-farm research they conducted on their farm. The videos were produced as an outreach of eFields, an OSU Extension on-

farm research publication. Fertilizer studies were selected to become videos on a voluntary statewide basis through the local OSU Extension educator. The discussion centered around why on-farm research is important, why they were interested in exploring that topic, study design, and results. Participants were also provided a copy of the eFields Bulletin. The survey aimed to assess whether videos containing Extension Educators and Farmer Peers positively affect viewers' likelihood of engaging with OSU Extension. The questions that were used were a subset of a larger survey to assess the farmer's reaction to receiving research results in multiple forms. Two questions were asked about the effect of video viewers' likelihood of engaging with OSU Extension:

- 1) Does viewing these videos increase the likelihood that you would partner with OSU Extension in conducting research?
- 2) Does viewing these videos increase the likelihood that you would use OSU Extension as a resource?

The survey was conducted with the farmers attending pesticide recertification meetings. The multiple-choice survey was conducted using audience response devices connected to PointSolutions software (v9.0.12.34 ,Echo360, Perth, AUS). There was no method of collecting written comments. This survey was approved by the Institutional Review Board (IRB), ensuring ethical conduct and participant confidentiality. The results of the survey questions were evaluated through Excel.

Results

The survey data collected in this study supports the hypothesis that Farmer Peer and Extension Educator team videos positively influence the likelihood of conducting research and using OSU Extension as a resource. There was variability in response rate between all questions asked on the larger survey.

Responses to Question 1

Over these six years, 652 farmers assessed their likelihood of partnering with OSU Extension after watching team-based videos (Figure 1). The results show that 57.98% (378 farmers) responded positively ("Yes"), indicating a willingness to partner with OSU Extension, while 42.02% (274 farmers) responded negatively ("No") (Table 1). The numbers indicate that farmers feel that these videos have a positive impact on their perceptions and likelihood to engage with OSU Extension in research. The yearly breakdown highlights yearly fluctuations. The results to Question 1 support the hypothesis that videos containing Extension Educators and Farmer Peers positively affect viewers' likelihood of engaging with OSU Extension.

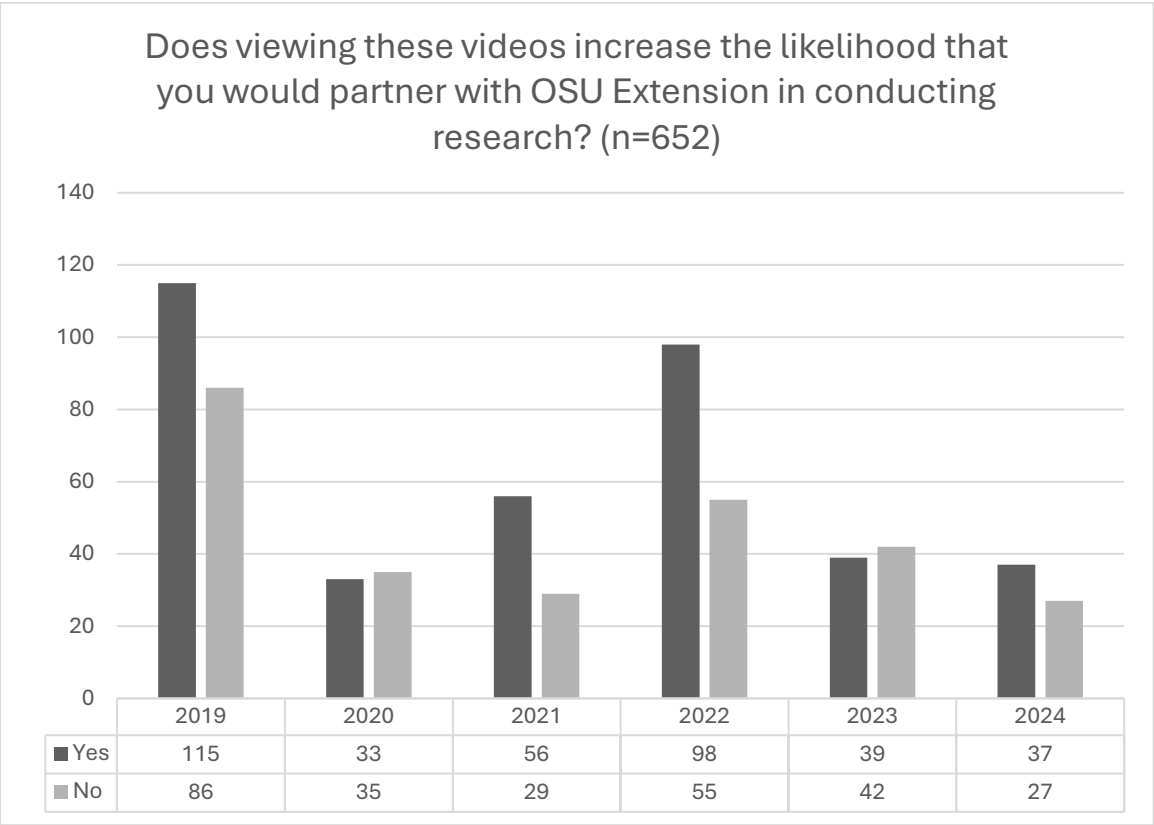


Figure 1. Does viewing these videos increase the likelihood that you would partner with OSU Extension in conducting research?

Table 1. Yearly percentages likelihood to partner with OSU Extension.

Year	Yes (%)	No (%)	n=
2019	57.00	43.00	201
2020	48.53	51.47	68
2021	65.88	34.12	85
2022	64.00	36.00	153
2023	48.15	51.85	81
2024	57.81	42.19	64
Average	57.98	42.02	652

Responses to Question 2

Over these six years, a total of 656 farmers completed the survey question assessing their likelihood to use OSU Extension as a resource after watching team-based videos (Figure 2). The results show that 84.91% (557 farmers) responded positively ("Yes"), indicating a strong inclination to use OSU Extension as a resource, while only 15.09% (99 farmers) responded negatively ("No") (Table 2). Once again, looking at the yearly breakdown, we see consistent positive responses. The results from Question 2 indicate that farmers are more likely to use OSU Extension as a resource, supporting the hypothesis that videos featuring Extension Educators and Farmer Peers enhance viewers' likelihood of engaging with OSU Extension.

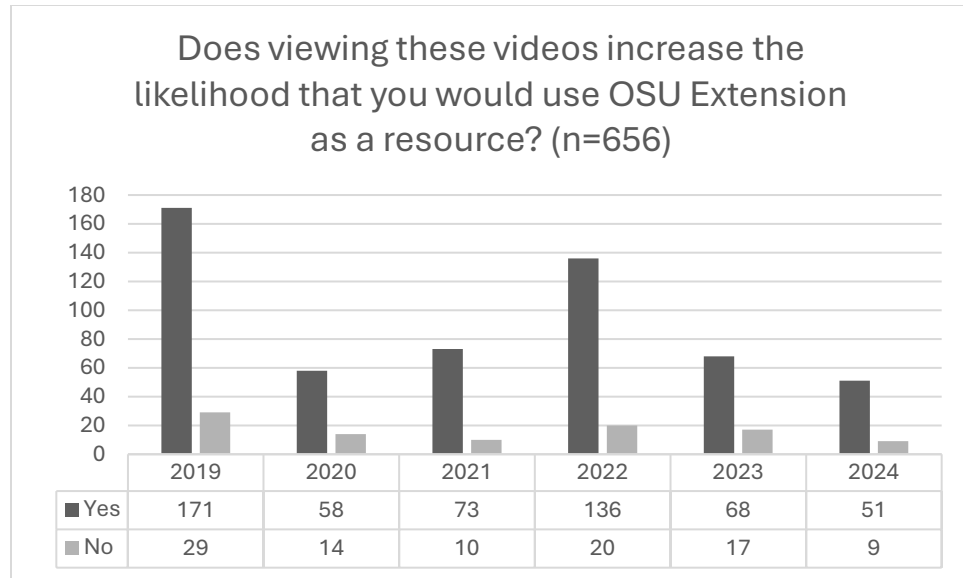


Figure 2. Does viewing these videos increase the likelihood that you would use OSU Extension as a resource?

Table 2. Yearly percentages likelihood to use OSU Extension as a resource.

Year	Yes (%)	No (%)	n=
2019	85.50	14.50	200
2020	80.56	19.44	72
2021	87.95	12.05	83
2022	87.00	13.00	156
2023	80.00	20.00	85
2024	85.00	15.00	60
Average	84.91	15.09	656

In summary, the participant group comprised farmers who viewed eFields research videos featuring Extension Educators and their Farmer Peers. The results indicated that respondents had a positive affiliation with the videos.

Discussion

This study was designed using descriptive statistics to investigate whether videos featuring Extension Educator and Farmer Peers positively affect viewers' likelihood to partner with and see OSU Extension as a viable resource. The questions used:

- 1) Does viewing these videos increase the likelihood that you would partner with OSU Extension in conducting research?
- 2) Does viewing these videos increase the likelihood that you would use OSU Extension as a resource?

The findings suggest that the Extension Educator and Farmer Peer-based videos effectively enhance respondents' perceptions of OSU Extension. The high percentage of positive responses indicates that participants found the videos relatable, likely due to the representation of their Farmer Peers and OSU Extension Educators. This aligns with social learning theory, which posits that individuals are more likely to adopt behaviors and attitudes modeled by their peers (Bandura, 1977). The inclusion of the Extension Educator also added credibility. This teaming of Farmer Peers and Extension Educators in videos reduces the chance of perceived information manipulation, as their firsthand experiences and research expertise increase authenticity and trustworthiness (DeAndrea, 2014). This approach enhances the credibility of the content, making it more persuasive and reliable to a farmer audience. That is the reason it is critical to have Farmer Peers and Extension Educators in videos.

When comparing survey questions, it is evident that Extension Educator and Farmer Peer team videos substantially impact farmers' likelihood to use OSU Extension as a resource more than their likelihood to partner with OSU Extension on research. This indicates that the farmer's willingness to conduct research may have many factors not addressed by the presented team-based videos. These reasons may include ease of conducting trial, expense, and available time. These findings support the hypothesis and indicate that Farmer Peer and Extension Educator videos positively affect farmers' opinions and enhance their view of OSU Extension as a viable resource.

The results have significant implications for the design of outreach and educational programs. By incorporating Farmer Peer representation along with an Extension Educator, OSU Extension can enhance farmer partnerships and increase the utilization of Extension resources. This approach may be applied to other agricultural Extension educational programs to improve engagement.

Despite the positive findings, several limitations must be considered. The self-selected sample influenced the annual sample size and may not represent the entire population of farmers, potentially introducing bias. Additionally, the sample predominantly consisted of agronomy and livestock farmers, which does not fully represent the farming population in the three-county area. The methodological limitations of this study prevent the generalization of the findings. The inclusion of a control group would have enhanced the generalizability of the results. Furthermore, allowing participants to provide written comments would have facilitated the collection of qualitative data for this study.

The descriptive statistics connected to the research question suggest the Extension Educator and Farmer Peer-based videos effectively enhance respondents' perceptions of OSU Extension. These results indicate that more robust studies implementing different treatments, control groups and inferential statistics are needed. Future studies should explore the specific elements of the videos that contribute to their effectiveness, such as the content, presentation style, and the characteristics of the featured Farmer Peers and Extension Educators. For example, does the status of the Farmer Peer affect the video impact? Additionally, research should examine the long-term impact of these videos on participants' behaviors and attitudes towards OSU Extension. For example, did the farmers actually increase partnerships with OSU Extension on research? Investigating the reasons behind the negative responses could also provide valuable insights for improving the videos and the effectiveness of video Extension education. Future research should investigate these factors to provide a more comprehensive understanding.

Conclusions

This study demonstrated that videos featuring the Farmer Peer and Extension Educator team positively affect viewers' likelihood of engaging with OSU Extension. This was demonstrated through increased participants' likelihood to partner with and use OSU Extension as a resource. The findings highlight the potential of team-based videos to enhance the reputation and partnership potential of OSU Extension. This approach can be an effective strategy for other Extension Educators to increase engagement and collaboration within the farming community.

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