

Background

- Fake news and critical issues (health guidelines, climate change, water quality, food waste, and more) have led to a growing need for 21st-century scientists and communicators to engage and educate audiences through dialogue (Loizzo & Beattie, 2019; Loizzo, et al., 2018; Nisbet, 2018; Nisbet & Scheufele, 2009).
- Podcasts have grown as a communication movement since 2013 to reach millions of adult listeners with niche content, including science topics (Edison, 2023).
- Artificial Intelligence (AI) is revolutionizing how agricultural and natural resources (ANR) communicators can dialogue with experts and audiences (Gunkel, 2012; Guzman & Lewis, 2020).
- AI tools for research, writing, and audio are emergent (Microsoft CoPilot, Google NotebookLM, & Descript).
- ANR communication college students need courses and experiences that focus on the planning and production of effective AI-human-generated communication to support science engagement and learning.

Purpose & Research Questions

- The purpose of this study was to examine students’ perceptions of AI-integrated podcasting across two ANR communication courses at the University of Florida (UF) and Kansas State University (KSU). Research questions (RQs) included:
 - How do AI-integrated podcasting tools influence ANR communication students' perceptions of:
 - RQ1: AI?
 - RQ2: self-efficacy in human-AI podcasting?
 - RQ3: trust in AI-generated content?
 - RQ4: AI use in ANR communication careers?



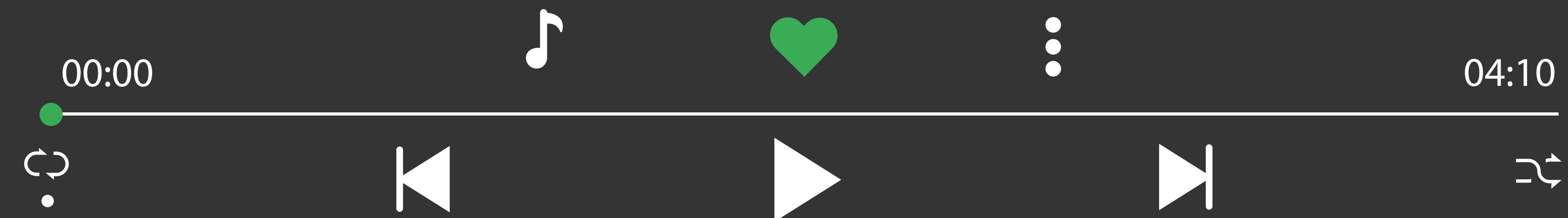
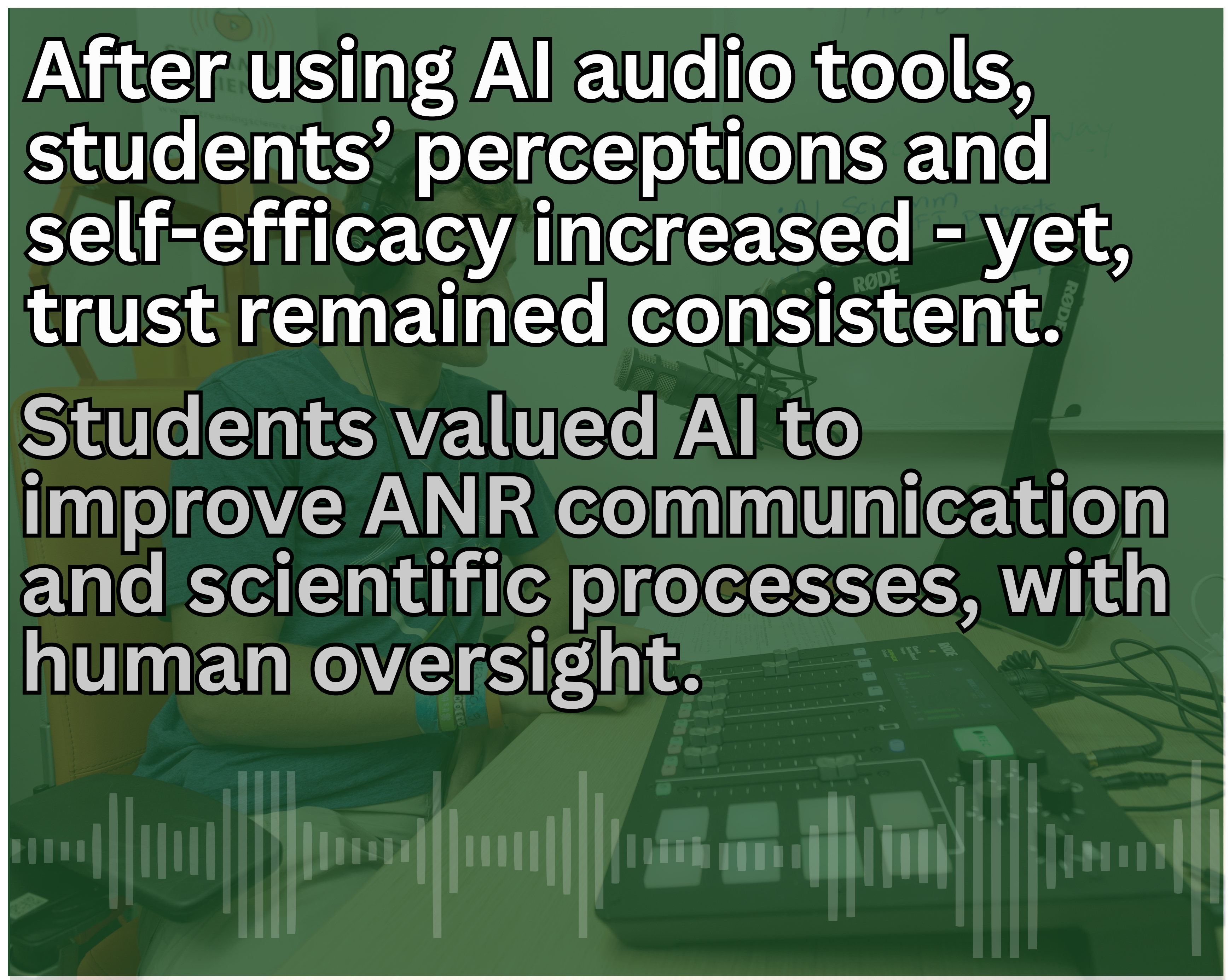
Methods

- The research followed a case study design (Yin, 2018) with multimethod data collection (Shutz et al., 2003), including pre/post-surveys and pre/post-student conducted interviews.
- **Context and Participants**
 - UF: AEC 4036/5037/6932 Advanced Agricultural Communication Production
 - Pilot in spring 2024; (n = 16)
 - KSU: AGCOM 590 New Media Technology
 - Fall 2024; (n = 23)
- **Data Collection**
 - Pre/post-survey; Likert scale questions
 - (1 = Strongly Disagree to 5 = Strongly Agree)
 - 30 quantitative items & 3 open-ended qualitative questions
 - Modified from existing instruments (Dagnall et al., 2019; Carolus et al., 2023; Sumandal, 2023)
- **Data Analysis**
 - Descriptive statistics (Field, 2018) for pre/post-survey
 - Scores averaged into three constructs aligned with RQs
 - Narrative inquiry (Clandinin & Connelly, 2000) to examine written pre/post-open-ended responses
 - Thematic coding terms included: AI, skills, job duties, location, & podcasting

Exploring Human-AI Podcasting:

Science Communication Students’ Perceptions, Self-Efficacy, and Trust

Dr. Jamie Loizzo,¹ Dr. Jacqueline Aenlle,² Caroline Barnett¹



RQs 1,2, & 3 Results

Construct	Index Score							
	UF Pre		UF Post		KSU Pre		KSU Post	
	M	SD	M	SD	M	SD	M	SD
AI Perception I know definitions of artificial intelligence. I can assess what the limitations and opportunities of using an AI are. I can imagine possible future uses of AI. I can operate AI applications in my everyday life. I can distinguish if I interact with an AI or a "real human." I can weigh the consequences of using AI for society. I can keep up with the latest innovations in AI applications.	3.90	0.27	4.16	0.29	3.77	0.66	4.21	0.87
AI Self-Efficacy I can record professional podcast audio with the help of AI. I can edit professional podcast audio with the help of AI. I can quickly improve the quality of a podcast interview with the help of AI. I can use AI software to create a professional podcast. I can accurately provide science knowledge to listeners through an AI-generated podcast. I can easily use AI tools to create online marketing materials to promote a podcast.	2.47	0.78	3.78	0.61	2.46	1.08	3.87	0.73
AI Trust I trust the science information that AI finds on the web. I trust AI tools to help me create accurate science-based podcasts. I believe most people trust science. I believe most people rely on information that comes from scientists. I believe AI is a trustworthy tool for science communicators to use. I believe science communicators can produce trustworthy AI-generated podcasts for listeners. I believe listeners should trust science podcasts produced with AI.	3.55	0.43	3.57	0.45	3.09	0.61	3.48	0.57

RQ 4 Results

Sample of Student Narratives

- **UF PRE**
 - “An extension agent in Florida hosts a monthly podcast about our state's natural resources. She uses AI to make graphics and write social media captions to promote her podcast. She also uses AI integration on her website to help write paragraphs for About pages and Show Notes in the podcast. She also used AI to make the podcast cover graphic.” (Participant A).
- **UF POST**
 - “Pam works as a science communication professional for the National Park Service. She produces a weekly podcast highlighting different research being done in the parks. For the most part, she manually cuts and adds filters to her audio. But, to remove any coughs, ‘uhs’ and ‘ums’, and background noise, she uses an application called Descript. This application cuts her editing time in half. She's excited to learn more ways to make her job easier.” (Participant B).
- **KSU PRE**
 - “A grain farmer who manages thousands of acres of cropland each year could benefit from AI, especially for farming technology. I think specifically of the use of drones for photo use and also spraying crops via drone. This would make the process of checking fields and crops easy with high-quality photos, measurements of land, and other identifications.” (Participant C).
- **KSU POST**
 - “Communication/Marketing Specialist for a cattle breed association or a national livestock show. They write articles on an everyday base, interview people, communicate with judges for the show, and design new graphics. I believe AI would help in editing pictures or coming up with new graphic ideas.” (Participant D).

Conclusions

- Incorporating AI audio tools can significantly **enhance** modern day skill development and career preparation in ANR communicaiton courses.
- Students had positive perceptions of the **usefulness** of AI and indicated they are likely to adopt AI audio tools in the future.
- Unchanged levels of trust indicate AI **trust-building measures** may be necessary for broader acceptance.

Recommendations

- **Scale-up** use of AI podcasting tools across ANR communication courses at land grant universities and **replicate** this study.
- Train students to use **additional AI tools for increased self-efficacy and other skills** development (writing, video, graphics).
- Conduct **additional research to understand AI trust factors** and develop strategies to address concerns.

EVERY CORNER OF

STREAMING SCIENCE

Scan QR Code for References