Science on Air: Podeos as a Tool for Practicing Science Communication, Telling Stories, and Strengthening Communities of Practice

Abril Benitez, Doctoral Student
225-439-1252
Abril.benitezbonilla@ag.tamu.edu

John Chivvis, Doctoral Student
979-314-8027
John.chivvis@ag.tamu.edu

Taylor Kennedy Apple, Doctoral Student
785-323-7366
Taylor.kennedy@ag.tamu.edu

Sarah McCord, Doctoral Student
573-645-9055
Sarah.mccord@ag.tamu.edu

Karissa Palmer, Doctoral Candidate
727-858-7185
Karissa.palmer@ag.tamu.edu

Robert Stirling, Doctoral Student
979-321-5724
Robert.stirling@ag.tamu.edu

Dr. Shannon Norris Parish, Assistant Professor
979-321-5757
Shannon.parish@ag.tamu.edu

Dr. Holli Leggette, Associate Professor
979-321-5757
Hollileggette@tamu.edu

Dr. Rafael Landaverde, Assistant Professor
979-321-5764
Rafael.q@ag.tamu.edu

Dr. Gary Wingenbach, Professor
979-321-5756
gary.wingenbach@ag.tamu.edu

Department of Agricultural Leadership, Education, & Communications
College of Agriculture & Life Sciences
Texas A&M University
600 John Kimbrough Blvd
TAMU 2116
College Station, TX 77843-2402

Science on Air: Podeos as a Tool for Practicing Science Communication, Telling Stories, and Strengthening Communities of Practice

Introduction

Podcasts have increasingly served as an innovative and engaging tool in education, demonstrating beneficial results overall (King, 2019; Oslawski-Lopez & Kordsmeier, 2021; Walters, 2020). However, combining podcasts with video formats (podeos) is still emerging within the context of agricultural and natural sciences education. A promising context for implementing podeos is the Research and Extension Experiences for Undergraduates (REEU). The REEU program was created by the United States Department of Agriculture National Institute of Food and Agriculture (USDA NIFA) as a workforce development initiative to develop leaders in the food, agriculture, natural, and human (FANH) sciences (USDA NIFA, 2022). Undergraduate research programs, such as summer REEUs and virtual research experiences, have been shown to help students develop valuable multidisciplinary academic and professional skills, including communication, critical thinking, and scientific identity formation (Akhter et al., 2021; Alaee et al., 2021; Mastronardi et al., 2021; Ross et al., 2021). While students gain valuable technical experience in undergraduate research and internship programs, they often lack structured opportunities to develop science communication skills for public audiences (Akhter et al., 2021; Alaee et al., 2021). Our podeo series was designed to address this gap by offering students a media-based platform to practice science storytelling, reflect on their experiences, and build confidence in sharing science beyond academic settings. Video podcasting has the potential to expand access to science and public engagement by creating content that is not only informative but also visually compelling and broadly accessible. Integrating podeo participation into internship programs may offer students accessible, media-rich opportunities to practice science communication in a real-world setting. Additionally, it may contribute to a sense of shared connection and engagement among participants within the broader learning community.

How it Works

The idea of the REEU-ECN Podeo Series emerged from the *REEU Ready? Workshops Series,* a professional development initiative designed to help REEU students and interested learners develop useful research, communication, and other workforce readiness skills. Through the workshop series, we saw the need for a more accessible and engaging format and were inspired to create a shorter, consumer-friendly version of these workshops in the form of a podeo. Because we had limited experience producing podeos, we followed Hersch's (2017) steps to creating a podcast and contacted the virtual engagement specialist for [Blinded], who kindly agreed to support us. We chose a casual interview format with no more than 10 minutes per episode, a design to showcase our brand—REEU Podeo Series (REEU-ECN on air)—and began setting up our table, chairs, microphones, cameras, and all needed equipment. We used Open Broadcaster Software (OBS Project, 2023) to record our episodes, the first one being an [Blinded] Podeo concept to ensure it aligned with our vision. After the team agreed on the format, design, and setting, we planned the first eight episodes and recorded a teaser trailer to promote the series, build anticipation, and reach the public. We shared our Podeo teaser through Instagram, X (formerly Twitter), LinkedIn, and YouTube.

Results to Date/Implications

Our first two episodes featured the program director and co-director of the [Blinded] program, who shared the vision behind building a national network of undergraduate research programs. In our third episode, we invited the director of producer communications at [Blinded], who shared her experience in agricultural communications and storytelling from an industry perspective. Episodes four through eight featured members of the Science Influencers Program, an REEU program that prepares students to become effective and influential communicators of science in the public domain. The students expressed their excitement in practicing public-facing communication in a more casual, yet intentional format. We asked two students to share their thoughts on their participation in the podcast. One said, "I really enjoyed being part of the podcast as it felt empowering to share my own journey and hear the diverse experiences of others." Another student said, "I'd never been on a podcast before, and it felt great that someone wanted to hear my thoughts in this way." Further, one of the students was inspired to create their own podeo series for their internship. These early outcomes supported our goal for the podeo series, which was to highlight students' voices while providing a space for scientists and the public to engage more through science communication. Hence, if other science-based research and internship programs implemented a similar approach, we may further leverage this popular and accessible communication format to offer students an opportunity to practice science communication while strengthening the REEU network.

Future Plans/Advice to Others

We plan to develop a detailed, user-friendly guide for other research and internship programs as well as other experiential learning communities so that they can replicate a similar podeo series throughout their curriculum. Internship and fellowship programs may be an area for podeo series to expand as students continue to develop their skills for science communication through these opportunities. Podeos would provide interns with a reflective way to build on experiential learning gained through their internships and the podeo session simultaneously. Furthermore, we will continue assessing participants' experiences in the REEU-ECN podeo series and gather feedback for improvement. Continued assessment of the podeo series will allow our team to understand the advantages and improvements to better enable students to succeed in science communication through fellowship, internships, and more. Further, we will leverage social media intentionally to expand our engagement and reach. As for others interested in developing a podeo series, we recommend a clear plan, goals, and appropriate support. On the production side, we suggest using accessible and user-friendly recording software, such as OBS studio, and test cameras and microphones by recording a few trials before an official episode. For sourcing content, we recommend inviting a mix of voices to offer diverse, relatable experiences and select topics that align with the goal of the podeo.

Resources Needed

We used an existing video studio and necessary technology at our university with no new cost to the program. Additionally, any digital devices including smartphones and computers can be used to record audio and video elements to create a podcast. If there is not a media lab or technology readily available, there are many platforms to edit and publish podcasts, such as GarageBand (free) and Adobe Premiere Pro ($22.99/month). To design items for promotion of the podeo series, we used a free Canva account. Time was also a very important resource in the creation of this podeo series.

References

Aenlle, J., Loizzo, J., Lundy, L. K., Bunch, J. C., & Folta, K. M. (2022). Podcasts in production: An examination of current and best practices for agricultural and natural resource podcast producers. *Journal of Applied Communications, 106*(4). https://doi.org/10.4148/1051-0834.2461

Akhter, N., Ali, M. S., Siddique, M., & Akram, M. S. (2021). The role and importance of communicating science for building up understanding of science applications. *Multicultural Education*, *7*(10), 274–281. http://dx.doi.org/10.5281/zenodo.5563105

Alaee, D. Z., Campbell, M. K., & Zwickl, B. M. (2021). Impact of virtual REU experiences on students' psychosocial gains during the COVID-19 pandemic. A*rXiv, 2108.07620*. https://arxiv.org/abs/2108.07620

King, C. (2017). Subsidies, uneven development, and the race to the bottom.

Mastronardi, M., Borrego, M., Choe, N., & Hartman, R. (2021). The impact of undergraduate research experiences on participants' career decisions. *Journal of STEM Education: Innovations and Research*, *22*(2), 75–82.

OBS Project. (2023). OBS Studio (Version 30.0.2) [Computer software]. https://obsproject.com/

Oslawski-Lopez, J., & Kordsmeier, G. (2021). “Being able to listen makes me feel more engaged”: best practices for using podcasts as readings. *Teaching Sociology*, *49*(4), 335–347. https://doi.org/10.1177/0092055X211017197

Ross, M., Litzler, E., & Lopez, J. (2021, March). Meeting students where they are: A virtual computer science education research (CSER) experience for undergraduates (REU). In *Proceedings of the 52nd ACM Technical Symposium on Computer Science Education* (pp. 309–314). https://doi.org/10.1145/3408877.3432547

Walters, K. (2021). Planning "real utopias" through federal spending. *TRAILS: Teaching Resources and Innovations Library for Sociology*.

U.S. Department of Agriculture, National Institute of Food and Agriculture. (2022, February 23). *USDA NIFA invests $16M for undergraduate agriculture research and extension experiences*. https://www.nifa.usda.gov/about-nifa/press-releases/usda-nifa-invests-16m-undergraduate-agriculture-research-extension