

THE POWER OF THE MICROPHONE: Podcasting as an effective instructional tool for leadership education

Abstract

The recent global COVID-19 pandemic has forced many institutions of higher education to place added consideration and focus on their virtual instruction, causing instructors to rethink their pedagogical approaches (Murphy, et al., 2020). While new pedagogical technologies are being introduced in higher education (Baker, et al. 2008), not all approaches have produced beneficial results (Heilesen, 2010). Could this new learning medium serve as an effective tool for student learning outcomes and comprehension of course concepts? The current study presents attempts to answer these questions through its exploration of student perceptions and impact of podcasting as an instructional tool within four undergraduate leadership courses. Through the use of podcasting as a means of supplemental content and assessment, these cases provide educators with foundational guidance and recommendations on how to most effectively implement different ways of podcasting into the classroom to achieve student learning outcomes. As we celebrate the 20th anniversary of JOLE and look ahead to the next twenty years, the authors suggest that one of the most important tasks for leadership educators will not only be to recognize opportunities presented by technological advances in teaching and learning (Gigliotti & Ruben, 2017), but also the use of these new technologies to meet the needs of a changed student population in a post-global pandemic world.

Introduction

The recent global COVID-19 pandemic has forced many educational institutions to rapidly consider their use of virtual instruction, causing educators to rethink their pedagogical approaches and delivery (Murphy et al., 2020). Boundaries of higher education will continuously be impacted by today's globalized society, including new technologies and

the increase of information (Sowcik, 2012); hence, higher education has long been called to modernize its educational approaches (Heilesen, 2010). Different technologies can provide significant benefits in institutions of higher education. Such technologies can serve as a platform to stimulate leadership insights and reflect on leader practices (Mainiero & Mangini, 2019). For example, smartphone technology, which has been shown to support college student learning (Smith et al., 2018),

has been used in higher education to enhance student leadership development on campus (Mainiero & Mangini, 2019) and better understand how students conceptualize leadership in a large leadership classroom (Gonzalez-Morales et al., 2020). New technologies, such as smartphone applications, have also been used in leadership education to create a classroom culture that fosters trust, collaboration, and engagement (Gonzalez-Morales et al., 2020).

The current generation of students, known as “Digital Natives,” has grown up with constant digital entertainment and education, and cannot recall a time where the Internet was not an integral part of personal and scholastic life (Robinson & Ritzko, 2009). While new pedagogical technologies are being introduced in higher education (Baker et al., 2008), not all approaches have produced beneficial results (Heilesen, 2010). As Phelps (2012) wrote: “Both educators and students should have clarity and understanding around the intended use and benefit of technology” (p. 73). Could podcasting be a beneficial instructional tool worth exploring in today’s increasingly remote learning environment? Could this new learning medium serve as an effective tool for student learning outcomes and comprehension of course concepts? The present study attempted to answer these questions.

Literature Review

Podcasting refers to the creation and serial distribution of online audio files to listeners who can listen to a discussion about a single idea or series ‘on the go’ (McGarr, 2009; Palenque, 2016; Shamburg, 2009). Podcasts have been utilized in higher education across a wide range of disciplines (Nielsen et al., 2018) with a wide range of purposes and methodologies (Harris & Park, 2008). Many educators have used podcasts to further understand course material, grasp new concepts, and reflect on the relevance to today’s world. Previous literature suggests that the most common use of podcasting in higher education occurs through teachers producing course-related podcasts, students creating podcasts as different forms of evaluation (Nielsen et al., 2018), and podcasts as a form of feedback

(Palenque, 2016). For example, Nielsen and colleagues (2018) examined how the use of teacher-generated podcasts in a blended communications course increased students’ theoretical understanding of unfamiliar topics at University College of Northern Denmark. Similarly, Norsworthy and Herndon (2020) explored how using student-produced podcasts in a leadership and ethics course provided a successful educational tool to engage with leadership themes. In order to best grasp and ‘digest’ course concepts, students created their podcasts, then participated in group discussions about the podcast in the classroom.

Of the limited literature, scholarship points to the many potential benefits of podcasting across disciplines in higher education, including its flexibility, nuance in complex topics and issues, the potential to further motivate student engagement (Nielsen et al., 2018), and support of reflective, experiential (Palenque, 2016), and active learning (Cass & Kravchenko, 2017; Fink, 2003; Palenque, 2016). In fact, by introducing theories before attending synchronous classes, Cass and Kravchenko (2017) found that podcasting can actually stimulate active learning, making class time more efficient. Resonating across disciplines (Walls et al., 2010), podcasting has encouraged students to more deeply connect with their curriculum and develop critical thinking (Norsworthy & Herndon, 2020) and problem-solving skills (Goldman, 2018). Podcasting also gives students a sense of autonomy in their learning by re-accessing the information to clarify issues and highlight gaps of knowledge (Hill et al., 2012).

Podcasting also has many practical benefits, given the recent global pandemic and transitory nature of education. Considering the increased responsibilities of many students, students can download the audio file and listen later, when they are able to engage more fully (Wake et al., 2020). Additionally, in a time of increased isolation, many university students have vocalized the comfort and ‘normalization’ of hearing a familiar voice (Wake et al., 2020), as well as opportunities to increase inclusivity and belongingness in the learning community (Van Zanten et al., 2012).

For many educators, despite its benefits, implementing podcasting into the classroom can seem like a daunting project, given the recent swift transition to distance learning, which is understandable. As mentioned by Mainiero and Mangini (2019), “while leadership education spans decades, technology does not last forever” (p. 156); technology redevelopment and revamping is inevitable, which can be expensive and time consuming for educators (Mainiero & Mangini, 2019). Some argue that the global pandemic has highlighted the importance of audio recordings and podcasting within higher education, some even calling 2020 “the year of podcast teaching” (Wake et al., 2020, p. 30) and the current era the “golden age of podcasts” (Hurst, 2019, p. 277).

Although there is significant potential for successful learning through podcasting in the future of higher education (Palenque, 2016), limited literature exists to further understand and evaluate the impact of podcasting on student learning. Several researchers (Collier-Reed et al., 2013; Neilsen et al., 2018) have called for further research to clarify whether podcasting can increase students’ reflection and understanding of a topic with further assessment of such impacts. These present case studies provide educators with further guidance and recommendations on how to most effectively implement different ways of podcasting into the classroom to achieve student learning outcomes.

Research Design

The purpose of the present study was to explore the use and impact of podcasting as an instructional tool within undergraduate leadership courses. Specific objectives of the study included:

1. Identify and explore student use and perceptions of podcasting in education and non-educational settings;
2. Assess the impact of podcasting on student learning; and
3. Compare student perceptions of podcasting between the case studies.

Two pilot and two subsequent surveys were distributed during Fall 2020 and Spring 2021 semesters among four leadership courses at two large US Land-Grant institutions. One hundred twenty-two total surveys were obtained from cases A (n=57), B (n=16), C (n=36), and D (n=12). Surveys consisted of demographic information (i.e., gender, ethnicity, GPA), quantitative data (multiple choice and Likert-scale questions), and qualitative data (free-response and open-ended questions). Distributed surveys were slightly altered between the classes to align with specific course objectives and podcasting context. The questions in both surveys, albeit slightly different, were designed to better understand student perceptions of podcasting used as an instructional tool for leadership education. In the case studies, podcasting was used either as a form of content delivery (i.e., instructor-led explaining course concepts), a means of assessment (i.e., assignments and final project), or both.

The study followed a convergent mixed methods research design, where both qualitative and quantitative data were collected simultaneously in the distributed survey, but were analyzed separately among the two Pilot Study and Subsequent (pre and post) Study cases. MMR is defined as the collection, analysis, and combination of both quantitative and qualitative data through “rigorous and persuasive methods,” where the integration, merging, and connecting of the two forms of data is consequential, “with one building on or extending the other” (Sweetman, et al., 2010, p. 441). The purpose behind the study’s design was to compare results among the four differing cases to obtain a more complete picture of the assessment and discover if similar responses were found in both quantitative and qualitative data (Creswell & Plano Clark, 2018).

Quantitative data utilized one-group posttest-only (Pilot Studies) and pre- and post-test (Subsequent Studies) quasi-experimental designs and were analyzed through descriptive statistics (frequencies). Qualitative data was collected via the open-ended questions in the survey, seeking to reveal student opinions and perspectives of the use of the podcasting tool within their class. The authors analyzed the data through a thematic analysis among each individual case study to identify

emerging themes within the students' experiences. Later, considering the contrast between the four classes (differences in podcasting purpose, implementation, assignments, etc.), the authors re-examined the coding of the themes among the four cases to showcase the similarities and differences between and among the cases, to bring further understanding to these differences (Glaser, 1965).

The authors met consistently to ensure that each interaction with the data involved some form of analysis collectively by the two authors during all stages of the research process - prior to the implementation, during implementation, and upon the study's closure - to validate the study's methodology (Gerstl-Pepin & Patrizio, 2009). The authors also utilized a shared platform to document an audit trail of their methodological decisions, to ensure that the study was as purposefully planned, designed, and implemented as possible, in order for the data to gain further richness and grow in meaning with each iteration of the cases. Because of this, data and findings from the Pilot Study cases shaped the content and focus of Subsequent Study cases. For example, additional demographic information was added to the Subsequent Study cases, to address comparison of groups between cases. Similarly, considering the rapid nature of the transition online during the COVID-19 pandemic, the research design was shifted from a one-group posttest-only design (where the introduction of podcasting was quickly introduced, without time for pre-intervention measures) to an intentional pre- and post-test design.

Once both strands of data were collected, concluding each semester, the authors met to

establish a verbal confirmability audit, to ensure that the interpretations of the findings of each case were truly derived from the data. Acknowledging the complexity of meaning of the data, after its two strands have been merged (Creswell & Plano Clark, 2011), the authors conclude by providing educator reflections for future podcasting implementation and overarching recommendations for leadership educators.

Pilot Study: Cases A and B (Fall 2020). In the initial Pilot Study, an online Qualtrics survey was distributed among two leadership courses (n=73) to explore the use and impact of podcasting as an instructional tool after course completion. The two classes focused on introductory leadership concepts and theories (Case A) and community leadership (Case B). Participants were mostly White females; full participant demographics for the two Pilot Study cases can be found in Table 1. In Case A, podcasts were used as a form of content delivery and assessment. For example, the instructor of Case A created their own podcast series called Leadership Untangled, featuring expert guests specific to course learning modules. When considering assessment, students were given the option to submit their reflection assignments in the form of a podcast, alongside several "podcast exams." In Case B, podcasts were used briefly as content delivery, drawing from an episode of the Leadership Untangled podcast in Case A. Case B focused on podcasting as an assessment of student knowledge through an individual final project in the course, which allowed students to further elaborate on one course concept, drawing from course and external resources.

Table 1
Pilot Study (A and B) participants

Demographics	Pilot Case Study Case A (n=57)	Pilot Case Study B (n=16)
Gender	Male: 15 (25.86%) Female: 43 (74.14%) Other: 0 (0.00%)	Male: 3 (18.75%) Female: 13 (81.25%) Other: 0 (0.00%)
Ethnicity	White: 32 (56.10%) Hispanic/Latinx: 5 (8.60%) Black/African American: 9 (15.50%) Native American: 0 (0.00%) Asian/Pacific Islander: 13 (22.40%) Other: 0 (0.00%)	White: 8 (50.00%) Hispanic/Latinx: 4 (25.00%) Black/African American: 1 (6.30%) Native American: 0 (0.00%) Asian/Pacific Islander: 1 (6.30%) Other: 2 (12.5%)

Subsequent Studies: Cases C and D (Spring 2021). Following the results of the initial Pilot Study, two subsequent pre and post online Qualtrics surveys were distributed to two additional undergraduate leadership classes at the beginning of the semester and at the conclusion of the semester. Participants (n=48) were mostly White females in their early 20's with an average 3.3 GPA; full participant demographics for the two Subsequent Study cases can be found in Table 2.

These subsequent classes focused on introductory leadership theories and concepts (Case C) and communication and leadership (Case D). Case C was the same course offering as Case A, using

podcasts as both a form of content delivery (e.g., the Leadership Untangled series) and assessment of student learning (e.g., student-created podcasts for reflection assignments and projects). Case D focused on podcasting as a group-based form of assessment of student knowledge in a final project similar to Case B, which allowed students to further elaborate on one course concept, drawing from course and external resources. The final project was scaffolded throughout the semester and students were encouraged to examine and draw from existing, familiar podcast resources, as they continued to work on and develop their podcast episode.

Table 2
Subsequent Study (C and D) participants

Demographics	Pilot Case Study Case C (n=36)	Pilot Case Study D (n=12)
Gender	Male: 16 (44.44%) Female: 20 (55.56%) Other: 0 (0.00%)	Male: 4 (33.33%) Female: 8 (66.67%) Other: 0 (0.00%)
Ethnicity	White: 23 (63.89%) Hispanic/Latinx: 1 (2.78%) Black/African American: 4 (11.11%) Native American: 0 (0.00%) Asian/Pacific Islander: 8 (22.22%) Other: 1 (2.78%)	White: 9 (75.00%) Hispanic/Latinx: 0 (0.00%) Black/African American: 0 (0.00%) Native American: 0 (0.00%) Asian/Pacific Islander: 2 (16.67%) Other: 1 (8.33%)
Age	Average: 21 Median: 21	Average: 22 Median: 20
Self-reported GPA (average)	3.32	3.33
Year in School	Freshmen: 4 (11.11%) Sophomore: 14 (38.89%) Junior: 11 (30.56%) Senior: 7 (19.44%) Unsure: 0 (0.00%)	Freshmen: 5 (41.67%) Sophomore: 2 (16.67%) Junior: 3 (25.00%) Senior: 2 (16.67%) Unsure: 0 (0.00%)

Findings

Objective 1: Identify and explore student use and perceptions of podcasting in educational and non-educational settings. Data from this objective were both quantitative (descriptive statistics) and qualitative (thematic analysis) and are described below in each of the case studies (Pilot and Subsequent Studies). All descriptive statistics regarding students' familiarity with podcasts in educational and non-educational ('outside of the classroom') settings in both Pilot Study and Subsequent Study cases can be found in Tables 3 and 4.

Pilot Studies (A and B). In both Pilot Study cases, either all participants (n=16, 100%; Case B) or an overwhelming majority (n=53, 92%; Case A) said that podcasts can be a helpful tool in today's online learning environment, with the stipulations that they are "not too long" (Case B). Several themes surfaced when students were asked to expand:

1. Convenience. Several students explained the benefits of the transitional nature of podcasts ("listened to while doing other things," "listen on the go," and "listened in the car or while doing household chores" (Case B)). For example, one student remarked, "I normally listen to podcasts at work or at night when I'm winding down because I find it a good time to be off my phone but still listening to new people and new things" (Case A). Such "convenience" (Case B) and flexibility made podcasting a more helpful learning tool for student learning.
2. Different creative medium for learning. Producing a podcast episode as a means of assessment allowed students a sense of creativity, since this opportunity wasn't available in other classes or was "something different," a "nice change," or "more exciting" (Case B) from traditional learning assessments. This opportunity was

especially welcomed during the pandemic. One student mentioned how, “it is nice to have a break from the traditional teaching methods” (Case A), while another commented, “it gave my brain a variety in a time where it feels like every class is basically the same” (Case B).

3. Engagement with the material. Listening to podcasts as a form of content delivery proved to be “more engaging than a lecture” (Case A). Students also highlighted the approachable (“less formal,” “casual”) nature of podcasting, where their “personable

voice” and shared stories (“back and forth” nature) have the opportunity to “create more of a connection” and “more focus from the listener” (Case B) to understand and learn new concepts. Instead of a “dry death by PowerPoint” (Case B), the conversation felt passionate and familial. One student also mentioned how this “tone” of conversation “made it easier to digest and think about” (Case B) when returning to the synchronous classroom environment and how “felt it wasn’t so stressful” (Case B) compared to other traditional forms of content delivery.

Table 3
Familiarity with podcasts (Pilot Study)

Survey question	Case A (n=57)	Case B (n=16)
Before taking this course, how familiar are you with podcasting?	Very familiar: (n=9; 15%) Moderately familiar (n=24; 42%) Not familiar at all: (n=8; 14%)	Very familiar: (n=4; 25%) Moderately familiar: (n=11; 69%) Not familiar at all: (n=1; 6%)
After taking this course, how familiar are you with podcasting?	Very familiar: (n=26; 45%) Moderately familiar: (n=11; 19%) Not familiar at all: (n=0; 0%)	Very familiar: (n=7; 44%) Moderately familiar: (n=9; 56%) Not familiar at all: (n=0; 0%)
Have you used podcasts in educational settings before?	Yes (n=11; 19%) No (n=46; 80%)	Yes (n=4; 25%) No (n=12; 75%)
How many podcasts do you subscribe to outside of this course?	1 (n=22; 38%) 2 (n=18; 31%) 3 (n=0; 0%) 4-6 (n=0; 0%) 9-10 (n=0; 0%) 10+ (n=0; 0%) None (n=0; 0%)	1 (n=4; 25%) 2 (n=7; 44%) 3 (n=0; 0%) 4-6 (n=1; 6%) 9-10 (n=1; 6%) 10+ (n=0; 0%) None (n=3; 19%)
Where (which platforms) do you discover podcasts?	Spotify (n=27; 47%) Apple (n=16; 28%)* Podbean (n=0; 0%)	Spotify (n=10; 63%) Apple (n=5; 31%)* Podbean (n=1; 6%)
How do you usually discover podcasts to listen to?	Recommendations from friends/family (n=31; 55%) Social media platforms (n=0; 0%) Randomly browse (n=0; 0%) Topical interests (n=0; 0%)	Recommendations from friends/family (n=7; 44%) Social media platforms (n=5; 31%) Randomly browse (n=2; 13%) Topical interests (n=1; 6%)
What types of podcasts are you most interested in?	Entertainment (i.e., comedy, storytelling, gaming, true crime, etc.) (n=32; 57%) Self-help (n=0; 0%) Knowledge-based (n=0; 0%)	Entertainment (i.e., comedy, true crime) (n=10; 62%) Self-help (n=4; 25%) Knowledge-based (n=2; 13%)

*Note: "Apple," "Apple App," "Apple Podcasts on my phone" or "iTunes"

Subsequent Studies (C and D). In both cases, a high number (n=27, 81%; Case C) or majority (n=10, 83%; Case D) of students in the pre-assessment indicated that podcasting is a helpful tool in today's learning environment. Students in both cases explained that podcasts can be an effective "learning aid" (Case C) which "makes learning easier" (Case D). Students also commented on how "mellow," "laid back," (Case D), or "more relaxing" (Case C) podcasting was, in comparison to more formal teaching delivery; podcasting involves a "normal

person that talks about what happens that can relate to other people" (Case D). A minority of students in both cases viewed podcasts as unbeneficial in university learning environments because they tend to be "overwhelming" (Case C) in length, "highly agitating" in nature (Case D), "difficult to make" (Case C), and don't always "accommodate visual learners" (Case C). One student even mentioned, "I do not think they [podcasts] present anything more than a person on Zoom can, it is simply another format of learning/teaching" (Case D).

In the post-assessment survey, this positive trend was similar among both cases, where many students ($n=24$, 88%, Case C; $n=13$, 81%, Case D) indicated podcasting was a helpful tool. Several ($n=3$; 19%) students in Case D mentioned that the helpfulness of such a tool was dependent on how it was applied in the classroom, especially considering its lengthiness; “because podcasts tend to be at least 30 minutes long and that can be challenging to

stay engaged in listening if it is about something a student may not be interested about” (Case D).

Student engagement. In both cases, students indicated that teaching style significantly impacted their level of engagement (i.e., their instructor’s “delivery of content,” overall “teaching/enthusiasm,” ability to “care” (Case C) for their students, “tone,” and “excitement for the material” (Case D)).

Table 4
Familiarity with podcasts (Subsequent Study)

Survey question	Case C ($n=36$)	Case D ($n=12$)
Before taking this course, how familiar are you with podcasting?	Very familiar: ($n=8$; 22%) Somewhat familiar: ($n=20$; 57%) Not familiar at all: ($n=7$; 20%)	Very familiar: ($n=4$; 33%) Somewhat familiar: ($n=7$; 58%) Not familiar at all: ($n=1$; 8%)
After taking this course, how likely are you to find and listen to podcasts in the future?	Very likely: ($n=12$; 34%) Likely: ($n=10$; 28%) Somewhat likely ($n=9$; 25%) Not likely at all ($n=4$; 11%)	Very likely: ($n=7$; 58%) Likely ($n=0$; 0%) Somewhat likely: ($n=4$; 33%) Not likely at all: ($n=1$; 8%)
Have you used podcasts in educational settings before?	Yes ($n=7$; 25%) No ($n=21$; 75%)	Yes ($n=5$; 42%) No ($n=7$; 58%)
How many podcasts do you subscribe to outside of this class?	1 ($n=9$; 25%) 2 ($n=7$; 20%) 3-5 ($n=6$; 17%) 6-8 ($n=2$; 5%) None ($n=10$; 28%)	1 ($n=2$; 17%) 2 ($n=2$; 17%) 3-5 ($n=3$; 25%) 6-8 ($n=1$; 8%) None ($n=4$; 33%)
Where (which platforms) do you discover podcasts?	Spotify ($n=18$; 52%) Apple ($n=10$; 29%)*	Spotify ($n=5$; 42%) Apple ($n=4$; 33%)* Social media ($n=3$; 25%)
How do you usually discover podcasts to listen to?	Recommendations from friends/family ($n=10$; 30%) Social media ($n=8$; 24%)	Recommendations from friends/family ($n=4$; 33%) Social media ($n=6$; 50%) Topical interests ($n=2$; 17%)
What types of podcasts are you most interested in?	Self-help ($n=7$; 21%) Entertainment/comedy ($n=6$; 18%) Sports/news ($n=4$; 12%) Storytelling ($n=3$; 9%)	Self-help ($n=2$; 17%) Entertainment/comedy ($n=3$; 25%) Sports/news ($n=1$; 8%) Storytelling ($n=6$; 50%)
Has the number of podcasts you listened or subscribed to increased, stayed the same, or decreased since the pandemic began?	Increased ($n=16$; 45%) Stayed the same ($n=17$; 48%) Decreased ($n=2$; 5%)	Increased ($n=5$; 42%) Stayed the same ($n=6$; 50%) Decreased ($n=1$; 8%)

*Note: “Apple,” “Apple Music,” “Apple Podcasts”

Objective 2: Assess the impact of podcasting on student learning. Quantitative and qualitative data were collected between the four cases to assess the impact of podcasting on student learning.

Pilot Studies A & B.

Podcast engagement and enjoyment. A majority of students in both Pilot Study cases indicated that they were “somewhat engaged,” “very engaged,” or “extremely engaged” while listening to instructor-led podcasts in this course. Through both listening to podcasts (Case A) and creating podcasts (Case B), most of the students in both cases indicated that podcasts are “very enjoyable” or “extremely enjoyable,” compared to traditional forms of learning. Full results of the engagement and enjoyment factors of the Pilot Study cases can be found in Table 4.

Podcasts and understanding course concepts. A majority of students in both Pilot Study cases indicated that podcasting was “extremely helpful,” “very helpful,” or “somewhat helpful” in their learning and understanding of course concepts. Full results can be found in Table 4. When asked how specifically this instructional tool impacted their understanding of course concepts, students mentioned the following themes:

1. Different perspectives. Both cases highlighted how listening to different perspectives from guests on the instructor-led podcasts added to students’ understanding of course concepts. Many students mentioned that podcasting gave an opportunity to hear from diverse and “eye opening” thoughts (i.e., “outside of your school environment” (Case B)). One student explained, “With the podcasts that [author] did with different guests, it helps me learn through the conversation that they have. Being able to talk through ideas and social topics can sometimes be a better way at explaining things” (Case A). Similarly, listening to differing perspectives increased student critical depth of thought: “Listening to them [podcasts] and creating one encouraged deeper thinking. They do help with understanding a bit more as they help you think deeper and hear new perspectives” (Case B).

2. Real-world application. Another emergent theme was the real-world application of course concepts in the instructor-led podcasts, “rather than just theories in a textbook” (Case A). Listening to the podcast series allowed students to “apply course concepts in real life” (Case B); “I think that the podcasts helped me out a lot because the speakers were able to talk about how they have applied different leadership concepts to their lives” (Case A). Similarly, creating podcasts for assessment gave students a better understanding of course concepts by “reinforcing what was being taught” and “expanding on topics” (Case B) that weren’t discussed in-depth during synchronous class, allowing for further application with real-life examples and reflection.

3. Verbal processing. Another prominent theme that surfaced was how students were able to process course concepts out loud. Creating podcasts facilitated student learning due to their own articulation of the material; “[creating podcasts] allowed me to get the material and put it in my own words, therefore I had to really understand what I was talking about” (Case B). By vocalizing their own ideas, this allowed for “a deeper understanding and thinking process” (Case B). For example, one student noted “...by speaking through all my thoughts for assessments, I was able to reflect way better on content than I did with writing them” (Case A).

4. More informative (Case B). Lastly, one theme that emerged only within Case B was the informative value of listening to instructor-led podcasts as a way to increase student understanding. Students explained that podcasting was more informative (e.g., “helps get across the information rather than a paper” and “more informed”), in comparison to traditional lectures or assignments. Such podcasts increased a sense of awareness and understanding of material that students might not be exposed to with more traditional forms of learning: “Everyone thinks differently and when I heard some of the podcasts, I wondered why didn’t I think about that or I was unaware of current issues going on in our communities” (Case B).

Table 5
Engagement and enjoyment (Pilot Study)

Survey question	Case A (n=57)	Case B (n=16)
How engaged were you in general while listening to podcasts in this course?	Extremely engaged (n=4, 7%) Very engaged (n=22, 38%) Somewhat engaged (n=27, 47%) Not engaged at all (n=0; 0%)	Extremely engaged (n=4, 25%) Very engaged (n=4, 25%) Somewhat engaged (n=8, 50%) Not engaged at all (n=0, 0%)
How helpful was this podcast [content delivery/assessment] in learning course concepts this semester?	Content Delivery	
	Extremely helpful (n=5; 8%) Very helpful (n=26, 45%) Somewhat helpful (n=23; 40%) Not helpful at all (n=3; 5%)	Extremely helpful (n=8; 50%) Very helpful (n=2; 13%) Somewhat helpful (n=5; 31%) Not helpful at all (n=1; 6%)
How enjoyable was this podcast [content delivery/assessment] in learning course concepts this semester, in comparison to more traditional forms of learning?	Assessment	
	Extremely helpful (n=25; 43%) Very helpful (n=19; 33%) Somewhat helpful (n=7; 12%) Not helpful at all (n=6; 10%)	
How enjoyable was this podcast [content delivery/assessment] in learning course concepts this semester, in comparison to more traditional forms of learning?	Content Delivery	
	Extremely enjoyable (n=4, 7%) Very enjoyable (n=31, 54%) Somewhat enjoyable (n=20; 35%) Not enjoyable at all (n=2; 3%)	Extremely enjoyable (n=6, 33%) Very enjoyable (n=6, 33%) Enjoyable (n=2, 13%) Somewhat enjoyable (n=2, 13%) Not enjoyable at all (n=0, 0%)
How enjoyable was this podcast [content delivery/assessment] in learning course concepts this semester, in comparison to more traditional forms of learning?	Assessment	
	Extremely enjoyable (n=27; 47%) Very enjoyable (n=19; 33%) Somewhat enjoyable (n=5; 8%) Not enjoyable at all (n=6; 10%)	

Subsequent Studies (C & D). Compared to more traditional forms of learning, a majority of students in both Subsequent Study cases in the post-assessment acknowledged that podcasting assignments were “enjoyable” (n=16, 44%, Case C; n=3; 25%, Case D) and “very enjoyable” (n=8, 22%, Case C; n=5; 42%, Case D).

Podcasts and understanding course concepts.

Post-assessment data showed that a majority of students in both cases indicated that the podcasting assignments used in their leadership course were “helpful,” ($n=19$, 50%, Case C; $n=6$; 50%, Case D), “very helpful” ($n=6$, 16%, Case C; $n=4$; 33%, Case D), or “somewhat helpful” ($n=11$, 31%, Case C; $n=2$; 17%, Case D) in learning and understanding course concepts. When asked to expand further on how podcasting contributed to their understanding, several key themes emerged:

1. **Use of voice.** Similar to the Pilot Study cases, creating podcasts allowed students to use their own voice, assisting with the further understanding of course concepts. By focusing on one specific course concept for their podcast episode, students were able to “become a [subject matter] expert in the selected area that [they] chose as a group” (Case D). Considering verbal processing, this hyper-focus provided students with an opportunity to enhance their ability to be concise in their wording: “It made me manage my time as I had so many words to say in [such a] short time” (Case D). Such articulation of course concepts was a powerful tool of self-confidence and -agency to better understand course concepts; “I think there is power behind talking about something. You are teaching yourself while talking which is extremely valuable” (Case C).
2. **Different perspectives (Case C).** Similar to the Pilot Study, students in Case C felt it was beneficial to hear from different perspectives, since the instructor interviewed various guests; “It was interesting to hear about others’

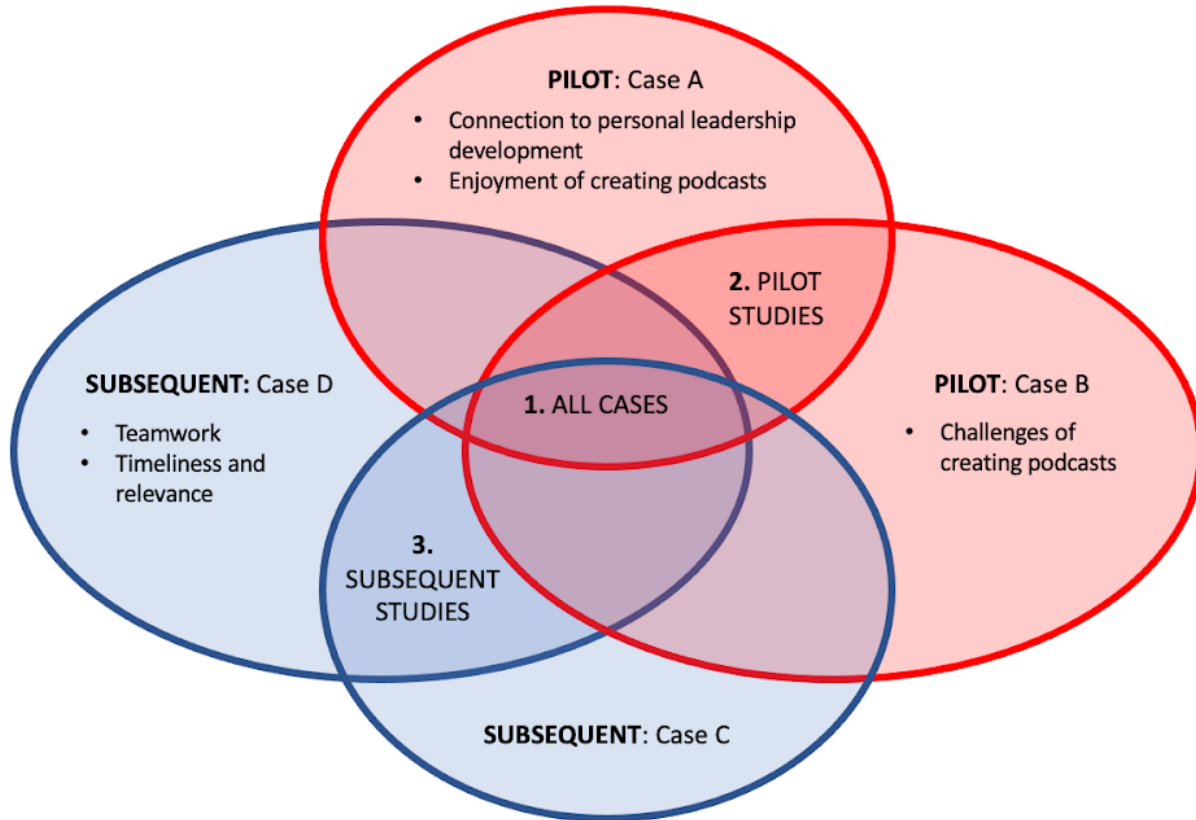
perspectives and how the material related to them in their own way” (Case C).

3. **Unique learning environment (Case D).** Similar to the Pilot Study regarding podcasting within today’s learning environment, students in Case D highlighted the unique and creative outlet that such tools present. Students indicated that podcasting allowed for “unique learning environments” and a “fun twist” (Case D) from more traditional ways of learning. This unique learning environment - both in content delivery and assessment - presented students with an opportunity for “creative brainstorming,” allowing students to think “outside of the box” (Case D) for how they presented and absorbed course content.
4. **Retention (Case D).** Lastly, a majority of students in Case D indicated that the use of podcasts made an easier retention of course information (“easier to learn” (Case D)), allowing students to have a tangible reinforcement of what was learned during their synchronous virtual or in-person class.

Objective 3: Compare student perceptions of podcasting between the case studies. Educators found several similarities and differences when comparing the four cases through a constant comparative analysis among the qualitative survey data. A discussion on these findings is presented below, organized in alignment with Figure 1, visually showcasing the similarities and differences among and between the four case studies.

Figure 1

Comparison of student perceptions of podcasting between case studies



Similarities Among Case Studies. In the discussion below, the authors highlight the results of the similarities among all cases, Pilot Study (A and B), and Subsequent Study cases (C and D).

All cases (1). Regardless of the utilization of the tool (content delivery or assessment), participants in all four cases acknowledged that podcasting presented a convenient learning tool that allowed for a personal connection with course materials through real-life examples, diverse perspectives, and the opportunity to become subject matter experts to better learn and retain course material. Further elaboration of these similarities is presented below:

1. **Convenience of podcasting as a tool.** All students found that podcasting was very convenient. Due to its transient nature, students were able to participate in other activities, or be in a state of transition, while listening to course content: "Sitting and reading something is sometimes extremely

hard to do, but podcasts let students who need movement or stimulation to focus have more freedom" (Case D).

2. **Personal connection with course materials through real-life examples.** Podcasting can provide an opportunity for real-life examples, for students to more strongly connect and relate to course material; such informal ("mellow or laid back" (Case D)) podcasting conversations allowed for "just a normal person" (Case D) or "personable voice" (Case B) that "talks about what happens that can relate to other people" on topics "of everyday life" (Case D). Such relatability "creates more of a connection" and is "easier to digest and think about" (Case B) when returning to the synchronous classroom environment. Such informality and personability felt juxtaposed from more traditional forms of learning: "I enjoyed how it felt like a conversation to

explain our knowledge rather than answering questions on a quiz” (Case C). Students felt that podcasts allowed for a degree of personal application in their learning: “I was able to think about the material more so in terms of my own life experiences and the examples given in discussions by other students instead of trying to memorize information” (Case B).

3. **Diverse perspectives.** Podcasting as a form of content delivery also allowed for students to hear from a diverse range of perspectives in all cases as well. For example, a student from Case B expressed, “Everyone thinks differently and when I heard some of the podcasts, I wondered why didn't I think about that or I was unaware of current issues going on in our communities?”

4. **Subject matter experts to better learn/retain course material.** By focusing on one specific course concept for their podcast episode, students were able to become subject matter experts in their specific course concept explored. Furthermore, talking out loud in the podcasting process (verbal processing) helped students with learning, comprehension, and retention of information. For example, a student in Case A elaborated on this point:

“There were some concepts that I was confused about and addressed in my podcasts, but when I talked through them in the podcasts, I felt like I was telling a friend about it and it started to unfold in my head. It made more and more sense the more I talked in regards to the topic” (Case A).

Because of this, a majority of students in all cases felt like podcasts allowed for easier retention of course information.

Pilot Study: Cases A and B (2). The authors found one similarity among the two Pilot Study cases: podcasting presented a creative tool,

unique to more traditional forms of learning. Students in both cases vocalized the positive and creative alternative medium that podcasting presented to the learning process. Since podcasting mostly wasn't available in other classes, it presented “something different,” a “nice change,” or “more exciting” (Case B) from more traditional teaching and learning. This unique learning environment presented students with an opportunity for “creative brainstorming” (Case A) that allowed them to think creatively for how they present and deliver course content. One student mentioned: “It gave my brain a variety in a time where it feels like every class is basically the same. Body language and being in class plays a huge role in teaching style, and COVID has taken all that away” (Case B). Because students were given some sense of liberty in their podcast creation, they were able to better dive into course content: “I feel like with a podcast the focus is so much more on the content rather than the format which I loved” (Case A).

Subsequent Studies: Cases C and D (3). The authors also found several similarities among the two Subsequent Study cases. In these cases, students highlighted the benefits of this tool across various learning styles, with student accessibility in mind. Unlike the Pilot Studies, students in these cases emphasized the challenges with podcasting as a form of content delivery, with some students acknowledging that they would have preferred more traditional learning instead. Further elaboration of these similarities is presented below:

1. **Benefits across learners.** Several students mentioned the importance of podcasting, as it relates to accessibility across learners. One shared their own narrative with learning at the university level: “I have ADHD, and trouble reading from a textbook or article, so podcasts are a way of learning that takes much less energy” (Case D). Other students highlighted how podcasts benefited their differences in learning styles and accessibility: “I liked that they were easily accessible and just one talking sequence.” For some students, the technical process for the podcast creation

(assessment) proved to be the most challenging aspect of the process. For example, students in Case C mentioned that “messaging up is easier when you are writing,” as opposed to recording podcasts, and the “technical aspects” were difficult. Some of these challenges arose due to barriers to bandwidth. For example, one student discussed how their podcast recording over Zoom “...led to different levels of audio depending on the members’ connection... we couldn’t really change it” (Case B). Another noted that “although recordings are helpful, it can use a lot of data to stream ...if you’re limited on data” (Case D).

2. **Increased time.** Several students also acknowledged the significant lengthiness of some podcasts (“at least 30 minutes” (Case D)), which was challenging for students to remain engaged for its entirety. Similarly, students also acknowledged the heightened amount of time and investment it took to create (not just listen) podcasts for assessment: “I disliked how time consuming making the podcasts could be at times and just was not convenient” (Case C).

3. **Preference for more traditional assignments.** Although students appreciated the opportunity to be creative and innovative as previously mentioned, a minority of students acknowledged that they preferred more traditional assignments: “I’m lazy when I have to be creative because I’m weird and prefer to compute math problems” (Case C). Regardless of preference, for many students, context mattered in the use of podcasting. Depending on the content of the course and the student learner themselves, podcasts may or may not be most appropriate for student learning; beneficial use of podcasts “depends on how it is used and applied in the classroom” (Case D).

Differences among Case Studies. In the discussion below, the authors highlight the differences between Pilot Study and Subsequent Study cases.

Pilot Studies: Case A versus Case B. Several differences were found between the two Pilot Study cases (A and B). The key difference between the two cases involved how podcasts were used and created in each course. Students differed through their level of self-reflection, perceptions of barriers in creating podcasts, and the personability conveyed in the episodes. The researchers suspect that these differences reflected the nature of how podcasting was used in both cases (i.e., specific assignments/projects/topics). With this mind, a key difference between the cases was the articulation of students’ personal leadership development in their created podcasts. Students also held different perspectives of the process of creating podcasts as either an enjoyable or challenging exercise. Further elaboration of these differences are presented below:

1. **Connection to personal leadership development.** Students in Case A emphasized the importance of incorporating personal values, opinions, beliefs, and leadership development in their podcast creation:

“It allowed me to become better at speaking and to be able to talk for at least 10 minutes about what I’ve learned about leadership. I think it’s a good opportunity to be able to learn skills on how to talk fluently and figure out how to keep people engaged who might listen” (Case A).

Conversely, students in Case B didn’t mention any personal or leadership-oriented skills developed in their podcast creation. Researchers suggest that this difference could be due to the podcast use in Case A, where students were asked to complete ongoing, podcast-style reflections. In Case B, although students were given autonomy in how they shaped their podcast narrative, students were not prompted to display

personal opinions or beliefs in their final podcast assignment (although several did).

2. **Enjoyment versus challenges of creating podcasts.** While a majority of students in Case A participants highlighted the enjoyment of creating podcasts, many Case B participants emphasized the diverse challenges associated with creating podcasts; most students perceived the creation of podcasts as a “helpful tool” (Case A) versus a tool that “added stress and pressure” (Case B) to the learning environment. Although there were a small minority of students in Case A that acknowledged challenges with the tool, most students mentioned how creating podcasts “helped [them] become more comfortable with [their] voice” (Case A), while students in Case B were “freaking out,” “stressed,” “worried about making mistakes,” and overwhelmed by the “pressure to sound ‘good’” (Case B).

Subsequent Studies: Cases C versus D. Similar to the differences highlighted above between the Pilot Study cases, one key difference involved how

podcasts were used and created in each course, specifically as an individual- or group-based assessment. Students also held different perspectives of the benefits of podcasting as it relates to its timeliness and relevance to current events and trends. Further elaboration of these differences is presented below:

1. **Teamwork (Case D).** The development of team-based skills was mentioned only in Case D (not Case C), due to the fact that podcast creation was an assessment-based project in small groups throughout the semester. This group-based podcasting assignment allowed for students to simultaneously develop “teamwork and group communication” (Case D) skills.

2. **Timeliness and relevance (Case D).** Additionally, in Case D only, students acknowledged podcasts (both as content delivery and assessment) as being timely and relevant to their learning. Students valued podcast’s current, up-to-date conversations and information, “tailoring to current trends” (Case D) and pulling from recent news media.

Recommendations

Stemming from the results of this study, the authors recommend that educators should first consider the underlying purpose of utilizing podcasts as an instructional tool in their classrooms. Is the purpose of podcasting to supplement course content or assess student learning outcomes? Students in the present study even emphasized the importance of this distinction, in terms of their preferences and perspectives. Perhaps students would prefer to listen to a podcast to absorb course-related content versus creating a podcast as a form of assessment of their understanding: “I enjoyed listening to podcasts rather than making my own” (Case B). Therefore, the authors present the below tangible recommendations and lessons learned on the use of podcasting as a learning/instructional tool within leadership education as either a form of assessment or content delivery.

Assessment. When creating podcasts for assessment, leadership educators should consider the following recommendations:

1. Address the challenges of podcast creation. Norsworthy and Herndon (2020) previously noted that a key theme from their research on podcasting in leadership education was the challenges associated with podcast-episode creation. Similarly, creating a podcast proved challenging for some students in the present study. Such challenges were due to the lengthy time spent recording, fear of public speaking (students “hated hearing [their] own voice,” (Case B)), or perceived social pressures of performance (fear that “others would hear me and hate it” (Case B)). Students also expressed concern for the technical aspects of podcast creation. Some felt ill equipped to make edits to their podcast, with a lack of familiarity of editing software and resources. Students also voiced concerns over “how long they took to upload” and how

it was easier to “mess up when writing than when creating podcasts” (Case C). With these obstacles in mind, instructors should consider implementing a ‘practice class’ where students spend time practicing recording individually or in small groups. Although an optional drop-in time was provided for student support prior to the assignment’s due date in Case B, attendance was very low. Having an opportunity (and possible incentive) for students to practice in a low-stakes environment beforehand may help address any challenges or fears.

2. Allow students to investigate a topic of interest. Several students mentioned the benefit of diving into a course topic that was of specific interest (personally or professionally) to them. This autonomy of choosing something important to them increased their understanding of the course content and provided further “inspiration” (Case D), differing perspectives, and engagement in the project. One student mentioned: “I liked the flexibility of being able to pick what inspired me, not what I was forced to talk about. I think if I was forced to pick a topic, it would have been way less enjoyable” (Case B).
3. Use external resources. Leadership educators should also ensure that students investigate resources outside of the provided course material. Results showed that such investigation allows for deeper understanding and meaning making of course content. External resources also contributed to student creativity and innovation; “It made me think outside the box and look into different resources that collaborated with topics in this class” (Case B).
4. Permit students to listen to one another’s podcasts. Listening to their peers’ podcasts allowed students to be exposed to topics outside of the those

they explored, diverse “interpretations of course concepts,” and also “helped to solidify what the concepts meant” (Case B). This opportunity can significantly impact the learning experience: “Revisiting them [others’ podcasts] and hearing peer’s present theirs helped to directly connect material with everyday things we experience, see, or hear from others” (Case B).

5. Presents the opportunity to create a podcast with a classmate. In Cases A, C (optional), and Case D (required), students were presented with the opportunity to work in pairs (Cases A and C) or in small groups (Case D) to create their podcast for assessment. The opportunity to work collectively on this joint project proved very enjoyable for students because they were “able to process the content with a peer and have an informative chat and see a different point of view” (Case A).

As previously mentioned, intentionality and forethought must be utilized to ensure that podcasting is the most appropriate and beneficial tool for assessment. The authors highlight the fact that several students throughout the cases mentioned that it took about the same time or longer to create a podcast as a more traditional form of assessment; some students mentioned that it felt “similar to a paper final” or “not that different from writing a paper or taking an exam” (Case B). Although the overall results showed benefits in their comprehension, it’s important to note that some students (although outliers) didn’t see a stark difference between podcasting and other traditional forms of assessment.

Course Content Delivery. When assigning podcasts as an innovative way to deliver course content (i.e., through instructor-led series), the following recommendations are presented:

1. Keep podcasts short and simple. In their pedagogical model of implementing podcasts in management education, Kidd (2012) noted that recording shorter audio files allowed for better learner retention. The researchers’ findings echoed this recommendation. Participant responses highlighted that it was easier to keep their attention on shorter podcasts. In all four cases, while the instructor-led podcast series were 30-40 minutes in length per episode, the student-created podcast assignments were 15-20 minutes in length. The authors encourage educators to create shorter podcast episodes for listeners to maintain focus and engagement. Overall, however, most students mentioned how podcasts were engaging, regardless of their length, allowing them to “pay attention easier” (Case A) than other traditional forms of content delivery and “not boring to the point you lost interest in listening” (Case D).
2. Expose students to a variety of perspectives. Educators should not only share their own perspectives on the course concepts, but bring other perspectives into the conversation. Similar to diversifying student readings, videos, and other learning materials, the authors encourage leadership educators to consider interviewing a diverse group of guest experts in order to bridge connections and shed a unique light on the concepts students are learning about. These varying insights helped bring the course concepts to a ‘real world application,’ as highlighted in the study’s findings.

Lastly, the authors conclude by emphasizing the importance of student accessibility. Previous research among technology use in leadership education classes has sought to ensure that all students have appropriate technology, access to applications, and the most appropriate version and system of technology (Mainiero & Mangini, 2019). Despite the small number of participants in the present study who voiced this concern, ensuring that the podcast (assessment or content delivery) is accessible for all learners and across all technology capability is essential for its success and effectiveness as a learning tool. Considering both learning approaches and technology, educators should always be intentional about student accessibility when utilizing podcasting as an instructional tool in the classroom.

Limitations and Opportunities for Future Research

As aforementioned, because the researchers identified several gaps in their podcast assessment survey from the Pilot Study cases, they made several alterations to the assessment survey for the Subsequent Study cases. Changes included shifts in the evaluation design (pre-/post-assessment versus solely post-assessment), as well as the addition of more demographic and pointed questions regarding the impact of podcasting on student comprehension of course concepts. These served as a limitation to the study, in terms of a lack of consistency across the Pilot and Subsequent Study cases. The authors thus suggest the need for future research to consider revising the specific method for gathering assessment data. For example, the authors suggest including learning objectives in the assessment, exploring if the use of podcasting truly impacted student learning objectives (versus students' perceived benefits of the use of the tool and its impact on general comprehension).

Additionally, although the authors shifted the research design as a pre- and post-test study design, because the students were not randomly assigned, the authors acknowledge that the outcomes of the present study cannot be determined beyond the associations (not causations) between

the podcasting tool and its assessment and cannot be generalizable beyond the present population. The authors therefore suggest the possibility of future assessment research through a comparison of two sections of the same leadership class, utilizing a control and treatment group with the podcast implementation.

Discussion and Conclusions

Overall, whether introduced to deliver content or assess student learning, podcasting seems to be a beneficial way to engage students in the learning process. Especially considering recent shifts to online learning, exacerbated by the global pandemic, podcasting has allowed for a positive and somewhat familiar alternative learning medium for students. Students seemed to welcome a unique and novel way to engage with course material that differs from more traditional forms of university delivery and assessment.

When describing "teaching leadership through transformative pedagogy," Guthrie and Jenkins (2018), noted that "students who participate in leadership education should experience multiple interventions and repeated exposure to varied perspectives with the intent of solving complex, real-world issues" (p. 157). Based on the findings of the study, the instructor-created podcast series gave students an added 'real-world application' dimension to their learning that could be more helpful than traditional forms of content delivery. Podcasts provided an opportunity for students to engage in a personable and intimate conversation with the speakers (versus traditional, more formalized one-way lectures) and provided a beneficial, diverse perspective to understanding leadership concepts from people other than their instructor. Students also highlighted the many benefits of listening to podcasts that supported their learning process, including its enjoyability, high engagement, convenience, and flexibility. These findings align with other research that suggests that such technologies can offer a learning environment that allows leadership education students to engage with the course material in an interactive, creative, and fun way (Gonzalez-Morales et al., 2020).

In terms of assessment, being able to create their own podcasts allowed students to express themselves and gave them the chance to take ownership of their learning. The ability for students to use their own voice when creating podcasts gave them a sense of “freedom,” “openness,” (Case B) and autonomy, outside the confines of more traditional learning structures. Such verbal processing of concepts also assisted with their overall understanding of the course material and leadership development (Cases A and C). These findings connect with what Norsworthy and Herndon (2020) explained from a similar study on the use of podcasts in leadership education, where “the entire process [of creating podcasts] becomes one of self-reflection and individual development” (p. 65). Giving students the freedom and autonomy to be self-reflective and to voice what they are learning in the present study contributed to their individual leadership identity development.

Podcasting presents a prime instructional tool and medium for use in leadership classrooms. Specifically for leadership, the authors found that this tool gave students a sense of ownership, agency, and personal voice in their own leadership development process (Cases A and C). Due to the nature of leadership as an abstract, idealistic, or ‘grand idea,’ podcasting can provide educators with a tool for concrete, tangible examples for how leadership looks in the ordinary, everyday context. Such real-life examples of leadership in action gives students essential context in being able to better comprehend course concepts.

Over the past several years, learning technologies have advanced rapidly. Significant challenges have been shown in both education and the practice of leadership stem from new technological advances (Sowcik & Komives, 2020). While one’s immediate inclination might be to adopt all innovative learning technologies into the classroom, the authors instead suggest caution. Rather than simply adopting technology for technology’s sake, might we instead consider the ‘why’ behind the technology we use? As leadership educators, are we implementing

technology because it is a novel and innovative way to teach, or because it is truly increasing students’ understanding of course concepts? Similar to the intentions behind this present study, the authors encourage the need to be intentional about technology use and its application, to ensure it most benefits our students. Depending on the content of the course and the student learners themselves, podcasts may or may not be most appropriate and beneficial for student learning; as demonstrated in the present study, appropriate usage of podcasts “depends on how it is used and applied in the classroom” (Case D). Under the headline “pedagogy before technology,” Kidd (2012) similarly explained this notion, suggesting that the learning process should not be contingent on a specific medium or technological tool, but instead structured and facilitated by the teacher. Additionally, leadership educators should question its appropriateness and benefits among all students, considering the diversity of student learning styles and accessibility.

Ultimately, in a time following a global pandemic, students in leadership classes need more than just recorded lectures, multiple choice exams, and reading of scholarly articles; they also need opportunities to be autonomous and creative with their learning, have a voice beyond their household and social circles, be exposed to diverse thoughts and perspectives in a time of increased isolation and social distancing, and build more genuine relationships when working with their peers. As we look ahead to the future, the authors suggest that one of the most important tasks for leadership educators will not only be to recognize opportunities presented by technological advances in teaching and learning (Gigliotti & Ruben, 2017), but also the use of these new technologies to meet the needs of a changed student population in a post-global pandemic world. While the return to ‘normal’ for leadership education over the next few years is uncertain, podcasting as an instructional tool can be a catalyst for the field to adapt to our changing technological environment and enhance student learning.

References

- Baker, R., Harrison, J., Thornton, B., & Yates, R. (2008). An analysis of the effectiveness of podcasting as a supplemental instructional tool: A pilot study. *College Teaching Methods & Styles Journal (CTMS)*, 4(3), 49-54. <https://doi.org/10.19030/ctms.v4i3.5535>
- Cass, A. K., & Kravchenko, M. (2017). Free flowing content: Unlocking the full potential for transitioning to e-learning at the institution sale. In J. Mena, A. García-Valcárcel, F. J. García-Peñalvo, & M. Martín del Pozo (Eds.), *Search and research: Teacher education for contemporary contexts* (pp. 1161-1169). Ediciones Universidad de Salamanca. <https://edicionesusal.com/wp-content/uploads/2017/07/978-84-9012-769-8.pdf>
- Collier-Reed, B., Case, J. M., & Stott, A. (2013). The influence of podcasting on student learning: A case study across two courses. *European Journal of Engineering Education*, 38(3), 329-339. <http://dx.doi.org/10.1080/03043797.2013.786026>
- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Sage Publications.
- Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). Sage Publications.
- Fink, L. D. (2003). *Creating significant learning experiences: An integrated approach to designing college courses*. Jossey-Bass.
- Gerstl-Pepin, C., & Patrizio, K. (2009). Learning from Dumbledore's pensieve: Metaphor as an aid in teaching reflexivity in qualitative research. *Qualitative Research*, 9(3), 299-308. <https://doi.org/10.1177/1468794109105029>
- Gigliotti, R. A., & Ruben, B. D. (2017). Preparing higher education leaders: A conceptual, strategic, and operational approach. *Journal of Leadership Education*, 16(1), 96-114. https://journalofleadershiped.org/wp-content/uploads/2019/02/16_1_gigliotti.pdf
- Glaser, B. G. (1965). The constant comparative method of qualitative analysis. *Social Problems*, 12(4), 436-445. <https://doi.org/10.2307/798843>
- Goldman, T. (2018). The impact of podcasts in education. *Pop Culture Intersections*, 29. https://scholarcommons.scu.edu/engl_176/29
- Gonzalez-Morales, A. M., Vawter, F., Traini, H., & Velez, J. J. (2020). *Wild goose chase!: Using a smartphone application to boost engagement and group cohesion in leadership education*. American Association for Agricultural Educators Annual National Research Conference. https://www.researchgate.net/publication/358848229_Innovative_Idea_Wild_Goose_Chase_Using_a_Smartphone_Application_to_Boost_Engagement_and_Group_Cohesion_in_Leadership_Education/download
- Guthrie, K. L., & Jenkins, D. M. (2018). *The role of leadership educators: Transforming learning*. Information Age Publishing. ISBN 1641130989
- Harris, H., & Park, S. (2008). Educational usages of podcasting. *British Journal of Educational Technology*, 39(3), 548-551. <http://dx.doi.org/10.1111/j.1467-8535.2007.00788.x>
- Heilesen, S. B. (2010). What is the academic efficacy of podcasting? *Computers & Education*, 55(3), 1063-1068. <https://doi.org/10.1016/j.compedu.2010.05.002>

- Hill, J., Nelson, A., France, D., & Woodland, W. (2012). Integrating podcast technology effectively into student learning: A reflexive examination. *Journal of Geography in Higher Education*, 36(3), 437-454. <https://doi.org/10.1080/03098265.2011.641171>
- Huber, N. S. (2002). Approaching leadership education in the new millennium. *Journal of Leadership Education*, 1(1), 25-34. https://journalofleadershiped.org/wp-content/uploads/2019/02/1_1_Huber.pdf
- Hurst, E. J. (2019). Getting started with podcasting. *Journal of Hospital Librarianship*, 19(3), 277-283. <https://doi.org/10.1080/15323269.2019.1628575>
- Kidd, W. (2012). Utilising podcasts for learning and teaching: A review and ways forward for e-Learning cultures. *Management in Education*, 26(2), 52-57. <https://doi.org/10.1177/0892020612438031>
- Mainiero, L. A., & Mangini, D. M. (2019). The *My Student Leader* app: How mobile technology enhances campus service leadership initiatives. *Journal of Leadership Education*, 18(1), 146-160. <https://doi.org/10.12806/V18/11/A1>
- McGarr, O. (2009). A review of podcasting in higher education: Its influence on the traditional lecture. *Australasian Journal of Educational Technology*, 25(3), 309-321. <http://dx.doi.org/10.14742/ajet.1136>
- Murphy, M. P. (2020). COVID-19 and emergency eLearning: Consequences of the securitization of higher education for post-pandemic pedagogy. *Contemporary Security Policy*, 41(3), 492-505. <https://doi.org/10.1080/13523260.2020.1761749>
- Nielsen, S. N., Andersen, R. H., & Dau, S. (2018). Podcast as a learning media in higher education. In K. Ntalianis, A. Andreatos, & C. Sgouropoulou, 17th European Conference on E-Learning (pp. 424-430). Academic Conferences and Publishing International Limited Reading. ISBN 978-1-912764-08-2
- Norsworthy, C., & Herndon, K. (2020). Leading by ear: Podcasting as an educational leadership tool. *Journal of Leadership Education*, 19(3). https://journalofleadershiped.org/wp-content/uploads/2020/07/19_3_Norsworthy.pdf
- Palenque, S. M. (2016). The power of podcasting: Perspectives on pedagogy. *Journal of Instructional Research*, 5, 4-7. <https://files.eric.ed.gov/fulltext/EJ1127626.pdf>
- Phelps, K. (2012). Leadership online: Expanding the horizon. *New Directions for Student Services*, 2012(140), 65-75. <https://doi.org/10.1002/ss.20032>
- Robinson, S., & Ritzko, J. (2009). Podcasts in education: What, why and how? In *Allied Academies International Conference: Academy of Educational Leadership Proceedings* (Vol. 14, No. 1, p. 38). Jordan Whitney Enterprises, Inc.
- Shamburg, C. (2009). Student-powered podcasting: Teaching for 21st century literacy. Washington, DC. International Society for Technology in Education. ISBN 978-1-564842-61-9/
- Smith, H. E., Stair, K., Blackburn, J. J., & Easley, M. (2018). Is there an app for that?: Describing smartphone availability and educational technology adoption level of Louisiana school-based agricultural educators. *Journal of Agricultural Education*, 59(1), 238-254. <https://doi.org/10.5032/jae.2018.01238>
- Sowcik, M. (2012). A review and critique of guiding questions: Guidelines for leadership education programs. *Journal of Leadership Education*, 11(2), 192-213. <https://doi.org/10.12806/V11/I2/TF3>
- Sowcik, M., & Komives, S. R. (2020). Emerging themes in disciplinary based leadership education. *New Directions for Student Leadership*, 2020(165), 163-181. <https://doi.org/10.1002/yl.20377>
- Sweetman, D., Badiie, M., & Creswell, J. W. (2010). Use of the transformative framework in mixed methods studies. *Qualitative Inquiry*, 16(6), 441-454. <https://doi.org/10.1177/1077800410364610>

- VanZanten, R., Somogyi, S., & Curro, G. (2012). Purpose and preference in educational podcasting. *British Journal of Educational Technology*, 43(1), 130-138. <https://doi:10.1111/j.1467-8535.2010.01153>
- Wake, A., Fox, K., & Strong, C. (2020). Pandemic podcasting: From classroom to bedroom. *Teaching Journalism & Mass Communication*, 10(1), 29-33. <https://www.aejmc.us/spig/journal>
- Walls, S. M., Kucsera, J. V., Walker, J. D., Acee, T. W., McVaugh, N. K., & Robinson, D. H. (2010). Podcasting in education: Are students as ready and eager as we think they are? *Computers and Education*, 54(2), 371-378. <https://doi.org/10.1016/j.compedu.2009.08.018>