

Table of Contents

Innovative Teacher Preparation

A New Approach to Field Observations During Covid-19

Wendy J. Warner, North Carolina State University
Keonte' J. Edmonds, North Carolina State University
Mary Kate Morgan, North Carolina State University
Jason H. Bullock, North Carolina State University

Deep Roots: Giving Voice to Underrepresented Postsecondary Agricultural Education Students

Tara E. Rojas, University of Kentucky
Stacy K. Vincent, University of Kentucky

Team Teaching in a Teacher Preparation Program

Sallie McHugh, Abraham Baldwin Agricultural College
Farish Mulkey, Abraham Baldwin Agricultural College
Andrew Thoron, Abraham Baldwin Agricultural College

The “Fun” in Fundraisers: Fundraisers that Stick

Jacelyn Nesmith, University of Kentucky
Andrew Hauser, University of Kentucky
Stacy Vincent, University of Kentucky

Virtual Preservice Observations in the COVID-19 Era

Jessica M. Toombs, Oklahoma State University
Nathan A. Smith, Oklahoma State University

Classroom Instruction

Agriculture Practicum Pick 10

Sallie McHugh, Abraham Baldwin Agricultural College
Farish Mulkey, Abraham Baldwin Agricultural College
Frank Flanders, Abraham Baldwin Agricultural College
Andrew Thoron, Abraham Baldwin Agricultural College

High School Doggy Daycare Programs: Measuring their Benefits to Agricultural Programs

Payton Moore, University of Florida
Katrina Alford, University of Florida

Texas Farm Business Management and Benchmarking Education and Outreach Alliance

Jose Lopez, Texas A&M- Commerce
Bob Williams, Texas A&M- Commerce
Mario Villarino, Texas A&M- Commerce

The Power of Feedback: Improving Instruction and Supporting Student Well-Being

Jason Bullock, North Carolina State University
Joy Morgan-Fleming, North Carolina State University
Wendy J. Warner, North Carolina State University

Video Enhanced Homework in an Agricultural Technology Course

Grant T. Hood, University of Arkansas
Donald M. Johnson, University of Arkansas

Instructional Technology

#2020: The Making of a Virtually Excellent Experience!

Debra Barry, University of Florida

Keeping the “Tech” in Career and Technical Education

Andrew Hauser, University of Kentucky
Rebekah Epps, University of Kentucky

SPARKing Technology in the CTE Classroom

Jason Bullock, North Carolina State University
Joy Morgan-Fleming, North Carolina State University
Wendy J. Warner, North Carolina State University

Using QR Codes to Gain Responses When Surveying Participants with Mixed Modes

William Doss, Texas Tech University
John Rayfield, Texas Tech University

Utilizing an Immersive Virtual Reality Activity to Teach Decision Making in an Undergraduate Team Leadership Course

Kenzie Bastian, University of Florida
Laura L. Greenhaw, University of Florida

Online Instruction

Building Rapport Online

Jason Bullock, North Carolina State University
Joy Morgan-Fleming, North Carolina State University
Wendy J. Warner, North Carolina State University

Covid Showers Bring Virtual Flowers: Getting Floriculture Curriculum to Bloom Online

Natalie K. Ferand, University of Florida
Catherine A. DiBenedetto, Clemson University
Brian E. Myers, University of Florida

Distance Makes the Heart Grow Fonder: Collaborating at a Distance via Nearpod

Andrew Hauser, University of Kentucky

Rebekah Epps, University of Kentucky

Going the Distance: Reaching First Year Agriscience Students and Their Teachers through the Virtual Greenhand Leadership Conference

Meredith Hall, Auburn University

Kelly Holler, Auburn University

Brooke Spann, Auburn University

Jason McKibben, Auburn University

Teacher Preparation

A New Approach to Field Observations During Covid-19

Wendy J. Warner, Keonté J. Edmonds, Mary Kate Morgan, & Jason H. Bullock
NC State University

Agricultural and Extension Education

Introduction/Need for Innovation

- ❖ Early field experiences have been identified as an important component of coursework in agricultural education teacher preparation programs (Smalley & Retallick, 2012).
- ❖ Traditionally, students in Introduction to Teaching Agriculture complete 12 hours of structured observations of agriculture teachers, microteaching activities, and reflections.
- ❖ Due to the on-going COVID-19 pandemic, a remote field observation was developed and implemented.

How It Works

- ❖ The field observation experience consisted of six activities in Planning and Instruction, Classroom Management, FFA, SAE, and Innovative Teaching Ideas.
- ❖ Six videos were selected in ATLAS (Accomplished Teachers, Learning, and Schools) for students to observe effective teaching characteristics, and the use of teaching methods and questioning strategies.
- ❖ Videos were also used to introduce students to classroom procedures and management strategies and the integration of FFA and SAE.
- ❖ A list of five innovative teaching ideas were created using social media outlets.

Results to Date

- ❖ The remote field observation experience was implemented in Fall 2020.
- ❖ All 30 students in the course completed the experience.
- ❖ The quality of submitted assignments was excellent, with a class average of 96%.
- ❖ Student comments indicated they would have preferred a face-to-face setting; however, they recognized the inability to do so as a result of the pandemic.



Part One - Planning and Instruction

From the six [ATLAS videos](#) below, please select three to watch and use to answer the following questions. In order to access the ATLAS videos, you should have received an email at the beginning of the semester with information about how to login and access the site. If you have any issues with access to ATLAS, please let me know.

ATLAS Case #1181 - Researching Agricultural Products to Fit Customer's Needs (20:07)
 ATLAS Case #1076 - Applying Learned Content to Scientific Discussions on GMOs (18:25)
 ATLAS Case #1183 - Developing Arguments about Environmental Issues Using Collaborative Skills (20:00)
 ATLAS Case #1266 - Constructing Floral Arrangements (20:08)
 ATLAS Case #1269 - Completing Electrical Circuits Collaboratively Using Industry Standards and Procedures (20:00)
 ATLAS Case #1071 - Addressing Issues of Genetic Manipulation (20:00)

A. In your opinion, what are **3 characteristics** that the teachers demonstrated that you believe contributed to effective teaching? Please reflect on characteristics discussed in class ([How People Learn](#), [Rosenshine and Furst variables](#)) and provide the characteristic and a specific example in the table below.

ATLAS Case #	Teacher Characteristic	Specific Example
	1.	

Part Two - Classroom Management

D. Routines and procedures are conducive to effective classroom management. Routines may include how announcements were made, how attendance was taken, how homework was checked, how materials were distributed and collected, how permission was given to move around or leave the classroom, how transitions were made between classroom and the lab, etc.

Watch this video, [My High School Classroom Procedures](#) (14:02). Also, review the accompanying [blog post](#) and her [procedure planner](#). Please elaborate on three routine/procedures and explain how it works in the classroom (either based on the video or how you think it would work in your future classroom).

Routine/Procedure	How does this routine/procedure work in the classroom?
1.	
2.	

[AEE 206 Remote Field Observation Journal](#)

Future Plans/Advice to Others/Costs

- ❖ The course instructor plans to return to the traditional approach of completing field observations in future semesters.
- ❖ The remote observation experience could be used if students have extenuating circumstances, such as lack of transportation or scheduling conflicts.
- ❖ The activities developed as part of the remote field observation experience can supplement classroom observations and provide a few common experiences since there is considerable variation in what students observe across different classrooms.
- ❖ Additional agricultural education specific videos will be created and archived for future use.
- ❖ The section on innovative teaching ideas needs clarification as it generated questions from several students.
- ❖ Approximately 10 hours was invested in selecting videos and modifying observation prompts and activities from the field observation guide used in previous semesters.
- ❖ NC State University pays \$4990 for 300 subscriptions to ATLAS per year.

INTRODUCTION

- There is a need for diverse educators from different cultural and ethnic backgrounds in the agricultural education profession (AAAE, 2019)
- Success rates of racial and ethnic minority in college are influenced by on-campus social support, off-campus ties, and the collegiate environment (Baker, 2012)
- Retention efforts of minority students is essential in order to improve a deficiency that exists within Agricultural Educators (Foster, et al., 2020) and such efforts must be intimate and sincere

METHODOLOGY

- Networking in the agricultural education profession with minority faculty & teachers
- Empowering students to have voice within the major
- Developing a social connection with other minority undergraduates and minorities becoming a part of the agricultural education profession

RESOURCES NEEDED

- Time
- Technology
- Space
- Purposeful intent

ADVICE TO OTHERS

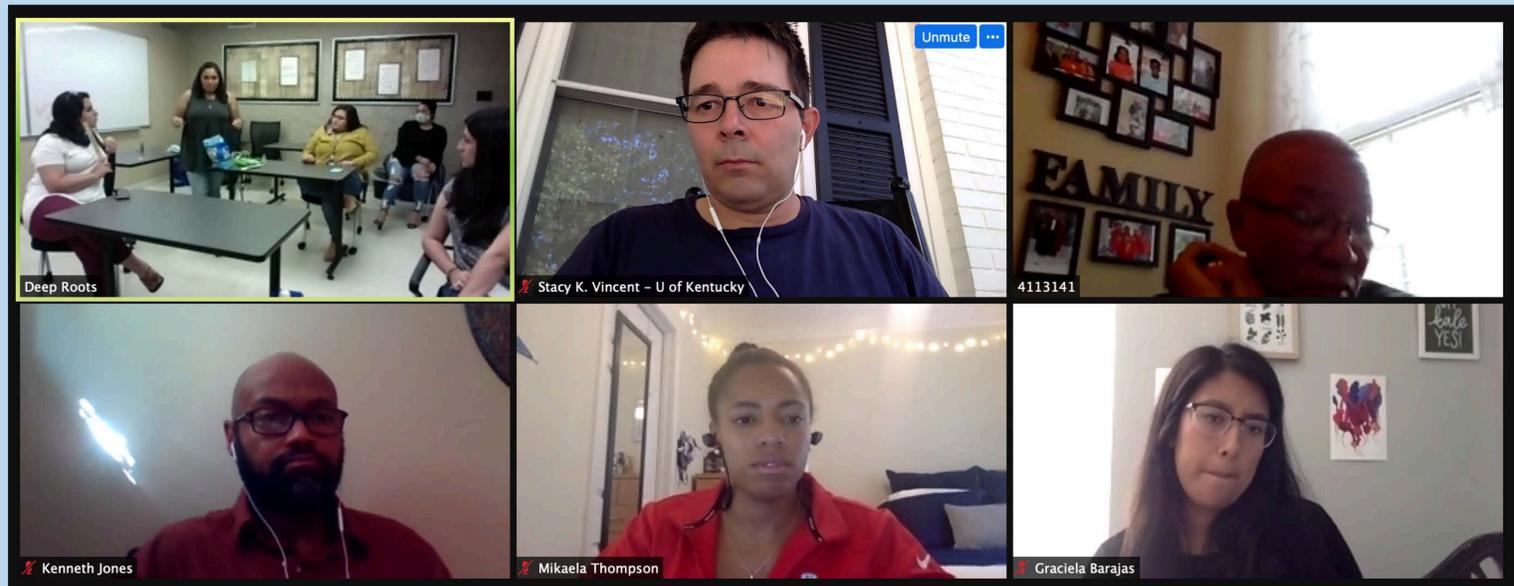
- Build relationships with students
- Serving on dept. committees with students
- Provide opportunities to facilitate discussion among peers
- Hold one-on-one discussion about culture, heritage, and belonging
- Leadership role is needed in communicating with invited guests, collecting feedback from attendees, and support ideas for the group

“It’s amazing to know we have a safe space to talk about our experiences and hear from others so we can uplift and support each other. It’s something I’ve never experienced before, and I have built the best relationships/friendships ever through this group.”

–Deep Roots Student

RESULTS TO DATE

- Undergraduate students have benefitted from having a safe place to share critical conversations of being an ethnic minority in a profession which is highly homogenous in its racial representation



Team Teaching in a Teacher Preparation Program

Sallie McHugh, Farish Mulkey, & Andrew C. Thoron



**School of Agriculture
and Natural Resources**

Agricultural Education and Communication

Introduction/Need for Research

- Team teaching is an ever-present trend (Winn & Messenbeimer-Young, 1995)
- Concerns for student safety due to increased student to teacher ratios
- Ease of differentiated instruction and reaching learners with IEPs
- Students learn from multiple instructors
- Multiple viewpoints in field experience and practicum courses
- Exposure to different perspectives is vital to preservice teachers (York-Barr et al., 2004)
- Models: Interactive, Rotational, & Participant-observer

How It Works

- Courses taught through interactive and participant-observer models
- Topical outline developed by both instructors to reduce any course overlaps and roles
- Taught courses together but maintain leadership role in their initial courses
- Teachers meet weekly to plan for the next week

Costs/Resources Needed

- Time, commitment, and trust in teaching partner
- Effective communication
- Organization

References

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Results to Date/Implications

- Team teaching helped keep faculty and students in a positive mindset
- Sense of comfort
- Students see multiple viewpoints
- Students realize no two teachers are the same
- Variety in teaching styles appreciated

Future Plans/Advice to Others

- Investigate student perspectives of team teaching
- Investigate student perceptions of team teaching if observed during student teaching
- Some students struggled seeing both instructors in two courses
- Time in class for instructors in both classes is greater
- Best suited for teachers who enjoy the classroom, engaging students, and building relationships
- Sharing the workload and providing the best experience outweighs higher attendance factor



The "Fun" in Fundraisers: Fundraisers that Stick

Jacelyn D. Nesmith, Andrew L. Hauser, & Dr. Stacy K. Vincent

University of Kentucky

Introduction

- Students are actively engaged in learning techniques to prepare them to advise a youth organization
- Leadership development In CTE occurs through participating in a youth organization (Ricketts & Rudd, 2002)
- Students learn to facilitate fundraisers through principles of Kolb's (1984) experiential learning theory
- Students at the University of Kentucky participated in a "Pancake Cookoff" to illustrate elements of an effective and entertaining fundraiser

Costs/ Resources Needed

- Pancakes materials and paper goods: \$18.00 (Walmart)
- Cost of Three Customized Trophies: \$15.00 (Amazon)
- Resources needed: Classroom space, griddle, and cookware

How It Works

Purpose: *Provide an experiential learning opportunity to discuss the procedures for facilitating a fundraiser through a role play scenario*

1. Students role play organizing a fundraiser
2. Students learn the importance and effectiveness of a fundraiser
3. Split students into pairs for the completion of the activity
4. Outline instructions for students and how pancakes will be judged
 - a. Base materials are provided (Cooking utensils, Pancake Batter)
 - b. Students can bring additional ingredients
 - c. Pancakes are judged for eye appeal, taste, and crowd appeal
5. Select judges and judge pancakes
6. Reflect on the importance and implementation of fundraising
7. Recognize winners

Results to Date

- Students have reflected different aspects of the activity
- Applicability:
 - "I took away a few really creative ideas I will use in my own chapter someday we learned in class"
- Reflection:
 - "The lesson was very hands on and provided a time for reflection"
- Community Involvement
 - "Having students that are benefitting from the proceeds present to represent the chapter/organization to the community"
- The activity was successful in having students reflect on fundraising and to brainstorm ideas for future practice

Future Plans and Advice to Others

- Continue to look for engaging hands-on activities to foster exciting and memorable experiences (Sun & Hsieh, 2018)
- Create different fundraising opportunities and planning periods
- Explore having students plan, implement, and facilitate a fundraiser for a local non-profit organization
 - Provides an opportunity for further applicability and to network, build social capital, and experience within the community
- Facilitate role play experiences for other facets of a youth organization
 - Service: Sock Drive
 - Recreation: Chili Cookoff



Virtual Preservice Observations in the COVID-19 Era

Background: With the issues associated with the COVID-19 pandemic and the protocols that have been in place due to its presence, Oklahoma State University (OSU) recognized a need to innovate how prospective teachers observe current agricultural education programs within the state. Clinical internship cooperating sites were requested to provide a video highlighting their program using the three-circle model. Videos are used to highlight course topics and provide real-world examples. To date, 26 videos have been shared with the OSU agricultural education department. Videos range from five to ten minutes in length and represent SBAE programs from across the state.

Future Plans: Videos will continue to be used by the agricultural education department at OSU. Additionally, videos will be made available to preservice teachers to assist with placement in student teaching centers. As the list of cooperating teachers is developed, more videos will be requested from SBAE teachers. Videos will continue to be used for preservice teachers and student teacher placements when the COVID-19 safety protocols are lifted.



Oklahoma State University

Authors: Jessica M. Toombs, Nathan A. Smith, Kristopher R. L. Rankin III, Emily A. Sewell, Emily O. Manuel, and Jon W. Ramsey

Classroom Instruction

Introduction

- Historical needs of beginning secondary school agriculture teachers: (Duncan, Ricketts, Peake, & Uessler, 2006; Joerger, 2002; Myers & Dyer, 2004; Rice & Kitchel, 2016; Shulman, 1986)
 - Content knowledge
 - Classroom management
 - Student motivation
 - Curriculum development)
- Additional content not currently taught needed to be addressed in teacher preparation program based upon literature and in-service (advisory) feedback
- Development of an agriculture practicum course
- Course offers real-life experiential learning scaffolded by current in-service teachers

How It Works

- Course based in collaboration with in-service secondary agriculture teachers
- Desired content divided into constructs:
 - Facilities and equipment
 - Recordkeeping
 - CDE preparation
 - Managing livestock programs
 - Educational technology
 - Professional associations
 - Working with administration
 - EdTPA preparation
 - Experiential FFA opportunities
 - School site visits



Pick 10
Students select 10 extra events within Ag Ed to participate in from a list of 20-plus experiential opportunities

AGED 3390 Experiential Learning "Pick 10" Reflection Pick 10 Event #:

Name:

Directions- After participating in a Pick 10 Event complete the following reflection. Be sure to answer questions completely and practice good grammar and writing quality. See scoring rubric for details on development and mechanics scoring. When finished, submit in Georgia View in assigned Drop Box.

Event Summary

Title of Event (guest speaker, event attended, etc.):

Date of Event:

Location:

What occurred at the event? What role did you have in event?

Personal Component

Provide your personal perspective of this event. Like it or not? Your thoughts? Changes you would make?

Total Program

Identify the Total Program component this event related to (can be multiple parts if needed) and explain.

Future Application

What will you take away from this event into your future? Lasting impact? Tip or trick you want to remember?

Pick 10

The extra events are what helps to define an Ag program. The same is planned for this course! We must get out of the walls of the classroom to experience agriculture education. We also understand your schedules may not allow you to attend all the listed events below. From the list of events, you must select a minimum of 10 to participate in this semester. Following each event, you must complete a reflection paper on your experience. Additional details of paper will be discussed in class.

1. August 21- Ms. Cook virtual visit
2. August 24- Ms. Gibbs virtual visit
3. August 21-22 Georgia Young Farm Livestock Show
4. August 26- Ms. Pope and Camp John Hope virtual visit and leadership activities
5. August 31- Ms. Harrison virtual visit
6. September 7- Mr. Anderson virtual visit
7. September 9- Ms. Steinkamp virtual visit
8. September 14- Ms. Golden virtual visit
9. September 17- Teach Ag Day events
10. September 18- Assist South Region Office with FFA Creed Judging
11. September 21- Mr. Beacham visit
12. September 22- Assist South Region Office with FFA Quiz
13. September 23- Assist South Region Office with FFA Quiz Finals
14. September 28- Dr. Claxton visit
15. September 29- Assist South Region Office with FFA Creed Finals
16. October 1- Assist South Region Office with Creed Finals or Employability Skills LDE
17. October 13- FFA Day at the Fair events
18. October 14- Ms. Tomlinson virtual visit
19. October 19- Mr. Johnson virtual visit
20. October 26- Mr. Drew virtual visit
21. October 27- Assist South Region Office with South Region Ag Comm or Employability Skills LDE
22. October 28- Participate in the National FFA Convention online
23. November 2- South Region YF Caucus
24. November 12 and 13- Assist South Region Office with Extemp. Speaking
25. Private pesticide applicators license
26. Pre-approved Ag Education based event by Mrs. McHugh

Additional opportunities will be posted throughout the semester

Results

- Increased:
 - Preservice teacher content knowledge
 - Classroom management when student teaching and during first year of teaching
 - School-based agriculture concepts and teaching examples/labs
- Popular among preservice teachers
- Appreciation for experiential opportunities and relevance to their future careers
- Course feedback evaluations

Question: What did you like most about this course?

School visits were helpful and informational- a great learning experience

Great opportunities

The Pick 10 Events

Pick 10s are great experience. Field trips are fun!

The preparedness I feel as a future educator!

Future Plans

- Course and Pick 10 will remain an experiential learning component in the program
- Research the effectiveness and perceptions of the success in developing professional development that meets a felt need
- Provide greater variety of experiences and diversity
- Create a Tour de Georgia Agriculture Education

Cost/Resources Needed

- Cost of completing low in COVID fall 2020 semester
- Virtual visits via Zoom
- Traditional semester costs include:
 - School activity bus mileage
 - Bus driver
 - Instructor time for scheduling events
 - Numerous student permission slip copies
- Recommendations for creating course:
 - Begin planning early in August
 - Set course calendar
 - Communicate with teachers to secure a visit date on their busy fall calendar
 - Share Pick 10 opportunities with students during first week of class
 - Create a sign-up board for students to commit to events and complete travel permission slips
 - Reserve transportation
 - Communicate with students and send reminders
 - Stress being on time
 - Professional dress at all events
 - Positive representation
 - Networking for their future



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High School Doggy Daycare Programs: Measuring Their Benefits to Agriculture Programs



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INTRODUCTION

There is a lack of empirical evidence about how effective doggy daycare programs may be in helping veterinary programs teach their students desired technical and nontechnical skills.

METHODS

- An online questionnaire was developed that examined student confidence in technical/soft veterinary skills.
- A pilot study was conducted with students enrolled at the Timber Creek Doggy Daycare program in Spring 2020.

RESULTS TO DATE

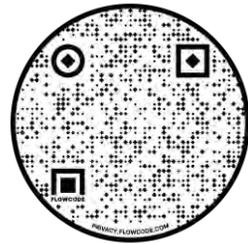
- Students are gaining technical (M=4.41, SD=0.645) skills but they are gaining fewer client-specific soft skills (M=3.8, SD=0.904).
- There are areas within doggy daycare programs that Ag-Ed teachers need to address.

FUTURE PLANS

- Research should be conducted utilizing research procedures that can increase the validity, reliability, and generalizability of the study.

RESOURCES NEEDED

- Qualtrics and SPSS software
- A list of agricultural programs that have Doggy Daycare programs.
- Time and Commitment



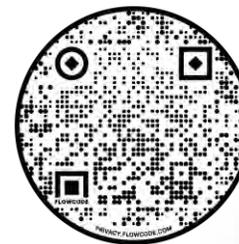
Agriscience Report



Agricultural Education High School Doggy Daycare programs have a positive **impact on student's skill** development, but further research needs to be conducted.



Innovative Poster



DESCRIPTIVE STATISTICS

- 1=strongly disagree; 5=strongly agree

SOFT SKILL ACQUISITION

- I believe that Doggy Daycare has helped with my interactions with people.

N	Range	Min	Max	Mean	Std Dev
71	2	3	5	4.13	0.653

- I feel that Doggy Daycare has increased my confidence in soft skills (for example, teamwork, communication, etc.)

N	Range	Min	Max	Mean	Std Dev
71	2	3	5	4.34	0.608

- I have learned skills needed to interact with clients in different situations (ex. pet is sick, pet just died, etc.)

N	Range	Min	Max	Mean	Std Dev
71	3	2	5	3.80	0.904

TECHNICAL SKILL ACQUISITION

- I feel that Doggy Daycare has boosted my confidence in my veterinary skills. (examples include working with animals, giving proper care, treating patients etc.)

N	Range	Min	Max	Mean	Std Dev
71	2	3	5	4.37	0.660

- I would feel confident to work in a vet's office after graduating from the program and Doggy Daycare.

N	Range	Min	Max	Mean	Std Dev
71	3	2	5	4.17	0.717



Texas Farm Business Management and Benchmarking Education and Outreach Alliance

Jose Lopez, Bob Williams, Mario Villarino

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A Member of The Texas A&M University System

INTRODUCTION

The College of Agricultural Sciences and Natural Resources at Texas A&M University-Commerce is conducting a two-year outreach program designed to assist agricultural producers in the state of Texas with farm financial management, business analysis, credit analysis, and financial benchmarking. The project provides consulting services, trainings, and assistance, including the use of use of financial software like FINPACK and IFSaM.

Financial benchmarking helps agricultural producers to increase their profitability and competitiveness. "Benchmarking is a longstanding and highly developed practice in the agricultural industry" (Jack, 2009). It consists of copying and improving the "best practices" within or across industries (Kotler, 2003). Financial benchmarking reports allows agricultural producers to realize potential profits as well as highlight opportunities for reducing costs and/or increasing revenues. In fact, "numeric benchmarks can provide a 'kick' to producers to convince them that change is needed" (Jack, 2009).

Financial benchmarking is consistent with the AAAE National Research Agenda research priority 2 to foster innovation and adoption of new strategies and technologies to feed a growing population.

HOW IT WORKS

The project proposes an interdisciplinary and multi-institutional alliance among Texas A&M University-Commerce, West Texas A&M University (WTAMU), and regional Texas A&M AgriLife Extension Service agencies. This partnership seeks to support the intellectual and collaborative efforts of regional farm institutions by supporting Texas farm management producers to solve agricultural and educational challenges. Texas agricultural producers benefit by comparing the benchmark of their agricultural practices with the agricultural practices from the leading states. For example, a comparison of Texas producers' cost and revenue structures with the leading states or other regions such as the Mid-West has helped to identify ways for Texas agricultural producers to become more profitable.

Project members rely on their long-standing relationships with regional Extension Service agencies, Farm Service Agencies, credit institutions, cooperatives, and outreach programs to recruit agricultural producers. Project members are connected to agricultural producers and have extensive experience with outreach programs, including contact information for beginning farmers and ranchers and small, socially-disadvantaged producers. Several of them are linked to or have advisory roles with producers and agribusinesses. In addition, every year A&M-Commerce hosts an Agricultural Technology Conference for regional producers in collaboration with Crops Cereal Research Incorporated (CCRI) and Texas A&M AgriLife Extension Service. WTAMU as well as the Texas A&M AgriLife Extension Service hosts several field days and other producer-related events throughout the year, which provides a great avenue for outreach.

The partnering universities will rely on and expand their current collaboration efforts with farm management and producers associations to recruit agricultural producers. The partnering universities will operate in their respective Texas region. A&M-Commerce focuses on counties in Northeast Texas, including Hunt, Hopkins, Franklin, Rains, and Wood counties. WTAMU focuses on counties in West Texas, including several counties in the top 26 counties of Texas, where Hartley county is among the top five counties in agricultural sales in the state of Texas (ERS, 2012). In East Texas has dairies, forages and pasture, grains, and livestock operations while West Texas is abundant of dairies, CAFOs, and beef cow operations.

RESULTS TO DATE

Agricultural producers benefit by comparing the benchmark of their agricultural practices with the agricultural practices from the leading states. Project members provide professional consulting services to interested agricultural producers through FINPACK financial software (FINPACK, 2020), sponsored by USDA, to create financial statements (Income Statements, Balance Sheets, Cash Flows), conduct financial analysis (FINAN), and enter information into the national farm financial management database (FINBIN). FINPACK training and software for the project director is provided by the Center of Farm Financial Management (CFFM, 2020). Both FINBIN and CFFM are hosted at the University of Minnesota. Financial Benchmarking is conducted through FINAN and FINBIN.

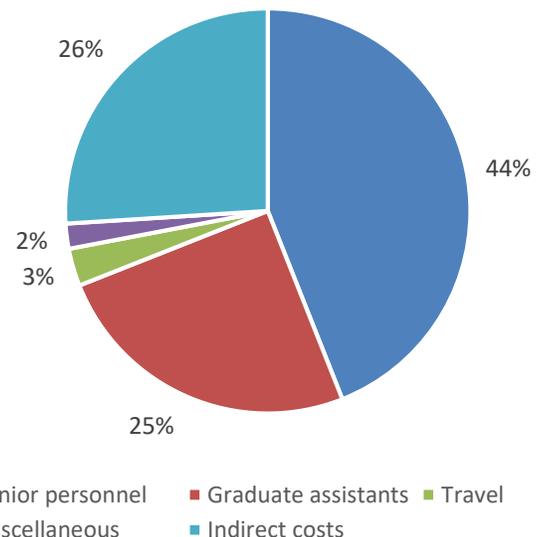
The project is an ongoing effort to develop strategies to increase participation of agricultural producers in financial benchmarking programs. Addressing the farm business management and financial benchmarking (FBMB) needs of agricultural producers is consistent with the AAAE National Research Agenda research priority 3 of creating a professional workforce that addresses the challenges of the 21st century.

FUTURE PLANS

After two years, the project plans to expand its alliance to gain a broader coverage in South Texas. Our prospective collaborators include the Weslaco Research and Extension Center where there are several livestock operations, vegetable operations, and a strong citrus industry, including grapefruit, orange, lemon, tangelo, tangerine, etc. We also plan to reach out to neighboring southern states such as New Mexico and Arizona for future collaboration.

COSTS

The Texas Farm Business Management and Benchmarking (FBMB) Education and Outreach Alliance is a USDA-funded project for farm business management and financial benchmarking with a budget of \$400,435. The two partnering universities receive half of the budget for two years.



ACKNOWLEDGEMENT

The Texas FBMB Education and Outreach project (TEXW-2020-06880) was funded by the FBMB Competitive Grants Program, National Institute of Food and Agriculture, United States Department of Agriculture.

Power of Feedback: Improving Instruction and Supporting Student Well-Being

Jason Bullock, Joy Morgan, and Wendy Warner
NC State University

Need for Innovation

- Feedback is considered a “consequence of performance” (Hattie & Timperley, 2007) and generally considered positive or negative (Wolf et al., 2010).
- To improve instruction and increase teaching effectiveness, instructors should be willing to incorporate a variety of methods to gather student feedback.
- During virtual learning, obtaining feedback was best facilitated through the creation of a Google form, “Lesson Feedback Survey” and added to each week’s lesson.

How It Works

- “Lesson Feedback Survey” created using Google Forms and housed on the learning management system (Moodle) after each lesson.
- Anonymous option for student feedback.
- Likert-type scale
 - (Strongly Disagree to Strongly Agree; N/A)
- Short Answer Responses

Results

- Survey included in 12 of 14 weekly classes.
- Feedback received 42 different times from 18 different students (two anonymous submissions).
- Highest submission rate was 6 entries from a student.
- Provided an outlet for students to willingly express challenges related to home or school and reach out for help or guidance.

Future Plans/Advice

- Use feedback to improve teaching and learning.
- Commit time to analyzing feedback and taking action.
- Expand questions/statements on survey based on course/student needs.

Costs/Resources

- No monetary costs.
- Time commitment to create Google Form, edit LMS (Moodle), and review feedback (~3 hours).
- Knowledge of Google Forms and Microsoft Excel.

NC STATE UNIVERSITY

Lesson Feedback

Use this form to provide feedback on each week's lesson. Your feedback is appreciated and considered as we learn how to best provide the greatest help, create and monitor an inclusive, engaging, and supportive learning environment.

1. Enter your name in the box (first and last) or type ANONYMOUS in the box.

Your name:

2. Which side of the scale do you lean?

3. How did you feel about this lesson?

4. List one idea about the lesson that you enjoyed in question #3 below.

	Strongly disagree	Disagree	Agree	Strongly agree	Not sure (no box)
1. I was interested in the activities.	<input type="radio"/>				
2. I liked how the instructor presented the material.	<input type="radio"/>				
3. I liked how the instructor presented the material.	<input type="radio"/>				
4. I liked how the instructor presented the material.	<input type="radio"/>				
5. I liked how the instructor presented the material.	<input type="radio"/>				
6. I liked how the instructor presented the material.	<input type="radio"/>				
7. I liked how the instructor presented the material.	<input type="radio"/>				
8. I liked how the instructor presented the material.	<input type="radio"/>				
9. I liked how the instructor presented the material.	<input type="radio"/>				
10. I liked how the instructor presented the material.	<input type="radio"/>				

5. Think about the different parts of this lesson. What did you like most about the lesson?

Your answer:

6. Think about the different parts of this lesson. What did you like least about the lesson?

Your answer:

7. How can I make this lesson better in the future?

Your answer:

How are things going? Please be constructive and specific so that I can identify areas that are going well and also some areas I might adjust the lessons during our remaining time together.

Your answer:

Submit



Use of Video-Enhanced Homework In Agricultural Mechanics

Don Johnson & Grant Hood
 University of Arkansas

Introduction

Risk of Covid-19 transmission has forced many teachers to pursue alternate methods to provide students with appropriate educational experiences. As learning shifts to a hybrid virtual learning environment, it is only fair that traditional activities such as homework assignments do the same (Bennett et al., 2008). According to Shoulders and Myers (2012), experiential learning is an essential component of agricultural education and should be a major component of agricultural education. Video components of experiential learning can help substitute the lack of laboratory time students have faced due to the current virtual learning situation.

In response to COVID-19, instructors are becoming more adept at using virtual classroom delivery methods such as video-enhanced homework to supplement traditional homework assignments with experiential learning videos. To be effective, learning activities must consider three factors; cognitive load, student engagement, and active learning (Brame & Perez, 2017). Students need this format to retain information and stay focused on learning objectives and transferable skills while taking part in video-enhanced homework assignments. Toward this end, we developed and incorporated video-enhanced homework activities into a freshman-level agricultural systems technology course to supplement the lack of experiential learning due to Covid-19.

How It Works

This idea is based on students being given the opportunity to record data measurements that would normally be taken by students in experiential learning labs required for use in their homework assignments through a short video component. The video focuses on the data measurements and provide the students an opportunity to see and to identify the processes underlying the concept as if they were doing it themselves. The videos are made using a tripod camera that is picked up and zoomed in so that students have a clear view of what data they are to record. The videos are then edited so that they are around two minutes in length. The videos use signaling text and brief 5 second pauses at data collection points to prompt students to record data at specific points in the videos. The recoding/editing process of the video component took about three hours for the first one. By the third video we had reduced this time down to about one hour total, less than the time of a normal experiential learning lab.

Three video-enhanced homework assignment were incorporated into ASTM 1613 – Fundamentals of Agricultural Systems in fall 2020:

- HW #1 - Tractor Dynamometer Testing (Figure 1)
- HW #2 - Lawn Spreader Calibration
- HW #3 – Ohm's Law

Figure 1
 Screenshot of Tractor Dynamometer Testing and Fuel Efficiency Homework Video



RESULTS TO DATE

Students completed a voluntary survey after each video-enhanced homework assignment. For the tractor dynamometer testing, students ($n = 38$) were fairly positive toward the video-enhance homework format, as compared to the paper-and-pencil homework assignments in ASTM 1613 (Table 1).

Table 1
 Student ($n = 38$) Perceptions of the Tractor Dynamometer Testing Video-Enhanced Homework

Statement	M	SD
I found the video homework to be easier to understand compared to the usual printed homework assignments.	3.52	1.11
Completing the video homework helped me understand tractor dynamometer testing better than I would have with the usual printed homework.	3.64	1.14
I like the usual printed homework better than the video homework.	2.99	1.11
I would like to have more video homework assignments.	3.56	1.11
The video homework was too much trouble compared to the usual printed homework.	2.15	1.09
I learned more by doing the video homework than I would have by doing the usual printed homework.	3.54	1.13
I like the video homework better than the usual printed homework.	3.41	1.13

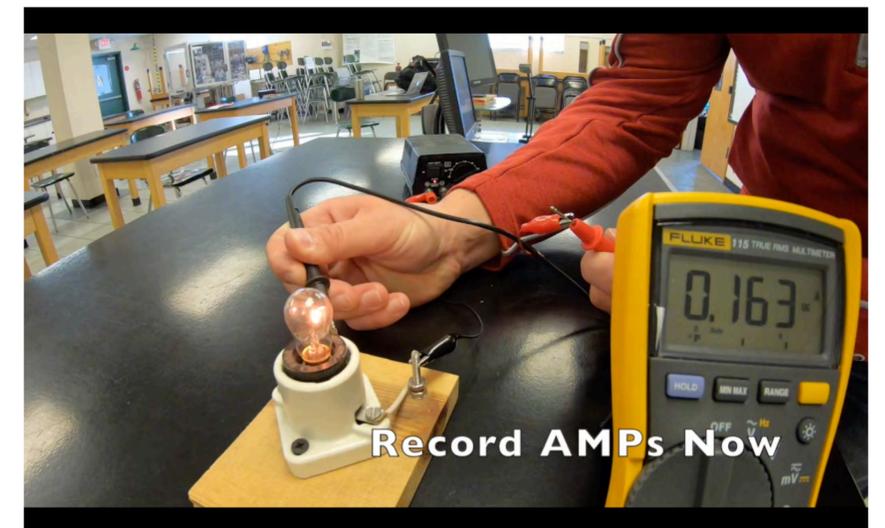
Note. Measured on a 1 to 5 Likert-type scale (1= strongly disagree and 5 = strongly agree)

Acknowledgement: Tractor dynamometer testing video courtesy of University of Missouri AST program.

CONCLUSIONS

This research suggests that students are receptive to and have a slight preference for video enhanced homework assignments as compared to traditional homework assignments. Therefore, we plan to develop and incorporate additional video-enhanced homework assignments into ASTM 1613 and other ASTM courses as appropriate. In addition, we plan to conduct an experimental study to determine if video-enhanced homework assignments make a significant difference in student learning compared to traditional alternatives. This could easily be implemented in other areas of study such as Horticulture, Food Science, and Animal Science courses.

Figure 2.
 Screenshot of Electricity Amperage Measurement



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Instructional Technology

#2020: The Making of a Virtually Excellent Experience!

Dr. Debra Barry
University of Florida



Introduction

- The need to create learning opportunities that fit into a virtual platform came to the forefront as the face-to-face learning environment was reduced to a minimum in 2020.
- Synchronous e-learning platforms were found to be potentially effective tools in preparing preservice teachers (Woodcock et al., 2015).
- Online learning brought keen advantages that helped to meet the needs of preservice teachers to gain valuable early field experiences. Online learning was cost-effective because of the lack of travel needed and allowed learners to engage in the experience, regardless of their physical location (Fedynich, 2014; Kim, 2020; Yilmaz 2019).

Steps

1. Identify agriscience programs that align with the goals of the virtual experience
2. Contact teacher(s) and ask if they were willing to participate in a virtual program visit.
3. Set-up the Zoom™ link and send to presenters, students and faculty.
4. Design agenda with programs that focuses on the strengths of each program.
5. Build in ample time for reflection and Q & A.

“I preferred the in-person tour much more. This tour [virtual] was easier to follow and listen and much easier to ask questions. I also felt like we weren't on as much of a time crunch and that the teachers were more comfortable.”

Results/Future Plans/Advice to Others

- Program visits were done virtually for the first time in Fall 2020
- Each program was able to showcase their facilities and program philosophies in 90 minutes.
- 30 UF/AEC students attended, with 60% (n=18) providing feedback in a Qualtrics™ survey.
- 100% of respondents who indicated the visits were informative and worth their time.
- Repeat attendee preferred in-person, but felt the comfort level and pace was better virtually
- Virtual program tours may be necessary moving forward
- Make sure that teacher presenters are proficient in the platform technology (i.e. Zoom™)

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Keeping the "Tech" in Career and Technical Education

Andrew L. Hauser & Dr. Rebekah B. Epps

Introduction

- Integrating technology into the classroom is a continual need for pre-service education
- Remaining current on classroom technologies is critical to classroom success (Kimav & Aydin, 2020)
- Pre-service educators better understand technologies when presented as practical knowledge (Tondeur et al., 2012)
- The University of Kentucky is using experiential education practices increase student's knowledge of technology
- The importance of technology has increased due to the impact of the Coronavirus

How it Works

- Students design a lesson around a technology to be used in their future classroom
- For completion of the lesson students:
 - a. Write instructions for using the technology specific enough for someone else to teach
 - b. Demonstrate the technology to the class
 - c. Reflect on the process of teaching with technology
 - d. Provide feedback for their classmates
- Students are encouraged to use a variety of technologies: applications, websites, virtual field trips, etc.
- Develop a list of technologies and instruction sets from the completion of multiple lessons for future use

Results to Date

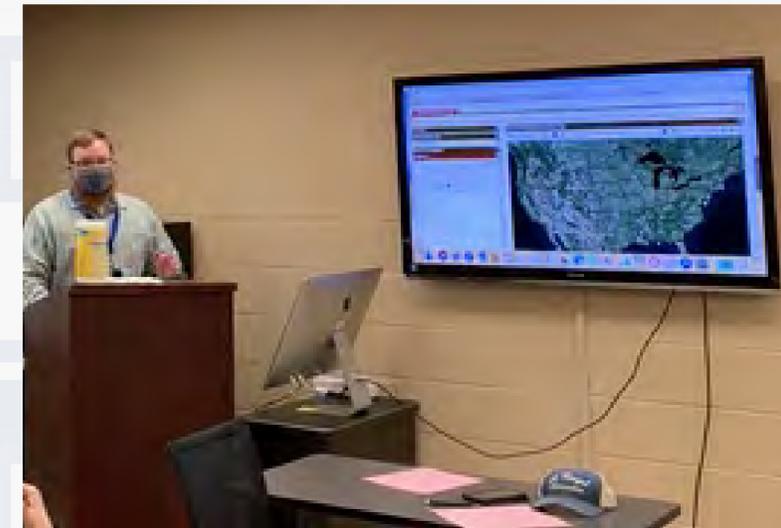
- Students have developed an increased awareness for time management and potential difficulties
- Students reflected on the lessons expressing the importance of visibility of technology, specific instructions, and keep students on task:
 - "It challenged me to step out of my comfort zone...and learn about a new tool to enhance my teaching"
- Students have used the technologies and instruction sets to enhance future lessons and lesson plans

Future Plans

- Further integrate distance technologies and integrate new technologies into instruction
- Expand reflection methods to include lesson plan modification and a written component to enhance effectiveness of lessons
- Explore the use of videography and music in creating unique curriculum

Costs/ Resources

- Pre-service teachers are encouraged to use free technologies
- Device with Internet access for the educator and each student
- Depending on the technology, a downloaded application, specific link, or QR code may be needed



Sp

SPARKing Technology in the CTE Classroom

— — — Jason Bullock, Joy Morgan, & Wendy Warner - NC State University

Resources & Costs

- ★ Prices range from \$19.99/month for team; \$9.99 for individual.
- ★ Internet access, computer/phone.
- ★ Instructor time (~3 hours) to develop rubric and assignment details.

Need for Innovation

- ★ Student engagement and motivation is challenging in a virtual learning environment.
- ★ Various instructional strategies and technology incorporation increase student engagement and achievement (Burns, 2018).
- ★ Exposure to new sources of technology can develop skills used in future instructional approaches (Williams et al., 2014).

How It Works

- ★ Students assigned CTE Legislation and tasked with developing a creative, digital product using Adobe Spark.
- ★ Rubric created to guide development and grading.
- ★ Format options included: Graphics, webpages, videos, & Slideshows.
- ★ Adobe Spark provided free to NC State students.



Results

- ★ 24 of 28 students submitted digital projects ranging from infographics (17), videos (5), & a Glideshow (1).
- ★ Testimony:
 - “For my CTE Legislation Spark Assignment, I designed a game show to teach about the Morrill Acts. I wrote the script, filmed, and edited the video. My roommates and one of their boyfriends helped me by acting as contestants and the assistant. Through this assignment I was put out of my comfort zone by acting on camera. I also challenged myself by using iMovie and GarageBand, two applications I have never used before. Overall, this assignment taught me a lot about my own boundaries and technology.”

Future Plans/Advice

- ★ Instructors should attend professional development for using new technologies.
- ★ Provide tutorials and guides to students for using new technologies.
- ★ Consider collaborative learning with technology.



Using QR Codes to Gain Responses When Surveying Participants with Mixed Modes



William Doss & Dr. John Rayfield – Texas Tech University

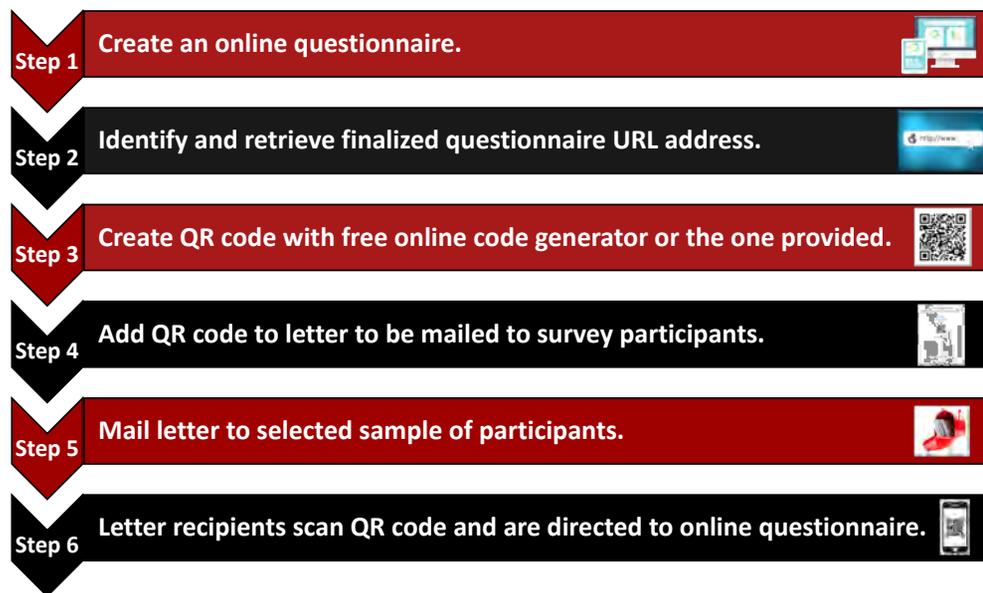
Introduction/Need for Innovation

- Survey response rates are declining.
- JAE articles published from 1990 to 1999 had an average response rate of 81.6% (Lindner et al., 2001).
- JAE articles published between 2006 and 2015 had an average response rate of 56.3% (Johnson & Shoulders, 2017).
- Low response rates are a threat to validity of studies (Roberts et al., 2011).
- Several have recommended ways of dealing with nonresponse after it happens (Johnson & Shoulders, 2017; Lindner et al., 2001; Miller & Smith, 1983).
- Sparse research in agricultural education has been conducted to help prevent nonresponse.
- We believe using QR codes as a way for survey participants to access a questionnaire is a way to improve response rates.
- A QR code is a quick response (QR) code in the form of an array of black and white squares that is used for storing URLs to be read by cameras on smartphones (Stein, 2020).
- One way to tailor survey contact and response modes to illicit more responses is to use mixed mode surveying (Dillman et al., 2014).
- To provide a participant with a QR code, a mail contact would need to be made so that participant had a physical code to scan with their device.
- Dillman et al. (2014) recommended providing participants with a QR code in addition to a URL when contacting participants through mail to complete an online questionnaire.



Methodology/How it Works

- A mixed mode survey was conducted where secondary agricultural education teachers were contacted through mail to complete an online questionnaire.
- In the paper letter to participants and in reminders, a shortened URL was provided as well as a QR code to scan to access an online questionnaire administered through Qualtrics™.



Future Plans/Advice to Others

- In the future we plan to continue using QR codes when contacting survey participants through mail.
- We also plan to examine the relationship of QR code use with participant demographics.
- Our advice to others would be to use a QR code when conducting survey research with mail contacts.
- There is little to no extra cost to implement and makes questionnaire access easier for some participants.
- When generating a QR code, be sure no other changes are made to the online questionnaire or URL.

Costs/Resources Needed

- The cost of using the Qualtrics™ online survey platform was free to our department.
- QR code generators can be found for free.
- A computer with internet access and a word processing system and a printer is necessary to create the contact letters with the QR code.
- Time required to add a QR code to a paper contact would be approximately five minutes.
- The cost of a sheet of paper, envelope, and postage would be necessary to complete the task for a total of approximately \$0.60.



Results to Date/Implications

- The questionnaire was sent to 548 secondary agricultural teachers.
- A response rate of 38.69% (n = 212) was achieved after five contacts in the 2020 fall semester during the COVID-19 pandemic.
- Of those responding, 79 (37.26%) were completed using a QR code.
- An implication of having over one third of respondents use a QR code to access the questionnaire is that it provided another way for participants to access the questionnaire compared to the traditional web address normally provided in mail contact letters.
- According to Dillman et al. (2014), reducing burden on participants is a way to increase overall response, addressing the need for this innovation.
- The use of QR codes has the potential to reach a different demographic of participants, reducing overall nonresponse error.



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Utilizing an Immersive Virtual Reality Activity to Teach Decision Making in an Undergraduate Team Leadership Course

Kenzie Bastian and Dr. Laura Greenhaw
University of Florida



Introduction

- Due to Covid -19, there was a shift to online delivery
- Attempts to innovate and integrate new teaching methods online
- Alternative face-to-face learning activities that still simulated the experience
- Online escape room game to evaluate group decision making

How it works

- TEG Unlocked, online immersive escape room. It is a self-led multiplayer problem-solving exercise students work together to complete, applying leadership and team based competencies.
- Students (N = 27) were assigned to teams. 3 four member teams, 3 five member teams.
- 45 minutes to experience one of the escape rooms.
- Teams convened on Zoom with their assigned observer, remote access control given to one student to lead the team in the game.
- Students completed a lab report reflection after the experience. Additionally, students took a pre and post survey of the decision making experience.

Future plans/Advice

- Allow more time for full experience.
- Purchase a game code for each team.
- Provide structured reflection to assist students' connection of lesson content with the decision making experience.

Results & Implications

- Students connected the experience to decision making concepts taught and derived meaning through practical application. This suggests that immersive virtual activities can provide effective experiential learning in team problem solving and decision making.
- Eleven students responded, the majority indicating the virtual experience was engaging (n = 8) and allowed for every team member to participate during the activity (n = 7)
- Initial findings indicate that while students engaged in team decision making through the immersive virtual reality activity, it was not their preferred type of experience.



Costs	Resources
TEG Unlocked access code bundle for 3 games : \$ 28.00	Two graduate TAs + an instructor facilitated three games simultaneously.
One game code cost : \$10.00	Group meeting software with screen sharing capability. We utilized Zoom.

Online Instruction

Building Rapport Online

Jason Bullock, Joy Morgan, & Wendy Warner
NC State University

COSTS: FREE

Need for Innovation

- ❑ With the impact of COVID-19 and mandate for online learning, building rapport with students has become challenging as strategies are not as salient in the virtual environment.
- ❑ Rapport can significantly impact student retention, engagement, and academic achievement (Estep & Roberts, 2013).

So how do we do this effectively in an online setting?

How It Works

- ❑ Make rapport building an **integral** part of each class.
- ❑ **Casual conversations** at the beginning of class were facilitated by instructors.
- ❑ **Virtual scavenger hunts** that focused on various themes throughout the semester. Both individual and group scavenger hunts added a fun component.
- ❑ **Google check-in forms** provided students an anonymous voice.
- ❑ **Breakout rooms** with non-academic discussion topics allowed students the social interaction lacking in online.

Results to Date

- ❑ As activities took place throughout the semester, camera usage increased.
- ❑ Increased comfort level with Zoom.
- ❑ Scavenger hunts created opportunities for students to talk and foster partnerships.
- ❑ Helped to mimic face to face interactions.

Future Plans/Advice to Others

- ❑ Identify and Incorporate strategies for each class.
- ❑ Incorporate activities that facilitate the community aspect and allow students to engage with one another.
- ❑ Seek out activities to challenge students to think critically and use technology leading to an increase in comfort level.
- ❑ As an instructor actively participate to encourage student participation.
- ❑ Use activities that encourage the use of the camera function.

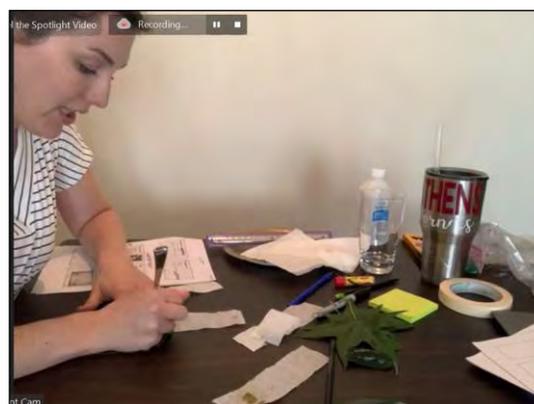
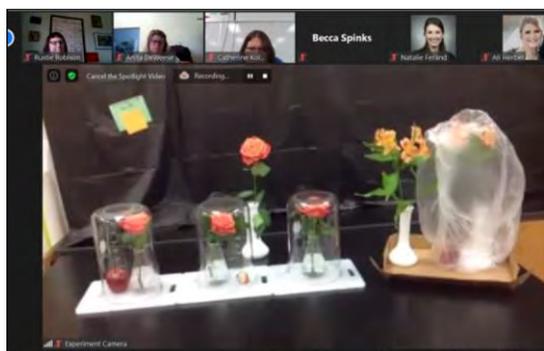


COVID SHOWERS BRING VIRTUAL FLOWERS: GETTING FLORICULTURE CURRICULUM TO BLOOM ONLINE

NATALIE K. FERAND, CATHERINE A. DIBENEDETTO, & BRIAN E. MYERS

DESCRIPTION

- Professional development program focused on inquiry-based instruction, scientific thinking, current research on fresh cut flowers
- Three day, in-person lab-based conference was transformed into an online experience
- “Experiment cams” and group labs were conducted virtually
- Program was delivered entirely via Zoom



HOW IT WORKS

- Canvas Catalog course housed all program materials
- Zoom “script” for the “Zoom expert”
 - Itinerary, prompts, polls, engagement techniques, time stamps, and presenter ques for effective communication
- Experiment cams
 - Two devices used
 - One on the instructor’s face, one on the experiment
- Readily accessible lab materials and supplies

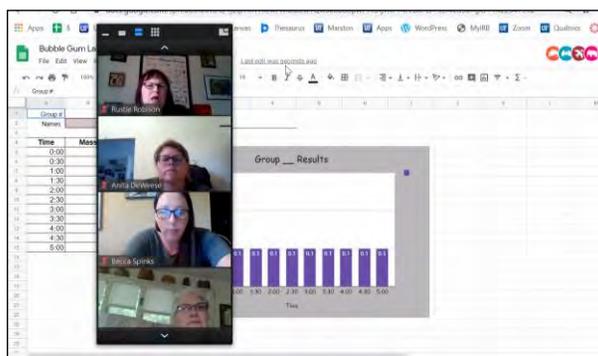
RESOURCES NEEDED

Total Cost: \$5,010

- E-Learning Specialist: \$500
- USB Flash Drives: \$110
- Blue-tooth Environmental Sensors: \$1500
- USB Microscopes: \$600
- Shipping: \$2,200
- Tripods: \$100

Additional Needs:

- Two devices per presenter
- Development of curricular materials & lab investigations, guest presenter “experts”
- Zoom “expert” to manage participant interactions



IMPLICATIONS

- Teachers observed high-quality virtual instruction
- Catalyst for innovative strategies for active engagement
- Inquiry-based, hands-on instruction can be delivered effectively in a virtual environment
- Teachers were motivated to teach inquiry-based instruction online and in face-to-face
- Planning for third cohort of agriscience teachers in progress – to be delivered online again to increase number of participants and maximize budget

Distance Makes the Heart Grow Fonder: Collaborating at a Distance via Nearpod

Andrew L. Hauser & Dr. Rebekah B. Epps

Introduction

- Collaboration creates a support system and avenue for contributions (Hafernik et al., 1997)
- Collaboration aids in developing an educational community (Kapuscinski, 1997)
- Collaboration has been fostered through the use of technology as a result of the Coronavirus
- Educational technologies can increase participation and ease of access to students (Sinha et al., 2020)



9

How it Works

1. Create a Presentation through the NearPod App or Website
 2. Project the presentation to students
 3. Have students enter the presentation specific code into their personal devices and enter their name
 4. Stop on the Collaboration Board slides and prompt students to enter their answers on their device
 5. Answers will become visible on the screen in real-time
 6. Students can "like" answers if they agree with another student's response
- Collaboration boards elicit responses from students who would not normally speak up in class
 - The presenter can see who has responded and save reports to review at a later time



15

Results to Date

- Students shared positive feedback after being introduced to NearPod:
- "I believe interaction, reflection and shared perspectives is essential in a classroom, and Nearpod is an amazing tool to do all of those"
 - "I think it's a great way to change up instructional styles that can be used for both in-person and virtual learning"
 - "I plan to use it during student teaching!"
- Students expressed interest in the NearPod functions and used them within their methods teachings



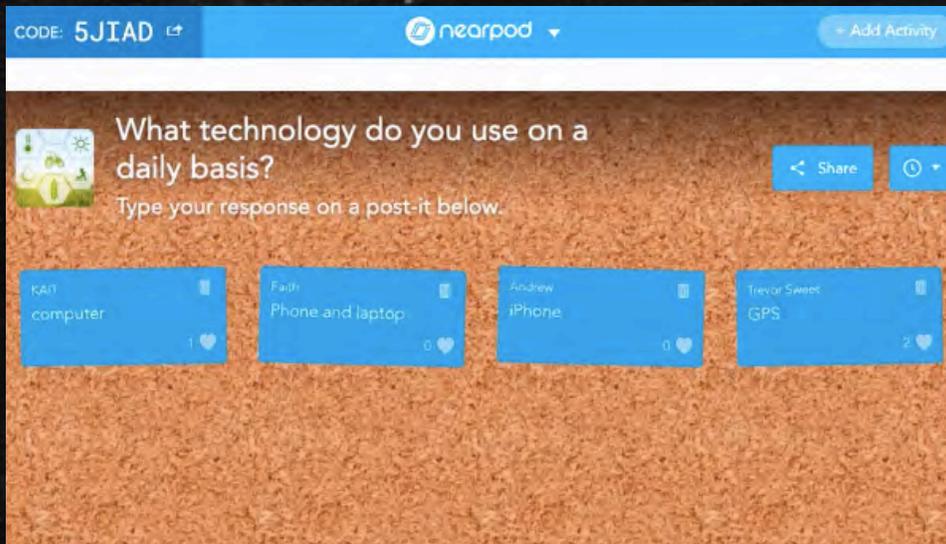
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Future Plans

- Continued use of NearPod Collaboration boards
- Explore other functions of NearPod (Quizzes, Modules, and Zoom)
- Using NearPod reports to enhance reflection



9



Costs/Resources Needed

1. NearPod account (0- \$349.00/ year)
2. Computer with internet
3. Projector
4. Student device(s)



12

Going the Distance: Reaching First-Year Agriscience Students and Their Teachers through the Virtual Greenhand Leadership Conference

Meredith Hall, Auburn University; Kelly Holler, Auburn University; Brooke Spann; Auburn University; Dr. Jason McKibben, Auburn University

Introduction/need

- COVID-19 has interrupted daily living; education as no exception
- The Auburn University (AU) Greenhand Leadership Conference is designed to prepare first-year middle/secondary agriscience education students to earn the Greenhand Degree
- AU restrictions prevented on-campus events during the fall of 2020
- The Greenhand Leadership conference continued with unprecedented reach



Results

- Previous attendance: 130-160 students from 12-15 schools
- 2020 attendance: >1,300 students from 11 schools
- Previous conference fees ranged from \$25-\$35 per student and included lunch, t-shirt, and a swag bag
- 2020 conference fee was \$50 per school
- Costs were greatly reduced to develop and participate in the virtual conference
- Eliminating the need to travel and the per-person registration fee expanded access to schools and students who otherwise may not have the resources to come to campus

How it works

- Undergraduate ambassadors in the AU Agriscience Education program worked in teams to develop videos, activities, and interactive materials to enhance the four workshops included in previous Greenhand conferences
- Workshops included Ag Careers, Career Development Events, Supervised Agricultural Experiences, and FFA 101
- All materials were delivered to teachers via Box, a file sharing service



Future plans

- Feedback surveys from previous on-campus conferences indicate teachers find value in bringing students to campus
- Offering both an on-campus and virtual conference experience may offer valuable fluidity to teachers