

**Assessing Awareness and Competence of Best Practices in Synchronous Online Instruction  
During the COVID-19 Pandemic for Cooperative Extension Agents**

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## **Assessing Awareness and Competence of Best Practices in Synchronous Online Instruction During the COVID-19 Pandemic for Cooperative Extension Agents**

### **Introduction**

The outbreak of COVID-19 suddenly put the world on lockdown in 2020 (Centers for Disease Control and Prevention, 2020). On March 11, 2020, the International Health Regulations Emergency Committee of the World Health Organization (2020) declared the outbreak a pandemic. This situation challenged education systems across the world and forced educators to shift to an online mode of teaching overnight (Dhawan, 2020), asking them to become both designers and tutors, using tools which few have fluently mastered (Rapanta et al., 2020). Synchronous online teaching sessions, where everyone joins a meeting at a scheduled time, is one way to create engagement when participants are remote (Harvard University, 2020). Cooperative Extension is an education system that provides practical education designed to help people solve problems and develop skills. The success of Extension programming is often based on in-person events that are scheduled well in advance of the anticipated programming date (Stokes et al., 2020). Since March, Extension county offices in South Carolina have had modified operations making them inaccessible to the public per protocols set by Clemson University and public health officials. Many agents transitioned to digital platforms to continue providing valuable resources and educational programs (Newsstand, 2020). Rapidly developing technology has facilitated distance education in all disciplines, proving to be popular among students for various reasons including convenience by the format (McBrien, 2009). To meet the needs of all constituents, the revised ADA 508 standards require extension agents to provide equal opportunities related to accessibility through accommodations for those with disabilities for viewing documents and presentations during online instruction (U.S. General Services Administration, 2020).

The purpose of this study was to assess Cooperative Extension Agents knowledge and self-perceived competence levels of Zoom features that enhance formal and informal instruction, as well as the application of accessibility tools allowing all learners equal access to content. The objectives supporting this purpose were to: 1) Identify extension agent's knowledge and self-perceived competence levels of synchronous learning features related to effective instruction, and 2) Identify extension agent's knowledge and self-perceived competence levels of best practices for assuring accessible Microsoft PowerPoint and Word files.

### **Theoretical Framework**

This study was framed by the human capital theory, aiming to evaluate the current knowledge and skills (Schultz, 1961) specific to the human capital development (Smith, 2010) of Extension Agents. Human capital considers expenditures on human capital as investments, opposed to consumption (Schultz, 1961). Furthermore, Smith (1952) noted that not all labor inputs into an economy are quantitative, as they include "the acquired and useful abilities of all inhabitants or members of the society" (p. 119). Schultz (1961) noted that one of the forms of education in human capital theory included on-the-job training, of which, is purposeful knowledge development for furthering an individual's job specific abilities. Therefore, assessing Extension Agents' needs in online delivery technology and accessibility skills will inform stakeholders, allowing for specified human capital development opportunities essential during the COVID-19 pandemic.

### Methods

This study employed descriptive survey research of Clemson University Extension professionals, including 155 agents and specialists in South Carolina. The survey was distributed via email with a Qualtrics Survey link following the recommendations of Dillman et al. (2014). The researcher-developed survey evaluated participants knowledge and self-perceived competence in using Zoom and accessibility aspects of Microsoft Word and PowerPoint. Additionally, demographic questions were used to gather pertinent information, i.e., age, gender, use of synchronous learning prior to the COVID-19 pandemic, access to equipment and Internet availability. Proficiency and accessibility questions were asked to assess awareness and competency levels in meeting tools. The survey was evaluated for face and content validity by five faculty members in agricultural and extension education and two extension specialists before being distributed. After the initial email, two reminder emails were sent to non-respondents to increase participation per Dillman et al. (2014). Data analysis evaluated descriptive statistics using SPSS version 27.

### Results

Extension agents ( $n = 71$ ) and extension specialists ( $n = 17$ ) spanning 40 counties across South Carolina responded resulting in a 23% ( $n = 88$ ) response rate for this study. The participants spanned from 23 to 69 years of age, with some having nearly 40 years of experience. Prior to the COVID-19 pandemic 53% ( $n = 46$ ) of participants used synchronous learning technology. A total of 85.3% ( $n = 75$ ) of participants were currently working from a home office rather than their assigned county office/duty station. Of the 88 respondents, 75% ( $n = 66$ ) felt competent in their ability to schedule meetings in Zoom. Although the respondents felt competent in using features within Zoom to hold meetings, the majority of other features (i.e., annotation tools, file transfer, broadcast, polling, and breakout rooms) were commonly unknown or seldomly used. Additionally, respondents were not aware of accessibility features available in Microsoft Office Word or PowerPoint to make documents accessible for their constituents, with only 19% ( $n = 17$ ) and 27% ( $n = 24$ ), respectfully, expressing they felt competent in this skill.

### Conclusions, Implications and Recommendations

The findings suggest that Extension professionals are actively using synchronous online learning tools available in Zoom during COVID-19 but they are not completely comfortable with or aware of all available features. There was a lack of competency reported in features that would enhance instruction, such as use of polling, file transfer, and live-streaming media platforms, including YouTube. Furthermore, Extension Agents lacked knowledge and ability related to accessibility features available for virtual delivery within Microsoft Word and PowerPoint.

Recommendations for practice include in-service activities specifically addressing the knowledge deficit areas of accessibility tools in Microsoft products and Zoom features to promote best practices in using online synchronous delivery skills for those in Cooperative Extension in South Carolina. To best serve the target audience further investigation is recommended in South Carolina to further evaluate the need and determine if the needs are specialization area and/or region specific for targeted professional development. Additionally, this study should be replicated on a nationwide level with Extension personnel to better understand the needs of Extension Professionals in other states. Agricultural education, communications, and leadership programs preparing future Extension Professionals should also consider the results of this study when preparing and evaluating course content.

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