

**Using GradeCam Go! to Assess FFA Career Development Event Activities**

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## Introduction

New and emerging technologies have important implications for school-based agricultural education (SBAE) settings (Doerfert, 2011). Declining costs over time and improving ease of access to such technologies, including specialized apps, smartphones, digital multimedia, and so forth, have somewhat helped to increase their adoption into SBAE settings (Smith, Stair, Blackburn, & Easley, 2018). Further, the use of technology in the context of SBAE can be used to promote educational goals and outcomes and to provide for useful knowledge and skill development (Bunch, Robinson, & Edwards, 2015; Bunch, Robinson, Edwards, & Antonenko, 2014; Bunch, Robinson, Edwards, & Antonenko, 2016). Many SBAE teachers report that they are receptive to using technology applications in their programs, often with the support of local school administrators (Smith et al., 2018). While the costs of new technologies and implementation into the curriculum remain chief barriers to adoption and usage in SBAE (Coley, Warner, Stair, Flowers, & Croom, 2015), perhaps lower-cost and flexible technologies could have utility in SBAE settings in various ways (e.g., student assessment, etc.).

Technology applications have, throughout recent decades, been used in the realm of student assessment (Fisteus, Pardo, & García, 2013). In the context of SBAE, formative and summative student assessment can be constituted in many ways, such as through live skill demonstrations, written examinations, participation in FFA Career Development Event (CDE) activities, and so forth (Phipps, Osborne, Dyer, & Ball, 2008). Moreover, with the complexities associated with delivering quality student assessment (Fisteus et al., 2013; Phipps et al., 2008), quality technology platforms that are easy and quick to use, efficient, effective, and appropriate for a given situation could remain as a solid and reliable student assessment technique in SBAE settings. Kilickaya (2017) described how assessment in a classroom setting may be improved via an instantaneous student feedback and assessment tool called GradeCam Go!. It is conceivable that such an opportunity may exist in the context of FFA CDEs as well, particularly when scoring written content knowledge examinations and selected skill activities.

## How it Works

GradeCam Go! is designed as an instantaneous assessment tool that, in conjunction with specialized, customizable grading sheets (e.g., rubrics, multiple-choice, etc.), uses a camera system to quickly scan and grade a given assessment (GradeCam, n.d.). Prior to using the GradeCam Go! system as an assessment tool, a user (e.g., an SBAE teacher, an FFA CDE superintendent, etc.) must create an account with GradeCam, create a new assignment, and develop an answer key for that assignment. The grading sheets are specific to the GradeCam system and can be generic sheets that can be used by or for any person or assignment, or they can be specifically designated for specific individuals (e.g., from an imported FFA CDE registration list, etc.), depending upon the present need. The camera system can be a webcam on a laptop or desktop computer, a document camera, or a smartphone camera. Identifiers on the bottom of each grading sheet help to provide individual scanning capabilities to each sheet. When a grading sheet is scanned, the answers on the scanned sheet are compared to the answer key previously developed via the GradeCam website. As a result, the user has immediate access to the graded

assessment, allowing him or her to identify the items marked correct and incorrect. Scanning several grading sheets allows the user to identify trends in performance that can be shared with educational stakeholders (e.g., SBAE teachers and students, FFA CDE superintendents, FFA CDE committees, etc.) to identify areas of strength and those in need of improvement. Results can also be uploaded into an electronic gradebook for future recordkeeping and for dissemination to stakeholders (GradeCam, n.d.).

In the context of the present abstract, the Iowa FFA Association staff and various CDE committees, which are composed of SBAE teachers in Iowa, elected to pilot GradeCam Go! as an FFA CDE written examination assessment tool during the 2017-2018 academic year. The Iowa FFA Association staff created a GradeCam account and selected a handful of CDEs (e.g., Agricultural Mechanics, etc.) to serve as the pilot sites. Because FFA chapters were required to pre-register students for each CDE, GradeCam Go! sheets were printed for each student prior to the CDE activities. Iowa FFA Association staff printed and organized GradeCam grading sheets for each registered student. On the day of each CDE, the GradeCam sheets were used during each written examination activity. After collection between activity rotations, each CDE's scoring room team, which was composed of SBAE teachers, individually scanned each grading sheet with a computer webcam. To ensure accuracy of each scanned grading sheet, at least one scoring room team member visually inspected each grading sheet to ensure accuracy. After the initial piloting phase was completed and some minor adjustments to the scanning process were recommended, this process was replicated with additional CDEs during the 2017-2018 academic year. The second year of using GradeCam Go! brought the implementation into additional CDEs (e.g., Agronomy CDE, Poultry CDE, etc.).

### **Implications**

The use of GradeCam Go! was well-received by CDE superintendents, SBAE teachers, and students, and CDE judges. Anecdotally, the technology's ease of use, speed, accuracy, and flexibility with each CDE's design allowed for a reliable system of assessing students' work. SBAE teachers present at each CDE site expressed an interest in adopting GradeCam Go! as a low-cost and effective assessment tool for use within their own programs.

### **Future Plans & Advice to Others**

We anticipate that GradeCam Go! will continue to be used by the Iowa FFA Association to help assess students' work during CDE activities. The Iowa FFA Association plans to incorporate GradeCam Go! into the majority of its CDE activities in the coming academic years. We do recommend that other state FFA Associations consider using this technology for a similar purpose. We also recommend that SBAE teachers consider implementing this technology into their local programs as a student assessment tool.

### **Costs**

Three product package options that vary in price and features presently exist. The Iowa FFA Association purchased four *Teacher/Administrator* accounts that can exchange information with each other. Each account costs \$150.00 annually and includes unlimited scans.

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