Examining the Use and Frequency of Competition-Based Instruction in SBAE Classrooms

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Introduction and Need for Research

Research has shown that healthy competition in the classroom is a way to engage learners in exciting ways while advancing their learning (Kowalski & Christensen, 2019; Shindler, 2009). When examining the three-component model of school-based agricultural education (SBAE), competition has also been a popular point of interest within many programs in the areas of FFA and SAE (Bolton, et al., 2018; Bowling & Ball, 2020; Goodwin & McKim, 2020). With all of the digital and non-digital platforms and resources available, introducing some of these competitive elements in the classroom is a strategy SBAE teachers can utilize to potentially streamline workload while also providing engaging learning strategies for learners (Goodwin & McKim, 2020). For example, a teacher can utilize the identification lists for the Nursery and Landscape Career Development Event (CDE) as the basis for the list of plants they expect students to learn in a horticulture class, and host competitions on platforms such as Kahoot!, Quizizz or escape rooms to help students learn these items. This practice ideally recruits and prepares students for CDEs, and saves the teacher practice time since students are studying in their class, while also preparing all students for industry-specific careers and not just a few FFA members. While there has been research focused on competition and pedagogical design capacity, there has been little work integrating these areas. Since there is a national deficit of over 600 SBAE teachers (Foster, et al., 2022), this research could preserve teachers' longevity in the profession, as competition-based instruction is a teaching strategy that could save them time and energy. The purpose of this study was to examine how teachers are able to implement different types of competition within their classrooms by designing or modifying curricular resources. The objectives were to 1) determine SBAE teachers' pedagogical design capacity for their implementation of competition and 2) determine the types of competition teachers facilitate.

Conceptual Framework

Brown's (2002) pedagogical design capacity (PDC) model was the study's guiding framework. Brown concluded that PDC is a complex relationship intertwining two key areas: instructional resources (professional development and curriculum) along with teachers' resources (beliefs, command of the subject area, and their pedagogical content knowledge (PCK)) (Brown, 2002; Brown & Edelson, 2003; Knight-Bardsley & McNeill, 2016). Teachers with a higher PDC can take existing resources and make them more relevant and engaging for learners, while teachers with a lower PDC tend to offload resources and just use existing resources as is—this generally correlates with subject areas where a teacher has a lower comfort level and PCK (Brown, 2002).

Methodology

To fulfill the research objectives, a non-probability convenience sample of 83 participants was achieved via a mass email sent to agricultural educators across the nation and recruitment via the Agricultural Education Discussion Lab on Facebook. Participants indicated they were all current SBAE teachers in grades 7 through 12. Participants accessed the survey via Qualtrics, and the instrument consisted of a series of demographic items, along with Likert-type, multiple-choice, and short answer items. Since there is not currently a scale that measures the data we were reviewing, items within the instrument were examined independently. Data was collected in June 2022 and processed in SPSS. Frequencies were calculated to identify potential missing gaps within the data and to inform future research (Creswell & Creswell, 2018).

Results and Findings

A total of 83 respondents participated in the study. Results from items relating to teachers' beliefs resources (Table 1) and the frequency of their use of competition as a teaching method

(Table 2) are below. We see that not all teachers have the resources to implement competition but those that do utilize many tools to do so; most frequently digital games and team competitions.

Table 1: *Beliefs about resources utilized by SBAE teachers in implementing competition (Obj. 1).*

	n	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I have access to the teaching materials I need to implement competition in the classroom	83	1 (1.2%)	18 (21.7%)	15 (18.1%)	39 (47.0%)	10 (12.0%)
The resources I use to teach can be used for competition	83	0 (0.0%)	3 (3.6%)	12 (14.5%)	59 (71.1%)	9 (10.8%)
I have the physical items I need to implement competition in the classroom	83	1 (1.2%)	16 (19.3%)	25 (30.1%)	33 (39.8%)	8 (9.6%)

Table 2: *Frequency of competition tools SBAE teachers implement within classrooms (Obj. 2).*

	n	Never	1-2 Times/Yr.	Monthly	Weekly	Daily
Digital games	83	4 (4.8%)	9 (10.8%)	37 (44.6%)	30 (36.1%)	3 (3.6%)
Team competitions	83	9 (10.8%)	24 (28.9%)	42 (50.6%)	8 (9.6%)	0 (0.0%)
Non-digital games	83	9 (10.8%)	33 (39.8%)	33 (39.8%)	7 (8.4%)	1 (1.2%)
Mock FFA CDEs	83	15 (18.1%)	44 (53.0%)	21 (25.3%)	3 (3.6%)	0 (0.0%)

Results pertaining to Objective 1 indicated many believe they lack the resources to implement competition in the classroom, with 41.0% (n = 34) indicating they may not have access to the teaching materials needed, but recognize a connection between the resources they use to teach lending themselves to competition as a teaching strategy, with 81.9% (n = 68) of respondents agreeing or strongly agreeing. When examining Objective 2, when they do utilize competition in the classroom, teachers frequently rely on digital games, with 39.4% (n = 33) of respondents using these on at least a weekly basis, as opposed to non-digital games, such as escape rooms, with only 9.6% (n = 8) of respondents reporting using these on at least a weekly basis.

Conclusions

The purpose of this study was to examine teachers' beliefs about resources needed to implement competition in their classrooms along with how often they do so. Results showed while teachers utilize a variety of methods to implement competition-based instruction, especially digital games such as Quizizz and Kahoot to engage learners, there is a need for developing additional, ready-to-use resources for teachers to utilize to implement competition-based instruction, and these findings are supported by the literature (Aldana, 2020; Kowalski & Christensen, 2019).

Recommendations

Additional research is essential to better uncover the needs of teachers, and ideally from a probability sample of SBAE teachers. To further advance these findings, potential areas of research might include looking at how teachers go about selecting one form of competition over another, and additionally, determining what resources teachers desire to use in their classroom that they are lacking. Then, we can use those findings to develop resources that help teachers embed competition within their classrooms. These include professional development relating to using competition as a teaching method, providing teacher preparation programs with training on how to model competition as a teaching method, the development of competitive materials for teachers to use or modify provided from the National FFA Organization, or "competition kits" with resources for teachers to loan to try out different competition activities in their classrooms.

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