

# A Case Study of Learning, Motivation, and Performance Strategies for Teaching and Coaching CDE Teams

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## Abstract

*This intrinsic case study examined the case of students on CDE (Career Development Event) teams preparing for state competitive events and the teacher preparing them in a school with a previous exemplary track record of winning multiple state and national career development events. The students were interviewed multiple times during the 16-week preparation period before, during, and after the district and state CDEs. From the interview data it was found the teacher used a variety of motivational strategies when preparing CDE teams. The teacher shifted the use of both extrinsic and intrinsic motivation strategies based on students' needs. The teacher also utilized performance strategies including both coaching and learning strategies, to develop students' competitive drive and content knowledge. From the findings it is recommended that CDE coaches assess students' needs and utilize the successful coaching behaviors and strategies accordingly.*

**Keywords:** Career Development Events; CDE preparation; learning strategies; motivational strategies; performance strategies; teaching and coaching; teacher behaviors; coaching strategies

## Introduction

Career Development Events (CDEs), which allow students to develop career related and problem solving skills through competitive events, are an integral component of an FFA program. McNally and Harvey (2001) state, "The student organization (FFA) complements a technical education by offering co-curricular activities and opportunities for students to assess their skill development" (p. 114). Currently, the National FFA Organization offers 24 individual and team CDEs (National FFA Organization, 2016), with three-fifths of the entire FFA membership participating in CDEs at some level (Talbert & Balschweid, 2004). Given the national scope of CDEs within school-based agricultural education (SBAE) and the number of student participants purported to build both career and problem solving skills via CDE participation, research is needed to investigate what strategies teachers use to help students become successful within CDEs.

A number of studies have been conducted on CDEs within agricultural education. This empirical body of work has extended from outlining the purpose of CDEs (Marx, Simonsen, & Kitchel, 2014; National FFA Organization, 2016; Phipps, Osborne, Dyer, & Ball, 2008; Russell, Robinson, & Kelsey, 2009; Talbert & Balschweid, 2004), resources utilized by teachers/coaches (Harris, 2008; Murphy, Miller, & Roberts, 2009; Poskey, Igo, & Waliczek, 2003), motivators for students to compete in CDEs (Russell et al., 2009), teacher stress related to coaching CDEs (King, Rucker, & Duncan, 2013), and professional development needs for teachers regarding CDE preparation (Harris, 2008; Torres, Ulmer, & Aschenbrener, 2008). Current research most directly related to the student outcomes associated with CDEs indicates students who participate in CDEs develop career related confidence (Marx et al., 2014), and teachers motivate students to participate

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due to the perceived benefits of life skill development as a result of participation (Russell et al., 2009). Given the perceived benefits of participating in CDEs as indicated by the research, it is no wonder that research in CDEs has also indicated a high degree of teacher stress and need for teacher professional development in CDE preparation. King et al., (2013) determined CDEs are one of the top five stressors for female agricultural educators in the southeast region of the United States. Further, experienced teachers spend more time on CDE preparation than first year teachers or student teachers and research indicates that providing time management workshops or professional development could help decrease teacher stress and increase preparation time (Torres et al., 2008). Finally, teachers indicate a very high level of interest in participating in professional development workshops or summer courses related to CDEs (Harris, 2008).

Research on teaching and coaching strategies for CDEs has indicated a number of interesting findings. Teachers are using different forms of personal hand-held technology devices (Murphy et al., 2009), to prepare students for their specific event, the Internet to gather resources about and gain student interest in CDEs (Harris, 2008; Poskey et al., 2003), and volunteers to help coach CDE teams and broaden student knowledge of CDEs (Seevers & Rosencrans, 2001). Research on CDE coaching has indicated that teams experience more success when teachers address students learning styles and provide learning opportunities which align with their preferred styles (Poskey et al., 2003). Four studies have investigated the specific coaching, teaching, or preparation strategies agriculture teachers utilize to influence student performance in CDEs. First, Russell et al. (2009) determined that teachers use: (a) tradition and success of the chapter, (b) opportunities for students to compete, (c) life skill development, (d) opportunities for fun, (e) active recruitment, and (f) CDEs integration as strategies for CDE coaching. Bowling and Torres (2010) utilizing a coaching framework from Wooden's Pyramid of Success to clarify specific behaviors for coaching a Floriculture CDE, it was found the top five coaching behaviors teachers utilized were: (a) friendship, (b) confidence, (c) enthusiasm, (d) team spirit, and (e) cooperation. Falk, Masser, and Palmer (2014) investigated the perceived coaching behaviors used for the National Parliamentary Procedure CDE, and determined teachers used: (a) positive feedback, (b) social support, (c) training and instruction, and (d) situational consideration. Finally, Voigt, Talbert, and McKinley (2013) investigated promising coaching practices of dairy, horse, and livestock CDE coaches and determined that coaches tended to utilize strategies associated with: (a) expectations, (b) effective coaching, (c) experience, (d) goals, (e) support, (f) foundational knowledge, (g) positive environment, and (h) youth development. The prior research on CDE coaching indicates that teachers perceive that they utilize specific strategies and techniques when coaching CDE teams. While the studies lend some insight into the fact that coaching and preparation for CDEs happen in purposeful ways, a need exists to identify how that preparation happens, and what specific motivational strategies influence the learning environment within a CDE team.

### **Purpose and Objectives**

The purpose of this intrinsic single-case study was to explore the coaching strategies used related to learning, motivation, and competition within a previously successful environment. This study was guided by the following research questions as they pertain to exemplary CDE teams:

1. How are CDE team members motivated to succeed?
2. What role does competition play within a learning environment?

### **Theoretical Framework**

Given CDEs are an intra-curricular entity, involving both competition and classroom learning, a need exists to better understand the impact of coaching behaviors related to competition and motivation on learning. Early research has indicated conflicting findings between competition

and classroom learning. Some research indicates competition can stimulate effort and increase some performance based on the task provided (Strong, 1963; Vaughn, 1936). Additionally, competition along with an external reward can foster better performance (Clifford, 1971). Other research indicates competition has little to no effect when coupled with complex problem solving tasks (Clifford, 1972; Clifford, Cleary, & Walster, 1972). According to Creswell (2013) it can be appropriate to identify a theoretical perspective to frame one's thinking in the analytic process. It is important to note, this framework merely *guided and informed but did not dictate* or pre-determine findings, which were emergent. Due to the classroom learning and competitive nature of CDEs, Self-Determination Theory (SDT) as well as literature around extrinsic and intrinsic motivation, provided the theoretical framework for this study.

Within the literature extrinsic or external motivation is defined as engaging in an activity for reasons not inherent to the activity and/or to attain something separate from the activity (Vallerand & Ratelle, 2002). Intrinsic or internal motivation is defined as engaging in an activity for the pleasure and enjoyment of it (Deci & Ryan, 1975). Russell et al. (2009) found teachers use extrinsic motivation to encourage students to participate in CDEs. They also discussed the need for further research into how intrinsic motivation can be used for CDE participants. Ryan and Deci (2002) utilized the Self-Determination Theory (SDT) to describe how intrinsic and extrinsic factors motivate people. The theory also describes what roles intrinsic and extrinsic motivation plays in developing people both cognitively and socially. "Self-Determination Theory begins by embracing the assumption that all individuals have natural, innate, and constructive tendencies to develop an ever more elaborated and unified sense of self" (Ryan & Deci, 2002, p. 5). SDT focuses on the assumption that people make connections within themselves and with other people and social groups; and on whether motivated actions are self-determined and controlled internally or if actions are forced by compliance (Deci, Vallerand, Pelletier, & Ryan, 1991). It is important to study CDE coaching from a motivation lens, because research has indicated that the source of motivation, whether internal or external, influences the quality of motivation (Kusurkar, Ten Cate, Vos, Westers, & Croiset, 2012). Further, within sports and coaching, motivation represents one of the most important factors for individual and team success and the use of motivation as a coaching strategy greatly increases outcomes (Vallerand, 2004). Thus, CDEs, as both an intra-curricular and competitive entity could benefit from a theoretical focus in motivation based coaching strategies.

Students who are extrinsically motivated behave based on rewards or expected outcomes. Although extrinsic motivation tends to have external causes, if these causes can be internalized the quality of motivation increases (Ryan & Deci, 2000). Students face many educational tasks in school settings whereby they lack internal interest and enjoyment, and are therefore more extrinsically influenced. The problem with extrinsic motivation is that an individual can perform behaviors or learning tasks with resentment, resistance, and disinterest. Russell et al. (2009) found CDE participants were motivated by rewards and success. Coaches use extrinsic motivation strategies such as verbal communication to encourage, reinforce, and self-regulate players' behaviors (Iachini, Amorose, & Anderson-Butcher, 2010). Given the literature base on utilizing extrinsic motivation in both teaching and coaching, and the intra-curricular nature of CDE's as both a teaching and a coaching (competitive) entity, it stands to reason that CDE coaches can utilize extrinsic rewards and extrinsic strategies such as verbal communication and reinforcements to help motivate students to participate in CDEs and to encourage behaviors within CDEs.

Intrinsic motivation is the internal desire to perform a task or behavior for its inherent satisfaction. Students are intrinsically motivated when activities are fun, challenging, or interesting, although not all students will be interested in the same activity and not all activities will interest a particular student. Intrinsic motivation is linked to high quality learning and creativity. Teachers can foster intrinsic motivation through specific autonomy strategies including: (a) identifying and nurturing students' needs, (b) letting internal thoughts guide student behavior, (c)

encouraging active participation, (d) providing structured guidance, (e) providing challenges, (f) positive and constructive feedback, (g) providing emotional support, (h) acknowledging students' negative thoughts, (i) communicating value in uninteresting activities, (j) providing choices, and (k) utilizing language such as "can, may, could" (Kusurkar, Croiset, & Ten Cate, 2011). Intrinsic motivation is also widely used in extracurricular activities and sports. Research indicates democratic behaviors displayed by coaches positively affects player autonomy and thus increases intrinsic motivation (Hollebeak & Amorose, 2007). Coaches use the following intrinsic motivation strategies: verbal communication through positive praise and public encouragement; constructing scenarios to allow players to hone skills and allow them to fail, for the sake of personal growth; and autonomy strategies to provide players opportunities in games, training, and practice to make personal choices, provide input to their team or captain, or develop personal responsibility (Iachini et al., 2010). Vallerand (2004) found the use of self-determined motivation or intrinsic motivation by coaches increases player performance.

Research indicates youth are more motivated toward and focused or attentive while participating in extracurricular activities as compared to the standard academically based school activities (Larson & Kleiber, 1993). Students focus better on challenging tasks when they have higher levels of attention and intrinsic motivation (Larson & Kleiber, 1993). Higher levels of attention also lead to prolonged experiences in the same extracurricular activity, which, in turn lead to mastery of the specific task or activity. Over time students adapt to ever challenging activities by adding layers of complexity to the activity (Larson, Ham, & Raffaelli, 1989). Ultimately, students are able to develop initiative to set immediate goals that transfer to motivated, goal setting behaviors in future endeavors (Larson, 2000). Involvement in CDEs could provide students with the same outcomes as other youth development activities. For instance, students with high intrinsic motivation and increased level of attention can progress from novice to mastery level learners in one CDE season. Achieving mastery level of a particular CDE content could help students develop initiative and goal setting behaviors for future applications. Thus, if CDE participation can lead to goal directed behaviors and intrinsic motivation, a need exists to further understand what coaching, learning strategies and motivational components lead to successful CDE outcomes.

This study was also analyzed with the theoretical perspective of Schunk's (2004) Model of Motivated Learning in mind. The model is a general model for learning and motivation that indicates pre-task, during-task, and post-task processes that impact motivation within a learning environment. During the pretask phase the focus of motivation surrounds setting goals and expectations and determining values, affects, needs, and social support. During the task phase the focus is on instructional variables, contextual variables, and personal variables. The posttask phase is a period of self-reflection and focuses on reflecting about the attributions, goals, affects, values, and social support related to the task. This model follows the continuous task for preparing CDE teams, thus added to the theoretical perspective of the researchers.

### **Methods**

This study directly aligns with the Agricultural Education's National Research Agenda for 2011-2015. Priority 3: Sufficient Scientific and Professional Workforce that Addresses the Challenges of the 21<sup>st</sup> Century, call for, "developing the models, strategies, and tactics that best prepare, promote, and retain new professionals who demonstrate content knowledge, technical competence, moral boundaries, and cultural awareness coupled with communication and interpersonal skills" (Doerfert, 2001, p. 9). This qualitative study was an intrinsic case study (Stake, 1995), which sought to better understand the particular case of students on CDE teams preparing for state competitive events in a school with a previous exemplary track record of winning multiple state and national CDEs. Due to the previous success of this particular case, the researchers were interested in studying the "what" and "how" of this intrinsic case (Stake, 1995).

Each researcher was formerly an agriculture teacher and FFA advisor and began the study by acknowledging the multiple realities and potentially contradictory viewpoints associated with their prior experience and the experiences of the participants.

The case of interest was the Biltmore High agriculture program, a large, Midwestern, suburban multi-teacher program, which was chosen as a purposive sample to best inform researchers about the probability of mastery level learning occurring during CDE involvement (Creswell, 2013). Biltmore High is located in a town with over 110,000 residents and offers over twenty-five courses with traditional animal, plant and mechanics emphasis. The agriculture courses at Biltmore High are stand alone, semester units, with students moving in and out of the program every semester. Some students enter agriculture courses their senior year, with no previous involvement in the agriculture program or FFA. The program maintains a roster of approximately 500 students between two high schools and a career center in courses and approximately 100 students in the FFA program. For this case study, the researchers conducted in-depth interviews and field observations with one of the four teachers who were in the process of preparing several different CDE teams for state-level competition. This particular teacher was selected based on his years of experience, continued success through his years of teaching, and various types of CDE teams prepared. The teacher prepared four CDEs in the spring, practicing after school three nights per week, and took students to approximately eight practice CDEs on the weekends. Over the past ten years the program has accumulated 31 state CDE titles. The researchers investigated CDE preparation methods, events, and experiences to explore the learning process of preparing for CDEs.

Each researcher individually researched a separate CDE team; they separately interviewed six students and the agriculture teacher multiple times from January until May. Each student was interviewed three to five times for a total of 46 student interviews, each lasting 5 to 30 minutes. The agriculture teacher participated in three interviews and the school administrator in one interview, each lasting 45 to 60 minutes. The process of conducting multiple interviews with multiple sources allowed for data saturation. Additionally, the interviews were conducted over the entire CDE preparation time period, which allowed data to emerge relating to changes in preparation and motivation as the students developed. The researchers conducted 10, 8, and 23 interviews for all three rounds respectively. All interviews were audio recorded and transcribed verbatim. Additionally, 36 hours of field observations were conducted and typed as logs. Two program documents and an online CDE scoring system were also analyzed. Finally, the researchers conducted reflective observations of the student teams during the state level CDEs. All three data sources were triangulated to corroborate the findings (Creswell, 2013).

The researchers utilized the constant comparative method for data analysis (Glaser & Strauss, 1967). The total data analysis process included three rounds of analysis, transforming data into categories, themes, and sub-themes. The researchers began the data analysis process by reading the data sets and identifying emergent themes. The researchers separately analyzed the interviews and observations they conducted, and then collectively analyzed the categories and themes which emerged. The purpose statement guided the open coding phase. This open-coding phase produced seven emergent themes. Two emergent themes were identified for further investigation: learning and motivation. The researchers then constructed two research questions that reflected the emergent themes. Semi-structured interview questions for each of these themes were used during the second set of interviews. Researchers began round two of data analysis after the second round of interviews. The researchers looked for evidence of student learning and student motivation throughout the entire data set. Categories were developed which reflected the emergent themes. Five categories were agreed upon by the researchers and used to formulate questions for round three of interviews. Researchers independently analyzed the full data set and recoded for each category. Representative examples and sub-themes were identified and later agreed upon by

the research team, and the resultant findings consisted of two broad themes each with two sub-themes. Trustworthiness was upheld through triangulation of data sources, comparison of emerging themes and subthemes, member-checking, and maintaining a continuous coding audit trail. Credibility was established through peer debriefing and investigator triangulation at various stages in the research (Lincoln & Guba, 1985).

## **Results**

From the data, two major themes Motivation and Performance Strategies were identified as the ways in which the coaching/learning environment transpired. In addition, the Motivation theme was shaped into two sub-themes (external and internal influences), and the Performance Strategies theme was divided into two sub-themes (coaching and learning strategies). Pseudonyms were utilized to represent the participants.

### **Theme 1: Motivation**

Throughout the course of the CDE season, the use of both external and internal motivation was the key to the success of the teams. At the beginning of the season, external motivators helped to encourage participation and as the season progressed a shift occurred within the CDE team members where more internal or self-determination was driving their actions and learning.

**Subtheme 1A: External Influences.** Students at Biltmore High School experienced multiple external influences throughout the course of their CDE experience. Many of these external influences were physical rewards students could receive from being successful. One of these rewards only came if the team could achieve the ultimate success, winning a state championship, and thus receiving a state champion jacket. Another external benefit students received was \$1000 scholarships, if the students placed high enough within the state individual rankings. Ann stated, "...there's a lot at stake as far as top three in the state get \$1000 (scholarship). If we win state, we get a jacket". Additionally, external influences such as the desire to make the cut of the final four team members (who were allowed to compete at the district and state levels), participating in resume building activities, and being recognized at the annual chapter banquet each motivated students to participate and be successful within their respective CDE teams.

In addition to tangible rewards, students were also motivated to maintain performance during the CDE season by other external motivators. A considerable amount of external motivation came from the people associated with the CDE team including teachers, friends, family, the FFA chapter, and other members of the CDE team. Regarding the people who influenced her Tracy said, "I would say Mr. Hanley [teacher] and my brother, because Steve won it two years ago and he went to nationals too." Members on the current year's CDE team were driven to be successful by the desire to outscore or out achieve the prior year's team. Other team members had siblings on former CDE teams and wanted to outperform them, as well. As the CDE season progressed, members monitored how other teams in the same competitive area were scoring across the state and this drove them to continually strive to outscore those schools. Members of the Biltmore CDE team also compared their individual scores to the other members of their team to achieve the highest individual score within the team. Thus, it was interesting to note the ways in which these winning CDE teams were motivated by the human external forces. Namely, trying to out-perform another school, a sibling, the past year's team within the same school, or even individuals on the same team, students preparing for competition on these highly successful CDE teams kept past performances in mind.

It was clear from the interview data, that Mr. Handley played an integral role in motivating the team members. Furthermore, the types and nature of the motivation he drew upon transformed as the CDE preparation season progressed. For example, during the early practices, it was observed

that he hooked members and got them enthused about the team through more external rewards and factors related to scores, jackets, and winning trophies. Once the teams began experiencing success, and had achieved those external rewards such as district and even state titles, his motivational style progressed to a more internally oriented manner of motivation, as explored in subtheme 1B.

**Subtheme 1B: Internal (Personal) Determination.** As the students progressed through the CDE season and became more comfortable with the content, the interview data reflected a shift in their sources of and strategies for motivation. The teacher focused less on the external motivating factors, and began developing students' internal motivation. During this process, the teacher and team members focused on rewards, but more on rewards that could be internalized by each member. Some of these internal rewards consisted of developing their abilities to try something new, interacting with new people, forging new friendships, and developing expertise in the CDE content. Kasey said, "Like everybody might have that background knowledge, but when you take one of these teams, that's when you become an expert on these topics". Pride, accomplishment, glory, ego, and personal growth were other internal rewards that developed within each student individually as the team became more successful. To be true to the core values of CDEs, members of CDE team saw internal rewards related to their career interests including: (a) developing science related knowledge, (b) gaining practical knowledge for everyday life, (c) increasing job potential, and (d) developing skills connected directly to future career goals. Kasey stated, "I knew I wanted to do something kind of involved in Ag, but I didn't quite know what. And I knew I liked being creative, and [the CDE content area] fits that."

For CDE teams to be successful individual team members must devote a focused and sustained effort for study and practice time. Through the interviews and observations it was noted that the Biltmore teacher developed that internal motivation within all team members to dedicate time outside of practice or class to develop their skills. Ann discussed why she studied outside of practice, "...because I want to be successful on the team and I know if I do this I will..." Mr. Handley was also able to motivate students by creating a fun, yet challenging team centered environment. Kasey said, "You learn an overwhelming amount of information, but it's such a fun way that you don't even realize it's happening." He also sought out students who were already highly motivated and driven to succeed. These highly motivated and driven individuals helped to push and motivate the other members to work just as hard as the rest of the group. In that manner peer motivation enhanced the internal motivation of students to sustain goal-driven behaviors.

## **Theme 2: Performance Strategies**

In regard to performance strategies interview data revealed the successful Mr. Handley employed coaching and learning strategies to influence the performance of his CDE teams. These not only included developing learning strategies for all members of the team, but also using the competitive environment to increase performance.

**Subtheme 2A: Coaching Strategies.** It was revealed from the findings from these highly successful CDE teams, that strategic planning and development was a critical element of creating a competitive environment and competitive team members. This finding was parallel to the many strategies that coaches in the athletic professions utilize and was reflected in a team member's comment. Ann said regarding the feel of CDEs, "In contests, it's equivalent to sports in the FFA world." To create a competitive environment Mr. Handley recruited more than four members for each team and then reduced the number down to four before the district contest. The members who were recruited all had previous sports experience and/or other competitive experiences. In short, his strategy was to recruit highly competitive individuals to the team in the first place, and to recruit more members than the final group so that much like with a sports team, the highest performers were competing. Mr. Handley also developed focused and engaged practices, was serious when

needed and dedicated much of his time to preparing and running CDE practices. Carrie said, "I like that it's very focused and serious. We joke and goof around, but it's very central and you learn this stuff. You go away knowing more than when you came." Even though practice was focused and serious, a non-stressful environment was created for CDE members to fail and not be ridiculed. Although members were not ridiculed, the coach pointed out when students were not working hard or studying outside of practice. Mr. Handley also focused on having the students create individual and team goals for the season. Finally, he had a specific strategy for completing the contest, and he taught his students this strategy explicitly. Ann said, "...he said a few times that you don't need to rush, but he's not 'be the last one done' type of deal. He always says, *"You have plenty of time."* Mr. Handley entered a "Contest Zone", when working with his CDE teams. The team members discussed how his strategies would shift and he would become more focused and driven during the course of the CDE season. Successful teams and their coaches have a game plan, and it was clear from the findings of this case, that Mr. Handley had a very clear and explicit game plan for success as illustrated in the way he ran practices, the nature of the content he delivered, and even in how he encouraged individual team member development.

Although strategy was very important to competition, creating relationships with CDE members was just as important to Mr. Handley. To develop these relationships he showed he cared about the members, about their success during the CDE season, about their success after they leave high school, and about the total school-based agriculture program. Ann said, "He cares a lot about the Ag program and about your success as a student and about preparing you for the real world". The environment was a comfortable and caring one, where personal connections between the teacher and team members were fostered. Through this comfortable environment students developed feelings of mutual pride, respect, and confidence. Even though cutting the team down to only four members was a strategic move, Mr. Handley emphasized a team effort and after the cuts were made the team members became closer. Ann said, "We are a team now, we are not competing against each other, we are competing together and so your team is only as good as your weakest player."

**Subtheme 2B: Learning Strategies.** Though competition can become of the focus of CDE teams, the learning experience of the students was a key component of the performance strategies noted for teaching and coaching this highly successful CDE team. At the beginning of the CDE season the locus of control for the team practice was through the teacher himself. He centered the team around him to shape the learning environment. He directed the learning, so in order to transfer his extremely high content knowledge to the novice team members. Even though Mr. Handley was an expert in the subject, he was able to make the details and thinking behind the concepts visible to the novice students. Kasey stated regarding Mr. Hanley's expert knowledge, "He really helps you look at the smaller details to everything and helps you break it down and narrow it down to what the plant would actually be or what anything would actually be." He also developed connections among different concepts, related these concepts to real life, and then related them to the students through the content. Mr. Handley utilized a wide range of learning and teaching strategies to help transform students as more experts in their knowledge of the subject matter. As students made this transition he noted these changes and made changes to his teaching and coaching methods including shifting to more repetition and review. The data revealed a number of ways he shifted the locus to internal motivation and a student-driven learning environment. Mr. Handley would increase student autonomy to increase internal motivation. To do this he would allow the students to direct the learning, provided choices for the students to make regarding what and how concepts would be taught, and encouraged students to ask questions. Additionally, Mr. Handley encouraged team members to work and learn together. Team members relied on each other, to help either catch students up who were not able to make a practice or during extra practice time when he was not available. Ann stated regarding teaching another member of the team:

Like we'll bring the bucket in here, and I'll just repeat what Mr. Hanley had said and give her my notes. So that's kind of more practice for her, just going through the twigs one more time. You can only memorize so many things, but once you have it in front of you, you start to adapt and remember what the twig looks like.

The teams also prepared for the competitions together, in something similar to a cooperative learning environment. Much of the learning responsibilities were placed on the team members toward the end of the season, although Mr. Handley did check in with the team the night before the state competition. It was interesting to note that even though the team members felt competent enough about the CDE content to teach each other and even after they won the state CDE competition, all team members still did not feel like experts. Ann stated:

I think there is always more that you can learn and more you can remember and I feel like the moment I take a break and that I don't look at, at least one contest or I don't look at, at least one test or at an ID (plant identification) I'll struggle the next test that we do.

The feeling of not being an expert was crucial to ensure the CDE team members would continue to focus on developing their knowledge up to and through the state competition. With this shift in the locus of control, students became more responsible for their learning and more connected to the success they wished to achieve. Finally, they consistently recognized that there was more to learn, never felt entirely “expert” in the process, and thus became continual learners about the CDE content.

### **Conclusions**

It was concluded that motivation was inherent to coaching and teaching exemplary CDE teams. First, the Biltmore teacher used external motivation to initially encourage students to participate and enhance interest in the CDE content. After students developed a deeper desire to succeed, he shifted to more internal motivation strategies. The use of intrinsic motivation to increase positive outcomes is consistent with previous athletic research (Vallerand, 2004). The shift in motivation from extrinsic to intrinsic is reflective of Self-Determination Theory (Ryan & Deci, 2000). Within this model human motivation tends to fall within a specific locus of causation but can change as an individual becomes more self-determined and autonomous.

Even though CDEs are competitive events, it was concluded teaching and learning, in addition to coaching, were major motivators for these CDE teams. One of the primary learning strategies used by Mr. Handley was instruction and the transfer of knowledge. This is consistent with previous CDE coaching literature (Falk et al., 2014; Voigt et al., 2013) and athletic literature as well (Iachini et al., 2010). Previous studies found both exemplary CDE teachers and athletic coaches utilized instruction as a key coaching strategy. As this transfer of knowledge occurred during the CDE competition season, the teacher shifted the coaching and learning process from a more teacher directed to a more learner directed experience. This transition reflected Schunk's (2004) Model of Motivated Learning. The model for motivated learning is a cognitive model, which focused on the motivation of the learning during pretask, task, and posttask (Schunk, 2004). During the pretask phase the focus of motivation surrounds setting goals and expectations and determining values, affects, needs, and social support. During the task phase the focus is on instructional variables, contextual variables, and personal variables. The posttask phase is a period of self-reflection and focuses on reflecting about the attributions, goals, affects, values, and social support related to the task. As indicated in the model, the pre-task or prior variables to CDE preparation included sibling rivalry, prior CDE successes and reputation, pride, and peer support systems. Once CDE preparation began, the during task variables included teaching, rapport, commitment to team, individualized learning strategies, and student becoming content experts.

In addition to motivation learning strategies, it was further concluded that multiple parallels to coaching strategies shaped this successful CDE team. Initially, the SBAE teacher created a competitive environment for members, where students were competing against one another to earn a spot on the team. As the CDE team formed and began competing with other schools, Mr. Handley shifted to a more cooperative environment. Throughout the CDE preparation process he created focused and engaged practices, had the team and individual members set achievement goals, and established a mutual caring and positive environment. All of those strategies are consistent with previous CDE research on the strategies utilized by CDE coaches (Bowling & Torres, 2010; Voigt et al., 2013).

Finally, it was also concluded, that a combination of approaches and strategies led to the success of the Biltmore CDE teams investigated in this study as articulated via the following conceptual model, CDE Coaching Strategies Model (see Figure 1). This conceptual model illustrates the use of motivation and performance strategies through a continuum to prepare a successful CDE team. Within this model motivation and performance strategies work simultaneously to encourage student success. Within the motivation component of the model, the student’s motivation can be shaped by external influences, however as the student progresses through the competition process, motivation shifts to more internal influences and drive to succeed. Teachers working with CDE teams can observe where their students are within the external/internal motivation continuum and adjust their teaching and coaching strategy accordingly. Within the performance strategies component of the model, teachers utilize specific strategies for performing the tasks related to mastering the CDE or its content. Through this process, as students are more novice to the content and have less mastery, teachers should be more focused, knowledge driven, and teacher directed. As students master the content, coaches can employ more cooperative, and learner centered strategies for practice sessions.

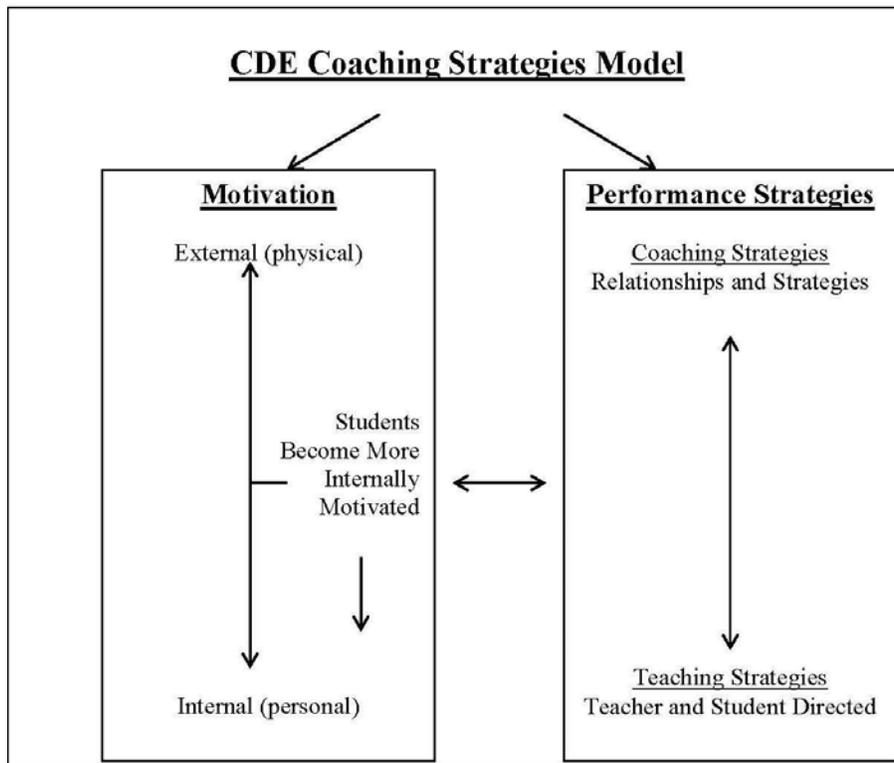


Figure 1. CDE Coaching Strategies Model

### Implications

It is important to revisit that the purpose of this study was not to generalize the findings to other CDE coaches but to better understand this exemplar case. This exemplar case has provided insight on how a previously successful coach utilized both motivational and performance based strategies simultaneously when preparing CDE teams. From the findings of this study an important dialogue can begin among practicing agriculture teachers, state staff, and teacher educators to better conceptualize the CDE coaching process. Additional conversations can focus on how to properly disseminate these strategies to pre-service and practicing teachers. Teachers can benefit by using these research-based strategies to decrease stress and less the felt need for CDE professional develop by enhancing their current practices. Additionally, students can benefit through these enhanced teaching practices by potentially increasing their learning, performance, and situational intrinsic motivation levels. Collectively, all who engage in CDEs can potentially benefit from the conceptualization of the CDE coaching process.

### Recommendations

From these conclusions and implications, it is recommended further research be conducted on the behaviors used by this exemplary teacher and CDE coach to see if similar behaviors exist in others using the CDE Coaching Strategies Model as the framework. Research is also needed to examine specific strategies and/or patterns among successful teams across all CDE areas. Previous research focuses either on specific CDE areas and/or specific teacher perceptions, yet little is known about whether such strategies are content and context specific or if they can be translated to working with CDE teams in general. Research studies should also investigate student variables, which could contribute to CDE success. Finally, studies should be conducted to more clearly articulate the intersection of student and teaching and/or coaching variables to CDE team success. In other words, how much of CDE team success relies on students or on the teacher's ability to use motivation and performance strategies? Findings from current and future CDE coaching studies can inform SBAE teacher practices through teacher development workshops on research based teaching and coaching strategies.

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