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Pandemic Pedagogy: How Early Career Agriculture Teachers Reflect on Their Practice

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Abstract

In a struggle to cope with school closures and shifting instructional paradigms from face-to-face to virtual, agriculture teachers across the United States were drastically impacted by the COVID-19 pandemic. We sought to understand how early-career agriculture teachers (ECATs) in California reflected on their teaching experience before and during the transition through February, March, and April 2020. Our work was guided by Pedagogical Design Capacity (Brown & Edelson, 2003) and the Discovery Learning® Change Process Model (Musselwhite & Jones, 2010) to explore the lived experiences of ECATS during the initial transition from face-to-face instruction to Emergency Remote Teaching (ERT). In this qualitative inquiry, the data illuminate how ECATs in California spent time reflecting on their reactions to mandates with raw emotion and how they are driven to change their teaching practice in novel ways. The data further reveal how ECATs cope with crises while supporting the fundamental socio-cultural needs of their students. The data lead us to better understand how ECATs leverage their networks and curricular resources to keep their students engaged in the absence of the traditional in-person instructional environment. The ECATs in this study also exhibited tendencies of resilience that impacted their experience during this teaching transition. Recommendations are discussed around understanding the process teachers undergo, triggered by a traumatic event, to return life to some form of homeostasis for themselves and their students.

Keywords: COVID-19; pandemic; early career agriculture teachers; pedagogy; resilience, crisis

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Introduction/Theoretical Framework

The mode of instruction used by many teachers was disrupted by the California Governor's Executive Order on March 19, 2020 (Exec. Order No. N-33-20, 2020). In the interest of public safety due to the COVID-19 pandemic, all state residents were ordered to "stay at home or at their place of residence except as needed to maintain continuity of operations of the federal critical infrastructure sectors..." (Exec. Order No. N-33-20, 2020, p. 1). In early spring, as the pandemic was hitting its first peak, the virus consigned nearly all of over 55 million US school children under the age of 18 to remain in their homes (Gracia & Weiss, 2020).

The Executive Order affected the entire education system but may have had a significant impact on early career agriculture teachers (ECATs). The literature suggests there are several job-related tasks that are a part of agriculture teachers' identities (Talbert et al., 2005; Terry & Briers, 2010; Torres et al., 2008), and due to immediate removal from those tasks, novice agriculture teachers may be vulnerable to impacts from this circumstance. In response to the stay-at-home order, school-based agricultural education (SBAE) programs were expected to instantly transition to instruction online (Easterly et al., 2021), causing an instantaneous ripple of change in the pedagogy of agriculture teachers. Milman (2020) expressed that,

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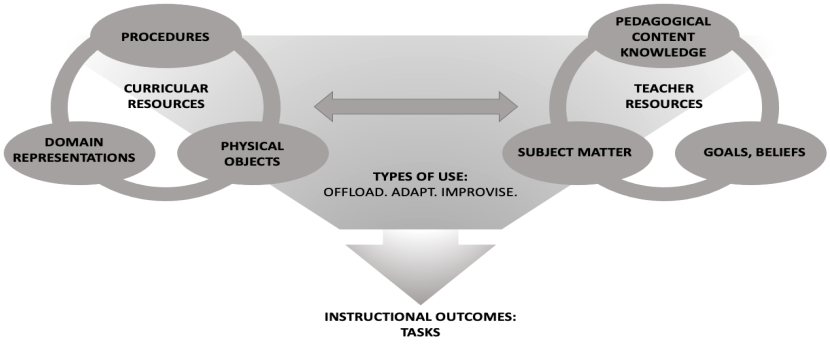
"These are not normal teaching and learning conditions. What we are experiencing now is emergency remote teaching..." (p. 1). He went on to describe emergency remote teaching (ERT) as educators' teaching, in this instance, suffering because they "do not have ideal conditions to offer well-planned, quality instruction." Researchers have gone further to discuss the difference between ERT and online instruction, noting that "ERT is a temporary shift of instructional delivery to an alternate delivery mode due to crisis circumstances" (Hodges et al., 2020, p. 6).

Historically, ECATs are vulnerable to the impacts and changes experienced in the profession during their first few years with respect to how they spend their time (Lambert et al., 2011) and their changing levels of self-efficacy (Swan et al., 2011). Researchers also understand that early-career teacher stress, and resulting mobility, are linked to the resources they perceive as available to support their teaching (McCarthy et al., 2020). Given the crisis-related conditions of ERT and the vulnerability of early career teachers, we chose to focus on the subset of early career agriculture teachers (ECATs) to understand their lived experiences during the onset of the COVID-19 pandemic. Our goal was to understand the immediate, varied, and drastic shift to ERT through the first few months of the pandemic.

We framed this study to consider that agriculture teachers intuitively, regardless of circumstance, invest in their craft to be knowledgeable about their content, skilled in pedagogy, and constantly learning to remain relevant. We enlisted the theoretical framing of Pedagogical Design Capacity (PDC) advanced by Brown and Edelson (2003) and the additional lens of Musselwhite and Jones' (2010) Discovery Learning® Change Process Model (DLCPM). PDC (Figure 1) posits that teachers have "an ability to perceive and mobilize existing resources in order to craft instructional contexts" (Brown & Edelson, 2003, p. 6). According to Brown and Edelson (2003), the outcomes of instruction are based on how teachers leverage curricular and individualized teacher resources to either adapt, offload, or improvise [sic] a lesson. On one end of the spectrum, a practice of *offloading* is exhibited when teachers rely heavily on the curriculum with little of their input to implement the lesson. On the other end of the spectrum, *improvising* [sic] is exhibited when a teacher utilizes curricular resources as a starting place but relies heavily on their resources to implement a lesson. In the middle, *adapting* describes a scenario where the teacher adopts certain curriculum elements and contributes personalized elements to implement a lesson. In agricultural education, researchers have used PDC to explore how agriculture teachers in various states use curricular resources (Easterly & Simpson, 2020; Kelsey et al., 2020). Kelsey et al. (2020) support the view that ECATs teach along this spectrum, depending on the type and structure of curriculum at the foundation of their teaching style. Examining our data through the PDC lens helped us understand how ECATs leverage curriculum and personal resources to shape their teaching during a pandemic.

Figure 1

Pedagogical Design Capacity Model

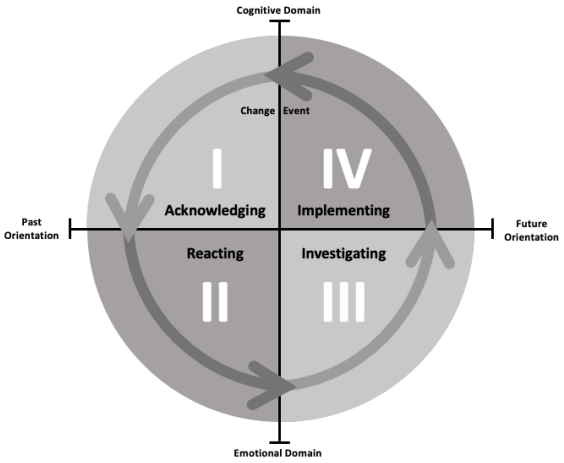


Note. Adapted from Brown and Edelson (2003).

In order to understand the process that takes place for ECATs to shift their pedagogical practice entirely, we chose to enlist the lens of the DLCPM (Musselwhite & Jones, 2010). The DLCPM, as advanced by Musselwhite and Jones (2004, 2010), takes the body of literature on change processes (both professionally and personally) into account when examining the stages a person goes through after a life-changing event (in this case, the pandemic). As seen in Figure 2, Musselwhite and Jones (2010) integrated the work of Kubler-Ross (1969), Scott and Jaffe (1988), and Spencer and Adams (1990), among others, to arrive at four stages of change processes: acknowledging, reacting, investigating, and implementing. Musselwhite and Jones (2010) described two transitions in this model: moving from past (acknowledging to reacting) to future (investigating to implementing) orientation, and shifting from cognitive orientation (acknowledging) to emotional (reacting and investigating) and back to cognitive (implementing). The DLCPM framed our understanding of how ECATs experienced the changing teaching landscape concerning their cognitive and emotional states on a temporal continuum.

Figure 2

Discovery Learning® Change Process Model



Note. Adapted from Musselwhite and Jones (2010).

Taken together, PDC and DLCPM help explain where ECATs' pedagogical capacity rested before and after the initial phases of the pandemic and how ECATs experienced the change event to shape their teaching post-onset of pandemic restrictions. By combining these theoretical and conceptual frames, respectively, we can paint a picture of how the pandemic may have impacted ECATs' emotional and cognitive domains for change and how they leveraged resources (e.g., curriculum, time, people) through the process. Together, these frameworks inform a perspective about how the stay-at-home order may have influenced ECATs' experiences during the COVID-19 pandemic to stabilize their teaching practice.

Purpose

The purpose of this study was to explore how ECATs in California coped with a crisis-prompted changing paradigm in education. Their coping ability was gauged through reflections on their experience within a formal induction (mentoring) program. We sought to answer the following research question: How do early career agriculture teachers in California reflect on their teaching experience during the shift in teaching context from face-to-face instruction to emergency remote teaching due to the coronavirus pandemic?

Methodology

To best understand the lived experience of individuals who participated in this study, a qualitative method of inquiry was enlisted. Denzin & Lincoln (2005) supported this tactic stating "qualitative research is a situated activity [locating] the observer in the world" (p. 3). To situate ourselves in the world of the ECAT, we made observations of written reflections during the transition from in-person teaching to the varied forms of remote teaching. Our approach is best defined by phenomenological research methods in a hermeneutic phenomenology (Creswell & Poth, 2018; van Manen, 1990). At its root, phenomenological research is implemented to understand the essence of meaning for the subject under study.

The sample for this study was drawn from ECATs in the California Agricultural Teachers' Induction Program (CATIP), a mandatory mentoring experience for beginning teachers. After completing an initial teacher preparation program, the induction program serves as a formalized mentoring experience. The induction program also assists ECATs in completing final obligations to clear their teaching credentials after their second year of teaching. Following consent and cleaning of data, there were 156 usable data points among 52 different ECATs. Twenty-six of the individuals were in their first year teaching, and 26 were in their second year teaching at the time of submission. In addition to demographic data, the geographic region of teaching was collected to gain perspective from all six regions of agricultural education in the state.

The data collected for this study were from written forms (i.e., Weekly Conversation Logs) completed each month (February, March, and April) by the ECAT. Reflections from three different collection points were explicitly chosen to understand how ECATs reflected on their lived experiences and related conversations with their mentors before school closures, at the moment of school closures, and during the initial month of ERT. ECAT reflections were isolated from the larger document and uploaded on the Dedoose® social science analysis platform. Participants and reflections were reidentified with a pseudonym to maintain anonymity in presenting the data and findings. Data analysis was driven in two main phases espoused by Maxwell (2013): an initial open coding phase for an organizational understanding of the data and a more substantive thematic analysis of the descriptive content within each code area. Four of the five authors were tasked with the qualitative data review, and weekly conversations were held to discuss general and granular findings.

The initial analysis yielded 14 different codes that served as the basis for our review of the data. To calibrate the code application, we applied the codebook to a dataset not included in the study. After calibration, the team met weekly throughout the data analysis phase to discuss code application and recalibrate where necessary. Through this process, we collectively expanded our codebook to 18 parent and child codes. After open coding, the research team conducted a substantive thematic analysis (Maxwell, 2013) on five code areas with the most notable changes in code applications over the study period (*reaction to mandates*, *adapting to technology*, *negative emotional response*, *adapting pedagogy*, and *time management*). This substantive thematic analysis phase yielded the primary inductive themes presented in the findings.

In the substantive thematic analysis phase, reflections from ECATs over the three-month study period yielded multiple themes that shed light on understanding ECATs' lived experience during the shift in teaching context from face-to-face instruction to emergency remote teaching due to the coronavirus pandemic. From the 156 reflections, 2,915 excerpts were coded (Table 1); 863 for February, 1064 for March, and 988 for April. We focused analysis on the code areas with the most remarkable change over the study period–measured by the standard deviation to answer our research question. The code frequencies are outlined in Table 1, sorted in order of standard deviation to show the most variation between code applications each month. A complete table is included in Appendix A.

Table 1

Code Application Frequency

Codes	February	March	April	Total	*SD*
Reaction to Mandates	13	149	85	247	55.6
Adapting to Technology	7	67	75	149	30.3
Negative Emotional Response	45	92	105	242	25.8
Adapting Pedagogy	12	59	66	137	24.0
Time Management	80	31	39	150	21.5
Emotional response (sentiment-based)	25	61	54	140	15.6
CDE/LDE Management	43	31	6	80	15.4
FFA Program Management	81	58	46	185	14.5
Positive Emotional Response	97	82	70	249	11.0
Classroom Management	68	54	79	201	10.2

Note. The top 10 codes are included here for reference. For a complete table, see the appendix.

Two different coders reviewed each data set to mitigate inter-rater bias on code application. One inter-rater reliability test yielded Pooled Cohen's Kappas (de Vries et al., 2008) between .53-.61 for all reviewers on all codes, which suggested a fair level of agreement on coding applications (Miles & Huberman, 1994). Two different training sessions were conducted to calibrate coding, and weekly meetings were held between all team members to discuss the codebook and application of codes to data. To increase the internal consistency of findings, we focused our meetings on calibrating code definitions and how we applied unique codes that fell below the fair level of agreement (<.51). The codebook was adapted and applied (or re-applied) as necessary. While every attempt was made to mitigate bias and calibrate openly during data analysis, we recognize inherent complexities with a qualitative inquiry predisposes the understanding of data to bias. Our methods allowed us to remain grounded in the data and guided by methodological practices rooted in literature (Merriam, 2009).

Findings

Reflections gathered from ECATs all told a general story about how they were thinking and acting toward the impacts of the pandemic. Their thoughts and actions are distilled into several themes. Among them, *reaction to mandates*, *adapting to technology, negative emotional response* (a subset of the parent code 'emotional sentiment'), *adapting pedagogy*, and *time management* showed the most notable changes. We found those changes set the context for a richer understanding as we approached answering our research question, which is one of process.

Reaction to Mandates

The *reaction to mandates* code yielded 247 total excerpts (*SD* = 55.6) over the three-month study period. While developing the codebook, we negotiated the definition of r*eaction to mandates* as "all discussion of mandates issued by federal/state/district/site/department levels." With the state's initial pandemic response, the frequency of this code application rose sharply in March and declined in April. This code demonstrated the most significant shift during the three-month study period. Examination of the reflection excerpts indicated the following subthemes.

Negative Emotion

In the early stages of the stay-at-home order, many ECATs expressed negative emotions concerning the general uncertainty and lack of communication surrounding their roles relative to the SBAE model. The lack of timely information supporting classroom instruction was of paramount concern. One ECAT shared, "I hope we get answers and more direction about how we can help our students during these uncertain times" (B22). Many ECATs felt distressed, worrying about students' physical and emotional health being isolated from the school campuses and their associated resources. As the stay-at-home order continued through April, the uncertainty amplified around the FFA and SAE components of the program. Teachers expressed their struggle with not knowing how to adequately advise students in training for career development events and supervise animal-based projects. Faced with an abandoned school farm, one participant found herself absorbing the care of three market lamb SAEs, which was a notable shift of added responsibility to the ECAT.

Adapt

Although the ECATs took the opportunity to emote, they did not remain in this space for long. The continuation of the academic year beyond the initial stay-at-home order prompted them to adapt their practice to the distance mode of delivery quickly. By integrating different technology tools, they transformed their teaching, some with reluctance and others with enthusiasm. One participant shared, "I wanted to create a sense of structure and familiarity in this uncertain time. Over the last couple of weeks, I have been playing around with Zoom and Google Classroom" (Y13). Another participant shared, "This month has been interesting, to say the least. There have been many changes on a day-to-day basis. We have been able to easily adapt and make things happen" (U14). The classroom was not the only space where adaptation was noted. Another ECAT, M24, pivoted supervision of her SAEs by integrating new safety protocols into show practices and worked with students to find buyers should the fair decide to cancel the annual livestock show and sale. In the realm of FFA, Google was a popular tool for the officer election process, and a variety of virtual meeting platforms supported programs in their end-of-the-year awards celebrations.

Frustrations

The extra work involved in transforming a hands-on program into a distance-delivery model, combined with the school's low expectations and accountability of student performance, fueled frustration. "Our district said we have to provide work for students to accomplish; however, we cannot require them to finish it. This seems so counterproductive" (B22). This sentiment was echoed by others who shared this approach resulting in only a handful of students completing their assignments. Additionally, several teachers admitted that the lack of student motivation was taking a toll on their own.

As if these challenges were not enough, cautious administrators added to ECATs' frustration with COVID safety plans that heavily imposed on ECATs' ability to execute their jobs. For example, limiting staff access to campus created barriers to utilizing materials and resources, making it more difficult to plan for instruction. "Our school has made it hard to use classroom resources such as tools in the shop. We are

only allowed on to the campus for two hours Monday or Friday, making it hard to film high-quality equipment demos" (Q14). These barriers were particularly troubling since career and technical education programs work with specialized equipment and technical processes not easily substituted.

Period of Mourning

While *frustrations* focused on the barriers teachers felt hindered them from fulfilling their responsibilities, the *period of mourning* revealed itself when teachers began to come to terms with losing the critical aspects of their jobs they loved. As the stay-at-home order continued, it became apparent that many of the events on their program calendars would be canceled. The cancellations triggered a mourning period as teachers came to terms with the loss. "I enjoy this profession because of all the additional opportunities the FFA provides to students, and with all of those opportunities getting canceled or postponed, it is very discouraging" (E13). The school-based agricultural education (SBAE) model (Classroom, FFA, and SAE) make the career unique. Without FFA meetings and county fairs, many reflections drifted to their reasons for choosing to teach agriculture. One teacher went so far as to say the cancellations were "taking away from the enjoyment of my job" (E13).

Renewal and Appreciation

Over the study period, ECATs demonstrated an appreciation for their community relative to social connections and resources. Their relationships with department colleagues and other campus teachers were critical to changing their practice and coping with the many challenges they faced. Students remained central to ECAT's concerns and motivated them to craft new approaches to creating community and designing engaging learning opportunities. One teacher realized that "agriculture education is NOT the most important thing on campus," (P23), which became a transformative paradigm shift. Seeing the staff work together to meet the essential needs of the student community inspired them to set new goals to intentionally get outside of the department and connect with the broader campus community.

Adapting to Technology

In analyzing the code frequency for *adapting to technology*, it became apparent that ECAT's felt increased concern from February to April, with code application increasing 971% over the study period. Through a total of 149 applications (SD=30.3), the greatest increase came between February and March. We applied this code when mentions of how teachers and students adapt to technology through programs, time management, and tools/materials arose. During the throes of the pandemic, adapting to technology became a lifeline to their students. Excerpts revealed facts about ECATs' challenges, ways they addressed these challenges through networking with peers, and how they utilized online resources to create novel lessons to engage students in a virtual environment.

Challenges

Countless hours spent preparing the online curriculum, lack of student engagement, and reliance on technology were some of the challenges ECATs confronted. Many of the goals they established early in the year came to a grinding halt, exemplified by one ECAT writing, "unfortunately, all my goals and plans for last month went out the window, and now I'm trying my best to adjust to moving my curriculum online and working from home" (I23). Another ECAT framed their challenges with adapting to technology by writing, "engaging students in a wholly new platform is exhausting and requires that we relearn how to teach and reevaluate how we go about education" (D24). The stress and anxiety felt by ECATs as they attempted to engage their students in online learning were identified easily throughout their reflections. Though countless hours were spent, some teachers were not able to connect with students at all. One ECAT expressed, "I have offered to meet with my students in Google Meet, but no student has wanted to do that. I explained their assignments on Google Classroom and my expectations. I am trying to keep it light so

they are not overwhelmed" (B24). The ECATs' challenges of adapting their teaching with available technology proved to be cumbersome but not insurmountable.

Moving Forward

After the initial shock and awe of the stay-at-home order, ECATs began expressing optimism and building new plans. One ECAT wrote, "I am doing fine with the adjustments of online learning and feel I am doing a pretty great job with teaching my students through videos and interactive documents" (G23). Some ECATs expressed a growth-oriented trajectory for their teaching, exhibited by a certain level of belief they felt in their evolving teaching practices. One ECAT captured this growth-oriented belief as they wrote,

> Distance learning has been a challenge and semi-fun. I miss being in the classroom and being able to encourage my students to do well in person, but with technology, I still have kept in touch with over 80% of my students. Creating meaningful templates and ideas to keep their notebooks going has been a fun challenge and has given me plenty of time to make plans for notebooks next year! (R24)

A majority of ECATs expressed some benefit to the development of curriculum and teaching practice provided by the chaos of the transition. Their expressed benefits were optimistic.

A Suite of Resources

In developing new instructional plans with technology, ECATs focused most on the variety of online resources that helped them adapt quickly to ERT. Their reflections referenced numerous online resources: Zoom, Google Classroom, virtual labs, interactive notebooks, Flipgrid, EdPuzzle, iCEV, and YouTube. One teacher stated, "I have learned numerous resources that I utilized for the enrichment activities I am required to assign on Google Classroom to boost students' grades and keep them motivated in education" (A24). Another ECAT reflected that "I'm continuing to have Zoom office hours for students, where I do wellness checks with them and see how they are mentally" (I24).

ERT also created a paradigm shift in the development of new pedagogy. One ECAT expressed this new mindset and technology-based approach by writing,

> It has been my first full month with distance learning. I have switched from a mindset of full-time teaching to a mindset of crisis management and providing equitable access to meaningful learning for all of my students. This means switching away from direct instruction and adopting a student-centered, project and technology-based approach. (R14)

These excerpts help shape an understanding of how ECATs experienced the shift in pedagogical capacity, often leveraging technological resources they may not have used otherwise, to continue engaging their students.

Negative Emotional Response

Reflections coded with *negative emotional response* nearly doubled by the end of the study period, with 242 total applications (SD=25.8). In total, the frequency of this code application increased by 133% over the study period. We defined this code as an array of emotions expressing concern, worry, decreased motivation, alarm, doubt, or anything portrayed in a less than positive light. ECATs expressed negative emotional responses in grandiose thesis sentiments related to the lack of social connection and student learning and engagement.

Thesis Sentiment

This theme resulted from the open and raw acknowledgment of overarching feelings for their lived experiences during the study period, often in very emotive terms. Thesis sentiments were often the mode ECATs used to summarize their negative experiences. Some reflected in succinct emotive statements such

as, "THIS MONTH IS WILD!" (M13) or "This month has been extremely crazy" (O13), where their overarching statement is then qualified with evidence of negative emotional response. In particular, one ECAT stated, "The past month has been full of pivoting, navigating new educational systems to continue to serve students," and followed up with

> Truth be told, I've had mixed success. Managing the progress of all of my students is challenging, but failure to do so allows them to slip through the cracks. I certainly am feeling the 'distance' in distance learning. It makes me sad to think about the regression of students I was just starting to get through to, but so proud of the unexpected success stories coming out of this situation. (N14)

In this excerpt, the individual found a way to spin the negative into a positive. The 'pivoting' thesis for this ECAT expresses the move from discord in student engagement and learning to focus on "unexpected successes."

Social Connection

Within the excerpts where ECATs engaged in self-talk around social connection, they reflected negatively about their students' lack of social and physical connection. Specifically, they missed social connections that influenced their feelings about the sudden shift from teaching face-to-face to virtual/hybrid. Some ECATs spoke simply, "I miss having the interaction with my kids" (U24), or "I think the biggest struggle for me is staying motivated while working from home and not having that in-person contact with students" (X14). Others spoke of how terrible and sad their experience had been. One participant evoked the most graphic representation of negative response through the following:

> I think, like most teachers, I'm worried about how they're doing if they're understanding the work and hoping that my students have a safe place to be. I think we take that for granted that not all of our students go home to a safe or supportive household. (O13)

The excerpt above expressed the sadness and anxiety some ECATs had with altered social and physical connections to students. Overall, ECATs reflected negatively about social connection when they could not have the social and physical contact they believed was a cornerstone of their careers in agricultural education.

Student Learning and Engagement

In conjunction with student learning, the most common themes were access—either to quality materials or access to any material—and accountability. The ECATs reflected that student learning was suffering because of a lack of accountability. In their eyes, when students do not have a constant accountability system/structure (usually physical), they disengage—as seen in the previous quote from O13. According to the ECATs in this study, and linked to student learning, engagement has to do with the level of involvement for students in class and involvement in co-curricular agriculture program events (i.e., FFA, SAE, CDE/LDE). ECATs use terms such as "challenge," "frustration," and "struggle" when they express concerns about student engagement. One ECAT wrote,

> I am finding it frustrating and hard to stay motivated when students aren't participating. Parents are being rude and not supporting the instruction we're supposed to be doing [sic] and all students do is complain that they can't figure it out but haven't watched the tutorial video I spent time on to help them get started. (W24)

When some ECATs reflected on disengagement in the classroom portion of their jobs, they turned their focus to FFA, SAE, and community events. They seemed to make this shift because they believed they had more authority in execution, and students took more interest in these facets of SBAE compared to the classroom. One ECAT wrote, "I have 16/145 students completing their home assignments to improve their grades. The assignment I gave them was a loose SAE project to be completed over the last six weeks of school" (Z14). This statement expressed the suffrage of student learning and engagement because of the shift to emergency remote teaching (ERT).

Adapting Pedagogy

Reflections coded with *adapting pedagogy* revealed that ECATs thought about adapting their teaching practice in different ways. Our team defined this code as "the active acknowledgment of adapting classroom practices or shifting pedagogical content knowledge." The frequency of this code application increased by 450% between February and April reflections, resulting in 137 total applications (SD=24). As ECATs reflected on their experience of the teaching shift to ERT, their reflections were distilled into two mindsets for adapting pedagogy: the struggle–usually a negative mindset, and the challenge–usually a growth-oriented mindset.

The Struggle

"The struggle" developed through those who wrote about adapting to technology and adapting pedagogy with a dearth of resources available to them. Generally, ECATs spoke about their difficulty–focusing on the negative and rarely growing out of that mentality. One ECAT resigned themselves to defeat, stating, "[students] mostly tell me that they are bored, so I started to have a tab on my Google Classroom with some other activities that will help keep them entertained (coloring sheets, puzzles, and other fun activities)" (B13). The tone of defeat in the "struggle" mindset related to impositions on their ability to teach by outside forces. The connection was made to school administration, policies, parameters, and limitations on ECAT's teaching practice. Another teacher reflected,

> Some weeks I struggle to find relevant material for each class I teach (Intro to Ag, Crop Science, Vet Science, Animal Science). It has been difficult since I have several students picking up work packets at the school since they do not have internet access at home, and the packets need to match the online work. (A14)

Resigning themselves to work packets was the strategy this teacher relied on, showing no ambition in their reflection to do otherwise.

The Challenge

ECATs who expressed adapting pedagogy in terms of a challenge expressed a certain air of motivation given through the opportunity provided by the pandemic, which expressed a growth-oriented mindset. Reflections were written in a tone of growth opportunities through strife. One teacher wrote, "distance learning is a blessing in disguise" (P23). In contrast to those associated with the "struggle," ECATs who aligned with the "challenge" wrote at greater lengths about their shift in pedagogy. In the latter example, ECAT's level of detail helped illuminate a better understanding of how they were experiencing the shift in teaching through the beginning of the pandemic. One ECAT wrote,

> It has been my first full month with distance learning. I have switched from a mindset of full-time teaching to a mindset of crisis management and providing equitable access to meaningful learning for all of my students. This means switching away from direct instruction and adopting student-centered, project and technology-based approaches. Each class is different, but I have been using EdPuzzle, Flipgrid, and a variety of projects and YouTube videos that students can access at any time, rather than direct instruction during our one-hour WebEx meeting each week. (R14)

Even amidst a shift toward "crisis management," ECATs tends to students from a student-centered perspective as they move away from direct instruction practices. Woven throughout the theme of the "challenge," ECATs noted the opportunity to serve their initial intentions for becoming a teacher, which was generally to support students and engage them in meaningful education. Another ECAT noted, "It may not be how we like to teach, but we have a duty to teach our students and support them in every way possible" (J14) as they referenced the characteristic of flexibility being an essential quality of a teacher.

Time Management

Time management was applied to an excerpt when ECATs wrote about planning or executing the management of their time relative to professional obligations (e.g., departmental, financial, clerical). Time management references decreased 51% over the study period, with a total application of 150 (SD=21.5). When ECATs wrote about time management, they primarily discussed how their time was being used concerning personal and professional obligations and impacts.

Within the time management theme, ECATs reflected on their time allocated in work-related and personal contexts. Prior to the start of ERT, ECATs heavily referenced time management outside of classroom activities. In February, one ECAT noted, "I have noticed the quality of lessons and planning to diminish from earlier in the year, and it is a personal goal to balance the FFA pressure with the responsibility of classroom expectations" (P22). The difficulties of time management regarding both the three components of agricultural education and work-family balance were echoed again in a pre-COVID reflection stating, "This month has been full of activities and planning. We've had multiple different community service events, FFA events, and different school projects this month, which have been extremely overwhelming. This month, I ran into full overload with work and my home life" (U12). A shift in how ECATs experienced time management became apparent in March reflections. The same ECAT wrote, "Being out of school for an extended amount of time and creating an online curriculum was not at all what I thought I'd be focusing on this month" (U13).

Still, ECAT's ability to prioritize tasks effectively was not clear cut, and they seemed to grapple with using time efficiently. One ECAT wrote, "my goal for the next month is to get back on track with planning lessons for each class as I feel I have been slipping a little in being prepared ahead of time" (A12). They also admitted that they could manage their time better but had not reprioritized time management after the shift in the teaching context. Another ECAT reinforced the struggle of reprioritizing time in the following excerpt,

> This month has been a learning curve. With that, I have had my ups and downs with being able to motivate myself and work from home and really get the things I need to get done in the time that I have been trying to schedule for myself. Sometimes I have been able to get things done ahead of my schedule, and other times it bleeds into the following week's tasks. (O14)

Multiple ECATs echoed this sentiment throughout the study who felt the scheduling changes and teacher expectations negatively affected their ability to manage their time. A first-year teacher wrote, "I feel I am getting a little messy in my field day practices because I don't have time to prepare for them as much as I would like. I feel like I am up to my forehead in paperwork and other things" (W12). Time management was at the front of many ECAT's reflections because of the central role in the quality of education delivered to students.

Overall, ECATs expressed severe reactions to the mandates imposed on their teaching during the three-month study period. The findings reveal many themes that exemplify how ECATs leveraged technology to adapt their teaching practices and accommodate students' needs during the shift in the teaching context. ECATs also had clear adverse reactions to the change in their teaching environment and how that impacted their ability to execute a quality educational experience for their students. Below, we frame our findings from the perspective of our theoretical and conceptual frameworks and discuss implications and recommendations.

Conclusions & Recommendations

The governor's stay-at-home orders related to the coronavirus pandemic demanded California's educational system reinvent itself overnight (Hodges et al., 2020; Milman, 2020). Despite consistent uncertainty in planning and barriers to access, teachers were faced with significant pressure to deliver instruction. While many teachers had years of practical experience to draw upon, early career teachers did

not. The purpose of this study was to examine ECATs' lived experiences, through reflection, during the initial stages of ERT. The data analysis revealed five main themes (*reaction to mandates*, *adapting to technology*, *negative emotional response*, *adapting pedagogy*, and *time management*), illuminating the context in which ECATs experienced the shift to ERT (Milman, 2020).

The ECATs began the study period planning for a typical spring in California Agricultural Education by training CDE teams, supervising students' SAE projects, and looking forward to celebratory events like the end of the year FFA banquet. The pandemic drastically changed those plans and changed how ECATs approached their careers and their professional identities. With the unknown leading to numerous event cancellations and the restriction of student access to facilities like school farms, ECATs changed how they prioritized their time. Universally, their focus was set firmly on building solid instructional experiences since the return on this investment allowed them to maintain strong connections with their students, their reason for entering the profession.

Prior to the pandemic, the ECATs accessed and used resources in their face-to-face instruction, yet we did not examine the degree to which they leveraged them. As the stay-at-home order was instituted, their reflections indicated ERT impacted their ability to handle curricular and teacher resources (Brown & Edelson, 2003; Milman, 2020). During the study period, the ECATs worked across the Pedagogical Design Capacity (PDC) spectrum. They often spent more time engaging in the *offload* and *adapt* practices, as captured in the findings for adapting pedagogy and adapting to technology codes. However, where they specifically functioned depended on their technological expertise and the time they had available for course planning. The *improvised* [sic] practice was most evident in their FFA and SAE responsibilities. With no playbook to guide their decision-making, many teachers went off-script from previously held models, creating awards banquets delivered by Zoom and virtual sales for fair projects. Ultimately, the ECATs achieved creative outcomes to fulfill their professional roles.

ERT also had a significant impact on ECATs' mindsets and approaches to teaching. This major change event required teachers to rethink and reestablish their traditional responsibilities within SBAE (Classroom, FFA, SAE), a process connected to the Discovery Learning Change Process Model (DLCPM) advanced by Musselwhite and Jones (2010). Entering Stage 1 (Acknowledging), teachers expressed uncertainty about how the stay-at-home order would impact them. When it became clear everyone would remain home, teachers dove into Stage 2 (Reacting) by spending considerable time and energy wrestling with the perceived barriers to supporting their students' needs in this new environment, as well as confronting their emotional struggles. In Stage 3 (Investigating), teachers started to search for new ways to teach and engage with learners by adapting their practice to this new reality. Finally, as the later reflections suggested, teachers began to feel more confident and competent with their shift to distance learning, having tried and mastered new techniques and technology. Although reaching Stage 4 (Implementing) was still plagued with concerns for their students, many ECATs felt empowered and energized by their creativity.

With regard to the two shifts in the DLCPM, it is important to note that early in the study period, ECATs referenced their goals for all three components of the SBAE model and their careers. With the trigger moment of the stay-at-home order and ERT, they reacted by reluctantly letting go of previous plans (past orientation). The schools' vague and changing responses and the discovery of student barriers to those changes presented additional challenges. Fueled by their emotional concern for student wellbeing, the ECATs were compelled to creatively revise their pedagogy, pulling them into the future orientation.

Throughout the study period, participant reflections vacillated between the cognitive and emotional domains and between the past and future orientations—related to the DLCPM (Musselwhite & Jones, 2010). ECATs admitted stressing over their students' safety, spending a great deal of effort trying to make sense of their students' challenges by remaining at home. One ECAT offered,

> Yet, here I am, sitting at my computer for the hundredth time alone, and I can't help but miss the faces of my freshman, the sound of their laugh and terrible jokes, and even the nasty smell of too

> many boys sweating in my awfully ventilated classroom. In light of everything happening in my life, I can't stop thinking about what this is like for them. For the city kids with nowhere to go, many of them with too many siblings and too little money or food. School was their escape, and I took it for granted these last few weeks. I was stressed out, a little scared, and not supportive enough for them. I lost sight of the bigger picture, so over these uncertain weeks my goals are to shift my focus back on the kids. I love the FFA… but FFA is not my goal these next few weeks, my students are, and that gives me some hope. (V13)

This excerpt is especially telling as it indicates ECATs were beginning to realize their pedagogical capacity would be better spent on student wellbeing. Each teacher who made similar declarations to this effect did so with confidence that their shift in priorities was justified.

While ECATs understood the need to shift priorities, they grappled with how to effectuate that shift. Some turned their focus to the community of educators (i.e., teachers, administrators, support staff) on their campus who were more central to their students' lives. Moving away from the paradigm that Agricultural Education is the most important program on campus to embracing a community of support, a new identity emerged. A second-year teacher best captured this shift in professional identity and practice.

> This month has been an interesting turn regarding what was expected of a typical March in "FFA/Ag World." Through the month, I have been able to reflect on priorities within the educational system and all the components that come together for a school district. Through this National epidemic, I have realized (even more than I already knew) that Agriculture Education is NOT the most important thing on campus. There are so many other factors, stresses, and events that are continuously happening behind the scenes. I have gained a new perspective on the student population and how students are truly affected by their everyday schedules and attending school. The simplicities that keep a school system in motion are all working together to provide a student the best educational and social experience of their young careers. I reflect this month on the efforts that all employees, staff, teachers, paraprofessionals, custodial staff, kitchen staff, and district/administrative employees put into the educational functionality and how important every person is on campus. This has been an eye-opener where I caught myself. I need to make a personal goal to venture out more in my educational community and appreciate all areas of the school district because Ag Education is not the only program, nor is it the most important role, but it's a privilege that students choose. (P23)

This second-year teacher's reflection shares a culminating theme that a community of people can positively impact students, and one another, during a crisis. Taken in concert with the earlier excerpt painting the forlorn picture of what many ECATs lost in the shift to ERT, our understanding of how ECATs in California deal with crisis comes into more precise focus.

In this study, the shift to ERT required ECATs to invest significant time and effort to learn the appropriate skills needed to support student learning and engagement. While many mentioned the desire to return to face-to-face learning, they shared their intent to use technological tools like learning management systems to maximize efficiencies and expand student access to course materials. We recommend teacher educators tap into this existing motivation and feature learning opportunities for preservice teachers and teacher candidates to develop their capacity for teaching with technology. Furthermore, cooperating teachers must model how to use technology with students. Doing so can provide teacher candidates with better understanding of how to ensure the tools can best support learning.

Resilience involves adapting while experiencing adversity or change (Easterly & Myers, 2018). This was a common sentiment in the totality of participant reflections. In the initial stages of ERT, many ECATs felt overwhelmed by the sudden and significant shift in their professional responsibilities. However, as they engaged in the process of trying to meet the challenges of chaos, they demonstrated a determination to establish a form of normalcy for themselves and their students by shifting their mode of delivery, implementing new student motivation strategies, growing their network, and amassing a variety of new resources. This phenomenon connects with the resiliency work by Thieman, Henry, and Kitchel (2012).

According to their research synthesis, resilient teachers demonstrate a greater propensity toward implementing problem-focused coping strategies while under stress. Resilient teachers also look for resources and strategies to add to their toolkit, thereby bolstering their ability to cope through the experience.

Many ECATs in this study expressed feeling stronger and proud of their growth, which lends evidence to the adaptations of resilient educators (Thieman et al., 2012). An example of this resilience was shared by one ECAT who wrote,

> I feel like Pat Benatar singing 'Hit Me with Your Best Shot.' I've decided that I'm just supposed to get all the hard things done first, and it's going to make me such a better teacher in the long run. I'm learning so much about myself, it's crazy—through the ups and downs. (J23)

To help our ECATs develop positive coping and resilience, we recommend all professionals working with teacher candidates and early career agriculture teachers implement and model problem-focused coping skills. By featuring scenario-based conversations, readings, and professional development workshops throughout their credential and induction programming, ECATs will be better prepared to handle rapid course changes which could otherwise create chaos for them and their students. Such strategies can also serve to motivate candidates and ECATs to add relevant tools to their toolkits.

These networks included mentors and colleagues across their programs, social groups, and even digital social networking groups. We recommended the state's professional development coordinators explore the presence of these organic networks and develop a repository of well-curated resources to assist with matching teachers with appropriate networks and tools. Furthermore, professional development coordinators should work with state staff to examine the existing professional development continuum to identify opportunities for reaching across experiential ranks. While this study uncovered the knowledge, skills, and resources ECATs received from others, it is recommended further research be conducted to examine the support networks agriculture teachers in other career stages tapped into to survive ERT. Such exploration has the potential to not only understand more about the depth and breadth of the agricultural education network but it can also seek to establish the knowledge, skill, and resource sharing other professionals received from ECATs during the pandemic.

This study provided a glimpse into ECATs' perspectives on their teaching experience during their transition to ERT in California. It should be noted that the study was composed of participants from one induction program, thereby limiting its generalizability. Still, the long-term impact of COVID-19 on this population of teachers may have implications for the broader ECAT community in SBAE, which may not be known for quite some time. The data indicate their resilience was tested, and they are forever changed. We recommended that this study be followed by an analysis of observational data throughout the pandemic and subsequent academic years. This comparison can shed light on how the ERT-based changes were integrated into some form of stabilized practice and what, if any, new evolutions in pedagogy occurred.

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Appendix A

Table 1

Code Application Frequency

Codes	February	March	April	Total	*SD*
Reaction to Mandates	13	149	85	247	55.6
Adapting to technology	7	67	75	149	30.3
Negative Emotional Response	45	92	105	242	25.8
Adapting Pedagogy	12	59	66	137	24.0
Time Management	80	31	39	150	21.5
Emotional response (sentiment-based)	25	61	54	140	15.6
CDE/LDE Management	43	31	6	80	15.4
FFA Program Management	81	58	46	185	14.5
Positive Emotional Response	97	82	70	249	11.0
Classroom Management	68	54	79	201	10.2
SAE Program Management	51	39	34	124	7.1
Goals	100	90	85	275	6.2
Content Accessibility/Sourcing	17	28	18	63	5.0
Curriculum	48	49	58	155	4.5
Work/Family Balance	21	16	10	47	4.5
Network of Support	42	47	41	130	2.6
Mentor Reflection	47	47	50	144	1.4
Facilities Management (school farm, greenhouse, shop, etc.)	12	12	14	38	0.9
Candidate Reflection	54	52	53	159	0.8
Total by Month	863	1064	988	2915	--