The Impact of COVID-19 on Instructional Practices

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Abstract

Initial research approaches to investigating the impacts of the COVID-19 pandemic in education have been largely constrained by the ongoing acute nature of pandemic circumstances in which that research has occurred. This qualitative study examines how different phases of the pandemic have impacted the instructional practices of teaching faculty in the high school division of a large, private international school located in Singapore. Aided by the comparatively short duration of online Emergency Remote Teaching that typified the acute phase of COVID-19 impacts in this system, the study provides the perspectives of 17 members of the high school faculty who have served as teachers and instructional coaches for the duration of the pandemic. Using a semi-structured interview approach and subsequent coding of interview transcripts, the study captures participant perspectives around how the COVID-19 pandemic has impacted instructional practices, how shifts in instructional practices have impacted teachers' ability to address what they consider to be their most authentic teaching practices, and the longevity of adjustments that participants have made to their teaching practices in response to the changing circumstances of the pandemic. Major findings indicate that there have been numerous and varied pandemic-occasioned changes to participant teaching and coaching practices. Many of the practices that participants implemented during the Emergency Remote Teaching phase of the pandemic have abated with the return to in-person instruction, while those practices that are most closely aligned with participant sentiments around the value of focusing on social-emotional well-being categorize many of persistent changes that participants have made in their teaching and instructional coaching work over the duration of their pandemic teaching.

Keywords: COVID-19, instructional practices, Emergency Remote Teaching, TPACK, reflective practice, praxis, social-emotional wellness.

Dedication

This work is dedicated to my family:

To my parents, Betsy Salemson and Eric Knuffke, who both spent full and fruitful careers as teachers, convinced me that I could do the same, and even managed to support my eventual decision to move my own young family about as far away from them as can be arranged without a ticket to Antarctica.

To my children, Connor & Lyra, who share the adventure of watching them grow up with me every day. I am always proud of who you are, and excited by who you are becoming.

To My life partner, Alison Kelly, who supports both me and our family in innumerable ways every day. None of this work would have been possible without your love and care.

Whatever is of interest or merit in what follows is a credit to each of these amazing people. Whatever might be less-so, is squarely my own.

Acknowledgements

Three years ago, I did not anticipate writing my dissertation on COVID-19. If memory serves, my initial thoughts for the project were on something comparatively wonky like initiative implementation. But then 2020 started, and before I knew it, I found myself squarely in the middle of the most significant event in the history of modern education. A change in my research direction seemed warranted.

I'd like to acknowledge the support of the faculty at USC Rossier who have supported this work and enabled my wish to follow this suddenly open path. Of course, this includes my gracious committee members, Dr. Darline P. Robles, Dr. David Cash, and my committee chair, Dr. Larry Picus. But it also extends past these three awesome-sauce people to include Dr. Artineh Samkian for her in-the-weeds support of my methodological choices, as well as Dr. Ekaterina Moore who provided an excellent first-pass through qualitative methodologies in her Research Methods I course. Rossier is also home to some truly top-notch teachers. Aside from the afore-mentioned Doctors Cash, Samkian, and Moore, I also really enjoyed the pedagogical approaches taken by Dr. John Pascarella and Dr. Briana Hinga for modeling what great teaching can look like, even when handling their own, sudden, pandemic circumstances.

It's a remarkable thing to be able to do a dissertation as a function of one's employment in a school system. With that in mind, I'd like to acknowledge the gracious support of a long list of colleagues. Deep gratitude to the "Secret 17" who participated in this research. My science

Edward Libretto continue to be in my cheering section, even now that we're separated by multiple continents. A bit closer to home, those five people I called out in the Dedication section are centrally important to me and to the work that I do, along with all the other members of the Knuffke, Salemson, and Kelly clans that I get to call my own. I owe each of them my gratitude for the life that I get to live.

Finally, I'd like to acknowledge every student that I've been able to work with during my career. Each of them has done something for me for being in our class, even if it might not have always felt that way for each of them all of the time. I'm particularly proud of the work that my students have done over the past 3 years in these COVID circumstances. Their perseverance and ability to roll with unprecedented punches gives me all sorts of feels. And while it is my suspicion that Randall Munroe will need to update the xkcd cartoon that appears at the top of this section to include a diesis next to the 2022 entry, here in the spring of that year I am also hopeful that this year might also signal the end of this pandemic era. Good riddance.

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Chapter 1: Overview of the Study

Introduction

This research focuses on the impact of the COVID-19 Pandemic on teachers'

instructional practices and the factors that have influenced changes to instructional practice

during the pandemic. COVID-19 provides a unique example of a significant disruption to

educational systems worldwide, serving as an essentially unprecedented, natural-experiment-

style setting to investigate how teaching is impacted by significant disruption and subsequent

recovery in an educational system.

The Singular Nature of the COVID-19 Crisis

The global COVID-19 pandemic is an unprecedented generational crisis, significantly

affecting all aspects of modern society. In as much as anyone has attempted to measure these

impacts, the data astound. Cutler & Summers (2020) estimated a projected cost of 16 trillion US

dollars in October of 2020. This figure is approximately 90 percent of the annual US Gross

Domestic Product, four times greater than the financial impacts of the 2008 "great recession,"

and nearly twice the total monetary cost of all American military operations since September 11,

2001. As of November 2021, the World Health Organization (WHO) reports more than 255

million confirmed infections worldwide, with more than 5.1 million deaths, placing the acute toll

of COVID-19 among the most significant impacts in recorded human history (World Health

Organization, 2021b).

The Local Trajectory of the COVID-19 Crisis

While the COVID-19 Pandemic is global in its impacts, it is not uniformly so. Different

countries have had different experiences and different outcomes during the crisis. The reasons

for this are outside of the scope of this research, but it suffices to say that a combination of local

factors that are both intentional (ex., The local system of government) and serendipitous (ex. Local geography) have resulted in these differences. As this research looks at the impacts of the pandemic in a private international school in Singapore, some attention to the local trajectory of the crisis in Singapore is helpful.

In many ways, Singapore has represented a best-case scenario for managing the disruptions caused by COVID-19. This is not to say that the country has been immune to the impacts of COVID-19. Economically, the country has suffered, with an estimated negative growth in 2020 GDP of four to seven percent, particularly in the areas of travel, tourism, and global shipping (Saw et al., 2020). When considered in terms of the health and well-being of its residents, a more positive picture resolves. Aided by its small size, relative ease of border control, and its position as one of the most highly developed countries in both the region and the world, Singapore has been able to manage the pandemic effectively. Until the summer of 2021, the nation had the lowest case-fatality rate (CFR) in the world, to that point having seen 34 total deaths out of slightly more than 62,000 cases for a CFR of 0.05% as compared to the global COVID-19 CFR of 2.16% (World Health Organization, 2021a). This was accompanied by an aggressive vaccination campaign, resulting in more than 86% of the population fully vaccinated by February 2022. In concert with widespread vaccinations, during the fall of 2021 the government of Singapore shifted its approach to managing the pandemic from a so-called "zero COVID" strategy that looked to isolate all cases to prevent the spread of the disease to one that recognizes the endemic, ongoing nature of COVID-19 transmission. This "endemic COVID" management has a focus on aggressive management of severe COVID-19 cases, while allowing mild cases to recover in isolation at home (McGregor, 2021). Since this change in pandemic management, infection rate and cumulative deaths from COVID-19 have increased, though the

overall CFR rate of 0.15% remains significantly below the global CFR of 1.3%, and among the lowest in the world (World Health Organization, 2021b)

The World Health Organization (WHO) declared the emerging COVID-19 disease a global pandemic on March 11, 2020 (World Health Organization, 2020). Singapore confirmed its first case of COVID-19 on January 23, 2020 and reported its first two deaths from the disease on March 21, 2020. During that time, the number of disease cases in the country increased steadily, though at a relatively slow rate, aided by a robust contact tracing and disease surveillance apparatus in the country and its famously high-quality medical care. During this initial phase of the outbreak, the disease spread to the foreign worker community. The pace of the outbreak then began to accelerate as transmission among foreign workers in their high-occupancy dormitory residences and untraceable community spread increased. On April 3, 2020, Prime Minister Lee Hsien Loong announced that the nation would enter a "circuit breaker" lock-down beginning April 7, 2020, with all non-essential businesses closing and all schools transitioning to home-based learning for the duration of the circuit breaker. Initially established until May 4, the circuit breaker was subsequently extended until June 1, as untraced community transmission continued (Yong, 2020).

Following the conclusion of the circuit breaker period, the Singaporean government introduced a three-phase approach to resuming activities. In-person schooling was allowed to resume from the beginning of phase 1 with special precautions for safe distancing and contact tracing. During phase 3, most societal activities resumed, in concert with strict adherence to safe-distancing measures and legally mandated mask-wearing and contact tracing. On May 8, 2021, Singapore re-tightened restrictions in response to a detected increase in unlinked community spread of COVID-19 and the development of several large clusters of linked infections involving

a public hospital and Changi airport (Lai, 2021)**.** On May 16, 2021, these restrictions increased again in response phase labeled "Phase 2 (Heightened Alert)" lasting until June 13, 2021. Phase 2 (Heightened Alert) involved several measures intended to reduce the rate of disease transmission within the country, including strong encouragement of working from home, the shuttering of all dine-in restaurants island-wide, and significant reductions in the numbers of people that allowed to occupy social venues like shopping malls (Singapore Government, 2021)**.** Except for annual end-of-semester testing, all K-12 school activities on the island returned to Distance Learning from May 19, 2021, until the end of the Semester on May 28, 2021 (Ministry of Education, 2021).

The Impact of the COVID-19 Crisis on International Academy of Asia

When considering the impact of COVID-19 on an educational system, similar interactions between the nature of any specific educational system and the impacts of the pandemic are at play. Consideration of the nature of the trajectory of the COVID-19 pandemic within the educational system that serves as the site for this research helps the reader understand the specific educational circumstances being analyzed.

International Academy of Asia (IAA) is a private, independent, P-12 international school located in Singapore. With a total student body of over 4,000 students, the school endeavors to fulfill a vision that speaks to global leadership and critical thinking (International Academy of Asia, 2020). As a private school, IAA is funded by a combination of managed endowment funds and student tuition. While the specific amounts paid by students vary by school division, student citizenship, and length of tenure spent at IAA, in the 2020-2021 school year, student tuition and fees ranged from approximately 25,000 USD to 40,000 USD (International Academy of Asia, n.d.).

Between the first confirmed case of COVID-19 in Singapore on January 23, 2020, and the nation's entry into the circuit breaker lockdown, IAA had more than two months to prepare for the transition to home-based learning. The first distance-learning practice drill was held during the week of February 10th and involved all divisions of the school piloting possible distance-learning structures while on-campus. Following this initial on-campus pilot, additional at-home distance learning practices were held off-campus on March 19, March 20, and again for the entire week of March 30 to April 3. During these off-campus pilots, teachers were encouraged to work from home or campus as per their preference.

On April 3, 2020, the circuit breaker declaration transitioned all school staff and students to at-home learning for the duration of the lock down. Following the end of the circuit breaker, staff and students returned to campus from June 3 until the end of the school year on June 5th. From this point forward, IAA transitioned out of distance learning and returned to in-person instruction, though with some modifications for those students who were unable to return to Singapore until October of 2021. This period of in-person instruction lasted for almost the entirety of the 2020-2021 school year until the restrictions that were implemented with the move to Phase 2 (Heightened Alert) in May of 2021.

With the increased restrictions that accompanied the move, IAA transitioned back to distance learning on May 19, 2021, for all divisions, except for semester exams which were allowed to be administered in person. Semester exams began on May 20, 2021. The high school division of IAA had one day of distance learning, while the lower school divisions were in distance learning until the final instructional day of the school year on May 25th. Since the beginning of the 2021-2022 schoolyear, the high school division has been almost continuously

in-person with the exceptions of a scheduled distance-learning practice day and a one-day at-home learning period due to a staff member testing positive for COVID-19.

Statement of the Problem

The problem this project focuses on is how the COVID-19 crisis has impacted the instructional practices of IAA teachers. IAA positions itself as an organization at the forefront of international P-12 education, as evidenced by its mission to provide each student with an exceptional international education (International Academy of Asia, 2020). While the institution has been spared from the more extreme disruptions that COVID-19 has occasioned due to a fortuitous combination of local factors and its well-resourced position, the pandemic has still had a pronounced impact on all aspects of the educational systems of IAA.

Effects of the pandemic on the instructional practices of the IAA teaching staff are of particular interest because of the central role that teachers play in the daily functioning of the school and the significant impact that they have on students. Instructional practice is a primary driver of how teaching is realized in pursuing the IAA mission and vision. While working under the constraints of the current COVID-19 reality, teachers' choices for their instruction will impact the student experience and impact their learning. This problem also represents considerations around the impact of COVID-19 on instruction more broadly, though the impacts for IAA will be highly localized to its specific circumstances.

Purpose of the Study

The Goal of the Study

This study describes the factors that have impacted teaching practices during the COVID-19 crisis. This research provides an understanding of how teachers perceive the work of teaching during the COVID-19 crisis, focused on the work they do with students directly. It provides an

understanding of what factors teachers feel support their teaching during the crisis and those that they feel work against them. By elucidating the interactions of different factors in teacher's perceptions of their work during the crisis, the research gives a view of how teaching practices are affected by different factors during and after the acute phases of the COVID-19 crisis (delineated as the period of emergency remote teaching) and how the interplay of practice-influencing factors can both strengthen and diminish the ability of teachers to work from a place that they feel is authentically aligned to doing the best work that they can for their students.

Research Questions

The research questions for this study are as follows:

1. How has the COVID-19 crisis impacted the instructional practices of individual teachers?

2. How have the shifts in instructional practices occasioned by the COVID-19 crisis impacted teachers' ability to address what they feel are authentic teaching practices when teaching students?

3. How have the adjustments that teachers have made in their instructional practices during different phases of the COVID-19 crisis persisted or abated as the acute stage of the crisis has receded?

Importance of the Study

Given the recency and extremity of the COVID-19 Pandemic, this type of descriptive research project is hopefully well within what Geertz (1973) termed the 'thick description' of human interactions within the context of an educational system handling an unexpected crisis. There seems to be inarguable utility in rigorous documentation of the current moment in education for its own sake, but the author does not think that this project is limited to memorialized documentation of a unique moment.

While the COVID-19 situation is an example in extremity, it has utility for elucidating how teachers' instructional practices, and the factors that influence those practices, respond to large-scale changes in instructional practices that also operate more universally as educational systems undergo the typical, less-extreme changes that are omnipresent in the field, albeit less overtly, and therefore less readily available for study. In this way, the work of this project is helpful to teachers, administrators, and any other parties of the IAA educational system for illustrating which factors are privileged by teachers when considering their instructional practices and the ways in which those practices change with the circumstances.

This study utilizes a qualitative methodology that involves one-on-one interviews with teachers. Participating teachers were encouraged to elucidate their perspectives about how the pandemic has led them to make changes to their instructional practices (if any) and their reasoning for why they have implemented changes to their instructional practices with consideration for how any identified shifts in instructional practices have impacted teacher ability to deliver instruction that they consider to be authentically positioned toward their instructional goals. Additional consideration is given to teacher perspectives on how long-lived they feel the changes they have implemented will be in their instructional practice.

Limitations

The study is subject to many limitations. One limitation of note is the ongoing impact of the COVID-19 pandemic on the instructional environment of IAA and the larger environment of Singapore. The sudden transition back to heightened restrictions in May of 2021 and the sporadic distance learning episodes during the 2021-2022 school year demonstrates that the pandemic is not over, and the local situation remains unpredictable.

Another major limitation is the specific nature of IAA as an institution. Given its position as a privileged, privately funded, independent school system, it is reasonable to expect that much of what this study uncovers is inextricably linked to the nature of the IAA school system. While the dangers of generalizing qualitative research in over-broad applications are well established in the literature (Lochmiller & Lester, 2017; Maxwell, 2013; Merriam & Tisdell, 2015), these dynamics are amplified given how atypical the educational system of IAA is both in Singapore and on a more global scale.

Delimitations

Several major delimitations factor into this study. The conceptual framework (illustrated in Figure 2 and discussed in Chapter 2) has driven the nature of the research questions and the choice of a qualitative research paradigm, all of which represent the perspective and interest of the author. It is undoubtedly true that multiple other domains of the IAA system have had significant impacts from the COVID-19 pandemic and that domains not considered in this study may well benefit from different research questions and research paradigms.

The criteria that have been used to determine the population of interest for this study are similarly delimiting. As the study looks at instructional practices, the population of interest is teachers, but as Chapter 3 will demonstrate, not all teachers are equally well-positioned to participate in this study. The result is that the population of interest are those teachers who have been teaching non-performance subjects (Mathematics, English Language Arts, Social Studies, Science, Learning Support and the Technology, Electives & Capstone departments) in the IAA high school for the duration of the COVID-19 pandemic (from at least the beginning of the 2019-2020 school year). Among other things, this delineation of the population of interest means that

the findings from this study will likely not generalize beyond this subdomain of the IAA

academe.

Assumptions

Like any other study, this project operates with several assumptions that are a product of

the epistemological and ontological perspectives of the author. The primary assumption is one of

authenticity on the part of study participants. It is assumed that those teachers who elect to

participate in this project represent their genuine perspectives on the topic. There is an

assumption that the researcher can believe participants.

Another assumption is that there is an impact on instructional decision-making by the

COVID-19 pandemic. From this overarching assumption, we can also assume that the research

questions, conceptual framework, and methodological approach are all useful for elucidating

those impacts.

A final noteworthy assumption is that teachers seek to work with students in ways that

they consider authentically positioned toward accomplishing their educational goals. This

assumption is the basis for the definition of authentic teaching utilized in this study, in that the

concept of *authenticity* in teaching is generated by the teacher's own stated pedagogical goals

and perspectives.

Definitions of Terms

Authentic teaching practices- Teaching practices aligned with teachers' stated beliefs about what

they feel are the most important goals of the work they do with students.

Circuit breaker- The name given by the Singaporean government to the lock-down period lasting from April 7, 2020, until June 1, 2020. This period was accompanied by mandatory at-home learning for all students in the country.

Emergency remote teaching (ERT)- Taken from the delineation of online instructional modalities offered by Bozkurt & Sharma (2020). ERT refers to online instruction that is occasioned by sudden, unplanned emergency circumstances. The term applies to all online instructional transitions driven by the acute phase of the COVID-19 pandemic. In this study ERT refers to the instruction offered by IAA during the circuit breaker period.

Instructional practices- The term is operationalized for this research as any actions that a teacher consciously engages in during their teaching practice to teach students and identifies as such. A teacher's immediate decisions during a lesson are less of a focus in this work than longer-term decisions involved in curriculum planning and instructional design.

Professional Learning Community (PLC)- A model of instructional planning and teaching that is based on the collective work of a team of teachers. The PLC model, particularly as conceived of by the work of Richard DuFour (2004), is the functional unit of instructional decision-making at IAA.

Praxis- Stanced within the Freire conception of praxis "reflection and action upon the world in order to transform it" (2000, p.51) whenever those actions are subsequently reflected upon by the teacher when they consider their utility for teaching.

Organization of the Study

This dissertation is organized in a five-chapter format. Chapter 1 provides an overview of the study, introducing the COVID-19 pandemic's impacts in Singapore broadly and in the IAA educational system. The statement of the problem and purpose of the study (including its goals

and the research questions) are introduced, along with a statement of the importance of the study. The chapter concludes with a discussion of the study's limitations, delimitations, and assumptions before providing definitions of terms.

Chapter 2 provides a literature review focused on three major areas: Impacts of COVID-19 on educational systems, conceptualizing instructional practices at a level of resolution appropriate for this study, and an overview of the TPACK framework for considering the interaction of instructional technology and instructional practices. After this review, the conceptual framework for the study is presented and discussed.

Chapter 3 describes the methodology that the study employs. The study population, sampling, and instrumentation are all described, along with discussion around the development of the research instruments being used and the methodological approach taken for data collection and analysis. Considerations around establishing reliability are also provided.

Chapter 4 provides a discussion of findings from the study. Findings related to each research question are discussed, along with overall summaries of the picture of the data that has been generated for each of the research questions.

Chapter 5 summarizes findings and conclusions that can be drawn from the work. Limitations of findings are discussed at length, and implications of study findings for both teachers and institutional leadership are presented. The chapter ends with brief concluding remarks.

Chapter 2: Literature Review

Introduction

The literature review that follows is structured as two forks that drive the work of this study. First, a digest of research into how the COVID-19 Pandemic has impacted educational

systems is provided with some consideration of how that research connects to the previously established, considerably more limited, research literature around teaching through other disruptive historical crises. Following this, a review of the research around instructional practices is presented, focusing on determining the appropriate unit of analysis for this study's framing of instructional practices and a spotlight on the role of teacher's technological facility in the work of teaching during the COVID-19 crisis. The chapter concludes with a discussion of the conceptual framework that underpins the rest of this study.

The Impact of COVID-19 on Education

In much the same way that it has affected everything else, the COVID-19 pandemic has disrupted global educational systems in ways that are unprecedented in their significance. The statistics are astounding. At the peak of the initial wave of the crisis in April 2020, 1.6 billion learners were affected by total or partial school closures in 194 nations, representing approximately 90% of the world's enrolled students (UNESCO, 2020a). At the time of writing, more than one year into the course of the pandemic, the impacts remain profound, with the United Nations reporting more than 145 million learners currently affected by total or partial school closures, and a comparatively-minor 29 nations with total school system closures (UNESCO, 2020a). Even as of May of 2021, as vaccine distribution continues to accelerate, the extent of COVID-19 impacts on school systems would be among the most significant disruptions to schooling in modern history were it not for the scale of the initial disruptions.

Bozkurt & Sharma (2020) suggested that due to the forced and rushed nature of the COVID-19 transition for educators, it is best to conceive of moves to online education due to the crisis as *emergency remote teaching* (ERT) rather than proper *online distance education* (p.2). In making this distinction, the authors suggest that typical research paradigms and metrics that have

developed in the history of research into planned, non-crisis-driven online and remote learning probably will not be wholly applicable to the current COVID-19 moment. Hodges et al. (2020) echo this delineation. They suggest that the primary foci of the ERT transitions are preferentially focused on creative problem solving for the emergency of the current moment and that the hurry to get material into an accessible online format will likely result in a diminished quality of course materials.

The Developing Shape of the COVID-19 Educational Research Space

A review of some of the literature written to this point on the impacts of COVID-19 in education reveals several emerging patterns around the subjects, samples, and cognitive styles that underlie much of the work reviewed for this dissertation. Several of these patterns are discussed in what follows.

A Focus on Higher Education

To this point, much of the literature that is reviewed is focused on higher education (Aristovnik et al., 2020; Assunção Flores & Gago, 2020; Bao, 2020; Cutri et al., 2020; Donovan, 2020; Humphrey & Wiles, 2021; Popa et al., 2020; Sjølie et al., 2020; Son et al., 2020; Villanueva et al., 2020; Zhang et al., 2020). Reasons for this are likely due to the proximity of most researchers to college and university education. During an unprecedented crisis that has gripped the field that a researcher is working in and is characterized by profound disruptions to regular patterns of work and interaction, it follows that a researcher may well be inclined to study the populations for which they have the greatest ease of access. This may also be a driving factor behind why much of the research described involving teaching and learning at the post-secondary level is almost wholly qualitative for much of the early work reported, with autoethnographic approaches and other forms of self-study showing up with frequency.

Donovan (2020) offered a fairly typical exemplar of this style, describing the experience of making the transition to ERT in undergraduate chemistry classes, the struggle to adapt to active learning strategies, and reporting that synchronous attendance for online lectures decreased over the semester, as students shifted to using recordings of the lectures asynchronously. In a similar mode, Berry's (2020) autoethnography of their reflections as an English professor provide both a discussion of how the pandemic has impacted the practices that anchor the work of being a professor and suggest several *reconciliations* they feel they need to make with the current moment (ex. Disconnection, interrupted cultural inquiry).

As interesting as these types of initial approaches to understanding the crisis are, they typically do not allow for easy extrapolation to a wider understanding outside of what it was like for this educator in one moment in the current crisis. Fortunately, the research picture continues to develop with larger-scale projects and their findings being published. Aristovnik et al. (2020) report their findings from a sizable survey of 20,383 college students from 62 countries administered from May 5 through June 15, 2020. The survey, which had participants from the six non-Antarctic regions of the globe, asked students to respond to a series of Likert scale items on various aspects of their experience of learning during the pandemic. An interesting picture of what it is like to be a college student in the current moment emerges (ex. almost half of the respondents reported that they did not have a quiet place to study, and one-third reported no access to printers (p.19). Son et al. (2020) report on a similar survey methodology, though constrained to a sample of 195 students at a single large public university in the United States, and find that the vast majority (71%) of student respondents indicated increased stress and anxiety due to the crisis and a variety of negative stressors ranging from fear and worry about their health (91%) to disruptions of their sleeping patterns (86%). These larger-scale more

quantitatively positioned survey approaches are inarguably illuminating about the impacts of the COVID-19 pandemic on education. However, the utility of the research for the current project is somewhat limited due to its focus on student reports rather than educator's perspectives.

The relative lack of a focus on P-12 educational systems within the larger corpus of this literature points to a clear utility for the work of this dissertation. Looking at the literature emerging from studies in higher education discussed in this section, the pandemic has had tangible impacts on both the experiences of students and teachers during this time. By focusing on how the pandemic has impacted the IAA educational system, this study should provide a useful and illuminating addition to the literature that has been, to this point, very focused on higher education.

The Inequity of the Crisis

Another major pattern seen in the literature is the pervasive disparity that has accompanied COVID-19 impacts on education. In their delineation around the nature of ERT, Bozkurt and Sharma (2020) note that typically poorer students suffer more from the ERT transition. Multiple studies all suggest tangible differences in how socioeconomic status and resource availability impact how the crisis is felt both by educational systems and individual students. In its October 2020 review of global impacts from COVID-19 on educational systems, the United Nations reported myriad disparities in those impacts, with high-income countries dealing with school closures differently than low and lower-middle-income countries. Differences abounded in most aspects of what it means to run a school system from student assessment practices to the use of online learning, support measures for remediation, and governmental policies to support teachers, support parents and caregivers, boost access to resources, prioritize safe reopening of schools, and long-term financing of crisis response

measures (UNESCO, 2020b). In every instance, lower-income countries were experiencing a more difficult COVID-19 crisis, with a less robust response. These findings are in-line with the large-scale student survey by Aristovnik et al. (2020), which showed notable differences in response patterns by region. Students generally reported satisfaction with online instructional modalities, though students from Africa reported below-satisfaction (p.8). Regression analysis also found significant positive correlations (p < .001) between student satisfaction and reporting hopeful emotions, receiving a scholarship, and the ability to pay for school, and significant negative correlations (p < .01) between student satisfaction and study issues, internet access, and quiet locations (p.17).

The work that has demonstrated the disparity of COVID-19 impacts on educational systems as a function of societal inequities is certainly important for its own sake. Outside of the clear utility of keeping this work in mind during this study, these dynamics are somewhat secondary for this research project. For various reasons discussed in the preceding chapter, political, geographical, and socioeconomic factors have a diminished impact on-site at IAA. By most metrics, the IAA circumstance represents a best-case scenario for handling the disruptions caused by COVID-19. In this way, any confounding local inequities should largely be absent from the work of this study.

A Focus on Teaching and Learning Online

Putting aside previously discussed distinctions of COVID-occasioned ERT within the larger sphere of online education, much of the literature around the COVID-19 crisis is focused on the transition to online instruction. The predominance of this research focus is understandable, given the specific nature of how COVID-19 occasioned a profound and sudden

shift to online-only instruction for much of the global education system. Several themes from the literature around online instruction are discussed below.

Principles of Online Instruction. Much of the literature that was reviewed focused on principles for online instruction through the lens of teaching during the COVID-19 pandemic (Aristovnik et al., 2020; Assunção Flores & Gago, 2020; Bao, 2020; Berry, 2020; Bozkurt & Sharma, 2020; Cutri et al., 2020; Dhawan, 2020; Donovan, 2020; Humphrey & Wiles, 2021; Whittle et al., 2020; Zhang et al., 2020). The typical structure of literature in this category is a series of observations about making the transition, followed by a set of strategies/thematic suggestions for working in the COVID-emergency remote environment, along with justifications. While the specific number and phrasing of suggestions provided by the author(s) vary, many themes occur repeatedly.

More Intentional Focus on Resourcing Crisis Teaching. The literature frequently notes a general lack of preparedness for meeting the current educational moment. Working from their perspective on K-12 education in Portugal, (Assunção Flores & Gago, 2020) note a series of difficulties for the nation, including lack of adequate equipment for pupils and for teachers (many of whom reported they had to use their own devices to teach), not involving pupils in their learning, lack of time in which learning can occur, lack of teacher training for online teaching, and lack of support from parents (p.509). From the Chinese university perspective, Zhang et al. (2020) explicitly calls for government assistance to provide educational infrastructure and standardized home-based teaching/learning equipment.

Suggestions within this theme include increasing institutional preparedness for emergencies that require rapid transition to online teaching circumstances (Bao, 2020; Villarnueva et al., 2020; Whittle et al., 2020) and increasing support networks and assistance for

teachers (Bao, 2020; Villanueva et al., 2020; Wentz, 2020; Zhang et al., 2020). There is also a repeated suggestion that the work done by teachers in the current moment may prove useful for future educational crises with similar demands on educational systems (Bao, 2020; Cutri et al., 2020; Hodges et al., 2020; Villanueva et al., 2020)

   Shifting Teaching Practices to Modalities that are Suggested to be More Effective in the Online Environment. In the previously described large-sample survey analysis by Aristovnik et al. (2020), 86.7% of respondents reported being in forced distance-learning structures (p. 8). Students generally reported satisfaction with the online instructional modalities on offer to them, and most students (57.6%) felt that teaching staff provided satisfactory support (though, as noted previously, with notable regional differences). Additionally, their regression analysis also found significant positive correlations ($p < .001$) between student satisfaction and the use of recorded videos, information about exams, teaching staff support, and informational channels from the learning institution (p.17). In a much smaller-scale ($n = 14$) survey of undergraduate biology students amid COVID-19 caused distance learning, (Humphrey & Wiles, 2021) report similar findings with the majority of their respondents (12 out of 14), indicating that while the transition to ERT was difficult, their professors had adjusted well to the circumstances. Villanueva et al.'s (2020) survey of 109 undergraduate chemistry students showed that student perspectives around specific ways of teaching online varied, and in their local circumstances, the grade distributions in sections of the course that employed either synchronous, asynchronous, or a combination of modalities did not differ significantly from each other (p. 2460). These positive aspects noted, the picture from the literature is not uniformly so. In their mixed-methods study of how forced distance learning affected the experience of 427 college students in the spring of 2020, Popa et

al. (2020) report findings that the didactic quality of the online learning experience needs to be improved.

Suggestions here include dividing content into smaller, more manageable units (Bao, 2020; Whittle et al., 2020), elucidating and adjusting the instructional style to those more suited for online instruction (Bao, 2020; Zhang et al., 2020), providing students with a variety of learning materials both synchronously and asynchronously (Bao, 2020), and reconceiving teaching and assessment practices to account for the online environment (Assunção Flores & Gago, 2020) 2020; Donovan, 2020; Humphrey & Wiles, 2021; Whittle et al., 2020). Popa et al. (2020) point specifically to professor-student interactions, obtaining feedback, and the pedagogic design of online courses as areas that are all in need of development (p.11)

Working to Maintain Student Motivation. Multiple sources report that students indicate that their motivation to learn in COVID-19 ERT circumstances attenuated over the duration of the time spent in online learning (Humphrey & Wiles, 2021; Lepp et al., Popa et al., 2020). There are several proffered reasons for this motivational flagging, including the nature of COVID-19 ERT, both from the perspective of less effective online learning modalities as compared to in-person instruction (Humphrey & Wiles, 2021), the difficulties of learning outside of school settings due to resources (Aristovnik et al., 2020; Humphrey & Wiles, 2021). The Aristovnik et al. (2020) survey reported that globally, 30.8% of student respondents indicated their workload got smaller, 26.6% reported it remained the same, and 42.6% reported it had gotten larger (p.9). Villanueva et al. (2020) report that notably more students withdrew from their courses during the spring 2020 semester than at any point in the previous 5 years for which data was available.

To help maintain student motivation, several recommendations are provided. Humphrey & Wiles (2021) expand at length on the topic and offer recommendations including clear communication and maintenance of expectations at the beginning of the semester and throughout a course, providing students with the opportunity to make more decisions about their learning, increased metacognitive reflection for students around their learning, and the thoughtful inclusion of challenging course work in the ERT setting. Whittle et al. (2020) also note that the ERT environment provides opportunities to develop learner agency and increase social connections to learners and their support networks (ex. parents) in ways that might be unique to ERT circumstances if teachers are provided the time necessary to develop fluency in technological tools.

Returning from Emergency Remote Teaching.

Unlike much of the research in previous sections, this review did not turn up a comparably robust corpus of literature dealing with the return from COVID-19 ERT circumstances. That noted, given the nature of the work of this project, the literature that was found is discussed herein. In his own Master's Dissertation (Wentz, 2020) provides a small-scale study (n = 3) of music (string instrument) teachers working in Maryland public schools during the spring and fall of 2020. Given that the work spans a period of the pandemic that included both remote-learning and (partial) return-to-school, some of it is discussed in prior sections of this review. At the same time, when considering specific findings related to the return from distance learning, Wentz notes that Teacher sentiments around success in the fall of 2020 (when the return to in-person instruction was underway) were connected to specific actions of building-level administration (p.38). Additionally, Wentz proposes three major personal qualities that determined the overall perception of the impacts of the pandemic: Adaptation to emergency

circumstances, commitment to the work of being a teacher, and the teacher's ability to provide students with a sense of normalcy in decidedly non-normative circumstances (p.42)

Writing from a more systemic perspective, (Teräs et al., 2020) note the increase in various proposed technological solutions for various aspects of teaching and learning during the crisis, warning that uncritical acceptance of these solutions due to emergency needs may risk perpetuating regressive educational technology practices once the acute emergency phase of the crisis abates. To avoid this, they suggest that

> "an urgent task in the Covid-19 pandemic is to actively engage people, networks, projects, research and public discussions to promote critically and reflectively informed praxis. We need to apply and develop critical applied research methodologies and create design principles for democratic and emancipatory digitalization of education. Moreover, we need wider societal dialogue about the purposes of education and about the kind of society we want to develop in the COVID-19 world." (p. 874).

In a similar vein, (Sjølie et al., 2020) note that the disruptive nature of COVID-19 on education may allow for Mahon's (2014) notion of critical pedagogical praxis, "creating spaces in which untoward or unsustainable practices and arrangements can be understood and reoriented and in which new possibilities for action can emerge and be enacted." They hope that the post-COVID-19 work of academe will involve not taking collegial relationships for granted, and continuing to develop a "praxis-oriented, communitarian character" of their academic life. Writing from a more systems-focused approach, Hall et al. (2020), posit that the impacts of the pandemic are so extreme that their effects may well "fundamentally redesign the educational landscape we are familiar with, and in ways that have not even been imagined yet." (p. 7). At the same time, results from a RAND corporation survey of more than 300 US public and charter school systems

suggests that while these changes are not easy to predict, they are certainly already well underway, with one in five districts planning to adopt, or having already adopted a fully online variant of their school programming in the period following the pandemic (Schwartz et al., 2020, p. 11)

Given the relative paucity of work that examines the transition to, and return from ERT, the work of this study should fill an intriguing gap in the literature on this front. On some level, the lack of work looking at the ERT transition/return is simply a function of the relative lack of historical precedent that would occasion shifts like the ones engendered by the COVID-19 pandemic. Given the pronounced impacts of COVID-19 on global educational systems, studies like this one are well-warranted for the current educational moment.

Teaching in a Crisis

While COVID-19 is an extreme example of teaching through disruption, it is by no means the only crisis that has affected educational systems. Dhawan (2020) provides 14 recent historical examples (p.13), all of which are natural disasters ranging from the 2009 L'Aquila earthquake to the 2019 heatwave in Bihar. In each instance, educational systems proximal to the region where the disaster occurred were interrupted for some time. In each instance, the author notes the need for robust online structures during the acute phase of the crisis. Certainly, the experiences of educational systems during the pandemic have been highly reliant on the same. That noted the extremity of the impacts from the pandemic, both in terms of duration and extent, do limit the applicability of much of the prior work that has been done looking at how school systems function in periods of disruption. Hall et al. (2020), note this dearth of relevant literature, pointing to only one study on the impact of pandemics in education that they could locate prior to the COVID-19 pandemic.

Lessons from Hurricane Katrina

By many metrics, the most similar recent crisis for educational systems to that of the current situation is the impacts of Hurricane Katrina on the school system of New Orleans in 2005. The storm, which resulted in breaching of the protective levee system, and widespread flooding of large areas of the city, devastated the physical plant of Orleans parish schools, leaving only 20 public schools suitable for occupancy in the aftermath of the floods out of the 120 school buildings that were functioning prior to the event (Alzahrani, 2018). The ensuing changes to the structure of the school system of New Orleans were significant, including the use of the recently established recovery school system, which had originally been created in 2003 separately from the pre-existing New Orleans Public School (NOPS) system at a state-wide level to address issues with the lowest-performing schools in Louisiana. This process resulted in an almost wholesale conversion of the school system to one comprising a series of charter school networks. Once this transition had been completed, only five traditional public schools remained in the New Orleans system, and 7,500 public school employees had been terminated from the positions they held prior to the Hurricane (Goral, 2013).

As significant as the changes to the New Orleans school system have been due to Hurricane Katrina, the specific nature of that crisis, and the response, are relatively limited for this study. Most significantly, the circumstances in which Katrina affected NOPS are not like the circumstances in which IAA is dealing with COVID-19 impacts. Thus, while the vast majority of literature around Katrina that the author has surveyed deals with the impacts of the sudden and large-scale transition of NOPS from one of a typical urban public school system to an almost-wholly-chartered one (Alzahrani, 2018; Goral, 2013; Morse, 2010; Newmark & de Rugy, 2006; Perry, 2006), and the ensuing developments used to further particular political purposes

(Tillotson, 2006; Tuzzolo & Hewitt, 2006), essentially none of that corpus applies to this work. The student-family response is another aspect where the Katrina literature does not easily apply to the current COVID-19 crisis. While firm figures do not exist due to the somewhat scattershot nature of early recovery from the hurricane, perhaps as many as 50% of Katrina evacuees did not return to New Orleans following the storm and its aftermath (Reckdahl, 2015). This type of migration has not occurred during the Pandemic, suggesting that the types of large-scale changes to the character of school systems will not be as pronounced in the aftermath of COVID-19.

Conceptualizing Instructional Practices

Delineating the Appropriate Unit of Analysis for Instructional Practices.

The research around instructional practice is deep and wide. A central finding of the literature in this regard is that the sheer volume of decisions that a teacher makes during their work in the moment with students relegates a significant portion to a level of consideration below conscious action outside of managing the delivery of a planned lesson and its routines (Calderhead, 1979, 1981; C. M. Clark & Peterson, 1986). Given the focus of this study on intentional aspects of instructional practices, there should be some care taken to delineate the aspects of teaching that arise from conscious decisions on the part of the teacher from those that are unconscious, as only the former include the unit of analysis for this work.

Much of the research around teacher decision-making in the moment of action with students have adapted to this sub-conscious aspect by having teachers engage with recordings of themselves teaching or otherwise being presented with opportunities to think-aloud their actions at particular moments, after the fact (Bishop, 1976; Calderhead, 1979). In their meta-analysis of think-aloud studies, Clark & Peterson (1986) found that on average, teachers made one interactive decision with students every two minutes (p. 61), with a comparatively small

percentage (14%) of those decisions pointed toward instructional objectives (p.52) and considerably more (20-30%) devoted to the procedures and strategies of the lesson as planned (p.54) and the immediate needs of the learner (40-60%) (p.55). Bishop (1976) found that immediate teacher decision-making is situational, highly variable, and typically references prior experiences. More recent research has established that immediate decision-making by teachers is enactivist, determined by the relationships of what teachers know and the environments in which they teach with the efficacy of immediate decision making by teachers developing over time spent engaged in the work (Brown & Coles, 2011). In a mirror of earlier work, Herbst & Chazan (2012) delineate four sources of professional obligations that influence teacher decision making: the discipline of the subject, the individual child, social life, the institutions of schooling. As illuminating as all this work is for larger questions around how teachers make instructional decisions, it is not particularly useful for the work of this study.

It is inherently difficult to separate those decisions that a teacher makes unconsciously from those more exemplary of the type of deliberate choices that typify more intentional conceptions of instructional practices. Nor are these delineations necessarily clear. Does a decision made by a teacher based on years of accrued experience but routinized through the practice of expertise rise to the level of an intentional choice? The literature is not particularly clear here, as the question rises to something more grounded in the philosophical realm (Brown & Coles, 2011; Maturana, 1988). Additional concerns around the analysis of quick, heuristic-driven decisions are raised by the corpus of work developed around cognitive biases and ex-post-facto justifications for quickly-made intuitive decisions (Kahneman, 2003; Kahneman & Tversky, 1979). For these reasons, when considering instructional practices for this research, the author has privileged areas of teaching that require conscious choices on the part of teachers.

Research in the area of teacher planning, those aspects of teaching that involve the teacher making decisions around how to structure their lessons, and reflection on planning decisions after putting them into practice suggests that this area is one in which intentionality is more clearly visible and where immediate more unintentional decisions are less prominent (Holmqvist & Brante, 2011; Stern & Shavelson, 1983; Sullivan et al., 2012; Wiggins & McTighe, 2005; Yinger, 1980). As such, teacher discussion and analysis around teachers' planning decisions are particularly useful for analyzing instructional practices at an appropriate level of analysis for this study.

Areas in which instructional practices are investigated vary quite widely in the literature. Contextual differences aside, the methodologies employed share certain unifying criteria. Torres and Mercado (2004) point to the utility of self-study of teacher reflections (through reflective journaling, collegial dialogue, and reporting on teacher-initiated auto-research projects) on their work, which in turn changes their understanding of that work. In a related approach, Bieler (2010) utilized discourse analysis from mentoring-generated discussions to occasion similar praxis-driven shifts in English teacher candidates during their preparation. In this research, conversations with mentee teacher-candidates were utilized to deliberately engage participants in discourse analysis to help them make praxis-focused shifts in their instructional practices. Arnold & Mundy (2020) required teacher-candidates to respond to cues around the pedagogical orientation of their portfolios. While the specific ways in which praxis is investigated vary along with the particulars of the methodologies employed, all approaches utilize teachers' reflection on their teaching work to occasion considerations of teacher perspectives. The common use of this mode of investigation informs the methodological choices that underpin the work of this study.

Findings from Research on Instructional Praxis

The framing of much of the work discussed in the preceding section in terms of conceptions of teaching praxis helps to resolve thinking around the appropriate unit of analysis. Notions around praxis in education are widely discussed and central to much of the discourse on the work that teachers do with their students. The term is ancient, appearing as one of the three major delineations in Aristotelian conceptions of the basic activities of all humans. In this view, praxis refers to what humans do. Given its deep history, the concept explicitly shows up in multiple western philosophical traditions and is implicitly considered in many more. In all instances, the unifying aspect of the concept is around that of action to put knowledge into practice. Marx held praxis to be a central aspect of his philosophy, holding that "all mysteries...find their rational solution in human practice and in the comprehension of this practice" (Marx, 2002). From the Marxist standpoint, praxis is viewed as *fulfilling work* (Hanley, 2017).

In the educational tradition, Freire famously utilized a Marxist conception of praxis in his formulation of the concept as "reflection and action upon the world in order to transform it" (2000, p. 51), which he in turn uses to establish an educational view of praxis as a cycle of action and reflection upon that action in order to allow for learning. Praxis is like other modes of iterative, dialectical human action in which the consideration of the results of that action inform their continuance. The concept describes the intentionality of action from planning the action through to consideration and reflection on an action's resultant effects in advancing the intended instructional aim.

Teacher praxis can describe all things that a teacher intentionally does in service of the work of teaching. Hoffman-Kipp defines the term as the "dialectical union of reflection and

action." (2008, p. 249) This includes all actions that a teacher consciously does when working

directly with students and includes activities that a teacher engages in before contact with

students (ex. lesson planning) and after that contact concludes (ex. reflective processes). Notably,

teachers do not necessarily need to be aware of the praxis conception in order to engage in

practices that typify working in praxis, as when Daniels (2010, p. 160) notes that one of her

subjects, at the time a teacher with 32 years of high school teaching experience, "was not

familiar with this term [praxis], but that they 'used to call it the reflective practitioner.'"

The TPACK Framework

Given the centrality of educational technology when teaching during the COVID-19

pandemic, a review of the relevant literature is useful when considering how participants in this

study have approached their use of technology in actualizing their teaching praxis. While

conceptual frameworks surrounding educational technology have developed over time, the

Technology, Pedagogy, and Content Knowledge (TPACK) framework has become a major

frame since its development in the first decade of this century. Koehler & Mishra (2009) provide

the graphical representation of the TPACK framework presented in Figure 1.

Figure 1

The TPACK Framework and its Knowledge Components
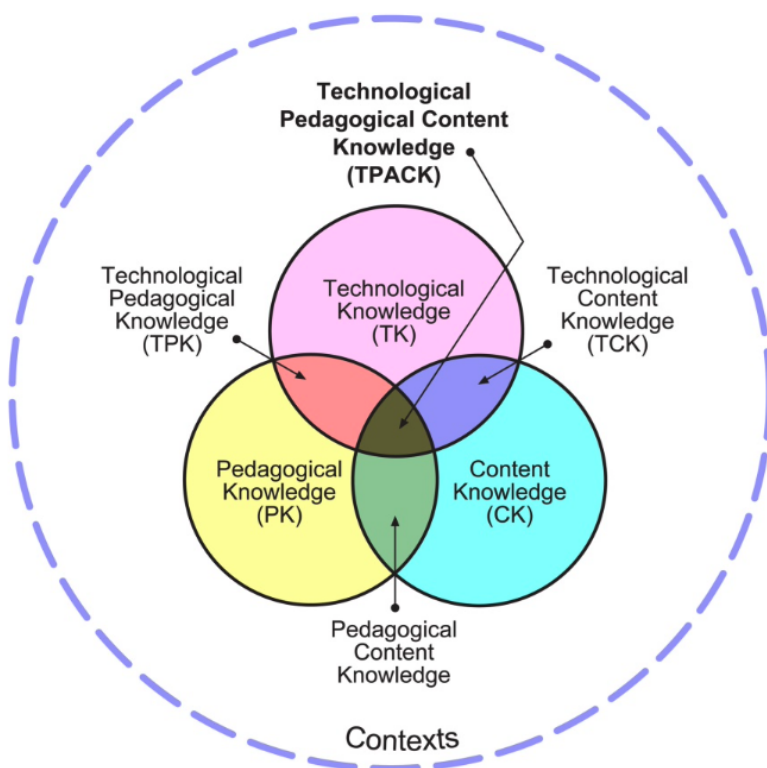
Note. From Koehler & Mishra (2009, p. 63)

One aspect of the TPACK framework that is particularly useful is its use of multiple different domains of teacher knowledge to elucidate effective instructional use of technology, drawing on the domains of pedagogy, content, and technological knowledge. Koehler et al. (2013) make this point explicit in pointing to the intentional grafting of technological knowledge onto the pre-existing corpus of work that has been done looking at pedagogical content knowledge (PCK) since the concept was first introduced by Shulman (1986). By adding the additional dimension of technological knowledge to the PCK framework, the TPACK framework

considers several novel intersections of knowledge domains in teaching, specifically technological pedagogical knowledge, technological content knowledge, and the trisectional domain of TPACK itself.

Findings from the TPACK Corpus

A review of research that has been conducted through the lens of TPACK has several interesting implications for the work of this study. Kim et al. (2013) found positive correlations between teacher beliefs around the epistemological basis of learning specific to both the source and structure of knowledge were significantly correlated with teacher conceptions about both the learning process and the role of the teacher ($r = 0422$ to 0.447, $p <= 0.05$). Building on this finding, they found strong positive correlations between teacher beliefs about effective ways of teaching and technology integration ($r = 0.673$ to 0.882, $p <= 0.05$).

Clark & Boyer (2016) conducted interviews and focus groups among public school teachers in North Carolina with 3-5 years of teaching experience. They found that exposure to technologies alone did not mean that teachers could use them in ways that were effective for instructional purposes. In a similar vein, Kopcha (2012) found that the use of situated professional development, specifically direct mentoring transitioning to teacher-led communities of practice, led teachers to indicate more favorable views of typical barriers to effective technology use in teaching.

Taken together, studies like these are suggestive that for modern educators working in non-emergency circumstances, effective use of technology is a central component of their praxis. Given the unprecedented reliance on technology occasioned by the COVID-19 pandemic's ERT circumstances, explicit focus on teacher use of technology is warranted.

Conceptual Framework

The discussion of the literature that is provided in the preceding sections of this chapter informs the conceptual framework that underpins this research project, presented in Figure 2:

Figure 2

Conceptual Framework of this Study
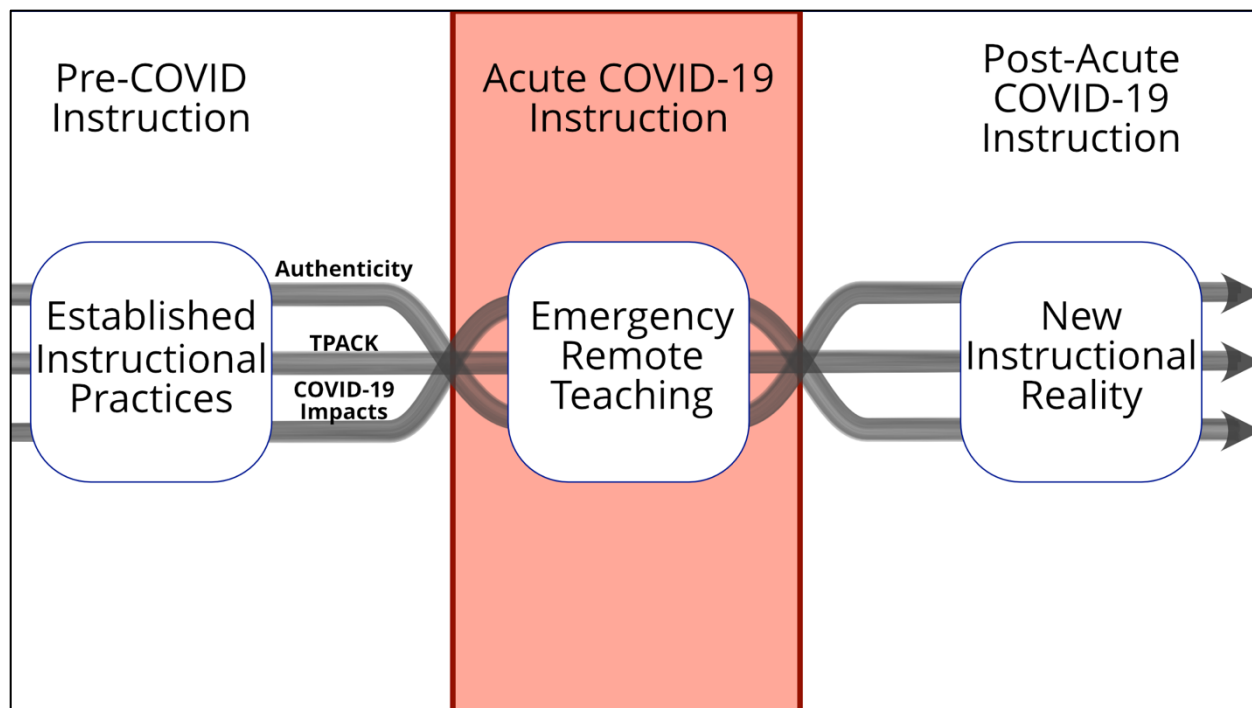
Figure 2 posits that the transition from previously established instructional practices to COVID-driven Emergency Remote Teaching and the subsequent return to in-person instruction in circumstances informed by the pandemic have tangible and reorganizing impacts on teachers' instructional practices. Considering the specific nature of the COVID-19 pandemic and its particular impacts, the framework suggests that different strands of the work of teaching (shown in large-scale aggregations *of authenticity*, *TPACK*, and *COVID-19 Impacts*) will each play different roles in the different phases of pandemic teaching, but that for however they might shift in any particular phase, they will persist in informing and influencing the instructional practices of teachers for the duration of the pandemic's impacts and beyond. While the graphical representation of the conceptual framework shown in Figure 2 may suggest a proposed return to prior prominence of instructional practice influences once the phase of Acute COVID-19 instruction abates, this is not intentional, and only reflects a constraint of diagrammatic representation.

Concluding Remarks

The literature review provided in this chapter demonstrates several major themes related to the work of this study. The corpus of literature around impacts of COVID-19 is nascent, rapidly developing, and predominantly occupied with studying impacts on higher education, concerns around the inequities of pandemic-related impacts on educational systems, and a focus on best practices for teaching and learning online. Comparatively little literature is pointed toward the K-12 teaching environment or the return from COVID-19 occasioned Emergency Remote Teaching (ERT). This suggests a clear utility for this study, which is specifically focused on how the pandemic has impacted instructional practices among the teachers in the IAA high school as they have transitioned to and returned from COVID-19 ERT.

COVID-19 is a specific and extreme instance of teaching during a crisis. Historical literature around the impacts of significant crises on educational systems is relatively sparse and inappropriate for analyzing the current situation. The review of literature in this chapter surrounding the impacts of previous natural disasters on education, and specifically that literature which is focused on the impacts of Hurricane Katrina on the educational system of New Orleans, demonstrates that it is not easy to find a clear historical analog to the current moment, which is understandable given the unprecedented nature of the COVID-19 pandemic in both scope and scale. In focusing on the impacts of COVID-19 on the educational system of IAA, this study looks to continue to advance the developing picture of how this singular moment in education is impacting the educational systems in which it is occurring.

The driving focus of this study on instructional practices is well-supported by the literature. The literature reviewed around instructional practices demonstrates that it has been a topic of research focus for at least the last 50 years and has varied widely from the moment-to-moment decisions that teachers make throughout a lesson (ex. Clark & Peterson, 1986) through to the long-term planning decisions that teachers engage in throughout instruction (ex. Wiggins & McTighe, 2005). This study's focus on a unit of analysis for instructional practices related to long-term planning is in keeping with much of the literature around the study of instructional praxis and (more generally) reflective practice, which is particularly well-suited to the qualitative methodological approach described in Chapter 3.

Finally, the research suggests there is strong utility in utilizing Koehler & Mishra's (2009) Technology, Pedagogy and Content Knowledge (TPACK) framework for understanding how the COVID-19 pandemic has impacted instructional practices, given the predominance of technological approaches to handling the disruptions to instruction caused by the pandemic.

TPACK acknowledges that technological knowledge is crucial but not sufficient for effective

instructional decision-making, which also requires a comparable depth of knowledge related to

both content and pedagogy. The implications of TPACK on this research are similarly

demonstrated in the methodology and instruments used for this study.

Chapter 3: Methodology

Introduction

This study focuses on the impact of COVID-19 on the instructional practices of teachers at IAA High School. In particular, the research questions that focus this work are restated here from their introduction in Chapter 1:

1. How has the COVID-19 crisis impacted the instructional practices of individual teachers?

2. How have the shifts in instructional practices occasioned by the COVID-19 crisis impacted teachers' ability to address what they feel are authentic teaching practices when teaching students?

3. How have the adjustments that teachers have made in their instructional practices during different phases of the COVID-19 crisis persisted or abated as the acute stage of the crisis has receded?

Methodologically, this study approaches these research questions via a qualitative case study that employs interviews with teachers from IAA high school division. The utility of the qualitative approach for allowing participants to share their experiences as fully as possible and provide for the type of rich description of the topic of study makes the approach particularly appropriate. Looking to Maxwell's (2013) delineation of the utility of qualitative research, this study seeks to provide a *process theory* for how the COVID-19 pandemic has impacted instructional practices within the IAA system. As this work is focused on getting the richest picture of how COVID-19 has impacted instructional practices within the specific school system of IAA, the use of interviews is well-suited for developing a clear picture of how the pandemic has impacted the practices of these teachers working in the IAA high school while providing a methodological approach that allows for suitably extensive coverage of the population of IAA high school

teachers. In addition, given the unprecedented nature of the COVID-19 pandemic, there are no suitably robust survey instruments that can easily be utilized to address the research questions while not suffering from the types of reliability and validity concerns that are characteristic of underdeveloped quantitative instruments within the time-constraints of this research project.

<div align="center">**Population and Sample**</div>

Study Population

This study focuses on high school teachers (grades 9 through 12) who work at International Academy of Asia. From within the larger population of all IAA high school teachers, the study population consists of teachers from the science, mathematics, social studies, and English language arts departments who have worked at IAA high school since at least the beginning of the 2019-2020 school year, along with teachers from two inter-academic departments; the technology & careers department (name pseudonymized), and the learning support department, along with the instructional coaching staff. In restricting the study population to teachers and coaches who meet these criteria, participants were ensured to be high school teachers and coaches who have worked at IAA over the entirety of the pandemic and have experienced both the transition to COVID-19 emergency remote teaching (ERT) and the subsequent return to post-ERT instruction. Restricting the study population of teachers to those from these six academic departments also helps mitigate confounding factors related to the fundamentally different way that performance-based subjects (ex. performing arts, and physical education) have had to operate during all stages of the pandemic. To point to one illustrative example of these confounds, due to concerns around aerosolized viral transmission, any music subject that involved the projection of breath (choir and wind instruments) were unable to engage in communal performance during the entirety of the first semester of the 2020-2021 school year.

For this reason, and a constellation of other, similarly particular aspects of teaching performance-based subjects during the pandemic, the population of focus for this study only includes teachers from the six specified academic departments, along with instructional coaches.

Study Sampling

The research phase of this project commenced in the fall of 2021. During the 2021-2022 school year, 51 teachers and four coaches were in the IAA high school faculty who met the criteria for participation in this study. The study employed a purposeful sample of teachers and coaches from the larger qualifying IAA high school teacher population (Merriam & Tisdell, 2015). All teachers and coaches who meet the population criteria were invited to participate in the study via email and personal recruitment solicitations. From the total sample of 55 possible participants, 17 teachers and coaches agreed to participate. Table 1 identifies the salient criteria of participating teachers and coaches:

Table 1

Salient Participant Criteria

Criterion	Number of Participants
Role:	
Teacher	13
Department Chairperson	4
Instructional Coach	2
Technology Help Center Coach	2
Department:	
Mathematics	4
English Language Arts (ELA)	3
Science	2
Social Studies	2
Learning Support	2
Technology & Careers	2
Technology Help Center (THC)	2

Notes. Due to dual roles (ex. Department Chairperson and Teacher), some participants are counted more than once in the top panel of this table.

The participants represent 31 percent of the eligible high school teacher and instructional coach population, 80 percent of eligible department chairpersons, and the entirety of the eligible

instructional coaches. In terms of institutional longevity, the median number of years that participants had worked in the SAS High School division at the time of participation was 6, with two participants having worked at the school for 3 years and three participants having worked at the school for 15 or more years.

Instrumentation

The study exclusively employed individual interviews with teachers in academic departments and instructional coaches. The appendices of this dissertation provide the individual interview protocol for teachers (Appendix A) and the individual interview protocol for instructional coaches (Appendix B). These protocols are materially similar, though adapted for the different roles of teachers and instructional coaches. The protocols were developed to elicit participant responses about their authentic teaching practices and how the COVID-19 ERT transition and return to in-person instruction have impacted their instructional practices. They directly ask teachers and coaches about how the pandemic has impacted their practices across the different stages of its trajectory and how particular aspects of their work have been affected by different aspects of the crisis, with particular focus on how technological facility and the various realities of teaching during pandemic circumstances have impacted the instructional decisions that teachers have made and the nature of the supports those instructional coaches have provided. They also ask participants to speak explicitly to the longevity of any changes that they have made in their instructional approach, along with discussions about their rationale for implementing any instructional changes.

Instrument Development Process

The interview protocols were initially developed for the author's doctoral research methods coursework in the spring of 2021. The foundational instrument was initially conceived

of as the basis of a semi-structured one-on-one interview protocol. Initial prompts were drafted considering the best practices identified in several current canonical resources on qualitative research methodologies (Maxwell, 2013; Merriam & Tisdell, 2015; Patton & Patton, 2002; Rubin & Rubin, 2012). The initial interview protocol was field-tested during the spring of 2021, both prior to and after receiving feedback from the author's Research Methods course instructor. With the conclusion of the spring 2021 semester, the author worked with his dissertation committee to revise and adapt the draft protocol for use in focus groups before qualifying to conduct his dissertation research in the summer of 2021.

Research Question-Focus Group Protocol Alignment

Table 2 provides an alignment between the Research Questions of the study and the items that seek to address them in the individual interview protocols:

Table 2

Research Question- Individual Interview Protocol Alignment Grid

Item #	Summary of Item:	Research Question(s):
1.	Name, Classes taught, years at IAA	N/A (Demographics)
2.	Teaching philosophy and authentic beliefs	1, 2
3.	Self-evaluation of technological facility	1
4.	Notable COVID-19 events	1
5.	COVID-19 impacts on teaching practices	1, 2, 3
6.	Support from IAA during ERT	1, 2, 3
7.	Instructional practice changes due to ERT	1, 2
8.	Persistence of instructional changes from ERT	2, 3
9.	Impact of COVID-19 regulations on teaching practices.	1, 2
10.	Impact of return to post-ERT distance learning episodes on teaching practice.	1, 2, 3
11.	Impact of ongoing nature of the COVID-19 pandemic on teaching practice.	1, 2, 3
12.	One instructional lesson learned from COVID-19.	1, 2, 3
13.	Evaluation of institutional response to the COVID-19 pandemic.	1, 2, 3
14.	Open for additional thoughts	N/A (open item)

Note. Item numbers are aligned across both variants of the interview protocol.

A reflection document was also provided to all participants to help focus group participants reflect on prompts and organize their thoughts. A copy of this reflection document is provided in Appendix C.

Data Collection

All interviews were held during October 2021, with the bulk of the interviews (14) occurring during the week of October 11th. Initial methodological consideration of using focus groups instead of interviews was discarded as the study progressed. This decision was made due to the nature of ongoing social distancing restrictions in Singapore during the period over which interviews were held. Given Kreuger & Casey's (2015) recommended minimum focus group size of four participants, it was felt that it was not possible to utilize focus groups in ways that are in keeping with institutional requirements from IAA and COVID-19 restrictions from the Singaporean government while also allowing for a relatively efficient data-gathering phase that was also reasonably convenient for participants. Fourteen of the 17 total interviews were held via Zoom, with the remaining three occurring in-person, in compliance with the COVID-19 safe distancing guidelines and requirements from IAA and the Singaporean government. The interviews ranged in recorded duration from 19 to 58 minutes with a mean length of 37 minutes and a median length of 38 minutes. Audio recordings of interviews served as the sole source of data for this project. All requirements and best practices described in the University of Southern California Human Subjects Protection Program Policies and Procedures document were adhered to during the study to ensure that data was gathered ethically and protected for the duration of this work. All participants provided explicit consent to record prior to participating in their interviews and were provided with algorithmically generated pseudonyms.

Data Analysis

The rationale for the analytical approach described in this section is in keeping with typical best practices for the analysis of transcript data as per several foundational texts that the author has consulted during his doctoral studies (Auerbach & Silverstein, 2003; Lochmiller & Lester, 2017; Maxwell, 2013; Merriam & Tisdell, 2015; Saldaña, 2013). The data for all three research questions were analyzed via thematic coding of transcribed interviews. Transcripts were generated from audio recordings of all interviews using the otter.ai automatic transcription platform. The author reviewed these generated transcripts and edited them in tandem with a review of the audio recording. Following this initial review, the edited transcript was provided to each participant as an initial member checking step to establish reliability. As a result of this initial member checking process, three participants provided additional edits to their interview transcripts, all of which were non-substantive (ex. mistranscription of a word). Following the initial member checking, the transcripts were uploaded to the ATLAS.ti Computer-Assisted Qualitative Data Analysis (CAQDAS) program for thematic coding.

Coding of transcripts was conducted in the fall of 2021. The author employed an elemental coding methodology based on several of the approaches delineated in Saldaña (2013), oriented toward the generation of an inductive theory for the work of this project. Inductive theory refers to using the data generated for a project to determine the underlying themes and findings, as opposed to a deductive approach that maps a pre-existing theoretical corpus onto the gathered data. The inductive approach is particularly useful for this project given the singular and unprecedented nature of COVID-19 impacts on both educational systems and the instructional practices of teachers.

Initial coding of transcripts began while data collection was still ongoing. Transcripts were reviewed with an attendant focus on the study's research questions, but with initial researcher agnosticism for specific coding methodologies that was refined through a cyclical reflective process of transcript coding, analytical memo writing, and refinement of the developing codebook. The primary coding approach employed during the initial analysis portion of this project was typical of open/initial coding analysis. Open/initial coding is an approach to qualitative data analysis that looks to develop codes from a review of the data rather than approaching the data with a pre-established coding scheme. As the data was initially analyzed, participant responses were coded as openly as possible. This initial review employed both researcher-generated descriptive codes and in vivo codes taken directly from participant responses. Ongoing reflective cycles resulted in the ultimate revision of initial in vivo codes by researcher-generated codes

Along with these theoretical coding approaches, the author also employed various grammatical coding methods to help organize the developing codebook. These grammatical coding methods included recording participant attributes like those found in Table 1 in the preceding Study Sampling section and some magnitude coding, particularly concerning participant responses to Item #3 and Item #13.

As the reflective coding cycle work continued, analysis resolved 11 major categories of codes. These categories and the number of individual codes within them are listed in Table 3:

Table 3

Major Coding Categories

Category	Description	Number of Codes

Axial Codes:		
Practice Impacts	Impacts of the pandemic on the work of teaching/ coaching.	52
Authenticity Beliefs	Statements of participant belief around their authentic teaching/coaching practice.	17
Authenticity Impacts	Statements of how the pandemic has impacted the ability to teach/coach authentically.	13
Change in Practices	Changes made by teacher/coach in response to pandemic impact(s).	19
Change Reasoning	The rationale for making changes in practice.	10
Attribute Codes:		
Institutional Evaluation	Participant evaluation of IAA's pandemic response.	8
Lesson Learned	Lesson learned during pandemic teaching.	10
Supports	Institutional supports provided/not provided.	22
Notable Events	Notable events in the pandemic trajectory.	15
TPACK	Specific TPACK-associated response.	7
Magnitude Codes:		
Change Duration	Duration of change(s) in practice made.	3 values
TPACK	Self-assessment of ability to use technology when teaching.	A-F scale
Institutional Grade	Participant grade for IAA's pandemic response.	A-F scale

These categories populate three major code-types. Axial codes are the major categories of analysis that drive the larger work of moving towards a process theory that underpins the organization, presentation, and discussion of project types. Additionally, participant responses within axial code categories served as the major source of researcher analysis and reflection when determining that the research was approaching saturation. Attribute codes are useful for understanding the larger research picture of this work but are not as foundational for the work of developing the underlying process theory. Three different magnitude codes were also employed due to the nature of participant responses to interview questions three, eight, and thirteen.

A sub-coding scheme was simultaneously developed for the codes in some categories to assist in the organization, management, and analysis of data. Sub-coding is a method of labeling codes that employs a structure wherein codes share common elements to assist in the hierarchical organization. Gibbs (2018, p. 102) uses the analogy of a tree to explain the utility of sub-coding, with the more general elements of the code serving as more foundational, widely held "branches" of the coding hierarchy. Sub-coding was particularly useful in those domains where the participant's role throughout the pandemic had a large influence on their response to a prompt, as well as to delineate between major typologies in participant responses (ex. provided support vs. support that was not provided).

Following coding of all transcripts, a process of code landscaping (Saldaña, 2013, pp. 199–201) was utilized to organize the data that was generated within each category. Using a spreadsheet program, the font size of codes was weighted based on the number of times they occurred in the data set before being spatially organized to help visualize relationships among codes. This landscaping step served the help visualize connections between codes within categories, identify any possibly overlapping codes for the consolidation, and frame the overall

approach to presenting findings in chapter 4. Ongoing cyclical reflection and revision of the project codebook continued during the analysis portion of the project and into drafting of the findings presented in chapter 4. The codebook for all final axial codes utilized during analysis is provided in Appendix D.

Establishing Reliability

The establishment of reliability is a crucial piece of the qualitative research process. Merriam and Tisdell (2015) provide a variety of approaches to establishing reliability in qualitative research. The following discussion provides an overview of the ways in which this research project worked to generate reliable findings.

Internal Reliability

Internal reliability refers to how well the data gathered within a qualitative research paradigm agrees with the reality it is describing (Merriam & Tisdell, 2015, p. 242). This research looked to establish internal reliability in the following ways:

Large Sample Size

A large enough sample size for a qualitative research project is useful for establishing two main checks on internal reliability. Having a large sample size of participants will help to demonstrate *triangulation* in the data, a situation in which multiple data points all reinforce a common finding. This helps to ensure that findings are robustly representative of the problem-space of a qualitative research project, and do not overstate the beliefs or perceptions of any one participant.

Aside from its function in triangulation, another way a large sample size supports internal validity is through allowing a researcher to capture maximum variation in their data set. Simply put, having enough data helps to make sure that as much of participant's reality has been

captured as is reasonably possible. This idea of maximum variation is also useful for informing saturation, or the point at which additional participant data does not continue to add novel findings.

In the qualitative research tradition, there is no set number for an appropriately large sample size. That said, the sample size for this project of 17 participants, representing 31 percent of eligible educators is well within normal parameters for qualitative research of this scope.

Member Checking

Member checking refers to asking participants for feedback on findings during the research project. It is useful as means to establish internal reliability because it provides participants with an explicit opportunity to acknowledge that the findings of the researcher agree with the perceptions of participants as to what they said and meant. This project utilized two different member checking steps; the transcript review process described earlier in this section, along with a presentation of the draft findings and conclusions in chapters four and five of this dissertation to all participants in February of 2022.

Audit trail

The audit trail for a qualitative research project is a suitably detailed, publicly presented description of the methodology of that project. The audit trail serves as a means for the research community to understand what was done during a research project and to verify that the work is in keeping with professional research standards. The audit trail for this research project is largely found in this chapter of the dissertation, along with the presentation of the instruments and research codes that are found in the appendices.

Researcher positionality

Explicit statement of researcher positionality helps to disclose researcher beliefs and biases to the larger research community. As subjective judgement is an inevitable aspect of all research paradigms, in disclosing one's positionality and attendant beliefs, researchers endeavor to make their subjectivity known so that the research they conduct is available for the research community to interrogate with respect to researcher subjectivity. A positionality statement of the researcher concludes this chapter.

External Reliability

External reliability refers to how well the findings of a research project can be applied to other circumstances outside those of the project. Unlike the internal reliability mechanisms discussed in the preceding section, external reliability approaches for this work were much more limited. In the main, this limitation is an inexorable function of the nature of this work. As discussed in prior chapters, the specific circumstances of the COVID-19 pandemic in IAA and in Singapore are highly particular to the environment and system in which they have occurred. The nature of this work as a study of a problem of practice for the institution in which it has occurred is similarly limiting. It would be folly to even try to suggest that this work endeavors to describe the state of IAA in a way that can be readily mapped onto other educational systems.

Another way in which external validity is limited in this work is due to the difficulty of establishing saturation among findings for less-occupied roles in the IAA system. A sample size of two (in the case of technology coaches, and instructional coaches), or four (in the case of department chairpersons) is lower than would be ideal to develop thematic findings for the experiences of serving in those roles during the pandemic. At the same time, these sample sizes

represent either an exhaustion or near-exhaustion of the total number of eligible participants who serve in those roles.

Additional Reliability Checks

Along with the above validity checks, the author employed several other, associated mechanisms of establishing validity. Unlike the above, these mechanisms served other purposes in this research process as well. They are discussed below:

Analytic Memo Writing and Code Landscaping

Analytic memos are a major means by which researchers consider and interrogate their developing corpus of codes and other findings during data gathering and analysis. The author utilized a series of analytic memos to summarize findings from interview transcript analysis, to develop and refine the categories and codes that emerged during analysis, and to frame the logical organization and presentation of findings found in chapter 4. Along with analytic memos, the code landscaping process described earlier in this chapter adapted from Saldaña (2013) served a similar interrogative and organizational process.

Peer Review

Peer review is also a useful means of establishing reliability. In discussion with researcher peers, researchers can engage in similar types of dialectical consideration of their research process and findings, while also working to make sure that the methodological approach being employed is sound and within well-supported guidelines for the work of a qualitative research project. The author utilized peer review with multiple members of his doctoral cohort, the members of his dissertation committee, along with consultation around his methodological approach and data analysis practices with his former research methods professor.

Positionality Statement

Given the impact of researcher positionality on a qualitative research paradigm, there is utility in explicitly stating that positionality. As author, my positionality follows in this section. I am the sole researcher for this project. I spent 13 years as a high school science teacher in an American public school system, and another 2 as the director of the same system's science and technology programs, before moving to Singapore to work at IAA, where I am employed as a science teacher and serve as the incumbent department chairperson. I recognizee that the institutional circumstances of IAA are significantly different and considerably more privileged than those of the system I came from, and that the institutional circumstances of my prior school system are considerably more privileged than many contemporary American public-school systems.

I agree with Villaverde's (2008, p. 10) suggestion that positionality is "how one is situated through the intersection of power and the politics of gender, race, class, sexuality, ethnicity, culture, language, and other social factors," though I am also struck by the role of personal history in establishing positionality similar to what is discussed by Eidinger (2017). For as long as I have thought about it consciously, it has been obvious that my life has benefited immensely from a series of choices that many other people do not get to make. My ontological beliefs are an inexorable function of my life as a middle-class, northeastern American as the only child of two middle-class, politically liberal, educator-parents. My father's own childhood was marked by pronounced familial poverty. My mother's childhood was decidedly more privileged but was punctuated by the blacklisting of her father, due to an accusation of membership in the Communist Party and his subsequent refusal to collaborate when testifying before the House Unamerican Activities Committee.

My training in science and science education, along with my religious atheism, has led me to privilege post-positivist empiricism as the major means of epistemological determination through which I view knowledge of the world and my place in it. That noted, I am aware of the various and valid critiques of empiricism that have been on offer since its development as a named school of thought.

As a teacher and department chairperson at IAA for the duration of the pandemic, I have been acutely affected by its impacts on the work that he does teaching children and working with his colleagues. While I recognize that all employees of an international school like IAA are in some ways complicit in the colonialist legacy of international school projects more broadly, I also recognize that there is an inarguable ability to subvert the most problematic dynamics of the system I am working in through the work that I do.

Chapter 4: Findings

Introduction

Findings across all three research questions suggest that the COVID-19 Pandemic has

had significant impacts on IAA teachers and their instructional practices. This chapter presents

findings related to each of the research questions. Before considering findings around the

research questions, this introductory section presents several findings related to the general

pandemic experiences of participant teachers to help better resolve the picture of their experience

of the pandemic and frame the findings that comprise the remainder of this chapter, as well as the

following note around how the author has chosen to present findings.

The Use of Numbers in Discussion of Findings

Throughout this chapter, findings will occasionally reference the number of participants

who spoke to a particular theme in their responses. I have made this deliberate choice, with

recognition that the use of numbers when discussing qualitative research is an unsettled question

in a larger discussion about the nature of qualitative research. Maxwell presents several

advantages to the inclusion of incorporating numbers within a qualitative research paradigm,

which include the use of numbers to support the *internal generalizability* of the research by

demonstrating how characteristic a particular finding is among study participants, the aide of

numbers in helping to illustrate the diversity of the data in a study, and their utility in disclosing

a dimension of the amount of evidence being utilized to support researcher interpretations that

would otherwise be absent without their inclusion (Maxwell, 2010, pp. 478–479). At the same

time, he also identifies several problems that the inclusion of numbers can precipitate in

qualitative research, including the unintended implication that a widely-held finding is more

easily generalized to conclusions that extend beyond the locality of the study, and the risk that

using numerical distributions to inform researcher thinking can lead researchers to suggest causal relationships between variables based on the magnitude of their incidence (Maxwell, 2010, pp. 479–480). In deciding to use numbers to present findings, I seek to avoid either of the later concerns while embracing aspects of all the former benefits. This is aided by the ultimate causality of the COVID-19 pandemic and its impacts on the IAA system in driving all findings presented, and explicit recognition of the unique locality of this project within that system. It would be improper for the reader to view a more-widely held finding as being more representative of the larger picture of the IAA institution or seek to use the findings in this chapter to broaden conclusions to circumstances outside of IAA.

Initial Pandemic Impacts on Participants

Interview question four asked participants to speak to those aspects of their personal and professional life that were most impacted during the initial stages of the pandemic. The goal of this prompt was to help resolve when exactly, during the initial acute phase of the pandemic, did participants come to recognize the significance of the pandemic. Responses touched on a variety of events and initial impacts. The cancellation of the 2020 Interim Semester week was identified by most respondents in their answers to the question. Interim Semester, an annual event at IAA since the 1970s, provides students with a variety of week-long, place-based learning experiences both in Singapore, and in various countries abroad. Prior to the 2020 cancelation, the event had never been previously cancelled. That it was cancelled (and the associated faculty meetings around the cancellation) was identified as a significant initial pandemic event by 12 participants. Amanda's response to the question provides a representative example of participant sentiments around the significance of the cancellation of Interim Semester. From the perspective of 15 years working in IAA, she noted that Interim Semester was the most common aspect of the IAA

experience THAT alumni reference whenever she has attended alumni events, but that she was personally relieved that it was cancelled for the spring of 2020 as the COVID-19 situation was worsening.

Additional events identified by many participants included the transition to Emergency Remote Teaching (ERT- nine participants), the significant changes to graduation events for the senior class (eight participants), and a generalized initial recognition of the severity of the COVID-19 pandemic (seven participants). Other common responses included IAA's preparation for distance learning (six participants), the loss of the ability to travel out of Singapore (four participants), the impact of the pandemic on the children of participants, and the resumption of in-person learning after ERT (three participants each).

Several impacts identified by instructional coaches were unique to their roles in the organization. Three out of the four coaches interviewed identified the preparation for both distance learning and in-person learning in accordance with COVID-19 regulations as a significant event. In a related finding, three coach responses addressed other ways in which their work during this period shifted, including supporting teaching staff to transition to ERT instruction, supporting teachers during ERT, and changes to their work responsibilities during the ERT period.

Participant TPACK Evaluation

Given the primacy of instructional technology for managing the initial impacts of the pandemic during ERT, prompt three in the interview protocol explicitly asked teachers to self-evaluate their ability to effectively utilize educational technology. The TPACK framework posits that teachers need facility with technology, pedagogy, and content knowledge to be able to effectively utilize technology (Koehler et al., 2013). To resolve the picture of participant facility

around using instructional technology, participants were asked to give themselves an A-F letter

grade for their technology usage and to explain their reasoning for the grade they gave themself.

Self-assessment of technological fluency is a commonly utilized methodology for TPACK

assessment (Scott & Nimon, 2020; Willermark, 2018). Table 4 lists the grades that participants

gave themselves along with the number of participants who assigned themselves each grade.

Table 4

Self-Evaluation of Participant Technological Fluency

Grade	Number of Participants
A	4
A-	1
B+	2
B	9
C+	1

Given the grade distribution shown in table 4, findings here suggest that most participants have a high degree of comfort in using instructional technology. Participant explanations for the grades they gave themselves also support this finding, with seven participants indicating they have a high comfort with instructional technology and have high usage in their work as teachers. When explaining his self-evaluation of an A for his ability to use instructional technology when teaching, Tate stated that he felt that he possessed a high-level of technological savvy in his teaching, both solving his own technology-related problems as they arise and pursuing what he termed as "innovative" uses of technology over the duration of his 11 years at IAA.

A perspective like Tate's is contrasted with that of the six participants who indicated high comfort with instructional technology, while also indicating that that they do not use it as frequently in their practice as high usage participants do. Milton explained his less-frequent usage in his response justifying his self-assessment of a B by expressing the sentiment that instructional technology is often not aligned to his own values as an educator, which has led him to use technology less frequently than he might otherwise.

Three participants indicated high comfort with instructional technology, while also indicating a relatively low level of usage. Among all study participants Amanda was the only participant to indicate less-than-high comfort with instructional technology, justifying her self-evaluation of a C+ by citing what she characterized as a lack of general fluency in a wide variety of technology, while also noting that she felt that she was very willing to learn and demonstrated capable use of the technology that she employed regularly in her teaching.

Taken together, these findings suggest that educational technology and TPACK facility among IAA high school teachers is generally quite high. This is not surprising given the level of instructional technology in the IAA high school environment. All teachers on staff are provided

with IAA-issued laptops that are replaced every four years, along with electively issued iPads that are on a similar replacement cycle. The learning environment is wholly 1:1 for student computer access, and the effective use of educational technology is one of the institutional priorities that teachers agree to when signing their employment contracts every year.

Research Question One Findings

Research question one is "How has the COVID-19 crisis impacted the instructional practices of individual teachers?" In the broadest sense, findings suggest that the answer to this question is that impacts have been substantial and widely varied. This section will delineate those findings to a much greater extent, beginning with the impacts of the pandemic that participants identified as influencing their practice as educators. Following this, the supports that IAA provided to assist participants when making the transition to emergency remote teaching (ERT) and the subsequent return to post-ERT instruction will be discussed, as well as participants-identified missing supports from the IAA institutional response. A synthesis discussion of data around research question one is provided at the end of this section.

Pandemic Impacts on Participant Teaching Practices

Impacts of the COVID-19 pandemic on participant teaching practices comprised the most numerous and varied category of responses in the research conducted for this project. In organizing this section, findings are generally organized by the period of the pandemic in which they occurred, beginning with impacts during the ERT period, followed by impacts during post-ERT distance learning episodes, and then to subsequent impacts that participants felt are ongoing in their nature, both due to various pandemic management regulations and more generalized ongoing impacts. The section concludes with impacts identified by department chairpersons and instructional coaches as a function of their specific roles in the organization.

ERT-Related Impacts on Instructional Practices

Participants identified various impacts on their instructional practices during the ERT period. These impacts generally related to changes in the experience of teaching during remote ERT circumstances. The most widely identified ERT impact was alterations to typical one-to-one student-teacher interactions (seven participants). Speaking to his experience around one-to-one student interactions during ERT, Milton offered the following:

> "I mean, how easy was it to sort of wait behind after class and have a quiet one on one conversation? It wasn't as easy. I will say that, strangely, I did have like, two kids kind of connect and just reach out and sort of say, "hey, look, you know, I'd love to chat about some stuff that's going on." So, we were able to have those conversations, but I think it was a lot more, kind of, there's a lot more back and forth."

Most participants who spoke to this impact employed framing like the quote above, while also indicating a similar level of ambivalence, identifying similar unexpected benefits for a minority of their students. Brooke explained that in her ERT experience, it was easier to meet in more private, one-on-one settings during ERT due to the ease of setting up private conferencing through the Zoom platform.

Participants also indicated that ERT lead to other changes in their work as teachers. Responses in this category touched on multiple aspects of the instructional practices of participants. Five participants talked about how the ERT period drove overall changes to their lesson design. Speaking to his own experience of the ERT period, Tate explained that he felt his ERT teaching was much more like being "a private tutor for 100 students, rather than a teacher." While he was holding classes of 20 students in a synchronous Zoom environment, the lack of

student interaction in the class led to it feeling like a much less enjoyable experience for both him and his students.

A reduction in the content that was taught during ERT was a common finding (four participants). This finding is in-line with explicit directives from the IAA high school administration to teachers that a reduction in the content of courses taught and assessed during the ERT was expected and encouraged. Discussing her own work during the ERT period, Amanda described how the Professional Learning Communities (PLCs) that she was a part of during the ERT time responded to the ERT by reducing the both the scope of what was taught along with the instructional tempo of her teaching work, and how this prioritizing of particular standards over others, along with the reduction of class time from 75-minute blocks to one-hour blocks led her to feel that the overall pace of her teaching shifted.

Another major finding around the impact of ERT on teacher's instruction was an increased focus on student social-emotional wellness during that period through both an increased need to focus on student social-emotional wellness and help for students in managing their emotional burden and burn-out. Osmond described how he worked to manage the social-emotional well-being of his students during the ERT period by focusing on the emotional well-being of his students much more than he had previously. Given that there was an increased sense of disconnection among his students, he explicitly worked "to get some smiles and get people just kind of smiling and maybe laughing and talking together about whatever it might be."

This sense of disconnection among students was echoed by several other participants. Ray noted that he had a subset of students who were "just sort of tuned out." When he noticed students off-task, his normal classroom management strategies (ex. varying his proximity to the

student) were not available to him in the online environment, and that management tools in Zoom like removing students from the class were comparatively "crude" solutions.

ERT-Related Impacts on Assessments

Changes to assessment practices during ERT were noted by four participants. Like Ray's comments in the preceding paragraph, Gary discussed how ERT instruction led to a reduction in the informal, formative assessment opportunities that he would typically apply in a physical class, as he was not able to monitor student work as easily in real-time.

Most of the respondent commentary around ERT assessment practices spoke to similar loss of typical assessment practices, though not uniformly so. Eva explained how she worked to adapt their assessment practices during ERT by moving to an instructional model that utilized an initial quiz to formatively assess student understanding and then targeting direct instruction to students who demonstrated a lack of understanding on the initial quiz questions on a question-by-question basis, while providing the other students in the class with self-directed with self-directed skill work via the IXL application.

Post-ERT Distance Learning Episode Impact on Instructional Practices

Participant responses around the impacts of post-ERT distance learning episodes were more uniformly positive than the ERT impacts described in the preceding section. Many participants (12) indicated that post-ERT distance learning episodes have been less stressful due to the forced practice that the ERT period occasioned. Morton spoke to his experience in this regard:

"I think just a comfort level with knowing the stuff you need and knowing the stuff how you do it. [Teachers] had six weeks to kind of tinker with the process. And now if we go it's like, "okay, plug it in, plug it in. I know what I'm Zooming. The students are all super

comfortable with it. Everybody knows how to log in." It just it just flows a lot easier now."

The short duration of post-ERT distance learning episodes was identified by six participants as yielding a beneficial change of pace due to their very short timeframes while several participants indicated that these subsequent distance-learning episodes have been useful for building relationships with their students. Alexis noted that subsequent distance-learning episodes have provided one of the few opportunities to see students without masks on and allowing for more understanding of who students are by providing a window into their home life.

Considering less-positive impacts of subsequent distance-learning episodes, two participants indicated that the post-ERT distance learning episodes have resulted in a less rich learning experience than what would have been possible during in person learning. Speaking to a sudden, unplanned, distance learning day that resulted from a staff member contracting COVID-19, Gary indicated that it was "a bit more work for that one day," because the single-day distance-learning episode in question only impacted one of the two alternating blocks of his classes. In his view those classes that got the distance-learning version of his lesson got a less-rich learning experience as a result.

Ongoing Regulatory Impacts on Instructional Practices

Participants identified many ongoing impacts to their teaching practice from the pandemic. These impacts are highly varied in their nature. The ongoing impact of regulations on instructional practices was the specific focus of interview question nine. This section provides a thematic presentation of findings that participants identified as being specifically due to the impacts of various institutional and governmental regulations.

Regulatory Impacts on the Instructional Experience. Participants identified various to changes to the IAA in-person learning experience that have been occasioned due to institutional and governmental pandemic management regulations. Ten participants indicated that management regulations have had tangible impacts on their instructional planning decisions. Brooke explained that have profoundly impacted her classroom environment, and the configurations of students that she can have in her instructional structures. Over the span of in-person pandemic teaching, changing regulations have allowed for different numbers of students who can work together in groups, and if those groups can mix over the span of a lesson or not, a situation that Brooke found to be both "frustrating" and "challenging" for her teaching, and further exacerbated by requirements around cleaning rooms and periodic temperature checks of student at the opening and closing of class time that has further impacted her instructional design.

Several participants also note that changes to the in-person learning schedule, a shift made by the IAA high school administration to be in regulatory compliance around the numbers of students who can congregate in any area of the school at any time during the school day, has led to various downstream impacts such as the significant loss of instructional time, and the degradation of the IAA Professional Learning Community (PLC) model. Humphrey explained that while the loss of 10 minutes from the daily schedule may not seem like much, it has an insidious impact on subsequent days leading to a progressive loss of typical instructional pacing over time and ultimately resulting in a feeling that his math instruction has felt "a lot more rushed."

Regulatory Impacts on Relationships. Six participants noted that regulations have an ongoing impact on their ability to build relationships with their students. Kyle described the

impact of regulations on his ability to build relationships with his students, feeling that he does not know his students as well as he has in previous years, due to mask-wearing and its impact on the speed with which he can get to know his students.

Aside from the impact of regulations more broadly, responses like Kyle's also touch on the specific impact of regulation-enforced mask wearing on his relational work with students. The impact of mask wearing on instructional practices is a major finding from this research and is addressed in much more detail in the discussion of findings around research question two.

Regulations Drive Adaptations. The notion that regulatory impacts on teaching has led participants to adapt their approach to the work that they do was a common finding. Six participants described ways in which they have adapted their work for the regulated environment that has existed while teaching in-person throughout the pandemic. Amanda explained how shifts in regulations have caused her to plan her lessons with attention around flexibility of the instructional approach she will use, likening the increased flexibility to experiences that she has had in sharing classrooms with other teachers for many years

Ongoing Non-Regulatory Impacts on Teaching Practices

Various ongoing impacts were identified by participants that were not due primarily to regulations. These impacts are wide-ranging in terms of how they have impacted teacher practices, both explicitly and implicitly. Unlike many of the prior findings discussed in this section of the chapter, the impacts of many of these findings are more nebulous in terms of how they impact the day-to-day work of teaching students. At the same time, they have been significant enough for participants to offer in response to questions around their instructional practices, and as such they are presented here in illustration of the often-blurry lines that separate a teacher's instructional practices from the other dimensions of their work as an educator.

The Impact of Pandemic Stress. Seven participants noted that the prolonged duration of the pandemic has led to an increased stress burden for them and for their colleagues, with two specifically spotlighting the increased stress that has come from the loss of ability to easily travel out of Singapore, or to have out-of-country family travel into Singapore during the pandemic. Brooke spoke to this impact: "People are tired. And so, they're not as open. You know, they're just managing, I suppose for lack of a better word, grumpiness, or just exhaustion, or tempers. I guess tempers-- just, you know, frustration."

Change Fatigue. Connected to the impacts of pandemic stress discussed above, findings around increased teacher fatigue due to the pace of changes in the IAA school environment over the course of the pandemic was another common finding. Three participants noted a feeling of general exhaustion over how quickly structures like the schedule and student grouping guidelines have had to change at different points in the pandemic's trajectory to maintain social distancing compliance. Amanda described these impacts in noting that "there's just so many changes, and you we never know when what's going to change, and when, and it's just a lot of yo-yoing. And that's really challenging."

Two participants noted that the initial IAA response to the pandemic had been to slow down initiative rollout, though it was also noted that since the beginning of the 2021-2022 schoolyear, the pace of institutional initiatives has increased, adding to the overall sense of change fatigue experienced by the participants who noted the change. Morton noted the impact of this recent increase in the pace of initiatives as seeming contrary to what he considers to be the more important work of focusing primarily on his instruction.

Altered Interpersonal Interactions. The impact of the pandemic on the nature of interpersonal interactions within the IAA high school was another common finding among

participants. Most of the responses offered by participants in this category were negatively framed as a decrease in various interpersonal interactions that participants value highly as part of their work as teachers. These impacts include changed collegial interactions with other teachers, altered interpersonal relationships with students, as well as the observation that IAA has had to decrease the amount of what Tate categorized as "fun stuff" that used to make it a unique and enjoyable environment for teachers and students. Milton indicated that he felt a sense of "progressive disconnection" from his colleagues over the duration of the pandemic due to the lack of social opportunities within the IAA environment.

Related to this was the finding offered by three participants that their extracurricular obligations had decreased because of the pandemic, and while this had a positive benefit of giving affected teachers some additional uncommitted time, it also represented a less-rich school experience. Tate described his experience around this aspect of the experience of working at IAA:

> "Kids can't have access to the jam room. There's no such thing as public performances. We've tried to retool what can happen and keep those kids excited, like playing for each other over Zoom and having a bit more of an online presence and that kind of thing. But it's all that stuff that happens at home…the reason kids get in that club is so that they can collaborate and make music together and basically rock out, and they can't do any of that stuff."

Changes to Teacher-Parent Contact Patterns. Alterations to patterns of teacher-parent contact during the pandemic was a repeatedly identified by participants. Findings here were ambivalent, with three participants noting that the pandemic has led to increased ease of parent contact, as videoconferencing has become more commonplace, while two participants indicated

that they have experienced a decreased amount of parent contact over the course of the pandemic.

Ongoing Increased Use of Digital Tools. The increased use of videoconferencing described in the preceding paragraph is related to an additional finding that the pandemic has led to an increased use of digital tools by the school community. Gale, one of the participating instructional coaches in this study, indicated that she felt that the pandemic has resulted in a lowering of the affective filter of teachers around seeking help when they need it due to the unprecedented nature of pandemic circumstances.

Difficulty of Providing Learning Support. Ongoing, domain-specific impacts were generally not noted by participants. The exception to this was in the Learning Support department where both participants indicated that there has been difficulty in providing learning support accommodations to students during all phases of the pandemic.

Unaffected Aspects of Instructional Practices

While not as numerous or varied as the impacts discussed in the preceding section, participants also identified a series of aspects of their instructional practice that they felt had not been impacted by the COVID-19 Pandemic. The most common finding in this area was the sense that fundamental instructional planning (ex. lesson planning, content, and curriculum) remained mostly unaffected due to the ongoing nature of the pandemic (six participants).

Findings in this area also determined a variety of less representative findings around unaffected practices. These unaffected practices were each stated by one participant and include the following aspects of their work as a teacher: Student-facing communication strategies, the use of direct instruction as a teaching approach, the pace of work/professional expectations, ability to assess in traditional modalities post-ERT, and the loss of various informal formative

assessment opportunities. For the sake of comparison, an equal number of study participants indicated that nothing was unaffected or made easier by the pandemic.

Department Chairperson Specific Impacts

The department chairpersons who participated in this research identified two impacts specific to their role. One participating chairperson noted a significant shift in their role during ERT as they became the first point of support for the teachers in their department. Three of the four participating chairpersons noted a general difficulty in managing and leading their department teams due to ongoing stresses on both their teachers and themselves over the course of the pandemic. Brooke described her experience as a department chairperson during the pandemic as becoming more "exhausting," with particular focus on the chairperson's roles in providing teams with information and helping department members to manage their emotions.

Instructional Coach Specific Impacts

Like chairpersons, participating instructional coaches also identified role-specific impacts on their work stemming from the pandemic. These impacts tend to mirror many of the teacher-identified impacts, with a focus on the coach-teacher role replacing the teacher-student role. These findings include changes to the nature of the coaching relationship due to both the ongoing nature of the pandemic and its attendant regulations, diminishment of opportunities to coach teachers due to pandemic circumstances, a change in coaching focus, as well as specific shifts in the roles that instructional coaches have played during the pandemic.

One interesting note is that during the run-up to the ERT phase of the pandemic, and throughout ERT, IAA made a conscious shift in what it asked instructional coaches to do. Technology Help Center coaches were tasked with developing and supporting the instructional technology infrastructure of IAA to enable a maximally effective online learning ecosystem for

students, while instructional coaches were explicitly told to pause any teacher-facing

instructional coaching, and to pursue other aims during that time (ex. curriculum development).

Coaches in both roles were also heavily utilized as part of the high school team that prepared the

IAA campus to allow students to attend in-person school after the ERT period, as well as one-

time scholastic events like graduation, while still following social distancing and contact tracing

regulations.

Identified Initial Supports for Participant Teaching Practices

Participant teachers provided a variety of responses when asked to consider the support

that IAA provided to them during the initial phase of the COVID-19 pandemic, with a particular

focus on the transition to ERT. These supports were typically structural in nature, reflecting

adjustments to professional expectations and other encouragements to flexibility by the IAA

institution as most directly communicated to teachers via the high school divisional

administration at the time. Nine participants provided examples of ERT supports that encouraged

themselves and their PLCs to be flexible in their expectations of their students and of themselves

as teachers. Morton described his experience of this encouragement to flexibility, noting that he

found administrative directives around not needing to fill the entirety of Zoom meetings with

teacher-directed instruction to be reassuring because "it just kind of took the pressure off…

giving us space to be able to take our own space, and to be able to give space to students, while

still trying to make some progress." Three participants pointed to the specific changes to the

daily schedule during the ERT period as being notably supportive for their work. Two

participants also noted that the level of communication from divisional administration during that

time was supportive in providing clarity during a chaotic period along with comprehensible

rationales for the changes being implemented.

The amount of training that IAA provided to teachers in the period between the emergence of COVID-19 as a possible concern and the move to ERT was particularly well-represented in participant responses, with 13 participants explicitly pointing to the preparatory professional development that Technology Help Center coaches and staff provided as being supportive for the ERT transition. Tate noted the utility of Zoom "practice days" and technical support around how to utilize Zoom effectively as being particularly useful. Methods of providing teachers with informational resources for them to consult as needed were similarly spot lit for their utility.

The impression of robust technology support is reinforced by the fact that all four instructional coaches indicated that this period of support and training during the ERT transition was the major avenue of support that they provided to teachers during this time. Mason described his approach to his instructional coaching work as shifting from coaching around instructional practice to what he described as "tech coaching," providing teachers with possible uses of instructional technology that might have been useful for what they were seeking to accomplish in their online instruction.

Along with support from IAA's professional development apparatus, seven participants also noted that resource sharing and support from teacher colleagues was similarly useful for their work as teachers during this period. One novel approach that was employed by the IAA Technology Help Center during this time involved provisioning teachers into two different "teams" based on self-assessment of comfort with digital tools. Milton noted the utility of this approach for his work as a teacher during that time in encouraging teachers to help themselves and each other in a very low stakes, "loose" structure.

Instructional Technology Supports for Participants

      One interesting subcategory of supports that participants identified during their interviews were the instructional technologies that they found useful for different purposes during the ERT period. Table 5 lists all identified supportive instructional technologies mentioned during participant interviews, along with a summary of the purpose(s) that those technologies served for teachers during ERT.

Table 5

Participant Identified ERT Technology Supports

Technology Support(s)	Purpose(s)
iPad, Laptops, TI-Inspire	1:1 hardware
Schoology (LMS), Google Docs	Management, curation, and delivery of curriculum
Zoom	Video meeting platform for class meetings
Flipgrid, Quizizz	Assessment
Peardeck, Slido, QuestionPress	Synchronous lesson interactivity supports
YouTube, LMS hosted videos	Asynchronous content delivery

Participant-Identified Missing ERT Supports

Participants were also asked to consider any supports that would have been useful during the initial stage of the pandemic, but that were not provided by IAA. Missing supports are both more varied than those that were provided, while also being much less commonly represented among the sample, with most identified missing supports only being mentioned by one or at most two participants. The only missing support identified by three participants related to a lack of effective ERT assessment practices. Two participants noted a lack of centralized guidance around instructional practices, and a desire for more planning time and less time spent on screen during the ERT period. Two of the participating coaches also noted that they would have liked to have provided more ongoing, large group professional development to teachers as the ERT phase of the pandemic continued.

Outside of the above, all other identified missing supports were identified by single participants. These missing supports are wide-ranging in their nature. Table 6 provides an overview of these singleton responses from both teachers (supports that they indicated they were not provided with), and coaches (supports that they felt they did not provide to teachers)

Table 6

Singleton-identified Missing ERT Supports

Category	Missing Supports
Flexibility	Decreased meeting time burden.
Emotional	Appropriately balancing teacher needs with student needs.
Predictive	Anticipating difficulties with post-ERT return to in-person instruction.
Structural	Initial unforeseen technical problems.
	Clear technical support for students.
	Physical support for prolonged distance learning.
	Managing teacher family needs.
	Widely utilized training for pedagogical changes.
Coach	Flexibility in hours and staffing for technical support.
	Lack of utilization of coaches as educators during the ERT period.

Summary Discussion of Research Question One Findings

Taken together, participant responses around research question 1 suggest that the COVID-19 pandemic has had profound and varied impacts on the instructional practices of individual teachers. These impacts varied by the nature of the roles that participants played in the IAA organization over the timeline of the pandemic, as well as with the nature of different phases of the pandemic and the ensuing response of IAA high school.

The initial phase of the pandemic is characterized by a sudden transition to a period of Emergency Remote Teaching (ERT) distance learning. Participants identified a variety of

impacts on their instructional practices from the ERT, notably including alterations to what teacher-participants identified as their typical one-to-one interactions with students, alterations to their lesson design, a reduction in the content that teachers and their PLCs taught and assessed, and an increase in explicit instructional focus on the emotional wellbeing of their students. Changes to assessment practices were another commonly identified impact during the ERT period, with respondents identifying both a loss of informal, formal assessment practices, and the utilization of novel modalities to assess students within distance-learning structures.

Following the ERT period, teacher-participants felt that subsequent, brief distance-learning periods were generally more positive than the ERT experience, with participants identifying their ERT experiences, and the brevity of these subsequent distance-learning periods as contributing to the more positive reception of these later distance-learning episodes. In keeping with participant's identified increased focus on the emotional wellbeing of their students, these post-ERT distance learning episodes served to help teacher-participants build relationships with their students in ways that the in-person COVID-19 learning environment did not afford, though a few participants did note that these subsequent episodes were somewhat disruptive and limiting for their own instructional practices.

With the transition back to in-person learning that followed the ERT period and has generally persisted since that time, participants identified the impacts of various institutional and governmental regulations as being particularly impactful on their instructional practices. The various requirements of teachers to comply with regulations around safe distancing of students, mask wearing, and appropriate maintenance of the classroom environment were particularly widely noted as being impactful on instructional planning with typically negative implications for student grouping structures, and the instructional trajectory of both daily lessons and longer-

term lesson planning. Changes made to the IAA schedule to allow for regulatory compliance were identified by several participants as having longer-term effects on their ability to effectively lesson plan. Regulatory impacts on relationships between teachers and their students was another common finding. These impacts established, many participants also noted that they have adapted their work over the duration of the pandemic to operate within the altered and occasionally shifting regulatory requirements.

Ongoing non-regulatory impacts were also identified by participants. These findings were generally less clearly impactful on participant instructional practices, while still being indicated by participants as impacting the work that they do as educators. Ongoing stress related to the persistence of pandemic circumstances was identified by many participants as being a notable impact, along with related impacts around change fatigue for the ongoing and unpredictable shifts in the IAA high school environment. A few participants noted that the IAA administration initially responded to the dynamic pandemic circumstances by slowing down initiative rollouts, but that this adjustment was felt by them to be dissipating with the commencement of the 2020-2021 schoolyear. Another notable finding was the observation that the various informal, enjoyable interactions with students through extracurricular activities, and collegial relationships with teaching colleagues were felt to have attenuated over the course of the pandemic.

Participants noted shifts in parent-contact during the pandemic, to ambivalent effect. This was accompanied by an overall increase in the use of digital tools by IAA teaching staff. Discipline-specific impacts were generally limited, though both participating members of the Learning Support department noted a difficulty in providing learning support accommodations has been a general feature of all stages of the pandemic.

In speaking to aspects of their instructional practices that were unaffected by the pandemic, several respondents indicated that fundamental, large scale instructional planning around lessons, content and curriculum have been generally unaffected, along with another selection of individually represented responses around specific instructional modalities, and professional expectations.

Participating department chairpersons identified role-specific impacts around the increased difficulties of leading their departments over the pandemic as their teams have worked to manage increased stress burdens. Instructional coaches reported shifts to the nature of their roles during the ERT phase of the pandemic away from their pre-pandemic coaching work in keeping with adjustments made to these roles via administrative directives.

When asked to consider the supports that IAA provided to teachers during the initial ERT phase, most participants pointed to specific examples of ERT supports related to explicit encouragement to flexibility by IAA administration through a directed reduction in taught and assessed course material during that time and shifts to the IAA high school schedule to better function within the ERT context. A particularly robust finding was the nearly universal identification of the utility of preparatory professional development during the ERT transition as being a particularly useful support, with many participants also identifying informal, collegial support as having utility for them as well. Instructional technology infrastructure for the ERT period was pronounced (see Table 5- Participant Identified Missing ERT Supports), though also a natural outgrowth of the generally high degree of instructional technology that was already present for teachers within the IAA system. When asked to consider supports that were not provided but that participants felt could have been useful for their work during this period, participant responses were generally quite varied, with a lack of effective ERT assessment

practices, centralized guidance around instructional practices, and a desire for more planning/off-screen time being the only items identified by more than a single participant. Table 6 provides a summary of singleton identified missing ERT supports.

Research Question Two Findings

Research question two is "How have the shifts in instructional practices occasioned by the COVID-19 crisis impacted teachers' ability to address what they feel are authentic teaching practices when teaching students?" Unsurprisingly, findings for this question show that participants have had their ability to teach from a place of authenticity widely effected by the circumstances of teaching during the pandemic. This section will discuss those findings to a much greater extent. The section begins with a delineation of participant-identified aspects of their authentic beliefs around teaching and discussion of findings around how pandemic-occasioned teaching circumstances have impacted participant authenticity. The section then discusses changes that participants have made to their teaching practices in response to various phases of the COVID-19 pandemic and participant reasoning for why they made the changes that they identified. A synthesis discussion of data around research question two is provided at the end of this section.

Authenticity Beliefs of Participants

To understand how the COVID-19 pandemic has impacted teacher's authentic teaching practices, it was necessary to establish what participant teachers identify as their authentic teaching beliefs. Interview question two explicitly asked participants to "speak briefly about [participants] overall philosophy as an educator…I'd like you to speak to one or two practices that you try to provide in your role as a coach/instructional support and the main reasons you privilege these practices." Table 7 provides an overview of the variety of participant responses

to this prompt, while Appendix D provides example quotes from participants that illustrate each of these identified beliefs.

Table 7

Participant Provided Authentic Teaching/Coaching Beliefs

Teacher Participant Beliefs:
Beliefs around what to teach
The teacher speaks to the value of teaching transferable skills in their work as a teacher.
The teacher places high value in curricular domain knowledge and practices.
Beliefs around how to teach
The teacher indicates they want students to be actively engaged in their learning.
The teacher speaks to trying to provide students with flexible and/or varied learning experiences.
The teacher explicitly speaks to privileging learning-theory informed instructional practices.
The teacher explicitly notes that they value teacher-centered ("traditional") delivery.
Beliefs about relationships
The teacher speaks to valuing the building of trust and relationships.
The teacher frames their work as a "teacher of students," not of their subject.
The teacher speaks to valuing learning over grades.
The teacher speaks to helping students achieve their goals.
The teacher speaks to wanting to encourage student reflection.
The teacher speaks to wanting students to challenge themselves.

> **Coach Participant Beliefs:**
>
> The coach indicates that "anyone can learn."
>
> The coach indicates that they do not believe that intelligence is fixed over time.
>
> The coach indicates that they work to respond to the needs of their coaching partners.
>
> The coach frames their work as building a skill set for their coaching partners.
>
> The coach values building relationships with their coaching partners.
>
> The coach values teaching systems-level thinking skills

Pandemic-Occasioned Authenticity Impacts on Participant Teachers

Given the diversity of authentic teaching and coaching beliefs held by participants presented in the preceding section, we can begin to understand how participants have felt that the pandemic has impacted their ability to teach and coach authentically. Responses to many of the interview prompts served to elucidate participant thinking in this area, with responses to items five, seven, ten and eleven being the most direct in addressing this question. This section presents findings thematically, beginning with ERT-specific impacts, before moving on to more impacts from the broader experiences of participants during the general trajectory of the COVID-19 pandemic. It should be noted that findings in this section focus first on participant teachers, with a discussion of participant coach findings presented subsequently.

ERT-specific Authenticity Impacts

Like the findings from research question one, participants indicated that the period of Emergency Remote Teaching (ERT) had several unique impacts on their ability to teach in line with their authenticity beliefs. An increased difficulty of being able to understand the well-being of students when engaged in ERT teaching was a widely noted finding, occurring in most

teacher-participant responses. Simone provided a typical response illustrating this difficulty in her interview, noting that the lack of incidental interaction with students made it much harder for her to get a sense of how they were doing, and that when she did notice that students were struggling, ERT teaching circumstances provided her with fewer approaches for touching base with those students.

Other ERT-specific impacts were typically framed in similar deficit-oriented terms. Two participants noted the difficulty of providing authentic learning experiences for their students during the ERT period. Morton described the difficulty of providing authentic science learning experiences, as he felt that the lack of in-person laboratory settings meant that his ability to provide students with opportunities to engage in the process of inquiry-centered science learning "completely went away." While simulations may have provided students with a simulacrum of laboratory experience, Morton felt that this part of his experience it was greatly diminished.

Two participants noted that the ERT period led to a loss of their ability to teach and build on transferable skills with their students. Eva characterized difficulties as a shift from teaching transferable skills to "more like we [were] just trying to get them through." Thinking retrospectively, Gary spoke to what he felt was an overall loss of flexibility during the ERT period, noting that ERT served as "a bit of a wakeup call about how, when things are normal, how much flexibility we do have. And maybe how we don't really take advantage of that because we take it for granted." Gary was also the only participant teacher to identify an impact from ERT on his ability to teach authentically that can be viewed as positive, in that he was able to map the fieldwork elements of his classes from his normal approaches within Singapore at large to the local circumstances of students in their homes and immediately surrounding environs.

General Pandemic Authenticity Impacts

Moving away from ERT-specific considerations, participants also identified a variety of authenticity impacts from their broader experience of teaching during the pandemic. Many participants indicated ongoing impacts to their ability to teach in line with their authentic beliefs. The most indicated impact in this domain was the ongoing difficulties around teaching while wearing masks and teaching a fully masked student population. Participants spoke about the difficulties that have arisen from mask-wearing in a variety of ways. Osmond identified how masks have contributed to a diminishment in his ability to get to know his students, noting that compared to previous years, "I continue to find it difficult to read emotion and to pick up on the nonverbal cues of students, of colleagues, you know, of everybody." Amanda offered a similarly framed description of her own difficulties in communicating with students through masks, and how she has attempted to adjust her teaching practice as a result:

> "It's challenging with masks, right? Because it's like this physical barrier. And I feel
> really sad that I can't see my kids smiles, and that they can't see mine. Right? And so just
> like learning that over the last year and a half or so, how to just communicate everything
> through your eyes, right? And I'm pretty demonstrative anyways, like physically… But I
> just wish we could see each other's smiles."

Mask impacts are not solely relational. Morton described the physical impact of teaching through masks on his ability to speak, noting that at the end of the day, sometimes his vocal cords are "ripped," and he feel exhausted from the work of communicating through masks.

Several teachers also noted how the ongoing nature of the pandemic has contributed to a generalized negative emotional state, or a sense of unease. In his response, Milton expressed that while he personally felt "lucky" that his own family has not had what he considers to be a

significant concern during the pandemic (ex. bereavement), the length of time since he has last been able to get together with his off-island family increasingly means that when travel from Singapore does become available "there'll be so much that I've missed and that, to be honest, does weigh on me a bit…it's hard for that to not sort of filter through into your day-to-day existence. Work's sort of a large part of that."

Leaving aside the pronounced and widely noted impacts of mask-wearing on teacher authenticity and participant's negative emotions and sense of unease, it is notable that participant responses in this area are not as uniformly negative as those discussed in the preceding section on the impacts of ERT on teacher authenticity. Several participants noted that they have found themselves providing increased flexibility for their students over the duration of the pandemic. Gary described how the pandemic has led him to plan his instruction more flexibly because of the "abnormal" circumstances that have accompanied in-person instruction since the end of ERT, and the possibility that those circumstances can shift in a variety of ways.

Simone offered a complementary view on how the pandemic has led her to increase her own instructional flexibility, nothing that while her own propensity toward allowing students a large degree of freedom can "get to a situation where these kids can you give them too much rope," that has means that she has had to increase the amount of focus she places on checking in with students and parents to make sure that the freedom she offers students is done so in concert with an appropriate amount of support.

In a related response, Eva noted that while she is still teaching transferable skills in line with her belief around the authenticity of this practice, the skills that she is teaching have changed. Speaking to her work teaching ELA, she noted how the end-of-year project for the 2020-2021 schoolyear was adjusted from a live speech to a recorded one as the PLC felt that the

ability to speak in recorded and digital formats had increased due to the use of platforms like Zoom over the course of the pandemic.

Participant-effected Changes to Teaching Practices During the Pandemic

The discussion of the ways in which participants felt that the pandemic has impacted their ability to teach authentically is closely connected to participant responses around questions of how, specifically, teachers have changed their instructional practices during the pandemic. Participant teachers identified a variety of changes that they made to their teaching practices because of the pandemic and its impacts. This section will present findings around participant-indicated changes that they have made to their teaching practice, and discuss the rationales that participants provided when asked to speak to their thinking around why they made these changes.

ERT/Distance Learning Specific Changes

Participants identified a several changes in their practice resulting from Emergency Remote Teaching (ERT) and distance learning. These changes included increased focus on efficiency/time management during the ERT period, and increased mindfulness of possible future distance-learning transitions. Talking about the impact of ERT on her instructional efficiency, Simone described needing to plan for increased efficiency and being more mindfully prepared at the start of a lesson for its entirety due to the instructional shifts required by teaching through Zoom. Kyle described how his pandemic teaching experience has led him to have an at-home instructional apparatus ready-to-go at short notice, indicating that "I don't think [the at-home instructional apparatus] is going to go away. I think I always have to be ready for this."

Relational Changes

The most common changes identified by participants were relational changes. A participant-identified increased focus on the social-emotional wellbeing of their students was a widely distributed finding, with eleven participants providing responses to this effect. Milton described the changes that he has made in this aspect of his practice, noting that while he felt that he did not make enough of an effort in this regard during the 2020-2021 schoolyear, he has intentionally made more of an effort in this regard during the 2021-2022 schoolyear with a hope that this effort will increase the sense of connection that his students feel.

Related relational changes to the increased focus on student well-being included an increased focus on relationship building with students, and relational changes to teaching practice, including an increase in student discussion time during post-ERT in person learning Simone offered a description of her own increased focus on student wellbeing as effected through increased "community building" in her classes:

> "I've given myself permission to spend more time on that community building. And so, prior to the COVID-19, prior to the pandemic, I would sometimes ask starter questions at the start of class, or I would sometimes, do little activities that no, I can't tie this to a common core standard, but we're going to do it anyway. Because it builds a community of learners. And I think that I engage in that much more consistently and much more frequently. It's almost every class now where I prioritize that, and whereas before, I would sometimes feel guilty, or like I was wasting instructional time on something else, or that somebody else might come into my room and perceive that I was wasting that time or whatever. I think I'm much more unapologetic about it now."

Instructional Changes

Participants identified several changes to their practice at the level of their instruction. The reuse of distance learning tools and practices when returning to in-person instruction was noted by several participants. Kyle offered an illustrative example of this in describing how ERT-occasioned scaffolding that his PLC developed for performance tasks in his course have been subsequently reused and increasingly developed in post-ERT semesters of the course.

Eva noted that her distance learning approach allowed her to provide increased differentiation for her students, and that the instructional model that she developed during ERT wherein students are provided with targeted direct instruction based on their performance on an initial formative quiz has since been adapted by her for use in her subsequent in-person teaching.

A related finding was the participant-identified ease of bringing in external experts via digital tools that were initially utilized during the distance-learning period. Gary explained that this practice has been useful for his teaching and offered that it was also likely useful for the speaker, as it greatly reduced the opportunity costs that are involved when experts visit schools in-person.

Participant Reasoning for Teaching Practice Changes

When asked to speak to the reasoning that teachers utilized when considering specific changes to their teaching practice, participants offered three major justifications for why they decided to make a particular change to their teaching practice, maintain that practice, or discard it. The needs of students were the most provided justification. This was particularly true for the ERT period. Brooke justified the reasoning around the changes that her PLCs made during ERT as coming from a desire to "keep students sane and try to help them manage their emotions and reduce their stress level."

Importantly, the needs of students remained a common participant justification for teaching practice changes into the post-ERT period. Simone described her reasoning for the ongoing changes to her own practice:

"I'm confident in, you know, my seven years of reputation as a teacher that if someone does come in and is like, "what are you doing?" I'm like, "Whatever. It works," you know, so I think that I have that confidence. I think if I were to go into a new institution, there might be time where it's like, "Is it okay to do this here?" or whatever, but ultimately, I think that it because it aligns with who I want to be as a teacher, I think it'll stick."

Milton offered a similarly robust justification for why he continues to seat relational work with his students at the forefront of his instruction:

"And then the relationship piece I look-- I always believed in relationships. I just believe in it significantly more now, having experienced what it's like to perhaps not be as intentional in developing that when half of someone's face is missing. And so yeah, I think that is definitely going to stay with me."

Less commonly cited were justifications rooted in participant's experiences during the pandemic. Brooke indicated that the instructional shifts that she had identified would remain in her teaching "indefinitely," because she now had a wider diversity of structures to choose from, and where she felt that ERT-developed structures were appropriate to her purpose, she would continue to use them.

Finally, it should be noted that several participants justified not continuing a particular practice because they did not find utility in using the practice once the ERT phase of the pandemic ended. Tate noted that he viewed the return to in-person instruction as a return to a

sense of relative "normalcy," and as such returning to the types of instructional structures that he tends to use when in-person was a way of signaling that return to normal.

Coach-Specific Findings for Research Question 2

While the authentic beliefs of instructional coaches were presented at the beginning of this section, the subsequent discussion has exclusively focused on participating teachers. This section will provide an overview of findings related to research question 2 that are specific to study participants who serve as instructional coaches.

Pandemic Authenticity Impacts on Instructional Coaching

In considering their work as instructional coaches during the pandemic, participant coaches offered several ways in which they felt that the pandemic has impacted their ability to engage in coaching that is pointed toward helping teachers to meet the authentic needs of their students. In considering the ERT period specifically, Gale indicated her feeling that teachers could still work within the period to teach authentically, noting that while the opportunities to do so may not be as "intimate", or might require changes to instructional mechanics, the opportunities remained for teachers to utilize.

Shane noted concerns around the gradual loss of beneficial ERT learning over time as the IAA system returned to circumstances that increasingly resembled the pre-pandemic state. In particular, he pointed toward an increasing sense of urgency around matters that had been consciously concepted as less urgent during earlier stages of the pandemic, resulting in an increasing administrative messaging cadence around an increasing number of institutional priorities.

Participant Changes to Coaching Practices During the Pandemic

Instructional coaches described a variety of changes that they have made to their work as instructional coaches during the pandemic. Three of the four participating coaches noted that over the course of the pandemic, they felt that teachers have increasingly adapted to the reality of the work of teaching during this time. Shane described his sense that "we are all better at adapting…we've become more adept at dealing with frustrations, interruptions, and things not going the way we planned."

Different coaches identified different shifts in their work with teachers during the pandemic. Gale indicated that her coaching work suggested that teachers are using digital assessments in an increased capacity even following the ERT period. Both Gale and Mason noted that they have been able to use the circumstances of the pandemic to build relationships with their teacher partners that may not have been as easily afforded prior to the pandemic, or even centered on the common experience of the pandemic, itself. Gale and Shane also indicated that they felt the circumstances of the pandemic have led them to show their teacher partners increased patience and flexibility.

Participant Reasoning for Coaching Practice Changes

Reasoning for changes in coaching practices was varied. Discussion of the way in which instructional coaches were utilized during the ERT period was previously discussed in findings around research question one. When considering their work during the ERT period, participating coaches indicated that this shift in their work was driven by an administrative directive at the time, though both Gale and Erin provided additional reasoning around the changes that they made during the ERT period as also being driven by the needs of teachers during the ERT period. Gale noted that teacher sentiments around difficulties with traditional assessment

practices during ERT was a fundamental driver in adjusting her coaching practice during that period to working with teachers and PLCs on problem-solving and support around assessment practices. Shane spoke to how experience over the course of the pandemic has led to increased ability to work effectively within the circumstances of the pandemic.

In a related finding, both Erin and Mason spoke to their belief that the pandemic has had a reinforcing effect on their reasoning around the work that they do as an instructional coach. When asked to consider her major learnings from her experience as a coach during the pandemic, Erin offered that "I think staying flexible is important. I think finding ways to engage is important. I think listening to students and teachers is important. Those are all things that were affirmed or confirmed, not just pandemic learning."

Summary Discussion of Research Question Two Findings

Findings around research question two demonstrate that the COVID-19 pandemic has had wide-ranging and varied impacts on the ability of teachers to address what they feel are authentic teaching practices in their work with students. Table 7 provides a summary of the various beliefs that participating teachers and instructional coaches hold around what their authentic beliefs about their instructional practice. These beliefs generally revolve around what to teach, how to teach, and the value of relationships when doing the work of teaching and coaching.

In discussing how the pandemic has impacted their ability to teach authentically, participating teachers indicated that different phases of the pandemic have had different impacts on the authenticity of their work. During the ERT period, most teacher participants noted that there was an increased difficulty in being able to understand the wellbeing of their students. Teachers also noted that the ERT period led to what they felt was a degraded experience in

providing what they considered to be authentic learning experiences, a loss of instructional flexibility, and a loss of their ability to teach transferable skills.

Considering the ongoing impact of the pandemic on teacher authenticity, the impact of mask wearing on the relationships that teachers build with their students and the ability of teachers to communicate effectively were widely reported by participating teachers. Several participants also noted that the ongoing pandemic has led to an increased stress burden on them which they indicated had a negative impact on their authenticity. These negative impacts noted, participants also identified several ways in which ongoing pandemic teaching circumstances have had more positive impacts on their work with the need to remain flexible in instructional planning and shifts in the types of transferable skills that participants are teaching being the major findings in this domain.

When asked to consider how the authenticity impacts of the pandemic have driven changes that participants have made to their teaching practice, participants reported a variety of changes that they have made and their reasoning for doing so. During the ERT period, participants reported an increased focus on their instructional efficiency/time management, and a more generalized mindfulness on possible, sudden, distance-learning transitions after the return from ERT. Teachers also widely reported an increased focus on the social-emotional wellbeing of their students that began in the ERT period and has continued afterwards. Instructionally, some teachers noted that they are reusing structures that they developed during the ERT period as they have returned to in-person instruction, and that there is an ease of bringing in external experts via video conferencing technology.

Participants identified three major themes for why they or have not made changes to their instructional practices. The needs of students were the most provided justification for making

changes, both during the ERT period and afterwards. Another, less widely stated, reasoning was participant experience during the ERT period of the pandemic serving as a reason for why they have continued a particular instructional practice post-ERT. Related to this, a perceived lack of post-ERT utility for structures developed during the ERT period was the most reported reasoning for not continuing a particular instructional practice once in-person instruction resumed.

Instructional coaches noted their belief that teachers could still address the authentic needs of their students during the ERT period, even if instructional modalities needed to change for ERT circumstances. They also reported concerns that beneficial instructional practices developed during the ERT period may be diminishing over time. In considering their coaching practices, coaches indicated that both themselves and the teachers that they work with have adapted in their work during the pandemic. The utility of the pandemic to provide a common experience for relationship-building with teaching partners, and a more generalized increased patience for teaching partners were both reported by multiple participating coaches. Reasoning for changes in coaching practices during the ERT period were justified by administrative directives from that period, while post-ERT changes were justified largely by the necessities and reality of pandemic teaching circumstances at IAA. Multiple coaches noted the pandemic has had a reinforcing effect on their coaching beliefs and practices.

Research Question Three Findings

Research question 3 is "How have the adjustments that teachers have made in their instructional practices during different phases of the COVID-19 crisis persisted or abated as the acute stage of the crisis has receded?" The duration of adjustments that participants have made in their instructional practices varies with both participant and the nature of the change(s) that they have made. This section delineates those findings to a much greater extent, providing a

consideration of the different durations of changes that participants made to their practices, along with a discussion of the types of changes that have persisted and abated in the period since Emergency Remote Teaching (ERT). A synthesis discussion of data around research question three is provided at the end of this section.

Analyzing the Duration of Changes Made During the Pandemic

Interview question eight asked participants to explicitly consider if any changes that they made to their instructional practices during the ERT period of the pandemic have remained in their instructional practices or not since the ERT period, and to offer their thinking around why they did or did not keep the changes that they identified. Additional consideration of the duration of changes to instructional practices during the pandemic were occasionally offered by participants at other points during interviews. In all cases, responses around the duration of changes were coded according to the longevity of the changes that participants indicated. This process resolved three duration magnitudes for further analysis: Changes that ceased with the end of the ERT period, changes that have attenuated over time as post-ERT in-person learning has proceeded, and the changes participants identified as having an ongoing impact on their teaching practice. Cross referencing of these duration codes with other axial codes around the changes that participants made during the pandemic and their reasoning for those changes drive the analysis that underlies the findings presented in this discussion.

Instructional Changes that Ceased After ERT

Four participants identified changes to their instructional practices that they indicated ceased with the end of the ERT period. These instructional changes were universally structures that these participants had put in place during ERT that they felt did not have any utility in the post-ERT period. Osmond provided a representative justification for why he ceased using the

digital tools that he had identified as having utility for him during ERT, saying "I think, what I was trying to do online teaching was come up with practices or solutions that could best simulate the type of activities that I would be doing in person." With the end of the ERT period, Osmond felt that the approaches that he used during ERT to accomplish those goals were less useful in the in-person environment, noting that "none of those practices or digital tools were so transformative for the way that I was doing those things that I thought that they were important to keep in person." Tate provided similar reasoning when discussing his own decision to stop using his ERT instructional approach, offering that since everything his PLCs had developed for use during the ERT period were online in nature, the return to in-person instruction allowed for non-digital structures that he found to be preferable to their online analogues.

It should be noted that in all cases where participants indicated that they ceased instructional changes after the end of the ERT period, no participant indicated that all the changes that they made to their instruction (either during the ERT period or after it) have abated. All participants in this project indicated that the pandemic has had some ongoing impacts on their instructional practices.

Instructional Changes that Have Attenuated Over Time

Three participants identified instructional changes that they made during the ERT period that remained in place during the initial post-ERT period, but that have since abated. Like the changes and reasoning teachers identified when discussing changes that they ceased at the end of the ERT period, changes in this duration category were similarly structural in nature. While one respondent spoke to the lack of apparent post-ERT utility when discussing his reasoning for ceasing the change that he spoke to in this category, two participants supplied reasoning for these decisions that was different than that which was seen in the post-ERT responses discussed above.

When discussing why he has moved away from the type of reliance upon recorded video-lectures since the ERT period, Milton spoke to his skepticism around the use of video as an instructional modality that agrees with his beliefs around pedagogical practices that are most aligned with his authentic beliefs, likening his ERT practice of using pre-recorded video lectures to "an answer key in motion. There's important pieces that you're talking about, but we didn't facilitate meaningful dialogue with them, right?…And that's not good enough."

Speaking from his position as an instructional coach, Shane noted that some of the beneficial changes he had noticed around the patience of himself and his team had begun to attenuate as the IAA system began to regain some of its ability to operate within normal parameters since the ERT period, with effects that he felt could be detrimental. In considering IAA's approach to initiative pursuit, he observed that "as we shift back into an overload or as our normal becomes our new normal…that the systems around all of that stuff revert to the way that we had been doing that for so long, that sort of initiative overload."

Persistent and Ongoing Instructional Changes

Eleven participants identified changes to their instructional practices that they explicitly identified as ongoing in their impacts to their teaching and coaching practices. Table 8 summarizes the persistent changes to teaching and coaching practices that participants explicitly identified:

Table 8

Persistent Pandemic-Driven Changes to Teaching and Coaching

Persistent Teaching Practices:

    Increased authentic digital assessment strategies

    Increased differentiation for learners

    Increased ease of guest speakers via online platforms

    Ongoing planning for possible subsequent distance learning

    Reuse of distance-learning structures and materials

    Shorter instructional planning time-horizon

    Increased focus on student social-emotional well-being

    Increased time spent in student-centered discussion structures

Persistent Coaching Practices:

    Pandemic-driven relationship building with teacher partners

    Increased patience & flexibility

    Increased system-level efficiencies

The details of these changes are discussed in greater detail in earlier sections of this chapter.

Reasoning for Persistent and Ongoing Changes

Analysis of reasoning for those changes to teaching and coaching practices that were explicitly identified by participants as persistent in nature reveals several commonalities. The most frequently provided reasoning for why participants have implemented a particular persistent instructional change was student well-being. Morton spoke about his own increased intentional focus on the wellbeing of his students during the pandemic:

"Yeah, I mean, I think that's going to be a part of it for a long time. You know, whether I teach digitally, or I teach together, then yeah, really trying to help students be intentional about saying hi to each other. And developing some friendships and just having those moments is something I think will continue."

Another widely provided rationale for a particular instructional change was the demonstrated utility of that change either during the initial ERT period, or in the subsequent pandemic-teaching period. Eva described how the experience of using particular practices has led to her continuing to use those practices, noting that "I have some good strategies verses when we're starting out, it was like what? Oh my gosh, what's a breakout room? how's that going to work? These days there's banked strategies that you know works."

Interestingly, the reasoning employed by instructional coaches around persistent changes to their practices mirrors the above teacher reasoning. The needs of teachers during the ERT period, the pandemic as a learning experience, and the utility of the pandemic in reinforcing beliefs around instructional coaching were all supplied by participant coaching as reasoning for the persistent changes that they identified.

Summary Discussion of Research Question Three Findings

Findings around research question three suggest that various changes that teachers have made in their instructional practices during the ERT period of the COVID-19 pandemic have had varied longevity since that time. While some participants were able to identify changes that have ceased either with the end of the ERT period, or since that time, no participant indicated that all the changes that they have made to their instruction during the pandemic have abated. The changes that were indicated by participants as having ceased with the end of the ERT period

were wholly structural changes that participants had put in place during the ERT period that were felt to no longer serve utility with the end of ERT.

Several participants identified instructional changes that they made during the ERT period, and that they maintained for a period post-ERT, but that have since abated. Like changes that ended with the ERT period, these changes were also structural in nature. Participant reasoning for why they subsequently decided to discontinue these changes was more varied than reasoning around changes that stopped with the end of the ERT period. One participant cited a similar lack of utility for his reasoning, one participant noted a skepticism of the pedagogical validity of the instructional practice in question (the use of course videos), and one participant coach noted a system-wide dynamic influencing movement away from the decreased pace of initiative pursuit that characterized his earlier pandemic work.

Most participants identified changes to their instructional practices that have an ongoing impact on their current teaching and coaching practices. Table 8 summarizes these persist changes, which are highly varied in their nature and which impact instructional practices across multiple time scales. In speaking to their reasoning around why they have maintained these persistent changes to their instructional practice, teacher-participant reasoning tended to focus on a belief that the practice they were considering was an effective way to focus on the wellbeing of their students. Another widely provided rationale for maintaining a persistent practice change was the demonstrated utility of the change due to the pandemic-driven experience of implementing the change. Participant coaches offered similar reasoning around persistent changes, with the needs of teachers during the ERT period, the learning experience of the pandemic, and a pandemic-driven reinforcement of their beliefs around instructional coaching being their major justifications for persistent changes.

Chapter 5: Discussion

Discussion of Findings

The findings from this study present a clear picture of how participant's instructional practices have been impacted by the COVID-19 pandemic. These impacts are complex and have varied with the roles that participants have played in the IAA high school over the duration of the pandemic, as well as the different phases of the pandemic. The profiles of participants show a relatively high level of comfort using technology to advance their instructional practices, well within the model of technological fluency described in the TPACK model (see Table 4- Self-Evaluation of Participant Technological Fluency). This high degree of participant's technological savvy is congruent with the larger structural and material resources of the IAA institution. The robust nature of technical support and resources that IAA provides its educators is evident in participant responses both around the material support that they received (see Table 5-Participant Identified ERT Technology Supports), and the relative lack of participant-identified missing supports (see Table 6- Singleton-identified Missing ERT Supports).

Any readers who are interested in a fuller picture of findings than what is presented below are encouraged to consult the axial codebook provided in appendix D. The codebook presents an exhaustive collection of all axial codes utilized in this research, including those that were only tangential to the analysis of findings related to the research questions of the study.

The Impacts of the Pandemic

Participants indicated that the period of emergency remote teaching (ERT) that characterized the earliest phase of the pandemic at IAA had unique impacts on participants that were connected to their initial realization of the gravity of the COVID-19 situation more broadly. One of the major delineations between teacher participants and instructional coach participants

was in these initial impacts. Participant teachers framed their responses around ERT impacts in terms of changes to their instructional practices, while participant coaches indicated that the nature of their roles shifted during the ERT period away from instructional coaching to providing technical and practical support for teachers. Participant teachers indicated that the experience of teaching during the ERT period was tangibly different from their in-person instruction. Among the various impacts that were identified, teachers most identified changes to the relational aspects of teaching during this period. Along with these relational shifts, participants also identified ways in which they modified their lesson design to address the reality of the ERT period, reducing the content burden of their courses, changing their approach to assessments, while also being more intentional in the work of providing students with increased social-emotional well-being. Of these three major categories of impacts on teacher practice, the social-emotional wellness aspect is the one that provides the clearest through line of participant experiences after the ERT period, while the ongoing stress burden of teaching in compliance with various safe-distancing regulations (particularly the omnipresence of masks), was reported to increase in its impacts once the ERT period ended and in-person instruction resumed.

Instructional Authenticity & COVID-19

Participants have a variety of beliefs around authentic teaching/coaching practices that touch on what they should teach, how they should teach, and the centrality of relationships in their work as educators (see Table 7- Participant Provided Authentic Teaching/Coaching Beliefs). The ERT period is again pointed to by participants as having unique impacts on their ability to teach in line with their authenticity beliefs. These were almost uniformly negative, with the impact of ERT on the ability to provide a sufficient social-emotional focus for students being reported by most participants. Participant teachers indicated that they felt that the ERT period

impacted their ability to provide authentic learning experiences and their typical focus on teaching transferable skills, along with a general loss of flexibility during the ERT period. These authenticity impacts continued after the ERT period, with regulations and mask-wearing being commonly identified ways in which teachers have felt their authenticity continues to be limited. Participants also noted several ways in which the ongoing circumstances of pandemic teaching have had positive impacts on their ability to teach authentically, with several participants noting increased flexibility in their planning and in their interactions with their students.

In considering how teachers have changed their instructional practices during the pandemic to address the authenticity of their work, participants identified several major areas of changes. A major change that participants identified was an increased, intentional, focus on the relational domain of their work. Participants also identified several aspects of their instructional planning that they have changed because of the pandemic that they considered to be helpful for the authenticity of their work. These instructional changes were generally technical in nature (ex. providing students with increased scaffolding, bringing in external experts over Zoom). In justifying the changes that they made to their instructional practices, participants typically framed their reasoning in terms of the needs of their students both in considering changes made during ERT and afterwards. A less common justification were the circumstances of the pandemic itself when participants were considering whether to continue or discontinue a particular instructional change that they had made.

The experiences of teachers described above are reinforced by the experiences of participating instructional coaches. A common finding among participant coaches was the perception that teachers have adapted their instructional practices to the realities of pandemic

teaching since the resumption of in-person instruction, while the underlying ethos for their coaching work has not been challenged due to their pandemic coaching experiences.

The Persistence of Changes

Changes to instructional practices made by participants have had varied persistence. Changes made during the ERT period that ceased with the resumption of in-person learning were structural changes that were felt to have no real utility outside of the distance-learning circumstance. Several participants identified similar structural changes that remained post-ERT but have since abated. Reasoning for why participants discontinued the use of these practices over time was framed in terms of a lack of utility, a feeling that a particular instructional change was at odds with an authenticity belief, or the loss of the practice as the IAA system resumed aspects of its pre-pandemic state.

Participants also identified a variety of persistent changes to their instructional practices (See Table 8- Persistent Pandemic-Driven Changes to Teaching and Coaching). Student well-being was the most often provided rationale for why participants have maintained a particular change, with the circumstances of the pandemic as a demonstration of the utility of a practice serving as the other major justification for the persistence of that practice. This reasoning is mirrored in the responses of participant coaches when considering the needs of their teacher partners.

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Limitations of Findings

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There are a variety of limitations to the findings from this study. The limitations to the study discussed in chapter 1 impact the findings of the study. These limitations involved the ongoing nature of the pandemic, the unique circumstances of the IAA institution and the local context of Singapore, and the fundamentally constrained nature of the qualitative research

paradigm employed in the study. These limitations noted, it bears repeating that the findings from this study are representative of one way in which the impacts of the pandemic have affected the instructional practices of IAA high school teachers, and even then, only of teachers within the departments that were eligible for participation. Additionally, the requirement that participants in the study have been members of the IAA high school faculty since before the onset of the pandemic means that perspectives of teachers who have subsequently joined the IAA high school faculty have not been captured within the scope of this work.

Implications and Recommendations

The limitations of the findings presented above established, this section provides a discussion of the implications of the study for different audiences and consequent recommendations. Implications for teachers and instructional coaches are presented first, followed by implications for the institutional leadership of IAA.

Implications and Recommendations for IAA Teachers and Instructional Coaches

Findings indicate that the impacts of the COVID-19 pandemic on teaching and coaching have been pronounced and highly varied. Given the unprecedented significance of the pandemic, this finding is relatively rote, and well within agreement with the larger picture of the literature around COVID-19 presented in chapter 2. This study shows that the impacts of ERT instructional modalities at IAA have been different than the impacts of in-person pandemic teaching. ERT instruction was notable for the sudden and large-scale disruptions to what participants indicated were the normal instructional structures and relationships that typified their teaching and coaching work. Many of the changes that participants made to their practices during the ERT period were driven by these aspects of the ERT period and the desire of participants to mitigate some of the more disruptive parts of ERT. With the return to in-person instruction

following ERT, many of the changes that participants made during ERT abated, with subsequent

changes being made by participants in response to the novel circumstances of teaching in-person

under the various restrictions occasioned by the continuing pandemic.

The Centrality of Relationships

While there are many granular differences, overall, the centrality of how the pandemic

has impacted the relational work of teaching is a constant finding across all stages of the

pandemic. Whether it is due to the difficulties of a rushed move to teaching online or the

difficulties in communication that come from teaching while wearing masks, the relational focus

of both teaching and coaching is the central theme of both the impacts of the pandemic, and the

changes that teachers and coaches have made to their work over its course. The need to center

relationships is also the major reason why teachers have made changes to their instructional

practices during the pandemic. In this way, the pandemic has served as a causal driver for

increasing teacher and coach focus on intentional relationship-building in their work. The

persistence of participant's focus on relationships is reflective of the type of educator practice

and action that exemplifies an authentic, praxis orientation for teacher decision making.

The Pandemic as Technical Learning Experience

Aside from its impacts on the relational aspects of teaching and coaching, the pandemic

has also served as a means by which teachers have broadened their instructional practice toolkit.

The ERT period was particularly useful in this regard. While not all participants indicated that

they brought back practices from the ERT period to their work once in-person schooling

resumed, many did. These practices tended to be technical in nature, with ERT demonstrating the

use of a particular way of presenting material, or a more efficient means of assessment, rather

than driving more fundamental shifts in practices due to changes in a participant's authenticity

beliefs. This may be why some participants reported a gradual attenuation of some practices after the conclusion of ERT (to say nothing of those practices that were discarded immediately afterwards).

Participant's Lessons Learned

Interview Question 12 asked participants to state a lesson that they learned from their pandemic teaching/coaching experience. In considering these lessons, the author feels strongly that there is utility in letting participant's words speak for themselves. Table 9 provides the lessons that participants spoke to in their responses:

Table 9

Participant Pandemic Lessons Learned

Teachers:
Morton: "Being in-person matters."
Gary: "[Distance Learning] is nowhere near the same relationship."
Brooke: "We are resourceful. As a team, we're resourceful, and we can come up with other ways to connect and deliver."
Tate: "Plan for a shorter future."
Kyle: "Be flexible, and at any given time, be ready to teach from home."
Humphrey: "Be flexible."
Eva: "We can adapt and change."
Osmond: "I think we as students and teachers, and more broadly, as people are very adaptable."
Amanda: "Just breathe and go with the flow."

> *Alexis:* "If you're working in a place that is stable, in a country that's stable, and an institution that stable that you are in the best possible place to ride out a storm like this."
>
> *Simone:* "How incredibly privileged we've been, to be able to have the resources we have to manage the pandemic."
>
> *Ray:* "Intentional checking in on students, even if it seems silly or obligatory, is absolutely worth doing."
>
> *Milton:* "Don't underestimate the value of relationships."
>
> **Instructional Coaches:**
>
> *Gale:* "Give grace and listen, and be listened to, read and be as proactive as possible."
>
> *Shane:* "Give people grace and act with as much flexibility as possible."
>
> *Mason:* "We can do anything. We really can."
>
> *Erin:* "I think staying flexible is important. I think finding ways to engage is important. I think listening to students and teachers is important."

Leveraging Pandemic Teaching and Coaching Experiences

Looking at the responses in Table 9, it is clear that the utility of flexibility in practices is a major take-away from participant's experiences during the pandemic. The pandemic has required participants to recontextualize their work into ways of thinking about instruction that allow for sudden, unexpected changes to instructional circumstances. What is most striking about these lessons is how optimistic they are for the work that participants are doing and have done over the course of these pandemic years. This is certainly a function of the circumstances of IAA, but it also shows that an unprecedented disruption, generally characterized as broadly

negative in its impacts, can lead teachers and coaches to engage in the types of reflective practices that typify notions of educational praxis. That the most widely discussed changes in this realm are stanced in an increased focus on the needs and well-being of students implies a hopefulness for the ongoing, post-COVID work of teaching and coaching at IAA.

Recommendations that emerge from this study for the work of IAA teachers and instructional coaches center around using the experiences of pandemic teaching and coaching to frame their work going forward. Using participant learnings around the centrality of relationships, the increased focus on student well-being, and increased flexibility around planning and lesson structures will serve as a particularly useful approach for pursuing the ongoing work of teacher and coach development at IAA. This is particularly true given participant concerns around the resumption of the return to the "normal" pace of initiative implementation that may otherwise lead to a loss of the most authentic identified shifts in instructional practices. At the very least, teachers and coaches should feel encouraged to pursue those approaches to their work that have developed over the trajectory of the pandemic that they feel are most resonant with their authentic beliefs around the work of education.

Implications and Recommendations for the IAA Institutional Leadership

While certainly not being an exhaustive evaluation of the overall institutional response, the research conducted for this project helps to inform the picture of how IAA has functioned over the course of the COVID-19 pandemic. Findings present several clear implications for the institutional leadership of IAA.

Participant Evaluations of IAA's Pandemic Response

Interview question 13 asked participants to evaluate the response of IAA to the circumstances of the pandemic by assigning the institution a grade from A to F, and to explain

their reasoning for their evaluation. Table 10 provides a summary of participant evaluations of

the IAA institutional response along with additional context where needed.

Table 10

Participant Evaluations of IAA's Pandemic Response

Grade	Count	Additional Context
A+	1	The grade was for the overall IAA community response
A	9	One grade was for the response until June of 2020, one grade was explicitly for the High School Division, one grade was for "effort."
A-	2	One grade counts the entirety of a participant's rating of "B+ or A- or A."
B+	4	
B	6	One grade was for the institution overall, one grade was for the response during the 2020-2021 schoolyear, one grade was for the HS administration, one grade was for "overall efforts."
C+	2	One grade was for "results," One grade was for unspecified aspects of the system-wide response.
C	1	The grade is specifically for the response since August of 2021.

Note. Rating total exceeds participant counts due to multiple ratings by some participants

It is hard to look at the picture of evaluations provided in Table 10 and not think that the overall institutional response to the pandemic has been effective. That the institution in question is one of the most well-resourced and well-positioned K-12 educational systems in the world for handling the impacts of a global pandemic should demonstrate to leadership that they have largely stewarded the institution as they should have over the course of the COVID-19 crisis. This noted, there are several additional implications from this work for the institution that are of interest for leadership.

The Gradual Loss of Institutional Pandemic Knowledge

It is not clear that there has been any intentional work by leadership to capture the knowledge that is has developed over the course of the pandemic. Outside of this research project, the author is not aware of any additional work being done to collect data on the impact of the pandemic on any aspect of the IAA system, much less those aspects related to teaching and learning. This is particularly noteworthy given the more transient nature of the faculty of international schools. The transition of teachers out of the IAA high school has been significant over the past three years, and it is not clear that any real attempt to capture their experience of teaching during these pandemic years. This study provides a palate of *best practices* for IAA related to online learning, working within pronounced constraints, focusing on the social-emotional needs of learners, and other aspects of the work that has been done at IAA during this time. To this point, outside of this study, no systematic attempt to capture these best pandemic teaching practices has been made by IAA. From the standpoint of best practices related to material resources and institutional support during remote learning, leaders are encouraged to consult prior sections of this study, particularly the discussion around initial institutional supports for teaching practices. The list of participant-identified technology supports in Table 5

(Participant Identified ERT Technology Supports) is useful for any leadership that wishes to understand what resources were felt by study participants to best support them in the ERT online learning environment. Similarly, both the discussion of participant-identified missing ERT supports as well as the list of singleton-identified missing supports found in Table 6 (Singleton-identified Missing ERT Supports) are useful for any retrospective consideration of the IAA institutional response to the early-stage pandemic and can inform future planning around online instruction. Going forward, leadership should prioritize capturing ongoing information from teachers and coaches related to their work during the pandemic. This can be done through interviews, surveys, and even as part of the typical exit interview for staff that are transitioning out of the organization. An intentional effort around capturing this information will be helpful for resolving those pandemic teaching and coaching practices that are most robust and widely developed among the IAA teaching and coaching staff. The data gathered from such an approach will also help inform leadership about the current state of the IAA instructional system as they consider return to a more typical pace of initiative pursuit and various other aspects of the IAA culture in the new instructional reality that exists, post-COVID19.

A Rushed Return to "Normal"

In a similar vein to implications around the loss of institutional learning from the pandemic, there is a similar undercurrent in findings from this project that participants feel that IAA is moving too quickly to resume the pace of innovation and initiative-pursuit that typified the pre-pandemic culture of IAA. This pace, characterized by one participant as a "hamster wheel," was suggested by multiple long-term IAA teacher participants to have been challenging for educators in pre-pandemic circumstances. That it would be resumed while the pandemic is still continuing is not well-supported by findings in this project. Negative impacts of this rushed

return to normal can clearly be seen in participant responses around the habituation of teachers and coaches to pandemic circumstances, the attenuation of participant-identified beneficial practices that had initially developed during early stages of the pandemic, along with accounting for the entirety of lower-end evaluations presented earlier in this section in Table 10. A resumption of a pre-pandemic initiative-pursuit tempo might be attractive to leadership for signaling that institutional circumstances are improving, but it carries distinct negative risks in suggesting that reality is different from what is perceived by teachers and coaches. With this in mind, it is useful for leadership to consider if the resumption of a pace of initiative pursuit that already had negative impacts on teachers and coaches prior to COVID-19, is worth the loss of beneficial pandemic-occasioned shifts in teaching and coaching practices. It is not at all clear that an academic culture that privileges innovation can do so authentically if its driving tempo is leading educators to discard practices that they regard as innovative.

Playing to Pandemic Strengths When Framing Priorities

IAA is an educational institution with multiple long-term goals and initiatives. While the preceding section discussed some concerns around resuming a pre-pandemic pace of initiative pursuit too quickly, findings from this study also provide leadership with approaches to framing initiatives in a way that is most agreeable for educators. Where any institutional priority can be grounded in a recognition of the various lessons learned by IAA during the pandemic, doing so helps to establish buy-in from teachers and coaches. To take one current example, illustrating how the IAA initiatives around culturally responsive pedagogy are in-line with the durable changes that educators have made to their practice that center relationship-building can help educators see how the priorities of the institution are *aligned with* the aspects of their work that they most value rather than things that are required *in addition to* that work. Similar positioning

can be made around all the major IAA initiatives. More generally, acknowledging that there are valid lessons from this pandemic period that have been learned and encouraging the use of this knowledge when helping educators to frame their own priorities will be a fruitful avenue for leadership to consider when doing the work of advancing the IAA vision.

Recommendations for Further Research

This project suggests many possible avenues for further research around the impacts of COVID-19 on both IAA and educational systems more broadly. Given the significance of the COVID-19 pandemic for education, the author is certain that it will become one of the most widely studied events in the history of education research, even absent his musings in this area. Still, there is some utility in delineating some of the possible approaches that future research could take at least within the context of IAA, which follows below.

In terms of the IAA context, understanding how COVID-19 has impacted teaching in portions of the faculty not represented in this study would be useful. The experiences of teachers in more performance-based departments such as physical education, and fine and performing arts almost certainly differs in some respects from the experiences of study participants if for no other reason than the more pronounced impacts of regulations in constraining the instructional approaches available to teachers of these subjects. Similar utility may be found in studying the impacts on teachers outside of the high school division. The experiences of teachers who have joined the IAA system during the pandemic is another unrepresented demographic that could demonstrate a useful addition to the overall picture of how the pandemic has impacted the experience of teaching and learning (and on-boarding of new hires) at IAA. None of this considers the experiences of other stakeholders in the IAA system over the COVID-19 period,

with a clearly suggested utility around research into the experiences of students and their families.

Research into other aspects of the IAA system outside of teaching and learning may also be clarifying. Additional value would be given to the application of research paradigms other than the wholly qualitative approach utilized in this project. In all cases, aspects of further research that are congruent with the findings from this project will be illuminating, as will the differences that will inevitably present themselves.

Concluding Remarks

This research project was developed to consider how the most significant disruption in the author's career as a teacher was impacting the work of teaching. That this disruption also happened to also be one of the most significant global disruptions to education in history gave this project a degree of utility that it might not otherwise have had. At the inception, it was clear that the pandemic had significant impacts on all aspects of the IAA educational system, instructional practices included. That this project has served to delineate the highly varied ways in which instructional practices have been impacted by the trajectory of COVID-19 is useful in and of itself. That it has subsequently demonstrated the continual positioning of student wellbeing at the forefront of instructional decision-making is affirming for the work that is done when teaching students at IAA.

It is clear to the author that the effects of the COVID-19 pandemic on education will be felt for a very long time. Understanding this and understanding how teachers have responded during their time working in the pandemic will be useful for anyone who wants to understand how school systems have functioned in this unique crisis and develop ideas about how we might move schools to a post-pandemic reality that is more effective for the work of teaching and

learning, informed by the experience of this current moment. In as much as this study helps to

illuminate some small corner of this larger project, it has been successful in its goal.

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Appendix A: Teacher Interview Protocol

I. Background and Demographics:

I'd like to start by asking you some background questions about you as a teacher.

1. First, let's talk about you and your background in education.

    a. What are your preferred pronouns?

    b. What subject(s) do you teach?

    c. Tell me about your role in the program/school.

    d. How long have you been in your current position at the school?

2. Let's talk briefly about your overall philosophy as a teacher. Let's begin with a bit of discussion around your overall philosophy as a teacher. If possible, I'd like you to speak to one or two practices that you try to provide to your students when you work with them and the main reasons you privilege these practices. This is a big question, so please feel free to take a moment to reflect and gather your thoughts. If it helps, please use the space provided in the reflection materials to help you organize your thinking.

3. I'd also like to get some sense of your comfort with using technology when teaching. Give yourself a grade from A to F, and briefly describe why you have given yourself this grade. Again, we'll take a moment for reflection, and please feel free to use the space provided in the reflection materials to help you organize your thinking.

II. Main Section of the Interview:

I'd like to ask about your experiences teaching during the COVID-19 pandemic:

4. In researching the overall trajectory of our work as an institution during the COVID-19 pandemic, I've identified several different notable moments in the initial stages of the pandemic when the pandemic caused us to adjust our schedule or the way in which we

could work with our students. There is a timeline that identifies some major moments in

the reflection materials, along with some space to organize your thoughts if it's useful.

    a. Looking at this timeline [provided in reflection materials], and considering your

       own experience as a teacher during this time, what moments are memorable to

       you, if any?

    b. Are there any additional moments that you remember that are not identified on the

       timeline? If so, please identify them for me.

5. I'd like to discuss how the COVID-19 pandemic has impacted your work as an educator.

We'll consider how the pandemic has impacted your work in different ways. If it is

helpful for you, there is some space provided to help you organize your thoughts in the

reflection materials.

    a. What aspects, if any, of your work as a teacher have been made easier by the

       pandemic?

         i. Tell me about how the pandemic made these aspects of your work easier.

    b. What aspects, if any, of your work as a teacher have been unaffected by the

       pandemic?

         i. Tell me about why the pandemic did not affect these aspects of your work.

    c. What aspects, if any, of your work as a teacher have been made more difficult by

       the pandemic?

         i. Tell me about how the pandemic made these aspects of your work harder.

    d. [Department Chairpersons Only] How has the pandemic impacted your work in

       the Department Chairperson role, if at all?

Now I'd like to focus on the first transition to Distance Learning during the last two months of the 2019-2020 school year and the return to in-person instruction during the 2020-2021 school year. We'll focus on particular factors that may have impacted your work as a teacher during these stages of the pandemic.

6. Please describe the support that you received from the school during the COVID-19 pandemic distance learning transition when needing to adjust your teaching practices, if any?

    a. What are some of the sources of support that you received?

    b. Give me an example of something the school provided to support your transition.

    c. What are some of the major areas of your work as a teacher where you don't think you were as supported if any?

    d. Let's imagine that you could get any additional support that you needed. What would be some of the additional supports that you would have liked to have if any?

        i. How would these additional supports assist you?

    e. [Department Chairpersons Only] Please talk about how your work in the Department Chairperson role was supported or not supported during the Distance Learning transition.

7. How did your approach to your teaching practice change when we had to move to distance learning, if at all?

    a. If you implemented any changes, what were the reasons you made those changes?

  b. Some people say that the COVID-19 Distance learning transition had negative

    impacts on the ability of teachers to address the authentic needs of their students.

    What are your thoughts on this perspective?

  c. [Department Chairpersons Only] How did your approach to your work as a

    Department Chairperson change when we had to move to distance learning, if at

    all?

I'd like for us to consider a series of prompts around your thinking about how you have taught in ways that address the authentic needs of your students in the time since the end of the 2019-2020 schoolyear.

8. When we returned to in-person instruction at the beginning of the 2020-2021 school year, what changes that you implemented when we moved to distance learning remained in your instructional approach if any?

  If affirmative:

  a. Can you describe some of the reasoning you used when deciding to keep these

    changes in place once in-person instruction resumed?

  b. How long do you imagine these changes will remain as parts of your teaching

    practice, assuming they have not already ceased?

  If negative:

  a. Can you describe some of your reasoning for why you did not retain any changes

    from the distance-learning experience?

9. Can you briefly discuss how aspects of your teaching during the pandemic have been affected by the institutional regulations that have been implemented by the school and the Singaporean government, if at all?

    a.   Do you feel these regulations prevented you from realizing aspects of your

        teaching or that you had to adapt those aspects?

Moving forward in time, I'd like to ask about the transitions back to distance learning that have occurred since the 2019-2020 school year (at the very end of the 2020-2021 school year, and on occasion during the 2021-2022 school year) and around the ongoing nature of the pandemic.

10. Can you describe any similarities or differences around experience of these subsequent distance-learning transitions as compared to the first transition during the 2019-2020 schoolyear?

    a.   How did any of your experiences and learning from the first distance-learning transition impact these subsequent distance-learning experiences, if at all?

11. Can you describe how the ongoing nature of the pandemic has impacted your teaching, if at all?

III. Closing Questions:

12. In considering your work as a teacher during the pandemic, if you had to state one lesson that you think you have learned from the experience, what would that be?

13. Institutionally, if you had to give our school a letter grade for how it has responded to the COVID-19 pandemic, what grade would you give us, and why?

14. I invite you to share any other thoughts about our conversation today around how COVID-19 has impacted the work that you do as a teacher that I might not have covered.

Appendix B: Instructional Coach Interview Protocol

I. Background and Demographics:

I'd like to start by asking you some background questions about you as a teacher.

1. First, let's talk about you and your background in education.

   a. What are your preferred pronouns?

   b. What subject(s) do you teach?

   c. Tell me about your role in the program/school.

   d. How long have you been in your current position at the school?

2. Please speak briefly about your overall philosophy as an educator. Let's begin with a bit of discussion around your overall philosophy as an educator. If possible, I'd like you to speak to one or two practices that you try to provide in your role as a coach/instructional support and the main reasons you privilege these practices. This is a big question, so please feel free to take a moment to reflect and gather your thoughts. If it helps, please use the space provided in the reflection materials to help you organize your thinking.

3. I'd also like to get some sense of your comfort with using technology when coaching/providing instructional support. Give yourself a grade from A to F, and briefly describe why you have given yourself this grade. Again, we'll take a moment for reflection, and please feel free to use the space provided in the reflection materials to help you organize your thinking.

II. Main Section of the Interview:

I'd like to start by asking about your experiences as a coach/instructional coach during the COVID-19 pandemic:

4. In researching the overall trajectory of our work as an institution during the COVID-19 pandemic, I've identified several different notable moments in the initial stages of the pandemic when the pandemic caused us to adjust our schedule or the way in which we could work with our students. There is a timeline that identifies some major moments in the reflection materials, along with some space to organize your thoughts if it's useful.

   a. Looking at this timeline [provided in reflection materials], and considering your own experience as a coach during this time, what moments are memorable to you, if any?

   b. Are there any additional moments that you remember that are not identified on the timeline? If so, please identify them for me.

5. I'd like to discuss how the COVID-19 pandemic has impacted your work as a coach/instructional support, if at all. We'll consider how the pandemic has impacted your work in different ways. If it is helpful for you, there is some space provided to help you organize your thoughts in the reflection materials.

   a. What aspects, if any, of your work as a coach/instructional support have been made easier by the pandemic?

      i. Tell me about how the pandemic made these aspects of your work easier.

   b. What aspects, if any, of your work as a coach/instructional support have been unaffected by the pandemic?

      i. Tell me about why the pandemic did not affect these aspects of your work.

   c. What aspects, if any, of your work as a coach/instructional support have been made more difficult by the pandemic?

      i. Tell me about how the pandemic made these aspects of your work harder.

Now I'd like to ask some questions about the first transition to Distance Learning during the last two months of the 2019-2020 school year and the return to in-person instruction during the 2020-2021 school year. We'll focus on particular factors that may have impacted your work as a coach/instructional support during these stages of the pandemic.

6. Please describe the support that teachers needed from you during the COVID-19 pandemic to help them adjust their teaching practices if any.

    a. Give me 1-2 examples of something you or the larger school coaching/instructional support apparatus provided to support teachers during the transition.

    b. What are some of the major areas of work as a teacher where you don't think our coaching/instructional support apparatus has been as supportive for teachers if any?

    c. Let's imagine that you could provide any additional support to teachers. What would be some of the additional supports that you would like to be able to provide if any?

        i. How would these additional supports assist teachers?

7. How did your approach to your coaching/instructional support practice change when we had to move to distance learning, if at all?

    a. If you implemented any changes, what were the reasons you made those changes?

    b. Some people say that the COVID-19 distance learning transition had negative impacts on the ability of teachers to address the authentic needs of their students. What are your thoughts on this perspective?

I'd like for us to discuss your thinking about how you have supported teachers in ways that help them to address the authentic needs of their students since the long duration period of distance learning at the end of the 2019-2020 school year

8. When we returned to in-person instruction, what changes that you helped to implement as a coach/instructional support when we moved to distance learning remained in the instructional approaches of teacher, if any? What changes remained in your work as a coach/instructional support, if any?

   If affirmative:

   a. Describe some of your thoughts as to why these changes remained in place once in-person instruction resumed.

   b. How long do you imagine these changes will remain in place going forward, assuming their use has not already ceased?

   If negative:

   b. Describe some of your thoughts for why changes from the distance-learning experience did not remain in place once in-person instruction resumed.

9. Can you briefly discuss how aspects of your coaching/instructional support during the pandemic have been affected by the institutional regulations that have been implemented by the school and the Singaporean government, if at all?

Moving forward in time, I'd like to ask about the transitions back to distance learning that have occurred since the 2019-2020 school year (at the very end of the 2020-2021 school year, and on occasion during the 2021-2022 school year) and around the ongoing nature of the pandemic.

10. Can you describe any similarities or differences around your experience of these subsequent, briefer, distance-learning transitions as compared to the first transition during the 2019-2020 school year?

    a. How did any of your experiences and learning from the first distance-learning transition impact these subsequent distance-learning experiences, if at all?

11. Can you describe how the ongoing nature of the pandemic has impacted your coaching practices, if at all?

III. Closing Questions:

12. In considering the work of coaching/instructional support during the pandemic, if you had to state one lesson that you think you have learned from the experience, what would that be?

13. Institutionally, if you had to give our school a letter grade for how it has responded to the COVID-19 pandemic, what grade would you give us, and why?

14. I would like to invite you to share any other thoughts about our conversation today around how COVID-19 has impacted the work that you do as a teacher that I might not have covered.

Appendix C: Individual Reflection Prompts for Interview Participants

Reflection space for your philosophy as an educator. If possible, list 1-2 practices you provide to your students and why you privilege these practices:

Philosophy:

Practices:

Reflection space for considering your comfort with using technology. Give yourself a grade from A-F and describe the reasons why you have graded yourself as you have:

Grade:

Reasons:

Timeline of IAA COVID-19 Response

January, 2020	February, 2020	March, 2020	April, 2020	June, 2020	August, 2020
Jan.23- Singapore reports first case of COVID-19	Feb.7- Interim semester is cancelled

Feb.10- SAS has first distance-learning drill. (held with students on campus). | Mar.19 & 20- SAS has two distance-learning drills (held with students at home)

Mar.21- Singapore reports first 2 deaths from COVID-19

Mar.30- SAS begins a week-long distance-learning drill (held with students at home). | Apr.3- End of SAS week-long distance-learning drill.

Apr.7- Singapore enters circuit-breaker period. SAS enters distance-learning | Jun.1- Singapore exits circuit-breaker. In-person schooling can resume.

Jun.5- End of the SAS 2019-2020 school year. | Aug.4- First day of school for SAS students in the 2020-2021 school year |

Particularly memorable moments:

Any other memorable moments that are not identified? If so, please identify them here:

The impact of the pandemic on your work as an educator:

Aspects of your work that have been made easier (if any):

Aspects of your work that have been unaffected (if any):

Aspects of your work that have been made harder (if any):

Appendix D: Axial Codebook

Category: Practice Impacts

Code	Description	Example
Change fatigue	The teacher indicates that ongoing changes to IAA school system are fatiguing.	"I think the biggest challenge is just that there's just so many changes, and you we never know when what's going to change, and when, and it's just a lot of yo-yoing. And that's really challenging, and it can be very stressful for people." *Amanda Page*
Collegial relationships	The teacher indicates that their collegial relationships have been impacted by the pandemic.	"I had a feeling that the COVID was having a positive effect on our community, as well as the world perhaps so it's actually everyone was in that situation…if it was something that just happened in Singapore, and nowhere else in the world, we probably would have hunkered down and become a closer community. So, I felt a greater collegiality, people were a bit warmer to each other, a bit sympathetic. But as things are loosening up, I think things are getting back to normal." *Gary Ingram*
ERT 1:1 Student: teacher interactions	The teacher indicates that 1:1 interaction with students during the ERT period was altered.	"I mean, how easy was it to sort of wait behind after class and have a quiet one on one conversation? It wasn't as easy. I will say that, strangely, I did have like, two kids kind of connect and just reach out and sort of say, "hey, look, you know, I'd love to chat about some stuff that's going on." So, we were able to have those conversations, but I think it was a lot more, kind

Code	Description	Example
		of, there's a lot more back and forth." *Milton Daniels*
ERT Advisory relationships	The teacher indicates that the ERT period altered the relationships with their advisory students.	"I kind of felt like there was even more authenticity, for my advisory. Wake up it would be like the eight o'clock check in, you know, and I'd see [STUDENT], get out of bed, like, no shirt on, like "[STUDENT], it's still dress codes, you know," and we'd have a laugh, and things of that nature and people would kind of groggily get up and move and there's authenticity to that." *Mason Smith*
ERT Assessment practices	The teacher indicates that the ERT period altered assessment practices.	"I didn't assess as often. And I felt I had to be upfront. I said "I know for a fact you guys could all cheat if you wanted to. But that's not going to do any of us any good. And just trust me in 20 years, nobody's going to think the spring of 2020 your grades are a little bit lower than usual." And so definitely the assessment piece was more like I had them all on the camera, but I know darn well they could have been cheating. But that was a challenge for me not being able to kind of look in their eyes and see what they're doing and just trusting them to do the right thing." *Humphrey Valdez*
ERT Content reduction	The teacher indicates that the ERT period caused them to reduce the amount of course material they taught.	"I mean we had to reduce, obviously, what we were able to cover. So that had to change. We had to really like think, prioritize certain standards over others, and let things go. And then I would say they were one-hour blocks instead of 75-minute blocks. And so, there was a different kind

Code	Description	Example
		of strategy there too, in terms of the pacing out of the time together." *Amanda Page*
ERT Formative assessment	The teacher indicates that formative assessment practices have been impacted.	"I think that very informal assessment, which is happening all the time. Just by being in the class, looking over the shoulder, looking at the work, asking questions. You're just constantly monitoring "Do the kids get it or not? Do I need to give another example? Do I need to adapt my lesson?"…I couldn't do that real time monitoring of whether learning is taking place." *Gary Ingram*
ERT Instructional design	The teacher indicates that the ERT period caused them to change their instructional/lesson design.	"Teaching-wise, I almost felt like I was a private tutor for 100 students, rather than a teacher. Five classes, and I was very one-on-one. And even though it was 20 at a time, it was like I had to, I don't know. They couldn't talk to each other. They weren't talking to each other. And it was kind of a whole different environment. So, I guess that feeling changed of how class kind of operated. I think we still got through everything, just wasn't as fun." *Tate Higgins*
ERT Social-emotional focus	The teacher indicates that the ERT period caused them to change their focus on the social-emotional domain of their practice.	"I tried to do just a lot more. More thoughtful about the kid's kind of emotional well-being and maybe even just acknowledging the fact that, for a lot of our kids, it was a time where they were lacking a lot of connection, and maybe just fun, joy, whatever you want to call it…I just tried to get some smiles and get people just kind of smiling and maybe laughing and talking together about whatever it might be." *Osmond Dawson*

Code	Description	Example
ERT Student burnout/management	The teacher indicates that they had a noticeable change in managing student behavior during the ERT period.	"There was just a certain segment of the students who were just sort of tuned out. You can see them on their phone doing something else, or just not really taking it seriously. And you can't use the physical proximity, and the other classroom management tools that you've got on hand. I had to get really harsh with a couple classes and just boot students out. And that's a really crude tool for behavioral management, for classroom management." *Ray Hancock*
Extracurricular obligations	The teacher indicates that their extracurricular obligations have changed during the pandemic.	"Kids can't have access to the jam room. There's no such thing as public performances. We've tried to retool what can happen and keep those kids excited, like playing for each other over Zoom and having a bit more of an online presence and that kind of thing. But it's all that stuff that happens at home…the reason kids get in that club is so that they can collaborate and make music together and basically rock out, and they can't do any of that stuff. Which kind of takes something off my plate, even though I worry about it and think about it and am in contact with those kids about what to do." *Tate Higgins*
Informal personal interactions	The teacher indicates the nature of informal, personal interactions has changed during the pandemic.	"Yeah, the being disconnected from family, being actually progressively more disconnected from colleagues, right? We don't have a lunchroom anymore, there's just like lots of little social nuances at school that just don't exist. I can be a pretty bad-- it's quite easy for me to be a loner for

Code	Description	Example
		several days in a row. There's the human interaction piece is missing." *Milton Daniels*
Initiative rollout	The teacher indicates that IAA initiatives have been impacted by the pandemic.	"I think it kind of gave the school a pause on some of the initiatives that can happen…but I think that IAA, historically, or you just hear from people can be a very-- I don't know if aggressive is the right word, but a very forward-motion machine. And you can definitely see that…I think it kind of gave everybody a little bit of a chance to kind of just pause and relax a little bit." *Morton Santos*
Learning support	The teacher indicates that the ability to provide learning support for students has been impacted by the pandemic.	"Learning support kids, they struggle, I mean, with executive function. And so that's the reason they're in support, and that's very difficult to navigate. When your teacher gave you some instruction, then you have to go on, read things, and sort of sort all those things out by yourself. And I think for our kids, it was quite, quite impactful." *Alexis Warren*
Nothing unaffected/ made easier	The teacher does not identify any aspects of their instruction that have been unaffected or made easier by the pandemic.	"It's hard to sort of say that nothing has been affected, I think I would not be acknowledging a whole host of undertones. So, I can't really say anything's unaffected." *Milton Daniels*
Parent contact	The teacher indicates that parent contact has changed during the pandemic.	"I think one thing would be the ability to-- the comfort level with conferencing with anybody whether that's a student, parent, colleague, without meeting in person. I mean, I had very little professional experience with virtual

Code	Description	Example
		conferencing previously. And so that is something that that I think has been made more accessible, and easier. Like our recent parent teacher conferences. That was easier I think because of it." *Osmond Dawson*
Professional Learning Community (PLC) model	The teacher indicates that the IAA PLC model has been impacted.	"Cutting PLC time to-- what is it like 20-25 minutes or what have you? I really don't like it. It just reduces-- What kind of meaningful collaboration can you get done in that time? It just, completely changes, shifts the PLC mode." *Milton Daniels*
Post-ERT distance learning	The teacher indicates impacts from post-ERT distance learning episodes.	"A few colleagues said, "You know, I really didn't mind. I don't want to do it long term, but I really didn't mind having the one day. Just, it felt like a breather." So, while there might have been some initial stress, like "Oh, no, what does this mean? Is it one day? Is it two weeks? Are we doing this for who knows how long?" I think when it ended up only being the one day, and the school was able to respond so quickly with the contact tracing and identifying close contacts and all of that, and having us back on, it might have been easier just to kind of go, "Okay, we're doing it Friday, too, and now we have four days to figure it out by Monday." But we were right back on campus on Friday, which I think showed that our systems work. And that was reassuring." *Amanda Page*

Code	Description	Example
Recent initiative uptick	The teacher indicates that there has been a recent (since August 2021) increase in pace of initiatives.	"From an institutional perspective. I feel like stuff is starting to pick up again and there have been meetings, or there are things we've been talking about through various professional development days, or time in the first week of school, where it's like, "I don't know, if we need to be talking about this. Give us some time to get stuff done." And try to have, you know, time, you know, to chat with some people, versus having full-on sets of meetings. Yeah. So that's where we are." *Morton Santos*
Regulation adaptation	The teacher indicates that they have adjusted instructional practices for pandemic regulations.	"I'm a pretty flexible and adaptable person anyway. I've been classroom sharing for a number of years. And so, I'm kind of used to showing up in a space that's a shared space and working with what I got, right? Okay, what can we do? And before we had to have the furniture set in specific ways, I'd walk into a room and we'd change the setup, and then we'd put it back. So, every time there's a change in the number of kids we can pod together, right? From five to eight to two to like what? Who knows what's next, right? I just in my head think "Okay, so I had a plan for pods of five, and now we're back to pods of two. So, we're going to be doing pair-shares instead of pod discussions."…I'm like, "Okay, this is what we're doing now. All right, then, whatever." Honestly, nothing surprises me anymore." *Amanda Page*
Regulation planning impacts	The teacher indicates that pandemic regulations impact their ability to plan their instruction.	"It's impacting my classroom environment, right? Not being able to have students in groups, even going from groups to pairs, recently, or feeling

Code	Description	Example
		like I had to separate students and not let them work together. That's frustrating to me. So those regulations that you had to limit the amount of all that at the beginning was very challenging last year. The start of the year where you couldn't have the students mix, they couldn't get help. So that impacted. And then taking time out of your classroom to clean a desk, or we had to reduce our assessment time and how long it was because we needed to have all these other things that were in place so that we could maintain the regulations of doing temperature checks, or the cleaning." *Brooke Doyle*
Regulation relationship impacts	The teacher indicates that pandemic regulations impact their ability to build relationships with students.	"I don't know if I know the kids as well as I would have in previous years. There's a piece of it with a mask and a piece of it with just kind of the interactions that I feel like I knew kids better a few years ago, quicker. Where now it may not be as quick. It's going to take longer. I think that's one of the big things." *Kyle Covington*
Schedule-driven advisory impacts	The teacher indicates that their work with their Advisory students has been impacted by pandemic schedule changes.	"And I would say the last one is sort of a positive one. The Advisory curriculum that we've got together. I've had so much time with my Advisory that we really jelled and got to know each other really well. So that was super beneficial." *Ray Hancock*
School enjoyment	The teacher indicates that enjoyable aspects of school have been impacted by the pandemic.	"But I also-- speaking to some colleagues-- feel like a little bit at the heart of the institution has been missing as of late. And I recognize that they're exhausted, and they've got loads and loads

Code	Description	Example
		of things to do. But there might also be some opportunities for us to just express that gratitude and value in some different ways. Or just make people feel that a little bit more." *Milton Daniels*
Second-order schedule change effects	The teacher notes that changes to the in-person IAA high school schedule have second-order impacts (ex. loss of instructional time).	"Class time cut out is huge. For people from the outside, it doesn't seem like much. But if you lose 10 minutes, one day, which is really 15, between cleaning up and wiping the desktop, and then you're 30 minutes behind the next day, then 45 minutes behind the next day. And in math, you can't just say "well just cut out a few things." They [students] have to be ready for the next class. So, it's definitely a lot more rushed. That's been more difficult." *Humphrey Valdez*
Student feedback modalities	The teacher indicates that they have changed the way(s) in which they provide feedback to students.	"I think I'm adapting somewhat but not as quickly as I need to, but I do think I adapt fairly quickly. For example, some of the-- just the check-ins-- you just can't do it. Just seeing how students are doing physically. That is, you can't do it as well. However, I am getting more written feedback. So, it's somewhat of a replacement, but I can't say that I'm adapting and getting back to where I was, but I'm starting to." *Ray Hancock*
Teacher pandemic stress	The teacher indicates that themselves or colleagues have been impacted by additional stress during the pandemic.	"People are tired. And so, they're not as open. You know, they're just managing, I suppose for lack of a better word, grumpiness, or just exhaustion, or tempers. I guess tempers-- just, you know, frustration." *Brooke Doyle*

Code	Description	Example
Teacher-student relationships	The teacher indicates that the pandemic has altered their relationships with their students.	"The biggest one is relationships with kids. And if we're still sticking to [ERT], I was fortunate enough to have, at that point, built a good level of relationship with my students. But thinking to the next year, I really underestimated just not being able to see half of someone's face, and how much that would progressively delay all the interactions." *Milton Daniels*
Unaffected- Direct instruction	The teacher indicates that direct instruction elements of their teaching practices have not been affected by the pandemic.	"And I think the elements of my teaching that are direct instruction, have also, not been changed by the pandemic." *Simone Stokes*
Unaffected- Instructional planning	The teacher indicates that aspects of their instructional planning (ex. lesson design, curriculum) have been unaffected by the post-ERT phase of the pandemic.	"The majority of my lesson planning, big picture lesson unit plans haven't changed very much. There might be-- a group project might be an individual project or something like that. But I would say the overall flow of the school year is relatively the same. I'm also using a lot of the same protocols I used before, like how to call randomly on students and, you know, entry protocols, exit protocols. So overall, I would say those big things haven't changed much." *Ray Hancock*
Unaffected- Professional obligations	The teacher indicates that their professional obligations have been unaffected by the pandemic.	"Expectations on teachers and students hasn't altered. And I think it probably should, because I feel like that's why everybody's feeling so burned out, because we're all trying to run at the same speed and function the same way as we as we did when it didn't have COVID times and things were

Code	Description	Example
		less restricted. And I think that the pace doesn't seem any less to me now." *Alexis Warren*
Unaffected- Room configuration	The teacher indicates they have not had to adjust their classroom configuration due to the pandemic.	"I think the way I had my classroom set up, desks in rows individually. Now that doesn't mean I wasn't being collaborative, or I wasn't interacting. It wasn't me lecturing. But that hasn't really been affected. You can still put the kids in pairs which you do multiple times during a lesson if they're not working. So, I think I was kind of fortunate, maybe, that was a bit old school with my classroom setup that the pandemic when we're in school, didn't affect it." *Gary Ingram*
Unaffected- Student-facing communication	The teacher indicates that their student-facing communication strategies have not been affected by the pandemic.	"I think I was always really clear with my communication. Every class had a slideshow, and that slideshow had everything. And so, I think maybe some teachers perhaps had to adapt the workflow elements of how they communicate, how they receive work, etc. And that didn't affect me at all." *Gary Ingram*
Unaffected- Traditional assessment (post-ERT)	The teacher indicates that their traditional assessment practices have not been affected by the post-ERT phase of the pandemic.	"So, AP Lang, for example, has a lot of standardized kind of assessments that we need to prepare students for, where students are sitting when they write their, 60, or 50, or 40-minute essay. The traditional modes of assessment haven't really been affected." *Simone Stokes*

Code	Description	Example
Department Chair- ERT support	The chairperson indicates that their role had increased teacher support during the ERT phase of the pandemic.	"We were, I think, supposed to forward that on to [TECH SUPPORT COLLEAGUES] if they had technical issues. We were sort of like the go-to person who then fed back so that they weren't receiving a million individual emails. And so, I feel like that support was there, for me as a Department Chair, that I had a place to go with the questions that we encountered, to try and ensure that people's needs were met." *Simone Stokes*
Department Chair- Management/ leadership	The chairperson indicates that they have had altered management and leadership experiences during the pandemic.	"Doing the work that is presented to us. Going to those meetings and hearing what's going to happen and taking that back. Knowing that the department, we're feeling, sensing that the department's reaction is going to be one that you're going to have to try to lift up for. It's just really exhausting trying to maintain all those things myself, in addition to colleagues, in addition to having new teachers join the team and helping them adjust. And there's just a lot going on." *Brooke Doyle*
Coach- Coaching opportunities	The coach indicates that their opportunities to coach have been altered or reduced.	"I wonder if it's a double-edged sword that not only do you have things to talk about with COVID, you also have maybe people who don't want to talk about the pedagogy. People have other things on their plate, so I do feel there is a natural need to say "Hey, we're not going to do a coaching cycle, we're just going to make sure you're okay." So almost a therapist role has started to become part of my-- and not for

Code	Description	Example
		everybody because the trust isn't there-- but definitely, there's been a therapy role involved as a listening hat. Yeah, being a listener.*" Mason Smith*
Coach- Device wear and tear	The coach indicates that instructional technology is under an increased use burden during the pandemic.	"Providing hardware has been harder. There's much more demand on batteries. There's much more demand on network traffic. There's much more strain on any given piece of material, and we've found whether we're sending monitors home with people to use in their own offices, or we're replacing batteries at a rate like we've never done before, people are just chewing through them. We get a lot more instances of damage, because people are just trucking their machines back and forth a lot more." *Shane Alvarado*
Coach- ERT Coaching focus	The coach indicates that their coaching work changed focus during the ERT period.	"Wow did my role shift. I felt that my coaching just went away. It was like, "We're not talking, we don't need coaching right now." It was tech coaching…So I was able to help upskill myself. I did some courses and just trying to get people-- I could get myself—on-board and then I would lead out…"hey, you're online, you might want to try these things." So, I was coaching but in a much different way. It was not individual coaching; it was much more "sign in if you want to be a part of this if you need help."" *Mason Smith*

Code	Description	Example
Coach- Habituation to pandemic reality	The coach indicates that the IAA high school system has become more accustomed to pandemic circumstances over time.	"I mean, it was those types of activities that we were dealing with at that moment. Fast-forward to just a couple weeks ago, that one caught everybody off guard. And so, the panic was around a nine o'clock announcement…I guess the differences would be we had practice and we had planned...And so now that practice is in place, but it's nice to know that we do have these delivery systems. That we could physically go and get stuff and have stuff delivered." *Gale Carline*
Coach- Impact of regulations	The coach indicates that pandemic regulations have altered their coaching focus or the nature of their coaching work.	"I think that it's been impacted some in terms of who's on stay-home notice, who's not on stay-home notice, who is present in the building, and who's not present in the building. So, depending on the size of a meeting, if we have to move to Zoom, if we don't have to move to Zoom, if it's just that one of our facilitators has decided to work from home because work from home is the default, then we're all on Zoom. So those types of things, yes, it is impacted." *Erin Harding*
Coach- Increased technology coaching	The coach indicates that the pandemic has led to more technology-related coaching.	"I think there's this possible stigma that might be attached to coaching as the person receiving it might say, "there's something like, wrong with me as an educator, and I need help." But on the tech side, it seems to be safe. And I don't know how to articulate that, but I'll do my best. It's almost like there's a bright shiny tool out there. And they want to use it. And because it's so brand knew they don't mind coming in asking for help." *Gale Carline*

Code	Description	Example
Coach- Learning management system (LMS)	The coach indicates that the LMS used by IAA is not effective.	"I think the circuit breaker pretty much gave us the evidence that Schoology is just not an effective tool for what we needed to do. And I think it gave us that evidence. It's just not, it's not pretty, it's clunky, it doesn't connect with different tools that we needed to connect it with, with attendance and with grading systems and with being able to push things out to students, you know, easily." *Gale Carline*
Coach- Onboarding new staff	The coach indicates that the onboarding of new staff has been impacted.	"The connection with people during onboarding. I was part of the team that was delivering the initial onboarding training for every group that's coming in the last four years. That was really my touchstone for then getting to know those people throughout the year. That's gone because we've digitally sourced that. Now I don't have the face-to-face time with them. We have difficulty putting the hardware into their hands. We've turned into sort of a delivery service over the course of the summer. We're trucking them out to isolation hotels, so that they can get on-board. And then they can do the lessons digitally-- from the hotel room-- so that we don't waste any time. So that delivery has been a challenge." *Shane Alvarado*
Coach- Peer to peer learning	The coach indicates that there has been more peer-to-peer learning during the pandemic.	"I would say there's a wider format of teaching delivery, where online delivery was never part of the part of the thing. And now it's not just that, but all kinds of things that lead back to that online delivery. I'd say we're getting way more. It's been

Code	Description	Example
		easier, because there's more people that are capable of doing the online delivery, whereas they had no familiarity with it before. Colleagues are leaning on colleagues; PLCs are leaning on PLC leaders. Students are leaning on students. Not so much adults and students leaning on me or on the people in my team. I think they've all brought their game up when it comes to the digital stuff. That's the easier part of it." *Shane Alvarado*
Coach- Post-ERT Distance learning pause	The coach indicates that post-ERT distance learning episodes have pauses.	"When we have the small interruptions, I still think that the instructional coaching pauses, because people don't have any bandwidth to go and do coaching. I mean we're not going; we have not decided to go watch a Zoom session, right? So, I think it stalls for my role when it's called off, and it's Zoom land…So, when it goes off for a week, that's where it starts to become a struggle." *Mason Smith*
Coach- Teacher relationships	The coach indicates the pandemic has altered their ability to build relationships with teachers.	"And I just happened to say-- you know, this was maybe three weeks ago-- "hey what's going on?" and we were talking about COVID, right? "I really want to go home" and then over the break, I saw her again. I said, "I saw Spain is opened up are you going to go back?" She says, "My husband's heading back." "Good for him. When?" "Tomorrow," and then it's just like all of a sudden you have this connection with someone. And what happens, it makes coaching easier when you go into those classrooms and the trust is there." *Mason Smith*

Code	Description	Example
Coach- Teacher stress impacts	The coach indicates that teacher stress has impacted coaching work.	"I think that the ongoing nature of the pandemic impacts my work in a variety of ways. Definitely around that idea of fatigue and around people's ability or cognitive capacity to process too many things at one time in order to take on new learning. If they are currently so absorbed in learning rules and regulations for the Singaporean government which seem to change so quickly and so often, then they have a reduced capacity to take on, for instance, their own professional goal of "I want to learn how to do anecdotal note taking." That seems you know so secondary to safe, alive, healthy." *Erin Harding*
Coach- Teacher support	The coach indicates they have increased their support for teachers during the pandemic.	"My concern, the amount of headspace that's taken up thinking about-- whether it's teachers I'm supporting, or students that I'm supporting-- I think that has grown. Or I've become, not more mindful, but it just seems to take up a lot more room in my head than it did." *Erin Harding*
Coach- Technology budgeting	The coach indicates that the instructional technology budgeting priorities have changed during the pandemic.	"We started seeing that the existing equipment could not handle all of the online work, so to speak. The processors on the, you know, the school issued computers, couldn't handle all the Zooming that was being done. It was not designed for that. And so that really-- based on the fact that we weren't flying out, we weren't traveling, so a lot of that money started getting redirected." *Gale Carline*

Code	Description	Example
Coach- Troubleshooting from a distance	The coach indicates that the work of troubleshooting with a teacher is impacted by increased distance during the pandemic.	"It's just harder. If I can sit down with somebody, and they can demonstrate their problem to me, sitting next to me, and I can look them in the eye and I can get a sense for how comfortable and uncomfortable they are with the issue that we're facing. That's always been better than having them say, "Okay, you share your screen with me." There's still sort of a little bit of a lack of familiarity with the tools to the point where I think that people are not quite as comfortable sharing the content of their screen with me that way as they were sitting down next to one another. The troubleshooting has been a challenge." *Shane Alvarado*
Coach- Work time burden	The coach indicates that the distribution of their work time has been altered.	"I would say, my hours of service. I'm still there at 7:30 in the morning, and I'm still out of there at 4:30 in the afternoon. Being tuned into what people need. If it comes to me digitally? Great. It's just not walking in the front door. But you know, they haven't sort of said, "Listen, you're not going to be too busy today. Why don't you take the first two hours off?" So, the hours of service for me or for the members of my team probably are not affected. Honestly, you'll do it somehow. You'll sit on Zoom, or you'll answer a chat, or you'll try to be instructional in some other format. You'll record a lesson or whatever." *Shane Alvarado*

Category: Authenticity Beliefs

Code	Description	Example
Domain-specific knowledge and practices	The teacher privileges domain-specific knowledge and practices from the subject they teach.	"As a science teacher, an important practice is to engage in scientific inquiry that would involve students asking questions, forming hypotheses and testing those hypotheses and or predictions through the collection of data and reflection afterwards with not only on their own data but the sharing and reflection of looking for the story or trends from the larger data set gathered by the by the group." *Osmond Dawson*
Encouraging student reflection	The teacher seeks to have their students reflect on their learning.	"I value learning more than grades and when I talk to students, I like to help redirect them if they seem to not agree with that philosophy right away. That when they have a question or when they're having trouble or when they seek clarification, let's make the conversation about learning and not about points or grades." *Tate Higgins*
Encouraging students to challenge themselves	The teacher seeks to provide a challenging learning experience for students.	"You know, it's not an easy thing for a kid to kind of-- particularly like even our most advanced 10th grade kids-- to just sort of be able to go ahead and grapple with that and so, you know, there's a lot of pushing kids towards, the edge of their competence." *Milton Daniels*
Helping students achieve their goals	The teacher values helping students meet their goals.	"I want them to achieve the highest possible...whatever their goal is, I want to help them get to that goal. So as opposed to making it

Code	Description	Example
		about me, it's usually about what is their desire and how can I help them achieve that?" *Brooke Doyle*
Learning theory-informed practices	The teacher utilizes findings from cognitive psychology to drive their instructional design.	"What I mean by the Learning Sciences is, there's a pretty good set of research at this point cognitive psychology and neuroscience and all of those things. And at this point, trying to use the strategies and ideas of spaced repetition, interleaving, all of those types of ideas, in order to help students develop a robust mental model of the scenario." *Morton Santos*
Providing varied learning experiences	The teacher endeavors to provide a variety of learning experiences for students.	"I like to mix things up. I don't just want to lecture the whole time. But I don't just want them to do group work the whole time. So, I try to keep things lively that way. Because I know math can't be-- it's not always the most exciting subject for a lot of kids." *Humphrey Valdez*
Students should be active participants in their education	The teacher believes that students should be active participants in their education.	"I really believe that school isn't something that should be done to students. And whether it's considering, the constructivist approach or the democratization of education, or however you want to look at it, that's ultimately what it boils down to is that students should be able to access education in ways that feel relevant and that they want to engage with." *Simone Stokes*
Teacher of students over subject	The teacher prioritizes themselves as a teacher of students over teaching a particular subject.	"I wouldn't say I'm an English teacher or a math teacher. I really do feel I'm a teacher of students. I don't, there's no particular subject that I love more

Code	Description	Example
		than others. But, I think, looking at the student and what they need and meeting students where they're at and providing the support necessary." *Eva Reeves*
Teacher-centered ("traditional") delivery	The teacher notes that they value a teacher-centered learning model.	"I would say, in general, I'm probably pretty traditional teaching in terms of math. A lot more delivery is probably given by me." *Brooke Doyle*
Transferable skills	The teacher notes the value of teaching skills that supersede their discipline boundary.	"I don't teach content; I teach kind of form and practice. So, a big thing that I use is cognitive coaching models, whether it be the full cognitive coaching, in terms of the kind of planning or reflecting. Or else kind of design thinking as well as part of it." *Kyle Covington*
Trust & relationships	The teacher privileges their role in building trust and relationships with and between students.	"I guess one of the most important things I feel in the…classroom is to create community. Developing respect, getting kids confident, helping them to sort of feel that they can trust me and trust the other people in there. So, it becomes like a peer support group almost within the class." *Alexis Warren*
Coach- Anyone can learn	The coach believes that anyone has a capacity to learn.	"My overall philosophy is I just think anybody can learn when the conditions are safe and inviting. And so, I don't really think it really matters, what we're trying to learn, I just think overall we can learn, there's the ability to do that." *Gale Carline*

Code	Description	Example
Coach- Building a skill set	The coach works to help teacher partners acquire and develop skills.	"I think one of the reasons why I like teaching, or one of the ways I really like to approach it is by getting people to string their learning along like a set of pearls, where one pearl is related to the prior one, a prior piece of structure that they had that helped them to understand the world. Make sure those are right, and then add another one on top of it." *Shane Alvarado*
Coach- Building relationships with coaching partners	The coach works to build relationships with their coaching partners.	"I think listening is something that I make sure that it is at the forefront because building relationships is the most important to me. So…being a classroom teacher for so many years, I was able to build some credibility with colleagues and so it's a little bit easier to kind of get into the classroom, people that-- the most important thing with any relationship is trust. So, trust was built for a majority of the colleagues." *Mason Smith*
Coach- Intelligence is not fixed over time	The coach believes that people have a varied capacity to learn and that this capacity changes over time.	"Not every person is at their peak in high school. I think some people peak in middle school, they get their binders all in a row, and life is good. I think a lot of people may not peak until after they've had their first job, or after they've had their second child, or until after their family's moved out. And I think that's important to sort of recognize and to kind of dwell within. I think there's such a thing in an individual's sort of peaking beyond their potential too early. And I think that, people have got to continually be given

Code	Description	Example
		that second, third, fourth try because they may not be in a part of their life where they're really at their best." *Shane Alvarado*
Coach- Responding to a learner's needs	The coach seeks to tailor their instruction for the needs of their teacher partners.	"I believe with adults, as I do with learners of any age, in meeting people where they are. Determining what their goals are to improve their practice or to grow and learn. So being responsive to a learner's needs is like a lynchpin of my own beliefs in the classroom no matter the age of my learners." *Erin Harding*
Coach- Systems-thinking skills	The coach frames their work in terms of system-level impacts.	"I know it's weird to talk from inside of a large organization like IAA-- but perhaps it's because it's so large-- I really feel that systems do evolve the way they evolve for a particular reason. But I don't think that that makes them above some form of skepticism regarding them, and the need to have them continually sort of rethink and justify the reasons that they do things the way that they do." *Shane Alvarado*

Category: Authenticity Impacts

Code	Description	Example
Authenticity unchanged	The teacher indicates that their ability to teach authentically has been unchanged by the pandemic.	"My focus on education and trying to teach math and teach whatever content we have put up. That's been unaffected. That's still my focus. My focus

Code	Description	Example
		is still the student trying to be achieved the best they can achieve and enjoy math." *Brooke Doyle*
ERT Difficulty of providing authentic experiences	The teacher speaks to difficulties in providing authentic learning experiences during ERT.	"The process of science completely went away. And so, I really didn't have that option. I mean maybe I could have done a better job in terms of using some simulations, or some other things. But on some level, again, simulations, students don't necessarily see simulations as real science…if you define kind of the authentic needs of students as they're learning the process of science, then absolutely." *Morton Santos*
ERT Difficulty understanding well-being of students online	The teacher indicates difficulty in understanding the well-being of students in the online ERT environment.	"I think the lack of incidental interaction with students made it really difficult to have a sense of how they were genuinely doing. I can think back. I had several ninth-grade students who it was just like, "I can see that you are gaming on another monitor during this lesson, and there's nothing I can do without drawing everyone's attention to you," right? So, there aren't really any super discreet ways that you can go about connecting or touching base with students besides emails after the fact, and our students are hit and miss when it comes to even checking their emails. You don't know if they ever received it." *Simone Stokes*
ERT Disrupts transferable skill-building	The teacher indicates that the ERT phase of the pandemic did not allow them to effectively teach transferable skills.	"I also did feel a little bit like we were just trying to get them through, in terms of are we building transferable skills? No. But it felt a little bit, especially for learning support, it felt more like we're just trying to get them through." *Eva Reeves*

Code	Description	Example
ERT Ease of providing authentic experiences	The teacher speaks to ease of providing authentic learning experiences during ERT.	"I think I was pretty resourceful. For example, I have two [SUBJECT] classes. They both had fieldwork elements. I still did the field work. They still did surveys, from their own apartments to people in their building about living in that neighborhood. They did surveys out their window of whether it's traffic levels, or services, car counts, pedestrian counts." *Gary Ingram*
ERT Loss of flexibility	The teacher indicates that they had less flexibility during the ERT period.	"From a personal point of view, it might be a bit of a wakeup call about how, when things are normal, how much flexibility we do have. And maybe how we don't really take advantage of that because we take it for granted." *Gary Ingram*
Mask difficulties	The teacher indicates that continual mask wearing causes difficulty in communicating with students, developing relationships with students, or otherwise monitoring student wellbeing.	"I felt like I did not know my students nearly as well as I had in previous years. I think the mask wearing, at least this is the story I've told myself, is that I continue to find it difficult to read emotion and to pick up on the nonverbal cues of students, of colleagues, you know, of everybody." *Osmond Dawson*
Negative teacher emotions	The teacher speaks to how aspects of pandemic teaching have contributed to their negative emotional state.	"All of the other stuff of not being able to get home and see your family. I'm lucky that it hasn't been as significant of an issue for myself as it might have been for other colleagues who wanted to get home and see family members and weren't able to do that or needed to get home or bereavement. You know, I've been lucky on that front. But when I do, finally, get to plug back into my family life back in the UK, there'll be so much that I've missed, right, and that, to be honest, does

Code	Description	Example
		weigh on me a bit. And it's hard for that to not sort of filter through into your day-to-day existence. And work's sort of a large part of that." *Milton Daniels*
Post-ERT Increased flexibility	The teacher indicates that they have increased the amount of flexibility in their instructional practices over the duration of the pandemic.	"I think the other thing, like I mentioned before, is the willingness to be flexible, because we still have to reflect, we're not back to normal. So, I'm still having to think, what's my fieldwork unit going to look like in the next two months? And what I now have is that range from normal situation where I've got total flexibility, to complete lockdown, to lack of flexibility. So, plan for both." *Gary Ingram*
Teaching different transferable skills	Teacher indicates that the pandemic has led them to teach different transferable skills.	"English felt a little bit different than that, for example in English, our end of year summative was supposed to be a speech. And so, we adjusted it. And so, it was a recorded speech. And part of the reason we wanted them to record is because we're like, if Zoom is going to be this new thing and have all these recorded things, there are skills around this." *Eva Reeves*
Coach- ERT Shifting teaching practices	The coach indicates that teacher practices needed to change during ERT to maintain authenticity.	"I still think you can make intentional connections with your students. In this virtual setting. It's not as intimate but you know, you still can do it. I also think that you see a lot if you do those alternative assessments, so you see a lot more than just the paper and pencil. And when you go virtual, even in writing, and we're utilizing Google Docs, you can, you know, they're

Code	Description	Example
		working, you can have 20, open up on your screen, and you can actually see them doing the editing real time." *Gale Carline*
Coach- Loss of beneficial pandemic changes over time	The coach indicates that beneficial changes from the pandemic are attenuating over time.	"And I fear that some of those could erode some of the good things that we've learned in terms of our online, our existence online for all of that teaching. I'm seeing it in my team, I see it in [COLLEAGUES] to some extent. We're here to do the job, but we can do the job without you know, brushing people off so quickly into sort of moving from problem to problem." *Shane Alvarado*
Coach- Skepticism of pandemic impact on supporting authentic teaching.	The coach expresses skepticism at the premise that the pandemic impacted their ability to support authentic teaching.	"I know that two teachers that I am working with this year have-- we've talked a lot about progress monitoring and looking for and connecting to specific needs. Love the students in the room, and just a small bit about how you differentiate to meet those needs. But I think that is initial work happening in High School." *Erin Harding*

Category: Changes in Practice

Code	Description	Example
Differentiation	The teacher indicates that they have increased differentiation for students during the pandemic.	"I mean the stuff we did with the quizzes while we were on distance learning, in terms of, let's find out what are the specific areas kids need help

Code	Description	Example
		in and provide small group specific intervention on that. I wouldn't say we continued that specific model. We were doing it every single class. But those practices have continued. I think it's been beneficial, not always with Kahoot, or I mean not always with quizzes, but paper pencil activities." *Eva Reeves*
ERT Efficiency	The teacher indicates that ERT impacted their efficiency and/or time-management.	"I realized that the Zoom time, I had to use the time really wisely. I didn't just have this 18-minute block of time which was flexible I can come in and out. I had to say what needs to be said efficiently, have everything ready, and then let the kids go." *Simone Stokes*
ERT Student feedback	The teacher indicates that ERT impacted their solicitation of student feedback.	"I probably did more quick surveys. When I experimented with Quizizz, or I was teaching a lesson, or having them to watch the video, come back and then take the quizizz, was something that I was experimenting with and just asking the students more often for feedback. "Did that work for you? How did that go?" I probably did way more of that during the circuit breaker than I have ever, even now. I don't check in quite as much to say "Hey, how's it going? We're here in classes. are you liking the way that...?" I've done it a little bit, but just not nearly as much." *Brooke Doyle*
Guest speakers	The teacher indicates that online tools have increased ease of bringing in guest speakers.	"It seems to be that for some speakers, Zoom has a big advantage in the face on the big screen, and there's a slight, you don't have that-- It's not guilt. I don't know what the word is-- when someone's traveled an hour to school, you know, from work,

Code	Description	Example
		come, presented the kids for an hour, then went home, that's a three-hour commitment. I don't feel so bad now. Just one hour. It's doesn't have to be an hour. That's the thing you have. "Okay, we've got the visiting speaker we've got to use." And so now I can just say "Just want a 15-minute chat. Some of the kids got these questions," and that thing's not going to go away." *Gary Ingram*
Planning for possible distance learning	The teacher indicates they intentionally plan for possible distance learning.	"I even have my own system set up. So, when I work at home now, I put this [school lanyard] on. You feel like I'm in school. And then when I don't have this on, I'm not working. It's the small stuff like that. It's like having an office set up in your house. I know how to do that quickly. I've got a monitor here that's always here that I can use from school. There's just there's stuff that I learned just about the basic mechanics of it, and how to teach more virtually and have it be a little more flipped. That I don't think they're going to go away. I think I always have to be ready for this." *Kyle Covington*
Post-ERT Increased discussion time	The teacher indicates they provide more time for discussion in their post-ERT teaching.	"I guess when we came back to class. I mean, the actual structure of my lessons didn't really change but I think it was, those kinds of discussions were deeper, and I guess longer, because kids feel more comfortable to speak in person than they do having to mute themselves and unmute themselves and come back in and all that sort of stuff. And some kids aren't really comfortable with that either. So, I think, that definitely was one thing that-- it just wasn't what I did that

Code	Description	Example
		changed. It was just the nature of the environment changed. And so therefore, how it went about was changed." *Alexis Warren*
Post-ERT Reuse of distance learning structures	The teacher indicates they continued to use distance learning structures once the ERT period ended.	"For [COURSE] as an example, there's performance task one that is a paper and presentation. Performance Task two, paper and presentation. Then the final has a Part A and Part B. And for each one of those things, we created this kind of map of all the rubrics, any tips, any kind of tools that we can use, a bunch of exemplars and a bunch of stuff that doesn't work well. So, it's really one page for each of these tasks. It has everything that we're constantly referring back to in it. So, I think one thing is curating some of that information into one place. And we had stuff like that on Schoology and would pop it in and out, but the kids have access to all of it at first. I think that's really good." *Kyle Covington*
Shorted planning time-horizon	The teacher indicates they are planning for a shorter time-horizon.	"We don't plan as far in advance as we used to. So, setting quiz and test dates or what's going to be on what quiz and how many number of quizzes per unit and all that kind of stuff. We used to kind of lay that out for the whole semester, and I feel like we've learned not to do that. You just never know. That has probably been affected the most." *Tate Higgins*

Code	Description	Example
Social-emotional learning	The teacher indicates they have increased their focus on social-emotional learning/ the well-being of their students.	"I've given myself permission to spend more time on that community building. And so, prior to the COVID-19, prior to the pandemic, I would sometimes ask starter questions at the start of class, or I would sometimes, do little activities that no, I can't tie this to a common core standard, but we're going to do it anyway. Because it builds a community of learners. And I think that I engage in that much more consistently and much more frequently. It's almost every class now where I prioritize that, and whereas before, I would sometimes feel guilty, or like I was wasting instructional time on something else, or that somebody else might come into my room and perceive that I was wasting that time or whatever. I think I'm much more unapologetic about it now." *Simone Stokes*
Supplementary resources	The teacher indicates they have changed the number of supplementary resources they provide to students.	"Some of the ways that I communicate. The objectives for the day, the agenda for the day, the resources. I know, some teachers have websites, right? I, again, being the C plus techie person, don't have anything flashy like a website. But I went beyond Schoology as just where I'm posting my materials and things like that. So, I have something called "[SUBJECT] Today," which is just a running document, which gives the kids access to everything they need. So that's been really helpful, because I had a couple of off-Island students, and they were joining us late. They could follow along very easily. They knew

Code	Description	Example
		exactly what we were doing on any given class. All of the links were there." *Amanda Page*
Target-Method match	The teacher indicates they have changed their target-method match when planning instruction.	"We were talking about what are the skills they need? And the way the world works today is the skill we want to target and teach the live presentation? Or is the skill we want to target and teach this recorded presentation? And they're both skills they need, interconnected, but I guess it may have broadened our conversations in terms of what is it that students need to be citizens of the world we live in now?" *Eva Reeves*
Unaffected- Practices during ERT	The teacher indicates that they endeavored to maintain prior practices during ERT.	"At that particular moment in time [ERT], I think I had good-- my classroom would have been set up in groups of four, and those teams will have been working together for quite a significant period of time. And so, the functionality of Zoom to be able to put them into a breakout room after an opening problem, or what have you, and support them in that way. They weren't shy in asking questions. So, I think, I'm not pleased about this, but I think much of much of what I tried to do was maintain pretty much my practice in the regular classroom in terms of basic structures." *Milton Daniels*
Unaffected- Relationship building	The teacher indicates that they do not think their relationship-building with students has been impacted by the pandemic.	"I'd like to think most of my relationships have been unaffected. I think it's quality over quantity. I think we're in, as you know, kids get off the bus at 7:20, they're right in class. And so, I like to think that didn't affect it. What was taken away

Code	Description	Example
		with class time, was kind of put back in other ways. Let's say relationships. So that's one thing that's been kind of unaffected." *Humphrey Valdez*
Coach- Adaptation to pandemic	The coach indicates that IAA teachers and school system have adapted to pandemic teaching over time.	"We're all better at adapting. It's been a year of interruptions to workflows, interruptions to relationships, and a change in format of instruction. But because of all of those, I think we've all become a lot more resilient. I don't think we show up every week, expecting that any given week is all going to go completely normal. Yeah, I think we've become more adept at dealing with frustrations, interruptions, and things not going the way we planned." *Shane Alvarado*
Coach- ERT focus of work	The coach indicates their work during the ERT period changed focus.	"Well coaching work is a small part of the work. What the work looked like during that time was revising and aligning all the rubrics in [DEPARTMENT ONE] and revising and aligning rubrics for the [DEPARTMENT TWO]. And communicating some of those revisions to [DEPARTMENT ONE], and working with coaches to think about "How can we align those tools from grade 6 to grade 12?" So that computer work, managing the competencies, Excel spreadsheets. We started some work on learning spaces right before we left, so touching base with that Math and Science Group. Research. Reading." *Erin Harding*

Code	Description	Example
Coach- Increased authentic digital assessment strategies	The coach indicates that they have noticed an increase in teachers using authentic, digital assessment strategies.	"Some of those assessments that [TEACHERS] were using online, they're continuing to use. So online discussions, people have now started their slide decks, but they're intentionally using like Slido and Pear Deck. So, they're starting to build in some of those other pieces where the kids are online and or can interact with the slide deck so they're starting to do that they're using Flipgrid as like an extension either in class or an extension of class and they're opening that up so that they can have an online discussion and you know, and different they're doing it in groups but they're also doing it whole class. So, I'm starting to see some of those." *Gale Carline*
Coach- Pandemic-driven relationships	The coach indicates utility of pandemic circumstances to build relationships with teachers.	"Cup half full, you know, you really do have the ability to do meet everybody on staff. And so, whether it was a new staff and I had to go in because I you know you're new and I want to help you out or is this just catching up with people, it was it was nice. In that sense I felt like I was able to know everybody's name, know something about that person, and just be able to carry on a conversation, whereas maybe in the past when I first started I was, there's a couple departments that I really didn't know and I didn't go into those rooms very often because it just didn't know them and how do you just start building up those relationships, So I feel like now, because of the pandemic, I will keep it positive." *Mason Smith*

Code	Description	Example
Coach- Patience and flexibility	The coach indicates they have increased their patience and flexibility when working with teachers during the pandemic.	"I think we became- I became, sorry-- a little bit more patient, a little bit more tolerant of folks. That folks that were stuck into a situation they didn't ask for, they didn't volunteer for. They were suddenly forced, in the face of this whole rapid change. They were forced to do something that we knew that they weren't comfortable with. So, for me, I think it was just a matter of like, you know, being "do you have time?" and I'd be like "the automatic answer to this question is yes, yes, I have time." *Shane Alvarado*
Coach- System efficiencies	The coach indicates that the pandemic has led to more efficiencies within the IAA system.	"I think we had a bit of an epiphany when we stopped just signing up for random meetings like "Okay, let's just make a meeting." Pal, that's a randomly generated number. Nobody would ever know what that is, unless it gets shared. And it has to be shared, like on a bit-by-bit. I think we shifted our emphasis away from that. And we realized, "Oh, a personal meeting identifier, is an absolutely consistent thing. It's just like an email address." And then we shifted our thinking to that. So many of our systems eased up. And that bottleneck, early experience we had around Zoom bombing, that eventually went away." *Shane Alvarado*

Category: Change Reasoning

Code	Description	Example
ERT Change fatigue	The teacher indicates concerns over change fatigue during the ERT period caused them to deliberately not adjust a practice.	"On reflection, were there some additional things that I could have done? Or would that have been too much of a job for my kids? Would they have felt like, "wow, okay, there's already enough change going on in my life right now, and now he's completely going to change out the way that we're going to come and run our class. And we've got exams a couple of weeks like this." So, I don't know if it would have been better or not." *Milton Daniels*
ERT Demonstrated utility	The teacher indicates that the ERT period demonstrated the utility of an instructional practice.	"I tend to tinker, like if someone says, "Hey, I really enjoyed this," I will try it. Now whether or not I do it enough to make it become a habit, you know. I don't necessarily have habits that get formed from it. I just have a plethora of things to choose from. And in that moment, I think of "Oh, yeah, this would be good for this."" *Brooke Doyle*
Experience	The teacher indicates experience with a tool or strategy drive a change in practice.	"I guess just probably more familiarity with it for me…"oh, now that I know this tool," I know it's the go-to. I've used it to go search and do things like that." *Brooke Doyle*
No apparent post-ERT utility	The teacher indicates they do not see the utility of an ERT practice outside of ERT circumstances.	"I don't know maybe just-- well part of it, just in personal habit, like, you know, "hey, we're back to normal. Let's go back to normal and like, all that stuff we did online was just kind of temporary, emergency fix kind of stuff. And philosophically, let's get back to normal as much

Code	Description	Example
		as we can". So, none of it apparently, I guess, at the time, none of it felt like it was enhanced by moving to distance learning. So, let's go back to the old ways." *Tate Higgins*
Skepticism	The teacher indicates skepticism about the utility of a particular instructional practice.	"The video design has to align with the overarching purpose that I'm trying to kind of push towards in my course if it's going to remain. And so, I think when we went to circuit breaker there was this kind of, okay, yeah, this is going to be a sort of, I don't want to say like, an answer key in motion. Like there's important pieces that you're talking about, but we didn't facilitate meaningful dialogue with them, right?…And that's not good enough." *Milton Daniels*
Student well-being	The teacher indicates student well-being as the primary driver for an instructional practice change.	"It was sort of to protect us. So that we could have less on our plate because there was-- the transition did occupy a lot of our space. But I think that mostly we were really hyper-concerned about their social emotional wellbeing. That's a big transition for them. So, if we were going to push more or less, we're going to err on the side of less." *Ray Hancock*
Coach- Administrative directive	The coach indicates an administrative directive drove a change in their practice.	"It did change because we were advised not to intrude upon, not to assert, not to move forward any of the initiative agendas that we'd worked with, coaching included. It seems in the high school to be viewed more as an initiative then as a support. So, we were told to wait." *Erin Harding*

Code	Description	Example
Coach- ERT Teacher needs	The coach indicates the needs of teachers during ERT drove a change in their practice.	"People were starting to have conversations about the assessments that they wanted to get, like, they really needed help problem solving the types of assessments because they found out very, very quickly that they could not do those traditionals very well. And they, you know, to help them think through that, some did not want to deviate…When the PLC is making this decision, you can help them problem solve, or you can help support them. So you start off problem solving. And the next thing you know, they've made a decision. So now you switch into supporting that decision." *Gale Carline*
Coach- Pandemic as learning experience	The coach indicates that pandemic circumstances have driven learning around a practice.	"We've developed systems that sort of deal with it more and more effectively, now. For the first year, we had to deliver laptops, for example, to folks that were in quarantine facilities…We learned, got better. We got better at, you know, "Here's the cluster of hotels. Here are the people here's how long we've been there."…So this last summer, we weren't just feeding our incoming teachers in various stages, but we were dealing with incoming families, with sixth grade families that were working that way and so that wasn't just me, that was obviously the whole middle school team. We've just all gotten better." *Shane Alvarado*
Coach- Pandemic reinforcement	The coach indicates that pandemic circumstances have supported their thinking about the utility of a practice.	"I think staying flexible is important. I think finding ways to engage is important. I think listening to students and teachers is important. Those are all things that were affirmed or

Code	Description	Example
		confirmed, not just pandemic learning." *Erin Harding*