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Faculty-Student Interaction and Impact On Well-Being in Higher Education

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ABSTRACT

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This educational criticism and action research study was conducted in the spring of 2020 to better understand the impact that faculty-student interaction has on the well-being of faculty and students. Classes moved to remote instruction halfway through the semester, prompting an additional research question on the impact of COVID-19 on faculty-student interaction and well-being. Data were collected at an engineering school from five faculty (4 participants and the researcher) and their students primarily through interviews, focus groups (with 16 student participants), and a student questionnaire (with 73 student respondents). Data analysis was structured with Uhrmacher, McConnell, and Flinders' (2017) instructional arc, expanded to include student intentions and faculty perceptions. Faculty and students described what interactions are supportive and unsupportive of their well-being and indicated that there are different ways to give and receive care. The findings call for both a language and a system for expressing care needs in higher education, through better valuing of relationships and teaching. In higher education, and particularly in STEM programs, we can mitigate overwhelm by implementing new policies and practices to better support well-being of faculty and students through financial and structural support and via the evolution of curriculum, including analyses of hidden, shadow, and complementary curricula. It is also critical to consider how care work is defined and gendered within an institution, especially in regard to contingent or non-tenured

faculty. The flow of care model expresses the ways in which supportive care can either be blocked or allowed to flow throughout the hierarchy of higher education. Future studies should examine interaction among different types of faculty or levels of students and explore the impact of interaction on the well-being of people of color, underrepresented groups, and marginalized populations.

Keywords: well-being, faculty-student interaction, higher education, care, teacher-student relationships, feminist pedagogy

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PROLOGUE

When I arrived at college as a high school valedictorian with a full ride to a state school, I was eager to join the ranks of college students and begin my independent life as a young adult. But I quickly found my high school study practices were no match for my college schedule. I was lost in chemistry after about a month and I didn't know how to get the support I needed to pass the class, not to mention I was a pre-med major and had years' worth of chemistry curriculum lying ahead. That realization was overwhelming because it seemed I had failed before I even got a chance to try.

Then there was the homesickness. I was only 150 miles from home and I visited frequently, but I missed my boyfriend who was still in high school and felt estranged from my parents who I thought would not understand why I was struggling. The desire to be independent and strike out on my own was complicated by academic struggles and difficult or demanding personal relationships. By the second semester of that year, I was frequently found watching Judge Judy or other daytime TV from my top bunk and regularly avoiding schoolwork and classes. Rather than the straight A's I was used to, I received all the letters that year: A, B, C, D, F, and W—not the performance I expected from myself. These experiences taught me many lessons. I transferred to a smaller school where I could have more interaction with faculty and was ultimately successful in college but I was lucky to have been able to make these changes. I had many supports in my life to enable that transition.

Now that I have been teaching college students for over 18 years, I have often heard fellow professors lament about student struggles and excuses; it is easy to overlook or dismiss

the common early college woes: relationship troubles, lack of preparation or dedication to college studies, grandparents dying, and poor communication with professors, to name a few. I had experienced all of these and more. I had needed academic and emotional support and had no clue how to seek it out. At the same time, I often heard my colleagues express concern for students' well-being, wondering about their behaviors, and reflecting on how best to reach out. I wondered if my professors thought about me and my performance in the same ways and how I might have responded to them when I was struggling.

As a professor, I saw the importance of student-faculty interaction from a new vantage point. I thrived on my ability to learn students' names and interests and respected them as individuals but I did not experience that kind of interaction in my freshman year at the state school. I have also learned that as a faculty member, it is not always possible to give one's all to students. Faculty also have life stressors that can impact their ability to be present for their students.

When I finally took the plunge to enroll in a doctoral program, I was worried about how I would balance this new responsibility with my teaching and family life, but I was excited to get back into the role of being a student. Two months later, my husband sustained a brain injury in what would have been a common car accident that would lead to a series of surgeries, treatments, and prescriptions that would alter the course of our lives and ultimately end his. My focus during this time justifiably turned to my family, but supporting him and then becoming a young widow left me with very little bandwidth to give time and energy to my students. I began to notice how pressures on faculty ebb and flow, based on the features of their personal lives, as well as institutional changes.

Again, I found myself extremely fortunate because of understanding and supportive colleagues who could step in for me when I was struggling, but I became more curious about how these inevitable struggles for faculty impacted student well-being. Conversely, students' life struggles can impact faculty and the classroom. Despite our lack of negative intentions, our external lives can impact one another negatively. As I continue to grow as an educator, I want to be a role model in showing my students and my own kids how to balance all parts of ourselves in living a good life. I want to learn from my students and colleagues about how best to support each other, especially when we struggle, so we can reach our higher education goals through meaningful interaction.

CHAPTER I

INTRODUCTION

The stereotypical kindergarten teacher is a nurturer who gives individual support. However, college professors are often cast as aloof lecturers who do not care whether or not students even show up. Higher education can be a sink or swim environment with fewer allowances for individual abilities or circumstances than K-12 education, but I have found the aforementioned stereotype does not hold in many cases. I argue that because college students are forming personal and professional identities amidst unpredictable obstacles and constant distractions, often on their own for the first time, they also deserve a commitment to care by their teachers. Adult learners need to be challenged, not coddled, but teaching professionals ought to show care for their students regardless of their age. Especially in this time of budget cuts and ballooning tuition, and particularly post-COVID, colleges and universities must prioritize the costs and considerations involved with providing faculty care to their students (Harward, 2016; Noddings, 2005).

Instead, class sizes and faculty workloads have increased, and capital has been invested elsewhere in infrastructure, technology for instruction, administration, and non-academic services (Flaherty, 2018, 2019; Rivard, 2014; Ziker, 2014). These trends indicate a lack of care for both students and faculty in the university system. As faculty have become more overworked, they do not have as much time to care for their students (Walker, Gleaves, & Grey, 2006) or themselves. As institutions emphasize evaluation metrics, qualitative understanding of teaching and learning has diminished. As students see robotic performance privileged over

individual contribution, they focus on getting the most value for their money as a consumer of education (Clevenger, 2014; Hart & Hubbard, 2010). Students are often advised to take courses that maximize their return on investment rather than exploration of personal passions. Faculty play a powerful role in shaping student experiences and outcomes in higher education as all these trends take hold. Student perspectives are sometimes diminished, overgeneralized, or ignored in these relationships, but students deserve to feel supported and respected by faculty and the institution.

Problem of Practice

The pressure is on at colleges and universities across the country as institutions are pressured by budgets and enrollment numbers; families are pressured by the cost and perceived necessity of a degree; faculty are pressured by research, funding, and service demands; and students are pressured by curriculum, costs, social demands, and strict timelines. Hibbs and Rostain (2019) explained, "Recently, education has become synonymous with institutional stress and its narrow and intense focus on academic metrics that rachet up the pressure on teens from middle school through college" (p. 15). It is no wonder these educational trends have drawn additional focus to the mental health and overall well-being of students. There are increasing student reports of stress at college that exacerbate mental health problems and strain counseling resources on campus (Hibbs & Rostain, 2019; Winerman, 2017). Researchers are calling for the promotion of well-being initiatives and better understanding of the level of problems students experience (Baldwin, Towler, Oliver, & Datta, 2017; Harward, 2016). Quintana (2018) reported that at selective colleges, the pressure to be outstanding in a sea of highly talented students exacerbates the pressures of comparative metrics like GPA, internship quality, and starting salary that many of today's students feel.

Growing interest in supporting students through mental health challenges is evident (Hibbs & Rostain, 2019; New, 2016), but the focus has often been housed in Student Affairs and campus health centers, rather than on the academic side of campus. This focus is well-placed because academic faculty are not trained mental health professionals, as iterated above. At the same time, professors often interact with students much more often than other staff on campus. Therefore, it is reasonable to ask faculty to be aware of changes in behavior, to reflect on the impacts of their own practices, and to show care to students who are struggling.

At my institution, students have started their own support groups for addiction recovery, mindful meditation, exploring bias and diversity, and discussing mental health challenges. The institution has added an anonymous reporting system for counseling needs, faculty and student forums for seeking mental health support, training on suicide prevention, and additional administrative faculty who can support students through their time in college. However, we have yet to explore the impact of our curriculum and teaching practices on the perceived well-being of our students. Harvey Mudd (cited in Mangan, 2018) recently embarked on a study of their curriculum, which students described as 'soul-crushing,' to determine ways to emphasize the 'joy of learning,' rather than the traditional trudging through the demands of a rigorous engineering curriculum. To be clear, this research study was not meant to assess mental health issues of students, nor did it presume any expertise in psychology or psychiatry for young adults. Rather, my questions and plan are situated in curriculum studies and practitioner knowledge of the needs of students in and out of the classroom. The goal was to explore the ways in which caring relationships between faculty and students could be understood within the larger social construct of how students experience college and how they report about those experiences.

At the same time as demands on students are increasing, the demands on faculty have increased as well. Miller (2010) explained the financial burden on research faculty and increasing numbers of contingent faculty and Gooblar (2018) described faculty burnout from caring for increasing numbers of students while struggling to maintain work-life balance. Faculty mental health is an underfunded and often stigmatized issue in colleges and universities, impacting contingent, junior, and tenure-track faculty in different ways (Pettit, 2016). Mariskind (2014) discussed the push toward market-focused institutions and argued that we need care as an antidote:

> As higher education becomes increasingly market-orientated and managerialist, institutions face funding cuts and accountability pressures (Davies, Gottsche, & Bansel, 2006), with academic workplaces becoming increasingly competitive and individualistic, and focused on measurable 'outputs' (Molesworth, Nixon, & Scullion, 2009). This environment supports the self-interested, unencumbered subject and devalues caring, collaborative relationships. (p. 317)

Giroux (2016) made a similar case: "Students are not customers, and they should have the right to formidable and critical educations not dominated by corporate values" (p. 63). He advocated for classroom grace—a pedagogy that values student input in crucial discussion and honors them as individual members of a democracy, rather than diminishing them as cogs in a corporate wheel.

The problem of practice I explored was situated within the context described above and included some features particular to my experience. I examined my own teaching and interaction with students and sought to gain a better understanding of my institution, Rocky Mountain Technical (RMT), through my colleagues' and our students' experiences. Rocky

Mountain Technical's administration recently set new goals for our institution over the next decade, and some of these goals match my own. We want students to be more able to explore their passions, we want faculty and the campus to be more diverse and inclusive, and we want mental health and well-being to be brought out of the shadows to be discussed and supported more openly. We know strong relationships between students and faculty can be rewarding for faculty (Einarson & Clarkberg, 2004) and students (Ei & Bowen, 2002); they can also increase well-being and satisfaction within the university system (Freeman, Anderman, & Jensen, 2007). This study unearthed some of the lived experiences of the intersection of all three of these impacts. I used student and faculty descriptions of their experiences to discuss perceived care and well-being in their interactions within and outside the classroom. Although students and faculty also mentioned stress, anxiety, and struggles with mental health, this study used many of these concepts from a layperson's description and not from a professional or clinical understanding of these terms. I reported my experience and relayed the voices of the participants without attempting to veer into the territory of psychology or psychiatry.

Study Rationale

As higher education continues to evolve to meet changing student and societal needs, it is essential to consider the hidden curriculum that could intensify the sense of overwhelm for both faculty and students. Dewey (cited in Uhrmacher, McConnell-Moroye, & Flinders, 2017) believed the "collateral learning" that takes place between and beyond the lessons is what matters (p. 13). Hidden curriculum is this unspoken aspect of schooling that everyone knows about but that is not printed in the brochures or seen on the website. Perhaps one of the key lessons students are learning from the hidden curriculum of a STEM degree is they can never do enough—the bar is set too high and they are tired of reaching for it. Perhaps faculty are

unintentionally reinforcing notions of busyness and output for students, even as they crave more work-life balance for themselves. Some practices in higher education, especially those in rigorous curricula, have traditionally centered on a 'sink or swim' or 'weed out' mentality (Mervis, 2011). However, because education is "unavoidably normative in both its means and ends" (Uhrmacher et al., 2017, p. 15), any negative mindsets, overworked campus members, or unrealistic expectations infect the mission and outcomes for all participants in the university system.

This study was important for the RMT campus because it started the conversation about the link between academic interpersonal practices and the perceived quality of life and level of well-being that results for the students and faculty. It began a dialogue about the obstacles and opportunities campus members had for taking better care of themselves in conjunction with their academic responsibilities. It worked toward a reflection on and assessment of whether institutions support a mindset of surviving or thriving, of merely being or of being well. Further, it established connections between allies who support well-being and invited collaboration on developing better policies and practices for positive interactions and classroom strategies.

Purpose and Significance of the Study

The increased focus on well-being in U.S. schooling is laudable and we have access to more allies and models than ever before. However, it is important to hear more from students about what they experience in their interactions with faculty while working on the rigorous curricula of science, technology, engineering, and mathematics (STEM) majors. As we seek to educate more and more STEM graduates to meet demands of these fields, we need to be sure students have also been trained in balancing demanding work with a meaningful, healthy personal life. Academics are overworked, sometimes by choice and other times by assignment,

but some professors cannot provide a model of a healthy work-life balance to their students because they are working too hard themselves. This study brings attention to faculty needs simultaneously with student needs, and calls for a focus on care within interpersonal interactions in a post-COVID world.

Improving teaching and learning in higher education needs to account for well-being: refinement of teaching and learning in higher education should consider the impact of bottlenecks not only in terms of pedagogy, academic workload, and market demand, but also in terms of student well-being (Cruwys, Greenaway, & Haslam, 2015). Often, the efforts to support students holistically have fallen on Residence Life, Student Services, and Health Services, and these branches of the campus community are invaluable to student well-being and success at college. At the same time, I argue that since students came to college to take classes and earn degrees, academic faculty are responsible for recognizing them as people who have lives and struggles beyond the classroom. Faculty are compelled to design their pedagogy and assessment in ways that enrich students' love of learning and love of life. At the same time, institutions of higher learning cannot ignore the well-being of their faculty and staff, as the campus climate influences all members of the community. This research could lead to better understanding of well-being through a study of student-faculty interaction and how students and faculty perceive intentions of each other.

This study was significant because it sought to understand student experience with faculty from within the academic side of their campus experience. Several scholars have developed surveys and questionnaires to help us better understand student well-being and student interactions with faculty members, but we also need to hear directly from students and faculty about their intentions in how they interact with each other. Learning from these respective

intentions could help direct future interaction and intervention as we seek the best ways to educate students in higher education settings. This study has already influenced my teaching and I am excited to share it with others in my campus community. However, my hope is that the influence is much broader than one institution because I believe all universities, and in particular, any rigorous academic environment such as STEM programs, can benefit from exploring these questions. I hope this work encourages other faculty to explore their habits and intentions as they interact with students. More importantly, I envision the potential for institutions of higher learning to begin to transform their campus cultures and educational missions to be more mindful of faculty and student well-being.

Research Questions

The aim of this study was to explore faculty-student interactions and the intentions behind them in order to foster student and faculty well-being within a rigorous academic context. Six research questions ultimately guided this study. For each of these questions, I describe how they informed the design and purpose of the study. In a broad sense, I was interested in the perspectives of both faculty and students and in all three aspects of curriculum: intentional, operational, and received. Therefore, the study was comprised of interviews, observations, and reflections of participants to capture a sense of each of these aspects. Eisner's (1992) ecology of schooling informed these questions through focus on the dimensions he defined: pedagogical, curricular, structural, evaluative and intentional.

Q1 What are the qualities of faculty-student interactions and relations that support care and well-being?

This study sought to better understand faculty-student interactions in the context of mutual well-being so this first question framed the scope and desired conclusions of the study. This question was important because I wanted to understand what it took by faculty to make

students feel supported, to give them space to live their best life outside of the classroom, while still performing well in the classroom. At the same time, I was also concerned with faculty well-being, so it was important to understand how student actions impacted and were perceived by faculty. Data collected from participants in the following four questions were synthesized in order to answer this overarching question.

Q2 What intentions do faculty hold for their interactions with students?

With this question, I asked professors to articulate what they were trying to do for their students as they enacted their teaching duties. Personally, I intended to be flexible, lighthearted, and open with students. I saw myself as a teacher who was supportive of life changes and individual needs, who challenged students to take risks, and who sought to make connections. However, I understood my intentions differed slightly for different courses and levels of students (for freshmen compared to seniors, for example). I also realized through reflection on my teaching that my intentions were not always brought to fruition. I rarely articulated my intentions specifically. Particularly when my life outside of work became stressful, I failed to follow through on my intentions. This question afforded an opportunity to record the stated intentions of faculty participants so they could be compared to the operational curriculum and received curriculum discovered through subsequent questions. Data for question 2 came primarily from initial interviews with faculty participants.

Q3 How do students perceive faculty intentions and interactions?

In conjunction with asking faculty to state their intentions for students, my study asked students how those intentions were perceived in their experiences with the faculty member. Students were asked to discuss types of actions and interactions experienced with the faculty member and their perceptions of the faculty member's intentions. This question explored

the operational and received curriculum for each faculty member by completing the 'instructional arc' described by Uhrmacher et al. (2017). It was important to understand what students needed from faculty and what they perceived faculty were intending to do. This helped to root out whether students articulated their own responsibility in forming and maintaining a good relationship and positive interactions in their classes. Students described a positive experience and what made them feel supported personally or academically. Conversely, students described a more negative experience and what they would have needed to make that experience more productive or positive. Data for question 3 were derived from student questionnaires and student focus groups.

Q4 What intentions do students hold for their interactions with faculty?

To complete the loop in understanding faculty-student interaction at RMT, this study also asked students about their intentions. Relationships and interactions involve the participation and interpretation of both parties, so I was curious about how students approached interactions with faculty. I had assumptions about why students behaved as they did; in some ways, I typecast students based on the behaviors I saw. However, I knew these assumptions were based only in my own experience and bias, so talking with students about their intentions helped me understand them more completely.

In much of the research on faculty-student relationships, students were given surveys to assess the efficacy of these relationships, but I was more interested in the thinking and decision-making of students as they engaged with their professors. How did they approach faculty about questions? How did they prepare for class? How did they prioritize and accomplish their work? How did they navigate college life with their personal lives? Did they know how and when to

ask for support? Data for question 4 came from student focus groups and the student questionnaire.

Q5 How do faculty perceive student intentions and interactions?

This question was important to the research design because I was interested in putting student and faculty ideas in conversation with each other through my study. Similar to the exploration of the operational and received curriculum in question 3, this question asked faculty to reflect on what students actually did for their classes and how they perceived the students' intentions. I investigated whether we faculty made assumptions about student intentions based on their actions and performance in class, explored the ways faculty generalize types of student behavior. This question also probed faculty perceptions of interactions they consider beneficial or problematic. Reflecting on how we as faculty perceived student actions helped to complete the conversation about intentions and how they were received in the actual interactions in the semester of data-gathering.

Q6 How did remote learning during COVID-19 shutdowns impact faculty-student interaction and faculty and student well-being?

The original five questions listed above were not adequate to fully assess the impact of remote learning on faculty-student interaction during COVID-19. I added question 6 at the end of the semester as I prepared for the final round of interviews with faculty and students. Most of the time in the final interviews and focus groups was devoted to what was different in teaching and learning from home, including reflections on the semester and hopes or fears about the future of interaction in classrooms.

Summary and Outline

This study introduced new ways of thinking about the significance of faculty-student interaction on college campuses, especially in the age of living and learning through a pandemic.

My hope is that the findings here are resonant for individual teachers and campuses, but also for STEM education and higher education more broadly. The weight of these findings could also inspire a large-scale movement toward supporting well-being for all in higher education and toward curricular reform that includes a focus on the many aspects of curriculum that are not listed in syllabi. Chapter II outlines the relevant research on faculty-student interaction and on care and well-being in higher education to provide context for the present study. Chapter III describes my conceptual framework and the methodology that best addresses my research questions, including how I collected and analyzed data. The instructional arc provides a structure for exploring the interview and focus group data outlined in Chapter IV. This section describes both faculty and student participants and their intentions and perceptions of what happened in their classes and interactions during the spring of 2020. Finally, Chapter V discusses theoretical connections to the research, makes arguments about what actions should be taken to improve well-being, and outlines my next steps as an action researcher as well as suggestions for further research into these questions.

CHAPTER II

LITERATURE REVIEW

Definitions and Search Terms

Before presenting the literature overview, I include a brief note here on the search terms I used and how I conceptualized the terms in my research. I conducted database searches for studies on variations of "faculty-student" and "student-faculty" interactions and relationships and used these variations interchangeably throughout. Some searches included college or university, substituted "teacher" or "professor" for faculty, or omitted the hyphen. Similarly, when searching for studies on well-being, I also tried well-being with no hyphen. I was most interested in learning about full-time faculty who taught undergraduate students but occasionally, there were relevant studies that addressed secondary or graduate students or contingent faculty.

With both "interactions" and "relationships" between faculty and students, I was most curious about one-on-one, interpersonal connections that resulted from a student participating in a teacher's class. However, it is also true that some relationships and interactions are formed between the teacher and the entire class or with groups of students, so sometimes a one-to-one relationship could not be assumed. Additionally, there are interactions and relationships that are formed outside the context of the classroom and a particular course. For example, faculty are often involved as advisors to student groups, attend campus functions where they interact with students, or are members of professional or campus organizations where experiences intersect. I

believe all interactions between faculty and students contribute to the relationship experienced by both parties, but the following research and the study outlined later should be seen in the context of the classroom experience.

"Well-being" is perhaps the slipperiest word I used in the conception of this study. Researchers who have used this term tend not to agree on the precise meaning of the term, but Minnich's essay in Harward's (2016) *Well-Being and Higher Education* traced the history and the complexities of the concept. Ultimately, she concluded that well-being is undoubtedly construed differently in the context of different schools, but the concept has several roots that inform our understanding and application. One root is in "the older definition of happiness," a form of self-actualization or fulfillment (p. 78). Another root of well-being, said Minnich, involves how we live our lives: "Well-being concerns how we are doing in our living as the humans we are. It is not a mood, a state, an achievement, or a possession" (p. 80). In another sense, well-being is a concrete, lived experience requiring principles and practices (p. 82). Finally, Minnich argued that well-being is a communal, relational goal: "well-being as a project and purpose of good democratic education entails reaching for excellence not as a singular, absolutized abstraction, but meaningfully, which is also to say, in relation" (p. 82). For this study, my working definition of well-being comprised an overall sense of contentment, self-worth, and purpose. I contrasted well-being with distress and overwhelm. All students experience frustration or setbacks in their academic careers, but sometimes those are exaggerated to impact well-being. In those cases, students might feel isolated, unsupported, or helpless. In contrast, I saw well-being as a state of feeling connected, supported, and empowered—there are normal ups and downs in the experience, but they are navigated with confidence.

I first describe the relevant literature, beginning with what we know about faculty-student interaction and the ways it impacts student performance and behavior. I then highlight the impacts of positive and negative faculty behavior, especially as it relates to care, and how students perceive these behaviors. I added to this literature by focusing on faculty-student interaction and how it influenced reported well-being by students and faculty. Therefore, I review what we know about well-being and stress in higher education including some of the survey measures that have been developed to measure well-being. The literature relevant to my study evolved as I gathered data, interviewed participants, and began to understand the context, problems, and needs more clearly (Herr & Anderson, 2015).

Faculty-Student Relationships and Interactions

Faculty-student relationships in higher education appeared in research studies in the late 1970s when Pascarella and Terenzini (1977) discovered positive relationships increased retention and Astin (1977) showed they increased student satisfaction. Since then, Pascarella and Terenzini (2005) provided extensive reviews of what we know about faculty-student relationships and their impact on a broad set of outcomes. A few well-studied areas in higher education research have been faculty-student relationships' influence on higher grade point averages (Anaya & Cole, 2001; Dika, 2012; Kim, 2010; Kim & Sax, 2009), persistence to graduation (Braxton, Milem, & Sullivan, 2000; Hernandez, 2000; Lau, 2003; Pascarella & Terenzini, 2005; Tinto, 1993), both cognitive and intellectual development (Endo & Harpel, 1982; Kim & Sax, 2011; Terenzini & Pascarella, 1980; Volkwein, King, & Terenzini, 1986), learning (Lundberg & Schreiner, 2004), vocational preparation (Kuh & Hu, 2001), retention and attrition (Hoffman, 2014), satisfaction (Kuh & Hu, 2001), and student performance and efficacy (Vogt, 2008) because these metrics are important to institutional measures of success.

Aside from institutional and academic outcomes, personal and relational outcomes also benefit from positive faculty-student interaction. Hagenauer and Volet (2014) described the scant literature on teacher-student relationships in higher education, distinguished it from the K-12 literature on teacher-student relationships, and noted two dimensions of these relationships: the affective (relationship-forming) and the supportive (academic success-enabling) dimensions (p. 374). When students interact with faculty, they develop a stronger academic self-concept (Clark, Walker, & Keith, 2002; Cokley, 2000; Cole, 2007, 2011; Kim & Sax, 2014) and report higher confidence (Micari & Pazos, 2012). Supportive classroom environments increase student belonging, engagement, and motivation (Zumbrunn, McKim, Buhs, & Hawley, 2014) and positive relationships with faculty influence students' educational aspirations (Kim, 2010; Kim & Sax, 2009). Studies also showed the links between positive interaction and personal growth; namely, the development of caring relationships within classrooms (Goldstein, 1999) and through informal interaction outside of class (Halawah, 2006).

In the few studies that investigated faculty-student relationships in STEM fields, researchers found a more urgent need for improvement. In fact, Hong and Shull (2010) showed that faculty could make or break a student's experience in STEM fields by either making them feel supported or by frustrating their success in the field. Suresh (2006) also studied engineering students and learned that faculty teaching styles and attitudes about 'weed out' or barrier classes impacted students' ability to persist through a degree. Vogt (2008) found "faculty distance" led to lower grades, poorer self-efficacy, and exodus from programs; whereas, professors who were "personally available" increased those measures (p. 27). While engineering faculty have traditionally seen attrition as a natural and perhaps necessary result of a challenging curriculum,

several researchers found highly talented students left at the same rates as those who were less prepared for high level academic work (Eris et al., 2010; Marra, Rodgers, Shen, & Bogue, 2012; Wagner, Christe, & Fernandez, 2012).

Of particular interest to STEM-focused institutions like my own was Christe's (2013) literature review on faculty-student connections in STEM disciplines. She emphasized faculty's negative impact on persistence (Micari & Pazos, 2012) and partially blamed the lack of pedagogical innovation in these fields (Jamieson & Lohmann, 2012), often because faculty were not rewarded for teaching innovation (Mastascusa, Snyder, & Hoyt, 2011). Christe argued that STEM programs rewarded research prowess over teaching ability, which exacerbated the disconnect between faculty and students (Kokkelenberg & Sinha, 2010; Seymour & Hewitt, 1997). Hagenauer and Volet (2014) also noted a context dependency of teacher-student relationships in higher education. For example, whether a professor taught the 'hard' or 'soft' sciences, the classroom environment, type of teaching, and way of relating to students could differ greatly (Lindblom-Ylanne, Trigwell, Nevgi, & Ashwin, 2006; Parpala, Lindblom-Yla¨nne, Komulainen, Litmanen, & Hirsto, 2010). Teachers even changed their own behavior and style with different contexts of teaching such as seminar and lecture courses (Hagenauer & Volet, 2014).

The way in which we understand faculty responsibility to and care for students is multi-faceted. Researchers have studied faculty's duty to foster student growth (Baldridge, Kemerer, & Green, 1982; Gaff & Gaff, 1981; Keller, 1983; Pascarella & Terenzini, 1980) and how faculty express care (Beal & Noel, 1980; Noel, 1978, 1985; Roueche & Roueche, 1994; Teven & McCroskey, 1997). Kuh, Schuh, and Whitt (1991) argued that 'involving colleges' need to foster student-centered faculty while Anderson (1985) and Noel and Levitz (1995) focused on

the individual attention provided in faculty-student relationships. Von Laue (1983) emphasized the human element of teaching as a key element. Some researchers suggested survey tools to measure student-faculty interaction and relationship (Ng et al., 2013; Stanton et al., 2013) and others highlighted exemplary (Knobloch, 2004) or uncaring professors (Edwards & Myers, 2007; Lynch, 2010). However, we can better understand how students feel about faculty care and how they receive and perceive faculty behaviors in and out of the classroom.

Student Perceptions of Faculty Behavior

In order to foster positive faculty-student relationships, one important focus is faculty behaviors in interacting with students and how students respond to these behaviors. Hong and Shull (2010) studied student perception of faculty behavior and found students frequently assessed the level of care they perceived in a faculty member's interaction. Specifically, they found when a professor denied help during office hours because a student had missed class, it could be devastating, but when a professor got to know the students and respected the other facets of their lives, students felt supported and cared about.

When Sanchez, Martinez-Pecino, Rodríguez, and Melero (2011) asked social science students what the ideal professor should be like, they identified nine categories, but the most important to students were "teaching ability (good communication skills, explains tasks clearly, organized, fluent), professor-student relationship (respectful manners, comprehensive, open), and social ability (easy to talk to, not authoritarian, fair)" (p. 494). Helterbran (2008) also described what students expected from 'the ideal professor' and found that students valued faculty who showed respect and compassion and employed engaging pedagogy. Frymier and Houser (2000) similarly found that students most highly valued "referential skill (the ability to convey information clearly and unambiguously)" and "ego supportive skill (the ability to make another

feel good about himself or herself)"; in other words, good communication and interpersonal connection involving respect and trust (p. 208).

Zumbrunn et al. (2014) found that supportive classrooms were important indicators of belonging and led to better student engagement and achievement as a result. When students described their perceptions of faculty support, they mentioned faculty showing respect and setting the tone, being approachable and available for one-on-one interaction, encouraging class participation, and demonstrating an investment of care and time (Zumbrunn et al., 2014). Hoffman (2014) ultimately argued that the responsibility fell on instructors for fostering student-faculty relationships and creating opportunities for interaction; she insisted that multiple contexts and formats must be available. Anderson and Carta-Falsa (2002) showed that students and faculty wanted interactions driven by both student and faculty input and they also valued student-to-student interaction within the classroom. Vogt (2008) examined engineering programs in particular and found that academic integration, or the ability to incorporate college expectations into personal goals and growth, was an important outcome of faculty-student interaction. She argued that faculty must seek input from students to determine whether their teaching and interaction with students is effective.

Digital surveys and other anonymous outlets for communication between students and faculty could open the door for more interaction (Jones, 2002). We know from Kelly, Duran, and Zolten's (2001) study that students who were uncomfortable speaking up in class or setting up a meeting in person were often more comfortable with email communication, but faculty might not have time to respond. Faculty reported in one study that they only responded to 7 of 15 emails they received weekly from students (Duran, Kelly, & Keaton, 2005). Ideally, students and faculty have time to engage in face-to-face interaction outside the classroom to build a more

supportive working relationship, but often, the student reaches out in time of crisis or is reticent to reach out at all. Some researchers found that even when students attended office hours, their time was often rushed (Kuh & Hu, 2001; Li & Pitts, 2001). Cruwys, et al., (2015) found that supportive faculty behavior such as transparent, frequent communication on academic progress gave students a sense of empowerment over their fate and lessened the need for out-of-class interaction with faculty.

Measuring Faculty-Student Interaction

Several surveys and assessment measures have been developed in recent years to aid in understanding and improving faculty-student relationships in higher education. Wilson and Ryan (2013) created the Professor-Student Rapport Scale to assess the qualities of classrooms and teachers that led to positive academic and personal outcomes for students. Faculty could seek feedback on student progress and compatibility with their instructional techniques with a tool such as the Learning Thermometer, created by Stallman and King (2016) to learn about and address problems in courses as they occur throughout the semester, rather than waiting to read the student evaluation comments after the semester has ended. Rogers's (2012) Learning Alliance Inventory took both student and faculty efforts into consideration and measured three categories: collaborative bond, teacher competency, and student investment.

Negative Faculty Behavior and Outcomes

Many studies indicated faculty-student relationships were positive or had beneficial outcomes, but the reverse was also shown in the research. Negative outcomes were measured when faculty failed to show care or foster relationships. Sometimes students lacked initiative to interact with faculty and it was not uncommon for there to be few connections between students

and faculty outside of class (Cotten & Wilson, 2006; Cox, McIntosh, Terenzini, Reason, & Quaye, 2010; Kuh & Hu, 2001). Cotten and Wilson (2006) found students were dissuaded from interacting with faculty outside of class by the negative attitudes and body language of professors, perceptions that there was no need to interact, and the belief they were a mere number and not seen as an individual. Interactions in higher education were shown to be infrequent in general; Hagenauer and Volet (2014) found this held for both formal and informal interactions.

Faculty were also found to exhibit behaviors that discouraged interaction with students. In some cases, students reported that faculty had 'given up' on them by failing to show care or noticing them as students (Hawk & Lyons, 2008). Einarson and Clarkberg (2004) found faculty chose not to foster relationships with their students based on four factors: they did not have time, the institution did not reward student interaction, they defined themselves more as researchers than teachers, and they did not feel qualified to support students through relationships outside the classroom (Hoffman, 2014). While required office hours could be an opportunity for interaction, Pfund, Rogan, Burnham, and Norcross (2013) found faculty were only present for those hours 76% of the time, so even when students took the initiative to track down a professor, they might find an empty office or a closed door.

Other researchers examined less obvious attitudes and behaviors of faculty. Slater, Veach, and Li (2013) showed that countertransference, when teachers reacted negatively to students based on their own fears and past experiences, could create a negative learning environment that was hard to overcome for students. Frey Knepp (2012) described incivility in the college classroom—actions by both students and faculty that detracted from a thriving classroom environment—and argued that faculty could change their behaviors and modify their

teaching to limit distractions and uncivil behavior in the classroom. She noted that uncivil behaviors could come from faculty and students and both types contributed to ineffective learning, higher levels of stress, and miscommunications. Faculty were sometimes guilty of disengaging lectures, last-minute assignments, and unbalanced or demeaning discussions. They could behave in superior or condescending ways, making students feel like a burden or their time and contributions were not respected (Frey Knepp, 2012, p. 35). Vallade and Myers (2014) studied relational transgressions of three types—incompetent, offensive, and indolent misbehaviors—to determine whether students were able to forgive instructors for these transgressions. They found students had difficulty accepting any external pressures or reasons for these behaviors, so the negative impact of these relational transgressions was strong and lingering.

Finally, institutional or systemic factors could lead to negative outcomes between students and faculty. Lynch (2010) discussed the notion of carelessness in higher education, describing the neoliberal push toward "new managerialism" in higher education and claimed carelessness was inherent in this model (p. 54). Furthermore, the gender divide in care work was oppressive and led to a "care ceiling" in promotion and life balance for all faculty: "women are care's footsoldiers while men are care commanders," and both of these roles are detrimental to higher education's mission (Lynch, 2010, p. 58). Ropers-Huilman and Winters (2011) also highlighted gender differences in higher education and advocated for more feminist perspectives in higher education research. Thompson (1998) argued that caring was not only associated with the feminine, but also with whiteness and privilege. She noted that descriptions of care ethics and studies about educational care typically do not consider race at all and are therefore allowing

racist constructions to persist from this work. She encouraged educators to subvert the notion that care is colorblind by incorporating the perspectives of "non-White and/or poor cultures" in their teaching and research (Thompson, 1998, p. 522).

Stress and Anxiety

For the purposes of this research, the experience of stress and anxiety was in opposition to expressed and reported well-being, so it was also important to understand how students self-reported their levels of stress and anxiety. To be clear, I did not explore stress and anxiety as psychological, clinical terms. Rather, I asked students and faculty questions about their experiences and reported how they discussed stress and anxiety and well-being. Much of what we know about student experiences with stress and anxiety in college came from researchers in psychology and educational psychology as this section shows. This research is summarized as follows to provide context for my study.

Stallman (2010) showed that college students reported more anxiety and stress than the general population. Especially in rigorous academic environments, academic pressures increased problems with anxiety and depression (Adlaf, Gliksman, Demers, & Newton-Taylor, 2001). Furthermore, students who entered an 'educational bottleneck' faced additional pressures to succeed. In a study of an honors psychology program, students reported higher stress and lower well-being than their peers and 49% were clinically depressed (Cruwys et al., 2015). Students often exhibited higher stress when transitioning to college (Bewick, Koutsopoulou, Miles, & Barkham, 2010; Iyer, Jetten, Tsivrikos, Postmes, & Haslam, 2009) or with particular subject areas of study (Murphy, Gray, Sterling, Reeves, & DuCette, 2009). Andrews and Chong (2011) found student levels of stress were high at the beginning of the semester and also increased at mid-semester and exam time as their sense of well-being waned. Mey and Yin (2015) also found

that students attending a university undergoing transition experienced higher levels of stress and anxiety than before the changes began. Pressures from the school or faculty have been found to exacerbate student feelings of stress and anxiety (Adlaf et al., 2001; Cruwys et al., 2015; Tennant, 2002).

However, relationships with faculty can go beyond academic success to decrease student stress and enhance well-being. Among students in general, studies found that receiving support from faculty led to less distress but many of these focused on adolescents and the K-12 population more broadly (Anderman, 2002; Buhs, 2005; Van Petegem, Aelterman, Rosseel, & Creemers, 2007; Wentzel, 1997, 1998). Zumbrunn et al. (2014) extended those findings to the college classroom and found that feelings of belonging and support enhanced students' experience of self-efficacy. When faculty showed immediacy, being available to students and showing concern for their success, student motivation (Estepp & Roberts, 2015) and participation (Roberts & Friedman, 2013) increased. Pedagogical caring and faculty openness and warmth encouraged students' feelings of belonging within the class and by extension, the university (Freeman et al., 2007). One of the most effective examples of teacher-student relationships was shown in Cook-Sather's (2014) study on fully partnering with students in pedagogical research in order to build trust and change perceptions of the norms of traditional teacher and student roles.

Well-Being and Care

Many approaches to studying student perceptions have been grounded in quantitative data, particularly survey data from large groups of participants, often from public repositories or conducted within an institution. Edwards and Myers (2007) studied student perceptions of instructors' verbal aggressiveness and argumentativeness. They found students perceived verbal

aggression as less caring and competent, but that argumentative faculty were perceived as caring and competent. Ng et al. (2013) developed and validated a survey tool called the Perceived Campus Caring Scale (PCCS) for use in subsequent studies measuring perceptions of care in higher education. The PCCS survey incorporated behaviors and attitudes of caring that focused on the social, affective, and academic needs of the students and mirrored the caring teaching model developed by Guo, Shen, Ye, Chen, and Jiang (2013). Onwuegbuzie et al. (2007) studied students' perceptions of faculty through regular course evaluations and then created a framework to classify student concerns. Frymier and Houser (2000) analyzed data on teacher immediacy and found students needed to feel personally supported through academic struggle, and Webb and Barrett (2014) asked students to assess the rapport they built with their professors. Students valued caring behavior overall, especially what Webb and Barrett called "uncommonly attentive behaviors," such as knowing student names and responding to individual needs (p. 19). Slate, Schulte, LaPrairie, and Onwuegbuzie (2011) confirmed these findings by showing understanding and communication were valued above many other teacher attributes. Teven and McCroskey (1997) showed early on that verbal caring behaviors by faculty were more important to students than nonverbal immediacy by simply being available and present. The surveys these researchers developed showed general trends from broad data sets (Teven & Hanson, 2004).

Survey data can generalize student perceptions, but qualitative analysis can reveal the stories and experiences that shape those trends. Ropers-Huilman (1999) wrote a personal narrative interwoven with her study of the perspective of both students and faculty. She focused on empowerment and the notion that all humans are fallible. In classrooms, Ropers-Huilman argued, we must give "continual attention to the ways in which our power is taking effect, and the ways that our caring practices are being perceived" (p. 131). Walker et al. (2006)

interviewed faculty to establish that caring work by faculty was not recognized for evaluation and promotion, yet it was valuable to students and faculty alike for academic and personal growth. Mariskind (2014) examined narratives from teaching staff at universities in New Zealand to determine how they characterized acts of care, and she found a wide variety of types: "caring about, taking care of, care-giving, and care-receiving…communal care, care-as-activism, and care for oneself" (p. 311). Mariskind also found that narratives of faculty-student relationships could involve various settings and actors such as "narratives of *pastoral care*, relating to personal well-being of students, colleagues or oneself, and in narratives of *pedagogical care* relating to teaching and learning" (p. 311, emphasis in original).

Whether studied quantitatively or qualitatively, researchers have shown that caring is important in higher education, both to faculty (Fitzmaurice, 2008; Lincoln, 2000; Murray, 2006; O'Brien, 2010; Walker et al., 2006) and to students (Bandura & Lyons, 2012; Lee & Ravizza, 2008; Rossiter, 1999). However, universities have rarely incorporated the time needed for care work in assessment of faculty workloads (Walker et al., 2006). Simply holding set office hours does not contain the work of showing care to students and rarely have faculty, students, and administrators shared the same definition of care work (Mariskind, 2014). Researchers have given various definitions of care over the past couple decades including Gilligan's (1982) ethic of caring for oneself and society, Tronto's (1994) model of caring relations, and Knobloch's (2004) distinction between instrumental and relational care. All these definitions have helped connect faculty-student interaction with well-being for students and faculty in higher education.

Well-Being Studies

Stanton, Zandvliet, Dhaliwal, and Black (2016) and Simon Fraser University established a cohort of faculty working on the design and delivery of courses to enhance well-being.

Perhaps the most important reason for improving conditions of well-being for students was that happiness led to deep learning, not to mention retention, engagement, and satisfaction with the degrees. Making well-being an institution-wide effort had the most impact (Simon Fraser University, 2015). Murphy (2015) also reported on a university that implemented a comprehensive mental health and well-being plan for both faculty and students and argued that education and shared missions were crucial for success. Additionally, Foster, Allen, Oprescu, and McAllister (2014) found that an individualized well-being intervention called Mytern (Take Emotional Responsibility Now) supported students in academic and personal success at college. Gillett-Swan and Sargeant (2015) discussed accrued well-being, arguing there is value in looking beyond a particular moment in time to assess how people feel over time, especially when varying definitions of well-being could prevent comparison and growth. Stamp et al. (2015) showed mental toughness led to enhanced well-being, not merely academic success.

Some critics of well-being initiatives worried there was too much focus on taking care of students in the 'therapeutic turn' in education, but Wright (2014) argued that we must consider how our practices match up with long-term educational aims. It is worth noting that the major well-being initiatives discovered in this research overview came from Australia, New Zealand, and Canada, while there was not as much research from the United States, even though universities here have also struggled with supporting students' mental health.

In several studies, not only was student well-being studied, but also faculty well-being. Hagenauer and Volet (2014) argued that positive teacher-student relationships also benefited faculty's sense of belonging and well-being. As Held (2006) noted, "Caring is a relation in which carer and cared-for share an interest in their mutual well-being" (p. 35). While faculty have responsibility to show care for students, well-being for both faculty and students should be

the result. Van Petegem et al. (2007) argued that the direct link between teacher well-being and student well-being proved the importance of fostering faculty well-being within the institution as part of a comprehensive well-being initiative. Mixer, McFarland, Andrews, and Strang (2013) described the need for comprehensive care across campus:

> The care constructs of respect, collective and reciprocal care, and mentoring/co-mentoring are essential to creating a caring scholarly faculty community. The environmental context of a caring scholarly faculty community leads to enhanced faculty health and well-being. (p. 1475)

Summary

The present study sought to build on this research base in a few significant ways. First, this study asked questions about faculty-student interaction that go beyond the academic success of students or typical institutional measures of success. By focusing on the well-being of students, the value of interaction is shifted to a more holistic benefit for student and institution alike. Next, this study included faculty in the focus of the research because faculty well-being is a neglected aspect of the field. Identifying faculty as overworked or overwhelmed does little to articulate the causes and propose solutions for better faculty well-being, which in turn influences student and institutional well-being. Finally, this study broadened discussions of well-being and care in higher education to comprise curricular and pedagogical development. In the following Chapter III, the framework, scope, and method of the study are described in detail.

CHAPTER III

METHODOLOGY

Conceptual Framework

My conceptual framework for this study was shaped by a variety of influences over my years of doctoral study. To begin, Noddings's (2003) *Happiness and Education* was the earliest inspiration for this study. When reading the chapter, "The Aims of Education," I was dumbstruck by her simple question: shouldn't schools aim at happiness? When I considered my own situation of administrative struggles and increasing class size, personal strife and overwhelm, I wondered how I could be happier in my work. Almost simultaneously, I thought of my students—many visibly stressed, some withdrawn, others lacking sleep—how happy were they? Was college turning out to be the 'happiest time of their lives'? Noddings wrote about how to define happiness and noted the difficulties of considering a purely objective or subjective definition, but at the same time, she knew there were few to no conversations about how happiness should fit into the aims of education. As my institution continued to position itself for the future and enhance conditions for the present, how could Noddings's ideas influence our work? Noddings posited that the idea of Subjective Well-Being (SWB), while problematic for its flaws, was also a good starting point for discovering the purpose of education and was far better than outcomes for getting to this definition: "Education, by its very nature, should help people to develop their best selves" (p. 23). I wholeheartedly agreed with Noddings's calls for major reframing of education's purpose, and I began to notice the ways in which my campus could focus more on happiness and our best selves.

The next step in conceptualizing this study was inspired by the work of Bringing Theory to Practice (2003), a project of the American Association of College and Universities that "believe that higher education should be holistic and transformative, nurturing students' intellectual growth, personal well-being, preparation for meaningful work, and democratic citizenship" (para. 5). They advocate reshaping the institution of higher education and educating the whole student through innovative practices and large-scale change (Bringing Theory to Practice, 2003). Harward (2016) published *Well Being and Higher Education* and this volume explored the concept of well-being from many different angles and for applications within and beyond the classroom. I drew from it an understanding of pedagogical models, institutional trends and needs, and complicating questions that drove this study (Harward, 2016). Most importantly, this text led me to refine Noddings's (2003) broad notion of happiness in education to the exploration of well-being in higher education.

Maxine Greene (1978) inspired my thinking about faculty-student relationships in her articulation of power imbalances and the need for community through education. Greene encouraged an expansion of mutual language and understanding, "in sympathetic dialogue with students," in an "attempt to examine together the implicit manipulativeness in classroom life" (p. 106). I resonated with this call to reveal and rebalance power dynamics and bring faculty and students to the same table for discussion of our shared space. Furthermore, she emphasized connectedness and membership in shared spaces as tools for developing individual identity within society. Greene (1997) further argued that one way to respond to the "evident lacks in society, to the spaces where people feel solitary and abandoned" was "to summon up an articulation of purpose suggested by Rich's 'possible happiness, collectivity, community, a loss of isolation.' The words imply a reaching out for individual fulfillment among others, in

(perhaps) the kind of community in the making John Dewey called democracy" (p. 3). In Greene's words, I heard echoes of the isolation and individualism that pervade college campuses and American life more broadly, and I saw a pathway for opening up frank conversations about our experiences that could enrich education for faculty and students.

In *Teaching to Transgress,* bell hooks (1994) articulated the interconnectedness of teacher and student well-being, arguing "that teachers must be actively committed to a process of self-actualization that promotes their own well-being if they are to teach in a manner that empowers students" (p. 15). She made the case for an engaged pedagogy that challenges the status quo and levels the playing field between so-called expert professors and novice students. hooks shared her strategies for acknowledging the past classroom experiences of marginalized students and her efforts to "affirm their presence, their right to speak," honoring all students' experiential knowledge (p. 84). hooks' ideas solidified my commitment to take action and foster change through this study and to involve both students and faculty as I explored their intentions and interactions.

As my questions about faculty-student relationships and the connection to well-being came into focus, I continued to encounter the concept of care. Noddings (1984) wrote about care extensively in her works by defining the carer and the cared-for and the major components of her ethic of care: modeling, dialogue, practice, and confirmation, all of which figured prominently in my study. In *The Challenge to Care in Schools,* Noddings (2005) emphasized Heidegger's conception of caring relations and detailed the centrality of relational ethics in schooling. Here, she argued for breaking down hierarchies and disciplinary barriers and for creating "a multiplicity of models designed to accommodate the multiple capacities and interests of students" (Noddings, 2005, p. 173). The need for multiplicity in our approaches rang true to me

because it seems some students thrive in the traditional curriculum and models for success we have built at RMT, but other students suffer within them. As we continue to expand and diversify the student body, more models and practices are needed to support all students and faculty.

Once I knew what questions made me curious, I turned to Eisner (1991) to develop a framework for formulating the study design. Eisner explained connoisseurship as "the means through which we come to know the complexities, nuances, and subtleties of aspects of the world in which we have a special interest" (p. 68). I had a good amount of "antecedent knowledge," having taught at RMT since 2004, to which I could now add processes of "epistemic seeing" via this study (Eisner, 1991, p. 64). I focused my research questions primarily on the intentional and pedagogical dimensions of higher education but remained open to revelations of the connections they had to the structural, curricular, and evaluative dimensions as well. Eisner's (1994) discussion of implicit curricula in universities was also instructive in thinking through the questions of this study because I hoped to bring to view the cultural assumptions and behaviors of RMT. I concurred with Eisner (1994) "that attention be devoted to the quality of life students experience in school" in addition to their academic performance, and that educational criticism would help me disclose what I observed (p. 367).

Action Research

To add to the literature on faculty-student interaction in higher education, I approached my questions as an action research study, primarily because I have experienced this problem of practice in my own teaching and I want to make a change. Glesne (2016) posited that "the essence of action research is the intent to change something, to solve some sort of problem, to take action" (p. 18). I positioned this study as primarily self-reflective—the action research of a

reflective practitioner (Schon, 1983)—but it was also my intent to influence change in the way faculty and students interact at Rocky Mountain Tech (RMT). In their guidelines for self-study, Bullough and Pinnegar (2001) suggested self-studies should "seek to improve the learning situation not only for the self but for the other" and "attend carefully to persons in context or setting" (p. 17-18). Further, they revealed the benefits of self-study in linking history and personal experience to authentically connect to the reader and address "the problems and issues that make someone an educator" (p. 17). My intentions with this research were well-suited to self-study because I wanted to show how my findings could enhance the outcomes for my institution and other readers and researchers. In particular, in reflecting honestly about my experiences and the participants' experiences, I intend to connect with readers' experiences of college in order show the benefit of attention to well-being in higher education across other institutions.

My research was also a good fit for the action research framework more broadly because I saw it as a cyclical process beginning with this study and extending to my future work at the institution. Stringer (2007) described the phases of action research as Look-Think-Act, in which researchers described the context and problem, then collected and interpreted the data before devising a plan of action. He argued this simple cycle was deceiving because it also involved diverse influences and agendas, "resulting in a continuous need to modify and adapt emerging plans" (p. 41). I saw this research as holding an array of unknowns, so my desire to negotiate those variables with the stakeholders matched the open, cyclical processes of action research.

Stringer (2007) defined community-based action research as research that is inclusive and equitable, that invites the members of the community to participate in and benefit from the research action plan. While some of this definition fits my purposes, faculty and student

participants did not help me analyze the data and will help implement the action plan only if they are motivated to continue beyond the scope of the study. In their discussion of positionality for action research in education, Herr and Anderson (2015) distinguished between an insider self-study and an insider working with other insiders. My study contains elements of both. I sought to improve my own practice as I learned from other faculty's practices and student perspectives, but I also intended to start a dialogue between faculty and students about the shared and divergent expectations of their interactions. By enlisting students and other faculty, I hoped to engage them in the long term to participate in institutional change with the ultimate goal of having regular, inclusive discussions about faculty-student interaction and what behaviors are supportive and harmful to the well-being for both students and faculty. At the least, this study could engender more informed practices for me and the four participating faculty and those we directly influence. In addition to improving my own practice, my work across the institution on committees and in service could be enhanced by the knowledge this study generates. More broadly, this study could influence faculty and administrators at other institutions, especially within STEM programs, to implement policies and start conversations based on these findings.

Rocky Mountain Technical has begun efforts to change campus culture to better recognize and support mental health struggles, diversify the population, and enhance the experience of the students, so this action research could inform those efforts as well. Stringer (2007) argued, "By working collaboratively, participants develop collective visions of their situation that provide the basis for effective action" (p. 67). To this end, I consulted with and enlisted support from the following groups before beginning the study: (a) students who have led efforts to expand mental health education and offered support to fellow students; (b) student affairs faculty who lead programs to support students experiencing mental health challenges,

suicidal ideation, sexual threats and violence, substance abuse struggles, and other traumas and challenges; (c) assessment coordinators who conduct studies to better understand student experiences of college at RMT; and (d) department heads and faculty who share my concerns about stress and well-being for our students. By consulting with an array of campus entities, I found camaraderie and support for improving the faculty-student dynamic on this campus. The perspectives of faculty and students were equally important to beginning a dialogue that could lead to more permanent change in both policy and practice.

Educational Criticism and Connoisseurship

Educational criticism and connoisseurship was the lens through which I gathered and interpreted the data in the study to formulate future action steps. Eisner (1994) outlined the four key dimensions of educational criticism: (a) description of "the relevant qualities of educational life" (p. 226), (b) interpretation of what "the situation mean[s] to those involved" (p. 229), (c) evaluation of "the value of a set of circumstances" (p. 231), and (d) thematics of the analysis that "provide a distillation of the essential features" of the study (p. 233). From the stance of an educational critic, my study revealed a counterstory of the institution, one that went beyond the promotional narratives and generalized tropes about what happens at RMT. As Yosso (2006) suggested, counterstory could "build community, challenge the perceived wisdom" of the institution, and "facilitate transformation" in the learning environment (pp. 14-15).

Eisner (1994) offered definitions and distinctions that framed my exploration in several areas. He argued that researchers should be curious about both "how beliefs about what is valued influence what is taught" and "the way in which schools actually function" (pp. 55-56). In terms of curriculum, my research questions and interview protocol were designed to evoke the nuances of intended (what we want to happen), operational (what actually happened), and received (how

we feel about what happened) curricula as they were experienced in faculty-student interaction (Uhrmacher et al., 2017). Revealing faculty and student experiences with these facets of curriculum shed light on the curricular ideologies of individual faculty and the institution more broadly. Finally, Eisner's ecology of schooling gave a framework for analysis of a particular system that considered all the aspects that comprises it. My discussion of findings and creation of an action plan honor the interplay among the intentional, structural, curricular, pedagogical, and evaluative layers of schooling Eisner described.

Connoisseurship

Beyond the value of educational criticism for this study, my experience at RMT allowed me a level of connoisseurship within the institution and as an educator. As Uhrmacher et al. (2017) argued, connoisseurship in education "is grounded in the connoisseur's interests and belief in the importance of what he or she seeks to understand" (p. 11). My passions for mental health and well-being, rooted in personal vulnerability and openness to change, have flourished in recent years in my professional and personal lives. I believe deeply in the need for educational reform that honors people over profits and individuals over systems. Therefore, the design of the study was based on my lived experience and bolstered by the inclusion of other participants who could help me learn and reflect on what we saw in our community (Uhrmacher et al., 2017). My data collection and analysis were rooted in "discernment, appreciation, and valuing" of the interactions and reflections of the participants within this particular context (Uhrmacher et al., 2017, p. 9). What made me an educational connoisseur in Eisner's (1994) sense of the term was the opportunity in this study "to perceive subtleties, to become a student of human behavior, to focus [my] perception" on the nuances of faculty-student interactions (p. 216). Employing the practices of educational criticism allowed me to see beyond the surface of

the interactions between faculty and students at RMT. It opened avenues for observation and analysis of faculty and student well-being that are not a traditional part of action research. At the same time, I explored how to best enhance campus efforts for reforming how we foster the well-being of the community. I hoped to inform not only my own practice but also to influence the actions of the campus entities working on pedagogy, student engagement, and mental health support. In this way, the action research inspired the structure of the educational criticism and the educational criticism informed the action plan and next phases of research and implementation.

Methods

The purpose of this study was to explore both student and faculty perceptions of their interactions during the course of an academic semester. In particular, the study focused on questions of well-being for participants and asked them to describe the qualities of the interactions they engaged in during the semester of data collection, as well as in their interactions in college in previous experiences.

Setting and Participants

The setting of RMT was ideal for this study because it provided a group of participants, both faculty and students, who are high-achievers but who might still struggle with the workload and pressures of succeeding in the rigorous environment of STEM education and research. My experience as a professor there for 16 years landed me in many teaching and leadership roles that facilitated my understanding of the institutional context for both faculty and students. I applied for and received exempt status from the Institutional Review Board to work with human subjects in this study (see Appendix G for the approval letter). In order to learn about the qualities of the interactions between faculty and students, I gathered data from both perspectives. Student

responses about faculty and faculty responses about students were used to start a dialogue about the nature and efficacy of faculty-student interactions. The goal of these conversations was to highlight the positive aspects of faculty-student relationships and foster growth and support in future interactions. Drawing perspectives from both groups addressed the issues of workload, stress, miscommunication, and confusing expectations for faculty and students alike.

Choosing participants. Since my passion for these research questions was rooted in my own experience in the classroom, the study was a community-based action research project with potential for ongoing iteration after this first phase of research. Now that the research has been conducted and analyzed, I can take actions based on my conclusions, as described in the final chapter of this project. To begin to understand the problem of student and faculty overwhelm in the context of faculty-student interactions for instruction, I studied my own practices and interactions with students and recruited four other faculty to join me in this research, for a total of five faculty participants.

Faculty participants. To recruit faculty for this study, I reviewed the class schedule for the spring 2020 semester and reached out to faculty who were teaching the large, required classes for freshman and sophomores, as well as faculty who were teaching smaller sections within major disciplines. I sought to recruit highly engaged and motivated faculty for this study: professors who had been teaching at this institution for several years, who were known as good teachers, but who also sought to refine and improve their practice, particularly their interactions with students. It was important for my study to recruit faculty who had institutional knowledge and could gauge the changes in their practices over time, especially when they had experienced their own personal hardships during this time. My own personal struggles brought my interactions with students into stark relief, so I wanted to work with faculty who could relate to

some of those changes in perception and behavior that occur as a result of being put under more pressure. The four faculty who responded to my invitation to participate had all been teaching at RMT for at least a decade, so they had that institutional knowledge. They also represented a range of important disciplines and required classes at RMT: physics, chemistry, differential equations, and thermodynamics.

Faculty who agreed to participate consented to give three structured interviews, to allow me to observe their classrooms and announce the study to their students to get informed consent, and to supply anonymized documents about their student interactions through the semester. Each participant reviewed and signed the informed consent form shown in Appendix B. In practice, because of the arrival of the COVID-19 pandemic in the middle of the semester, some of these planned data were not gathered. In particular, all but one faculty member completed two interviews instead of three, and only two faculty members supplied interaction data. I focused on collecting the data as closely to the original plan as possible but made the necessary adjustments for living in quarantine and working from home. Final interviews were conducted over Zoom and final class observations were conducted via the method of delivery of remote instruction for each professor. For two faculty, remote classes were conducted live with Zoom, and they taught the class as close to the original, in-person delivery as possible. For the other two faculty, they used class time as live office hour and help time and provided students with recorded lectures of the material to watch on their own time. The teaching changes and challenges caused by the pandemic shifted delivery and interaction with students, so they also impacted the questions in the final interviews with faculty.

Student participants. Student participants were recruited from the faculty participants' classes. I went into each classroom and explained the purpose of my study and invited students

to participate in two ways: by filling out an anonymous questionnaire and/or as a participant in focus groups. The questionnaire was developed to coincide with the content and tone of the focus group questions so students could provide data about their experiences of interacting with faculty even if they were unable to come to a focus group (see Appendix A for the list of questions). It included quantitative questions about interactions as well as open-ended qualitative questions, asking students to describe particular interactions and experiences.

In addition to the above student participation, my goal was to recruit three to six participants who were willing to be interviewed to tell their stories in more depth. I was most curious about faculty and students who had been through rough patches personally because that personal struggle is what drew me to this study. I wanted to hear from students who had struggled academically, had experienced emotional or relational hardships, had missed classes for a long illness, or the like. Students who had had external stressors on top of their responsibilities for coursework could lead me to a better understanding of what faculty had done to show or deny support during difficult times. The thinking was that comparing these students' perspectives to those of the faculty participants would help discover any overlaps or gaps between perceptions of faculty and students. However, seeking prior struggle in participants, both in faculty and students, proved to be a challenging recruitment parameter when I was asking for voluntary time from participants. In recruiting for the focus groups, a couple of senior students met the criteria for needing more support from their professors throughout their time at RMT. Those students agreed to talk about their experiences in more detail in addition to participating in the focus groups. I also added questions to the questionnaire to draw out experiences from students of times when they struggled and needed more support from faculty.

In general, I cast a wide net for participants within the classrooms I observed and was happy with the number and variety of student participants. With 16 participants in focus groups or one-on-one interviews, I was able to learn from a variety of students about their experience at RMT. The participants were representative students from all five faculty participants and they came from various majors and levels of academic standing. There was an institutionally representative balance of gender in the participants, as well as both traditional and non-traditional age students. `

Participant Consent

The four faculty who agreed to participate in this research provided me with three points of access: (a) observations of at least one of their classes two or three times throughout the semester; (b) two or three interviews with me for 20-30 minutes each at the beginning, middle, and end of the semester; and (c) interaction logs to be filled out each week for an agreed number of weeks and ideally the whole semester. Two faculty members provided additional observation notes, teaching materials, and Canvas course access to provide additional artifacts to expand my analysis.

Students in my own classes and in classes I observed were invited to complete a questionnaire about their general experiences as a student at RMT. Each student present in class that day received a copy of the consent form, and students who were willing to participate submitted signed consent forms to me (see Appendix B for consent forms). I emailed all volunteers a copy of the consent form for their records and kept the signed forms on file. The questionnaire was conducted in Qualtrics and questions in the questionnaire focused on specific interventions and interactions that were helpful for students in their learning and that impacted their well-being. Students in these classes were also invited to participate in focus groups to

discuss specific experiences the questionnaire was not able to capture. Students volunteered their time and participation and had the opportunity to contribute as much or as little as they wished.

Data Collection

Participant Researcher Data

As a researcher, I participated in data generation by examining my own teaching, both in the semester of data collection and from previous semesters. My examination of my own teaching involved writing reflective, narrative journals about my past and present teaching at RMT to develop and record my interpretations of the students' experiences in my own classes. Some of these were recollected from the past but they were lasting memories and experiences similar to the ones I asked faculty about in their interviews. I also observed faculty in their classrooms, occasionally gathering artifacts on their course planning and assignments, classroom activities and interactions. My initial and ongoing observation, artifact analysis, and reflection formed the foundation of my stance as an educational critic and connoisseur as I gathered and analyzed data from other participants.

Since I was the central participant in this action research, reflecting on my own practice was an important aspect of the data gathering process. My intention was to have my self-observations and reflections match the schedule for the faculty; I would answer the same set of questions in the interviews and record my class on the same schedule as the participants' class observations. My reflection was more sporadic than I had hoped in the original design for a couple of significant reasons. One reason I did not do as much reflection and self-study as I had planned was simply because of the constraints of being a working mom; being an only parent to two teens who needed my presence at unpredictable times made the research fall to the end of

the list behind home and work more often than anticipated. Secondly, when COVID-19 hit the United States, all aspects of life were frozen. We were focusing on basic survival and coping mechanisms, so it took me a few weeks to get my footing and begin to approach the research project once again. Beyond my reflection on my own teaching, my work as a researcher included the following aspects:

1. Recruited faculty participants and conducted initial interviews
2. Journaled about planning processes and my intentions for the semester's teaching, in accordance with the interview protocol for faculty
3. Informed my students about my study and invited them to participate; informed and invited faculty participants' students
4. Journaled after most faculty interviews to connect to my practice and study goals
5. Journaled after most student interactions to reflect on my practice and goals
6. Completed the checklist for interactions with students each month.
7. Recorded my teaching and conducted classroom observations with participating faculty; completed class observation forms for each

Checklist Interaction Tracking

Faculty participants and I did our best to complete a weekly checklist of interactions with students, recording when we met, corresponded with, and interacted with students. For me, the challenges of spring 2020 mentioned above meant I did not complete this as regularly as I had planned. For faculty in the STEM disciplines, the checklist task was more of a challenge, as their office hours were often packed with a line of students waiting for them. These faculty provided select examples of memorable interactions with students. For my own teaching, I

interacted with classes of about 30 students and had more targeted interactions with a few students per semester. Those interactions were easier to record on the checklist consistently. However, the interruption of the semester by a global pandemic threw all of us off and made consistency harder to come by in the final weeks of the semester when everyone was trying to adjust to remote teaching and learning as well as what was going on in the world.

The checklist grid was divided into three timeframes: in-person interactions during class (including immediately before and after class), digital interactions (including during evenings and weekends), and in-person interactions outside of class (see Appendix C for the sample chart and instructions). The checklist was inspired by Cox and Orehovec's (2007) typology of interactions, Hawk and Lyons's (2008) exploration of faculty care, and Tatum, Schwartz, Schimmoeller, and Perry's (2013) analysis of classroom interaction. In terms of specific behaviors, the checklist included typical categories of interaction during class (greeting, calling on students, asking for questions, connecting to lives outside class), before and after class (taking questions, setting up room, eye contact, walking with a student after class, greeting students outside classroom), outside of class (emails, phone calls, office hour visits, campus events), and in the digital space (replying to email, posting announcements, assigning work through the LMS). Additionally, the checklist grid included a column for ranking the quality of the interaction from negative 5 to positive 5 with 0 indicating a neutral or routine interaction. I instructed faculty to use the categories and descriptors that were most meaningful and helpful to them, and not to worry about classifying every detail for every interaction.

Faculty Interviews

Faculty participants agreed to three semi-structured interviews with me to discuss their experiences as college students, their philosophy on teaching, their best and worst interactions

with students throughout their careers, their current intentions for interacting with students, and what practices they employed to engage with and get to know their students. Appendix D provides the semi-structured questions for each of the three interviews. During the first interview, I introduced the procedures of the study such as the checklist and methods for exchanging plans, goals, and concerns for the semester. Faculty detailed their intentions for the course and their students and also talked about themselves as college students. In mid-semester for the second interview, I asked questions focusing on how faculty characterized specific class sessions and interactions with students and got an update on how the semester was progressing. We discussed interventions and actions they were taking to connect with students who might be struggling or blending into the classroom. This mid-semester interview was intended to give me a chance to check in with participants and ask more questions about their personal well-being. As the semester unfolded and COVID-19 started spreading around the country, I was able to meet with only one of the faculty participants before the school shut down and moved to remote instruction. With faculty spending so much time and energy on transitioning to remote teaching, I did not attempt to schedule a mid-semester interview with the other three participants. Rather, I added the most pertinent of those questions to the final interview.

Finally, at the end of the semester, I conducted a third interview that focused on reflections about the semester—what seemed to go well, what relationships were strongly built, and what missed opportunities or failed interventions occurred. We discussed plans for next semester and how the faculty member hoped to improve student interaction based on what was learned in this semester. The original plans for this interview also shifted significantly because of COVID-19 and the shutdown of the institution. I asked several questions about the impact of remote teaching on their original goals and on interactions with students that were not in the

original study design. However, the shift in plans added a different dimension to the semester and added stressors to both students and faculty that allowed for different kinds of interactions and perceptions.

Observations

When I observed classes, I used a checklist of various behaviors and events I could chart and count based on the work of Tatum et al. (2013) and Hunzicker and Lukowiak's (2012) Instructional Practices Inventory (see Appendix E for a sample checklist). The checklist included typical course observation behaviors of the instructor, but also included details about perceived well-being and stress, tone of voice, language that indicated pressure or condescension, and instructor immediacy indicators. I allowed a space for jotting episodic events to turn into vignettes of the classroom experience, perhaps including dialogue when it illustrated an exchange particularly well, but during most of my observations, I was able to record the audio of the classroom. Throughout my time observing classes, I took notes on what the teacher was doing and what behavior I noticed from students. For all four faculty's classrooms, I was able to observe the class in person one or two times and then did the final observation as an observer in their remote sessions with students. This was a different type of observation, but I was still able to take notes and record what I noticed on the observation checklist.

Student Focus Groups and Interviews

To better understand students' experiences and their perceptions of interactions with faculty, focus groups were ideal. Conducting interviews with multiple students would not only have been time-consuming, but it also could have inhibited students' willingness to share feelings about their experiences. My hope was that students in a group of peers would feel free

to discuss these issues amongst themselves with me as the researcher in the background, facilitating the discussion, but refraining from participating in it much. I held these focus group sessions in a conference room with snacks and drinks to provide a casual setting. I did not want it to feel like a classroom with me in the front of the room or for students to feel compelled to say what I wanted to hear. I also employed the focus group design to prohibit my tendency to want to converse individually with students and stray off the topic of the interview questions.

To prepare to conduct the focus groups, I carefully crafted my questions and probes to elicit stories shared between the students; I tried to only intervene in their conversations when or if there was a long pause and students needed to be stimulated with a follow up question or a change in topic. I began by having the students write briefly about their experiences so I made sure to hear from everyone present even if they were more reticent to join the group discussion (see Appendix F for the questions I provided).

I recruited students for the focus groups from each class I observed with participating faculty, as well as from my own classes. This method allowed me to compare responses between faculty and student participants. I was interested in learning how student perceptions compared to faculty intentions and how student intentions compared to faculty perceptions. The interplay between the responses of faculty and students contributed to the discussion of all five research questions.

Data Collection Overview

The research steps laid out in Table 1 formed the structure of my data collection process and the foundation of the data I collected. However, the data collection plan was more fully formulated once participants were known and helped me understand their schedules and needs. Everyone was very accommodating to my original schedule, but the onset of COVID-19 was the

major disruptor to my original plans for when and how data were collected. The timeline for data collection shifted a week or two later and some data were not collected as intended in the proposed study. In particular, the mid-semester interviews, focus groups and observations were mostly canceled.

Table 1

Structure of Data Collection Process

Data to Collect	Data Type	Timeline
1st faculty interviews	Qualitative, Interview	Before semester begins
Faculty interaction tracking	Quantitative and Qualitative	Throughout semester
1st classroom observation	Qualitative, Observation	Weeks 3-4 of semester
2nd classroom observation	Qualitative, Observation	Week 7 or 8 of semester
2nd faculty interviews	Qualitative, Interview	Mid-semester
1st student focus group	Qualitative, Focus group	Mid-semester
2nd student focus group	Qualitative, Focus group	Week 13 through end of semester
Final classroom observation	Qualitative, Observation	Week 14 or 15 of semester
Final faculty interviews	Qualitative, Interview	End of semester

Data Analysis

As an educational critic, my ability to describe the problem of my research and the context of the participants' experiences undergirded the data analysis. Describing my role as researcher and my experiences as a faculty member and student added value to my characterization of the study participants and findings. As Flinders (1996) noted, the interpretive phase of educational criticism moves from articulating the qualities observed to "focus on why those qualities are the way they are" (p. 353). For this study, my interpretations are compared against and incorporated with those of the faculty and student participant groups because their individual experiences were nuanced and valuable to understanding the scope of experience. As I developed interpretations of faculty-student relationships from participants' stories and my observations, I began to evaluate their quality and the merit of making changes in how they functioned. As Flinders (1996) argued, critics are "expected to shed light on the qualities that constitute excellence" (p. 353), so my study used the evaluation phase to determine practices that support student and faculty growth and well-being. Finally, the thematic phase of inquiry served as a capstone to this phase of the study, suggesting areas of further research and connections to national trends in higher education where appropriate. Overall, the study was written in a narrative style with specific participant responses and vignettes included to highlight the phases of the educational criticism process: description, interpretation, evaluation, and thematics.

The process for my data analysis was emergent, recursive, and dynamic (Merriam, 2009). After the first round of interviews with faculty, I began to winnow down the scope of focus with observation notes and a researcher memo (Bogdan & Biklen, 2007). Completing this process before meeting with the first focus group of students ensured I adapted the ideas emerging from faculty perspectives. As I worked through this iterative process for each phase of

the study, I crafted upcoming interview questions and the student questionnaire to include themes that guided the final analysis phase of the study. In addition to coding transcriptions of interviews and focus groups, I employed Uhrmacher et al.'s (2017) suggestions for annotation of data, seeking broad global parameters, patterns of meaning, and divergent data within the study. Ultimately, my analysis led to "anticipatory frameworks" that helped me and other educators understand the dynamics of faculty-student interaction at RMT and other institutions (Uhrmacher et al., 2017, p. 55). Table 2 displays the types of data collection and analysis for each research question as well as my conceptual approach to each question.

Table 2

Analysis of Data and Conceptual Approach

Theoretical/ Conceptual Framework	Research Questions	Participants	Data Collection Tools and Sources	Data Analysis Procedures
Structural, Curricular, Pedagogical, and Evaluative Dimensions of Schooling (Eisner, 1991)	Q1: What are the qualities of faculty-student interactions and relations that support care and well-being?	5 faculty and their students	Interviews and focus groups Questionnaire Observation Artifacts (course evaluations) Researcher memos	*Constant comparative* analysis of artifacts, observations, interviews, and memos
Instructional Arc (Uhrmacher et al., 2017) Intentional Dimension (Eisner, 1991)	Q2: What intentions do faculty hold for their interactions with students?	5 faculty in different disciplines at RMT; 4 participants and researcher; convenience sampling	Interviews Researcher memos	*Narrative analysis*
Instructional Arc (Uhrmacher et al., 2017) Curricular and Pedagogical Dimensions (Eisner, 1991)	Q3: How do students perceive faculty intentions and interactions?	16 focus group volunteers and 73 questionnaire responses from faculty participants' classes	Interviews/focus groups Questionnaire Artifacts (course evaluations) Researcher memos	*Content analysis* Structural, in vivo, values, and concept coding
Instructional Arc (Uhrmacher et al., 2017) Intentional Dimension (Eisner, 1991)	Q4: What intentions do students hold for their interactions with faculty?	16 focus group volunteers and 73 questionnaire responses from faculty participants' classes	Interviews/focus groups Questionnaire Researcher memos	*Narrative analysis* Structural, in vivo, values, and concept coding
Instructional Arc (Uhrmacher et al., 2017) Evaluative Dimension (Eisner, 1991)	Q5: How do faculty perceive student intentions and interactions?	5 faculty in different disciplines at RMT; 4 participants and researcher; convenience sampling	Interviews Researcher memos	*Content analysis* Structural, in vivo, values, and concept coding

Coding Qualitative Data

My process for analyzing the interview and focus group data began with reading printed copies of the transcriptions. I used color-coding for each research question as I read through the transcripts with colored pens, describing and summarizing the responses of the participants in the margins. As described by Saldaña (2016), I used these initial codes to create connections among the responses and to develop themes, remaining open to the possibilities I would find there (p. 115). In particular, I used in vivo codes to capture the "participant-generated words" during this phase of coding (Saldaña, 2016, p. 105). I also coded for values in the initial phase to search for ways the participants articulated their "perspectives and worldview" (Saldaña, 2016, p. 131).

After gleaning these initial codes, I went back through the hand-written notes to classify ideas into themes for each of the research questions. At this phase I began to input codes into the NVivo software to digitally code each interview, memo, and questionnaire response. This digital coding process helped me identify the overlap between some of the different codes I initially established and allowed me to further refine the descriptions of the data. I was able to find multiple categories to which a particular quotation or anecdote could be assigned and think more critically about the meaning behind participant experiences. Saldaña (2016) explained concept coding as a process that "symbolically represents a suggested meaning broader than a single item or action," and this process was valuable in creating higher level themes and developing conclusions about the data (p. 119). Concept coding allowed me to think more broadly about how the participant responses mapped onto my research questions. I used a form of provisional coding for Research Question 6 about remote learning during the pandemic and for Research Question 1 about what kinds of interactions are supportive for faculty and students. For both of these questions, I knew in advance that I was looking for the key words in the

question to arise in participant responses and even built these words into my interview and focus group questions. Saldaña noted that provisional coding should be used with caution because one "run[s] the risk of trying to fit qualitative data into a set of codes and categories that may not apply" (p. 170). However, I only used a few predetermined codes and let the rest evolve from participant responses. Provisional codes assured that I could talk about remote learning impacts and about supportive interactions. Finally, I used versus coding for a few of the dichotomous concepts in the study in which disagreement in perspective was noted in the data. Saldaña noted that for action research, "discerning the conflicting power issues and micro politics among constituents and stakeholders is an important diagnostic for initiating and facilitating positive change," making versus coding a valuable tool for assessing situations involving hierarchy and power differentials (p. 137). All of these coding techniques helped me reflect on the data-gathering processes of the study and to articulate multiple levels of meaning from the different types of approaches.

Validity

For an action research study, Herr and Anderson (2015) outlined the following five types of validity that should be confirmed:

1. Dialogic validity—peer review of methods, data, and findings
2. Process validity—a study design that allows for learning
3. Outcome validity—implementation of a plan based on study findings
4. Catalytic validity—a study that energizes participants to stay engaged and
5. Democratic validity—a study that derives from insider concerns and includes relevant stakeholders.

My work with faculty and students in this study ensured dialogic, process, and democratic validity were accomplished through the duration of the process. To attain outcome and catalytic validity, my action plan addressed these concerns, as I explain in the final chapter. My goal is to open up these findings to the scrutiny of other participants and stakeholders, as well as to interested researchers, as I move forward with the action steps derived from the study.

For educational criticism, the important validity factors are structural corroboration and referential adequacy. Uhrmacher et al. (2017) described structural corroboration as an analysis that "makes sense" and provides "a coherent, persuasive whole picture" (p. 59). Confirming my stories with the participants through member checking and considering the outliers in my data analysis helped me achieve this complete picture of the findings. Referential adequacy means readers are able to draw connections to their own experiences and situations through the new understanding I explore in the discussion. To this end, I contextualized and connected my interpretations to ensure a "consensual validity," what Eisner (1994) called an "intersubjective agreement among a community of believers" (p. 237).

In one sense, my teaching experience at RMT over 16 years gave me a level of connoisseurship about the curriculum, the campus, and familiar faculty and students. At the same time, Herr and Anderson (2015) noted that "unexamined, tacit knowledge of a site tends to be impressionistic, full of bias, prejudice, and uninterrogated impressions and assumptions that need to be surfaced and examined" (p. 44). Part of the validity in this study came from comparing my analyses to faculty responses and student questionnaires to describe "what is" and avoid merely "what I see" as much as possible. To check my own bias in interpreting my behaviors and journals, I invited the participating faculty and students to examine my data and

conclusions. I also used the faculty interviews and student focus groups to confirm and probe my analyses of their perceptions.

Herr and Anderson (2015) also cautioned researchers who study themselves to be aware that they are "too often tempted to put a positive spin on their data" because they are embedded and invested in the success of the site (p. 44). I often considered that I did not want to paint a bleak picture of my personal or institutional practices and wanted to focus on the positive outcomes and effective behaviors of teachers and students. However, it was also true I might have had a tendency to oversell aspects of my descriptions because of my pride and affection for the people and the institution, so I was careful to remain true to the particulars I experienced and to avoid generalizations I could not support with data.

Member Checking Process

Faculty and student participants were invited to participate in the process of designing and reflecting on the study parameters through the interview process. I also included participants in more direct member checking. After completing the data analysis chapter, I emailed all participants a version of the chapter with their quotations highlighted and asked them to review their ideas in context. I invited tweaks of the phrasing and edits on additions or deletions. After I wrote the final chapter, I sent each participant a copy of the entire document, again seeking their approval of my characterization of them and their ideas. A few participants did not respond to these emails, but a majority of participants replied to one of the two emails and agreed their ideas were represented faithfully. All responding participants gave their approval of the text as I crafted it and their quotations as I selected and reported them.

Summary

This chapter outlines the choices I made in designing the research study, including inspirational thinkers and ideas, the setting and participants, and the methodological approaches I applied in shaping the study process. Educational criticism and connoisseurship provided me the language and allowed me the space to focus on deep qualitative analysis of my environment, while action research required me to reflect and collaborate then act to educate beyond the scope of my single study. COVID-19 changed the way classes were taught in the middle of Spring 2020 semester, so my study design evolved to collect data via Zoom instead of in person and to include a question about the impact of remote teaching on faculty-student interaction.

The final two chapters reveal the findings and highlight perceptions and anecdotes from the participants. Chapter IV introduces the participants and their intentions for the semester, followed by sections on what happened throughout the semester and what was perceived by participants in their interactions. I categorized and summarized participant responses to reveal both individual experiences and more general trends and conclusions. Chapter V presents connections to theory and current events, particularly related to care ethics, feminist pedagogy, gender dynamics, and curricular reform. I make arguments about what actions could be taken to better support faculty and student well-being in light of these connections.

CHAPTER IV

DATA ANALYSIS

Data Analysis with the Instructional Arc

This chapter characterizes and describes the faculty and student participants and their intentions and perceptions about the interaction they had with one another in the Spring 2020 semester at RMT. The purpose of the study was to articulate impacts on well-being for both students and faculty as a result of their interactions. Participants answered questions about the qualities of their interactions and aspects of those interactions that impact their well-being. As an educational critic, I used the framework of the instructional arc to organize the data and show connections between what was intended by the participants and what was ultimately received and perceived by them. Uhrmacher et al. (2017) described the instructional arc as the connective thread between the intentional, the operational, and the received curricula. They argued that "the instructional arc provides us a way of seeing what actually happens in schools, with a focus on discerning congruence or variance between intentions and operations" (p. 25). Because my research questions were focused on intentions and perceptions of participants, I was curious how those two elements were connected through the instructional arc. I highlight the areas where intentions were realized for students and faculty and also raise questions about what we can learn from unmet intentions and unpredictable circumstances.

When I applied the instructional arc to my analysis, I focused on curriculum in higher education and it is a much broader sense of curriculum than simply what is being taught. He, Phillion, Chan, and Xu (2008) defined curriculum as "a dynamic interplay between experiences

of students, teachers, parents, administrators, policy-makers, and other stakeholders; content knowledge and pedagogical premises and practices; and cultural, linguistic, sociopolitical, and geographical contexts" (p. 223). In higher education for STEM disciplines, the stakeholders are of course slightly different than in K-12 education. Most notably, employers and industry leaders are more prominent drivers of curriculum and parents play a more removed role. However, this definition of curriculum supports an analysis that includes both teachers and students and acknowledges the contexts in which they operate. Furthermore, the consideration of student curricular needs in higher education, particularly in STEM fields, is lacking. There is a presumption that there are many technical subjects students must master and many skills they must learn to be a successful employee, but this notion confines students within those expectations. For example, the federal strategy for STEM education (National Science and Technology Council, 2018) stated that "a diverse talent pool of STEM-literate Americans prepared for the jobs of the future will be essential for maintaining the national innovation base that supports key sectors of the economy" (p. v). Maxine Greene (1993) addressed how traditional notions of curriculum are limiting:

> It is not a matter of determining the frames into which learners must fit, not a matter of having predefined stages in mind. Rather, it would be a question of releasing potential learners to order their lived experiences in divergent ways, to give them narrative form, to give them voice. (p. 219)

This study seeks to give voice to STEM students' lived experience of their curriculum in the context of a given semester.

My rationale for applying the instructional arc is to show the value of what both students and faculty experience and believe about those experiences. When we think of curriculum in the

narrow sense of what concepts and subjects are taught to students, we leave out the richness and the reality of what higher education means for the participants. We also often consider only the teacher to student pathway—what is being shown to students or given to students or required of students. However, both faculty and students set intentions, both of them have an experience of what actually happens in their interactions, and both of them reflect on what is perceived and received. The expansion of the instructional arc to also apply to the curriculum that faculty experience in their role as teachers is one way I am extending the arc to encompass a broader look at the relationships within curriculum through this study.

Ingman and McConnell (2019) emphasized an "underlying definitional relationship—that education is curriculum and curriculum is experience" (p. 348). We all have a lived experience of creating intentions, we have a lived experience of trying to manifest those intentions by playing out our roles in the classroom and engaging in interactions, and we have a lived experience of what we understand or reflect on or take away from the semester. Eisner (1991) encouraged us to consider "the perception of qualities, those that pervade intimate social relations and those that constitute complex social institutions, such as schools"; he wanted us to think "about the meaning of those qualities and the value we assign to them" (p. 1). In considering both the intentional and the perceived in this study, I want to complexify the concepts of the operational and the received curricula by considering them from the perspectives of both the teacher and the student. What happened in the classroom and what is understood and remembered about that experience can be described and valued from both the faculty and student vantage points. The qualities we ascribe to these experiences comprise the value of this analysis.

The focus of this chapter, therefore, is to outline my findings in the scope of the intentional, the operational, and the received curriculum for faculty and students in the study in

order to answer my research questions in Chapter V. Figure 1 shows the relationship between the instructional arc and my research questions. The main headings of intentional, operational, and received, along with the white text, represent the traditional instructional arc; whereas, the shaded, italicized text shows the layers of analysis I added to the base of the model. Much of the data discussed in this chapter support and informally answer my research questions about student and faculty intentions and perceptions, Questions 2 through 5, but I answer all research questions more directly in Chapter V. In the pages that follow, the significant findings from the interviews, focus groups, and questionnaire are the main concentration, but I also discuss findings from the class sessions I observed, the course evaluations faculty received, and the interaction checklists some faculty completed.

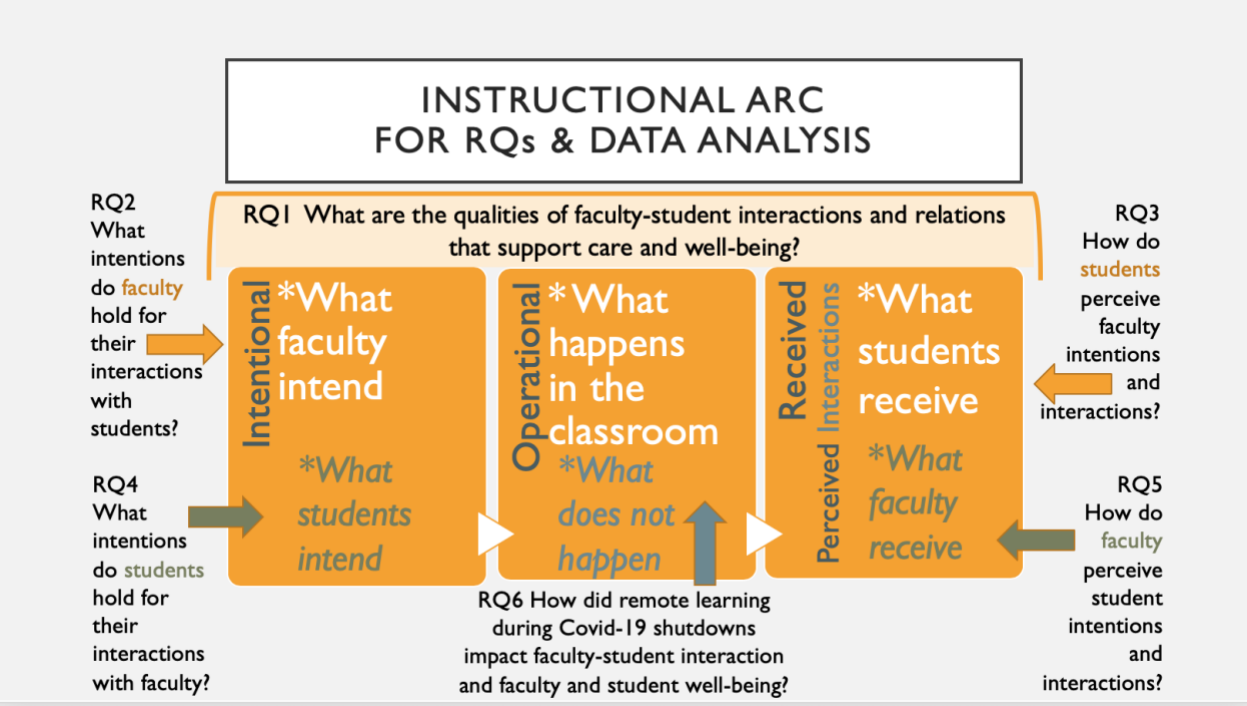

Figure 1. Instructional arc for research questions and data analysis.

Meet the Faculty Participants: Profiles and Our Intentions for Spring 2020

As I indicated in Chapter III, my goal in recruiting faculty was to find participants who were similar to me in that they had years of institutional knowledge and experience as opposed to being brand new faculty to the institution. My participants were all faculty who had been at RMT for seven or more years: Danielle started in 2013, Tonya was hired in 2012, and Shawna started in 2009. Tom and I have been at RMT the longest, starting as adjuncts in 2001 and 2004, respectively, and getting hired as full-time teaching faculty soon thereafter. The following section highlights each faculty participant, including me, to introduce each professor participant to the reader. I discuss our experiences as college students and our roles at RMT, so the reader gets to know us a bit before I outline our intentions for teaching at RMT in spring 2020. I introduce myself first at more length to emphasize the context of the study and then provide shorter vignettes of the faculty participants.

Along with each faculty profile, I discuss the participant's stated intentions for teaching in spring 2020. Early in the data analysis, I saw that each faculty member had at least one clear connection to their experience as a college student in the intentions they stated. Therefore, I combine my discussion of faculty intentions with a reflection back to their significant college experiences that seem to have contributed to the kind of teachers they want to be today. Data in this section came from the first interview at the beginning of the semester before I had any interaction with student participants.

"I Struggled Fiercely": Cortney's Story

More details of my personal experiences as a college student and as a professor appear earlier, especially in the prologue. Most pertinent to this study's research questions is that I have

struggled both as a student and as a professor with balancing academics with what happens outside the classroom in my private life as I have experienced personal hardships.

To begin with, I had a difficult time transitioning from being an outstanding high school student to a flailing college student. I made no friends except my roommate and connected with no professors in my first year of college, although interacting with teachers had been one of favorite things about being a student in high school. I struggled fiercely with being a good college student and was floundering both personally and academically. My relationships with family and friends, my entire support network, were strained by my intensive relationship with my boyfriend. My energy and motivation were severely lacking and I realize in retrospect that I was depressed. As a result, I rarely engaged with my coursework, had no interaction with students and faculty outside of class, and had terrible grades in my courses. I had never gotten lower than a B+, but between those two semesters of freshman year, I had gotten several Cs and Ds and had to drop or fail one or more classes a semester. I was deeply lost in the large institution of the state school I attended.

After that first miserable year, I transferred to a small state school with a campus that only occupied a few blocks and had fewer than 3,000 undergraduates. I thrived at this smaller school because I had a much easier time approaching and getting to know my professors and classmates. I attended with my best friend and my boyfriend so I had carpool buddies and a network of peer support. I engaged with my peers and my professors in and out of the classroom and I began to identify as an English major and associated with others in the department. I was still disconnected in that I commuted from 45 miles away, but was far more motivated and engaged than I was at the large state school of 20,000 undergrads.

Once I found my footing as a student who thrived in smaller classes on a smaller campus, I was back to my old self—learning well and getting good grades to show for it. I continued this path as I entered graduate school at a relatively small mid-size university that was roughly double the size of my undergraduate institution. I joined the English master's program with a cohort of 15-20 students and most of us were trained as teaching assistants to teach freshman composition. I was excited to jump into the role of teaching as I had had lots of practice in my playroom as a kid, standing at the front of the "class" giving assignments, and watching my parents in their roles as teachers over the years, helping them decorate classrooms and grade multiple choice quizzes from time to time. The reality of the situation, though, was that I was a rather busy graduate student, trying to figure out how to be a master's student as opposed to an undergraduate at the same time as I was trying to teach writing for the first time. My experience as a tutor did nothing to prepare me to plan and execute multiple instructional plans and course assignments. I knew what good writing sounded like from all the reading I had done and I roughly knew the course structure and objectives prescribed by the university. However, in practice, I was not adept at connecting with students and understanding what they were going through. I have often wondered what my first students thought of "grad student me" up there teaching them composition, and I will likely never know. But I kept working on it as a teaching assistant and then was teaching at several institutions once I got my master's, landing at RMT in my second year post-graduate school.

Teaching at RMT has been incredibly rewarding in several ways. The colleagues I work with are outstanding and the students are inspiring. The campus is alive with cutting edge ideas and research. Everyone is bright and motivated in their own ways and there are many opportunities for intellectual stimulation and growth—precisely what I love about college

campuses. I was hired to teach the freshman composition class as I had done at other institutions, but here at RMT, the course also includes exciting content on ethics and the environment, and I thrived teaching content I am passionate about. I soon was acting as director of this required class, leading the collaborative meetings on curriculum and pedagogy. I also have created upper-level electives in science communication and service learning, both also passion areas for me and for the students. I have found it easy to engage in this community and I have always enjoyed my work there. As with my undergraduate and graduate student experiences, the smaller institution combined with clearly delineated cohorts was supportive for me.

The biggest struggles of my teaching career have come in recent years when my home life was falling apart. The aforementioned boyfriend had become my husband in 2001, right after I finished my Bachelor of Arts, and we had children in early 2005 and late 2006. We were living rather stereotypical white-middle class-suburban American lives until my husband sustained a brain injury in the fall of 2013. The years that followed were difficult and dark, as he struggled to battle headaches and nerve pain and spinal surgeries and deep depression. There were many doctors' appointments and surgeries and much pain, both physical and emotional. During this time, I struggled to support him along this healing path while maintaining the household and the kids' care and activities, while also teaching and serving as director of the required freshman class in my department. It was a lot of responsibility and I managed it all as best as I could, but this was the first time in my life when my care for my students and my concern for what I was doing in the classroom was put on the back burner more often than not. While I knew my priorities were in the right place with my family, I no longer felt as good about my work as I had before those stressors were added.

I began to cut as many corners as possible—reusing assignments I had already developed, not rereading the materials I had assigned, leaving fewer comments on the essays I graded, offering fewer ways to connect with my students, and the like. It was not even a conscious choice; rather, it was a natural consequence of the variety and scope of the tasks on my plate. This pattern carried on for three to four years, and was most pronounced in 2016-2017 in the months before and after my husband's death. In the years since, I have started to be able to bring the energy and focus to my teaching it deserves, but now I approach my work with much more awareness of the factors that can influence one's focus and success in academia. These experiences strongly influenced the questions and designs of this study because I understand that faculty and students alike experience difficult circumstances that severely limit their ability to fully engage in academics, despite their best intentions.

"Students Don't Need to Feel Invisible": Cortney's Intentions

Spring 2020 brought my focus to the continued revival of my passions in teaching: giving more attention to students and my service to the university, trying new pedagogy and assignments in my classes, and reading new materials for inclusion in lesson plans. These are the aspects of my job that have always fueled me. I had been missing those reinforcements of my passion in the past few years because of the series of stressors at home.

At the beginning of the semester, I articulated my intentions in this way: "I want to be prepared for class and offer interesting and exciting topics" that engage them in the science communication and service learning classes I teach. I want them to "carry their interest in and study of these topics beyond college and into their lives and careers." In my teaching, I set the intention to be responsive to their needs and return graded assignments quickly so they can build

on the skills that early assignments provide for the final projects. And in terms of interaction, I set the intention to connect more with all students and build some relationships with students outside of class, especially "those who show interest beyond the classroom component and see the application of these skills to their lives beyond college." Finally, I intended to examine my biases and preconceived notions about students, especially those who asked questions or asked for help throughout the semester.

I frequently emphasize to students that they need to communicate with me about any problems they are experiencing so we can work it out together. Most often, this would relate to absences from class, but any number of other questions or concerns could also be part of this communication. I was always too intimidated or too independent to go talk to my professors as a student, and in a couple of circumstances, when I did go talk to them, I was dismissed or given the message that there were rules and policies that had to be followed. On occasion, I shared my personal struggles but those did not impact the professors' decisions, so that led me to believe that these personal concerns were irrelevant and unnecessary to share. I have had students share similar positions—they get the impression that no matter what is going on, the rules and policies still apply, and in many cases, they are right. As we will see later, students in this study also felt dismissed sometimes, like there was no point in asking content questions, much less digging deep with their explanations about their circumstances. My intention for interacting with students is that they would feel comfortable letting me know when they are experiencing serious life stressors that make it difficult for them to complete class work. The authenticity of interactions about real life circumstances helps to build relationships; whereas, lack of communication often leads to failing or disappearing students. I know that this is what happened

to me as an undergraduate—I felt invisible and that there was no line of communication, so that was how I appeared to the professor. I intend for students know that they do not need to feel invisible or inconsequential.

"For Whatever Reason, There's Just a Click": Tonya's Story and Intentions

Tonya attended two different institutions as an undergraduate, and the first college did not inspire any strong feelings of connection or loyalty in the two years she spent there: it was "just college." At her second institution, she met one faculty member who worked more closely with her in undergraduate research and she developed a more connected relationship with him. This interaction led Tonya to feel more positive about the institution as a whole because she had a connection to someone there and she considered it a huge benefit to her as a student. She knew there was someone who would be supportive of her journey as a student and who knew her outside of class.

Tonya's negative experiences in college were related to sexism from a particular white male professor. He seemed to hold a grudge against her because she was outperforming one of his favorite students. When he cornered her one day and spewed off some very sexist diatribe about how "women should be barefoot and pregnant," she did not know how to respond in the moment, and he quickly walked away. Tonya vowed then and there to ace his class and show him his presumptions were unfounded. However, she knows that, had she been a student with less confidence or support, this incident could have become the undoing of her college success. She reflected that it was a different time when incidents like this were more common, but it definitely impacted her attitude going forward.

At RMT, Tonya has been an assistant director of the department for five years, which brought much responsibility and stress in addition to her teaching duties. She feels like the pace and volume of work have continued to increase over the recent years and that that burden prevents her from enjoying the teaching side of her job as much as she wants to. She loves the students at RMT but is less able to engage with them because of her administrative duties and because of the sheer volume of students. At her previous job, she worked at a very small liberal arts school and got to know each of her students over their entire career, but here, she has hundreds per semester and it is harder to form connections with students either in the classroom or outside of it.

Tonya was the only faculty member in the study who has taught for several years at another college. There, she had the valuable experience of getting to know all the students, working with them closely for several years, and celebrating them when they graduated. This experience related to her undergraduate experience of connecting with a professor on a personal level. At RMT, she is trying to replicate that with a few students, even though it is impossible to connect with many of them when she has 350 students in a semester. For Spring 2020, she "only" had about 170 students, so her intention was to connect with more students and to get to know some of them a little more. She revealed that this is her "favorite part of interacting…getting the one-on-one, being able to advise them about life, not just explain this chemistry problem." She wanted to have more time to connect and inspire them beyond the classroom so she tried to stay approachable even as the generation gap grows. Tonya said,

> I feel like the older I get, the harder it is sometimes to... not to empathize. I empathize. But understand their experience and their viewpoint. And that bothers me. I don't like

> that. I want to be able to feel like I have a better handle on it, but I definitely feel my age anymore.

She intended to create a space where students feel comfortable asking for help, but do not become overly dependent on her as a friend or mom figure.

"It Made You Feel Like a Part of the Class": Shawna's Story and Intentions

Shawna attended RMT as an undergraduate and has always loved the institution—both as a student and as a professor. She was shy as a student, but was engaged in undergraduate research and found herself surprised when the faculty member running her research group greeted her by name on the first day in his class. She had no idea he knew who she was, and this personal connection and with her professors was meaningful for Shawna. She appreciated that engagement from him, went on to take more of his classes, and now is teaching those same courses herself as a professor. Another experience that stuck out to Shawna from her time as a student was when she was overwhelmed with a lot of work during summer field session for chemical engineering. She was responsible for running her group for a couple projects in a row and she found herself behind. The professor, who she really enjoyed, was disappointed with her work and gave her a D, which was rather upsetting to Shawna who had never gotten such a grade before. Later that day, the professor actually reconsidered and changed her grade, but she knew she had not been prepared for his questions and she learned from that experience.

Shawna's work at RMT involves teaching several different classes in chemical engineering, and she is also the assistant department head. She gets to teach some of her favorite classes in thermodynamics where she can help students understand the connection to engineering broadly, as well as some of the historical context for the development of the concepts. She stated

in our interviews in a few different ways how much she enjoys her work here, even saying that if they stopped paying her, she would still want to come in and teach these students.

Shawna's experience at RMT as an undergraduate was a positive one because her professors knew who she was and she was able to interact with and feel supported by them. Now that she is a faculty member at RMT, she teaches the same thermodynamics classes she took as a student. However, instead of the 30-40 students in her classes then, she routinely has 70 or more students these days. Her intentions for teaching are to "give [students] that same interaction that I knew and loved" but this is no small task. She studies and memorizes the names and faces of her students within the first week or two so that she can "address them directly by name" when they come in for office hours. Shawna reported that students give her positive feedback on this in evaluations and she feels that it makes for good interaction with her students.

Beyond the first-name basis she establishes early in the semester, Shawna also intended to teach with a consistent format: teaching a concept, modeling a problem, letting students work out similar problems with time to ask questions, and repeat for the next lesson or skill. She intended to show the value of more time to work through questions in office hours where she can connect with them and encourage their growth through the concepts. Finally, Shawna intended to approach students in a particular way: first, to smile, then to point out what students are doing right, then begin to help them with their question. She wanted to "encourage an inviting atmosphere" in this way.

"They Cared About Me as a Whole Human Being": Danielle's Story and Intentions

Danielle went to a really small school of only 1,200 undergraduates and she was only one of two physics majors in her graduating class. This meant she had lots of interactions with the faculty members and remembers the whole experience being really positive and supportive for her as a student. She was very close to all four physics faculty members; they attended her basketball games, and she babysat their kids. The professors were very flexible with working around her schedule as an athlete and she was able to do research with one of them during the summer. They knew her and her older sister very well and she had a great experience.

The only negative experiences with faculty that she remembers were with the athletic department. She had negative interactions with the athletic director and the men's basketball coach who discriminated against the women's team, giving them a lower budget than the men's team. Her lesbian coach was surreptitiously fired. An assistant basketball coach for her team made snide comments about the "hygiene issues" of women and would not let them wear the white home uniforms for any reason. He was extremely disrespectful in demeaning women in multiple ways, always commenting negatively about their abilities and skills. This series of experiences was deeply troubling to Danielle and she was let down by the injustice of it, but she emphasized that her academic experiences with faculty were supportive and challenging and the faculty saw her as a whole person with varied interests outside of academics.

At RMT, Danielle teaches physics one and two, both required classes for most students, unless perhaps they have tested out of them from high school experience or transferred them in from another college. These are rigorous courses that have been completely overhauled pedagogically in recent years. Danielle was instrumental in training the teaching assistants

(TAs) who help run these courses and make them a hands-on studio experience, rather than the purely lecture-based experience of the past. Danielle was also instrumental in launching the teacher training program at RMT. This effort was inspired by her work with the physics TAs, some of whom get the bug to become teachers by working with her in this dynamic classroom, but there had never been a way to follow that passion until a new program for aspiring teachers was developed under her guidance.

In her college years, Danielle felt connected to professors and felt supported as a whole human being, so her intentions for her teaching mirror those experiences. Her intentions for her teaching were to "instill a growth mindset" and show them that "balanced challenges" support their growth as a learner and help them "build confidence". She wanted them to reframe how they see academic struggle—to recognize that struggle is good, normal, and temporary; that it leads to learning, so they should not be afraid of it. Danielle worked toward these intentions with her approach to office hours, dubbed "help hours," emphasizing that they all should come in to talk about the homework and that they are expected to support each other in their small groups. She also assigned students to study growth mindset, overcoming challenges, and healthy sleep patterns as part of the course. In encouraging them to get more sleep, she changed the time when assignments are due so students are not working all night and included an exam question that asks students how much they slept the night before. Noticing aspects of behavior that go beyond academic performance shows Danielle's commitment to the whole student and to good mental health.

"He Just Treated Me Like a Learner… Very Human": Tom's Story and Intentions

Tom described himself as an undergraduate as "a big time slacker" for the first year or two. He did not understand it at the time but he was "out of sorts and so discombobulated and didn't understand the transition" and he can see now that he was rather lost. Partially, he lacked interest in the mandated, really broad education over a variety of topics, and partially, he just was not being challenged or pushed out of his comfort zone as he needed to be. None of his professors were giving him the spark of interest in what he could become and in the relevance of this work. His best experience was with a faculty member who "treated [him] like a learner" and as a human. This experience made him feel like he had a fresh start to begin to engage with the material in his courses and truly start to grow as a student and as a person. His more negative experiences with faculty were just from the professors who really did not care about their job; it was obvious when they were more focused on their research than on their teaching. Tom said he "judged them harshly," but he does not remember being too negatively impacted by those attitudes because he could see their disengagement for what it was.

Tom's role at RMT is in teaching mathematics courses and he has been responsible for several different courses over his many years of teaching. He started teaching part time in 2001 and became a full-time instructor in 2003. He recently finished a doctorate in physics from RMT, all while continuing to teach in the math department. He has taken on various leadership roles around campus, especially in developing curriculum and leading student facing initiatives.

Tom's intentions for his students were a product of what his undergraduate education was lacking. Tom wanted to inspire and provoke and push his students out of their comfort zones and really give them something to chew on academically because he was really missing that as a

young person in college. He held different intentions for different types of classes. For example, in large lecture classes, he described a need for "theatrics" to keep students engaged in a room with lots of people. His goal was for them to "walk away thinking that they were given the tools they needed" to do the course tasks. However, for the honors class in differential equations, Tom's goal was to get them thinking in a modern way about technical knowledge. But even more than the technical content, he wanted them to know he "care[s] about them, their growth as a learner." In reflecting on his experience in college, Tom felt the most positive connection with the professor who first got him to realize that he was valued as a unique learner, and he now brings that experience to his students. He wanted the students to experience feeling uncomfortable and unsure so they can work their way to solutions and new understandings because "they're a cohort that hasn't really been shaken up." Tom designed the course in this way so that students can come to talk to him about the class content, but also about their growth. He connected this philosophy directly to the way in which he was feeling as an undergraduate—he said he "knew [he] was doing it wrong," but since he got decent grades, "it took [him] awhile to get it all figured out." He wanted to give students the "opportunity to grow" that he had needed as a young learner. Especially when he considered how much students invest in undergraduate education, he wanted them "to come out with a much stronger product."

Themes of Faculty Intentions

In reflecting on these faculty intentions for the semester, we all showed connections to our own experiences as college students when we articulated our intentions. From all of our diverse experiences, it was interesting to notice how our intentions for teaching our own students connected to the experiences we had as undergraduates—some of us are trying to replicate the experiences we had and some of us are trying to do the opposite of what we experienced. I

wanted to be open and accommodating and notice students who are struggling because I did not have that experience. Tom wanted to challenge and inspire his students like he had not been challenged. He also saw the individual growth of the learner as valuable because that is what showed him value as a student. Danielle treated her students as whole people because that was what helped her succeed. Shawna vowed to know her students' names even though she teaches more than double the students her professors had. She wanted to keep things fair because that was important to her as a student. Tonya valued interpersonal relationships and one-on-one connection because she had that as an undergrad and also in her first job as a professor.

It was also interesting, though, to explore the connections between all of the faculty intentions; despite our unique college and teaching experiences, several areas overlapped among the faculty participants' intentions. I used structural coding for the faculty interview responses, a method of connecting the research question to the chunks of data, and found that several themes emerged from the data about how we all talked about intentions (Saldaña, 2016, p. 98). I asked participating faculty direct questions about their intentions for their classroom and their teaching this semester. I also asked them to reflect on their past teaching experiences and recall the types of interactions that were most rewarding and most challenging for them. In general, faculty discussed intentions in three different ways. One category was describing actions they intended to take: connecting, helping, inspiring, teaching, and encouraging growth. They also talked about what they intended to be or embody—what characteristics they wanted to exhibit. Faculty wanted to be approachable, caring, fair, open, personable, and professional. Finally, they mentioned what they intended to value or prioritize: boundaries, challenge/struggle, more time, and the whole human being. I'll give some examples about each of these categories in the section that follows.

"I love every minute of teaching": Actions faculty intend to take. When faculty talked about what they wanted to do, they wanted to see their students grow and learn as a function of being in their class. Tom said he "want[s] them to come away with the notion that [he] think[s] about them as learners and that [he] care[s] about them, their growth as a learner." Tonya elaborated on this theme of connecting and helping. She wants students to "realize…I care about them, and I want to help them, and I realize they have other things going on." Faculty also wanted to engage and inspire students in the classroom. Shawna said her intention for class was "when I'm working a problem, they'd all be following along engaged with me. When I then, in turn, ask them to do the problem, they would all sit there and do it." For me, there is something about a live discussion where ideas are being generated that creates the presence of all these actions—connecting, helping, inspiring, encouraging growth:

> I love seeing students light up in their small groups or in large group discussions where you can tell that they're thinking hard and that the lessons and materials I have brought to them have given them something to think about and be inspired by.

As faculty considered the actions they intended to take, most of them were about direct teaching in the classroom but the goals of those actions also extended to building relationships and supporting the student beyond the class.

"I just try and encourage an inviting atmosphere": Qualities faculty intend to embody. Faculty participants also stated intentions about what qualities they want to embody. Overall, they want to be seen as approachable and fair, as personable and caring. Tonya talked about distinguishing between being approachable and open and being too casual or friendly: "I want them to be comfortable with me, but I want them to also realize I'm not here to be their

friend. I'm here to be a mentor, a teacher, a helper, a guide, but I'm not their buddy." Tonya was also balancing "trying to teach them about professionalism without being not approachable."

My interpretation of openness and approachability is a little different, although I agree with Tonya's sentiment about being a mentor and a guide as opposed to a friend. I said, "I feel like students know that I'm help here to help them succeed both professionally and personally just by my general open attitude. It's pretty clear that I am laid-back and not a rigid or uptight professor, based on the way I talk to the students in the classroom."

Shawna wants to be seen as fair to all students and has always shown this through her course policies. However, she feels like she has "softened a little bit. Still holding true to trying to have a set policy in place that's uniformly applied to everyone, but when a student is sick, saying, 'Oh, I'm sorry to hear that.'" She described this shift as just a more sympathetic means of communication about what the student is experiencing, even though the policies would still be in place.

"There's a lot more going on": Values faculty intend to prioritize. The final category that emerged from the data on faculty intentions is that they intend to show value for certain aspects of the teacher-student relationship. In particular, each faculty member had one or two main emphases in their teaching that is important to them. For Tonya, working mainly with freshmen, it can be hard for them to grasp the boundaries of her time and schedule versus theirs. She mentioned having students ask to meet on Saturday or late in the evening when she plans to be home with her family. Tonya said students can struggle with "the fact that I'm not in my office 24/7, all weekend long, waiting for you to contact me. I do actually have a life." Faculty also value more time to spend with students, helping them through their academic struggles. Shawna said she values "finding a way to make the light bulb go on" and Danielle talked about

the growth mindset she teaches in her classes. She makes sure students know that "being challenged and being in that moment where you are not quite getting it is where you need to be to learn." Tom also showed how he values the struggle students go through in working through his class. When students ask about really difficult problems, his response is "No one can make sense of it at first pass. I put it in there because I couldn't make sense out of it at first pass." Part of valuing the challenge of student thinking and growth is investing time, so faculty also mentioned the value of time with students, especially outside the regular classroom setting. Danielle said what she values most in interactions is "having the time to be patient and to just have those one-on-one conversations or one-on-group conversations."

Finally, faculty emphasized that they intend to show value for the whole human being, seeing students as more than just students in a particular class, but as complete, complex people. I reflected,

> I tend to let [students] know that I understand they are busy, that I know they have a lot going on, that I understand the different times of the year and seasons that we go through throughout the semester. It's may be a little harder to encourage people to know that I am there on a personal level because some people aren't going to reach out about that kind of thing anyway. But I think that sharing my own stories from time to time encourages this.

One of my techniques for connecting with students and showing them I care about their lives outside the classroom is just to commiserate and talk about the flow of the semester and what I am experiencing. Danielle talked about her focus on the whole student several times in her interviews, especially in the curricular pieces she brings in, educating students about sleep hygiene and growth mindset and studies on learning habits. She also incorporates a focus on the whole student into the TA training:

> We talk to our TAs a lot about there's a lot more going on than just do they get it or not. And so, what are the other psychological concerns that they need to know? And in the beginning of the year, we have our big TA training, and we actually have the counseling center come in and talk to them about if you see like a distressed or disgruntled student, these are some things you can do, which is mostly just make sure you don't take it on yourself, tell someone, stuff like that.

Tom noticed that students who come in for help on content are often struggling with issues outside of the class work, so he tries to help them see the broader picture in their habits that might be leading to them feeling lost or out of sorts.

Student Participants and Their Intentions for Spring 2020

Now that I have explored the faculty intentions for the spring 2020 semester, I turn in this section to the intentions of the student participants. I asked students about both their intentions for these particular classes that I observed and also about how they intend to approach their learning and their professors in general. This section gives an overall analysis of their intentions and the interactions they value most. First, I introduce the students and the institution to give the reader a sense of the demographics and interests of these participants.

The students at RMT are all getting degrees in a science, technology, engineering, and math (STEM) field. Most degrees are in engineering specialties or science, except for the majors in economics or business engineering, both of which are closely connected to engineering, technology, and math. Therefore, the students who participated in this study are STEM major undergraduates in rigorous academic programs, and most of them were at the top of their high school classes. I recruited students from the classes of the faculty participants discussed above, so some were in introductory (freshman or sophomore) chemistry and physics, some were taking

differential equations or thermodynamics in their middle years (mostly sophomores and juniors), and some were taking upper-level humanities and social science courses from me (primarily seniors). Most of the students were traditional age college students, but three were non-traditional students who had all attended other institutions previously and had either work or military experience or both before coming to RMT. Students in the study agreed to participate by completing a questionnaire or coming to talk to me in a focus group or interview. All student participants answered similar questions about their experiences as a student, focusing on their intentions for interacting with faculty and their perceptions of the faculty's intentions and interactions (see Appendix F for student questions).

When I talk about the student participants in this study, I use first name pseudonyms for those students who participated in the focus groups or one-on-one interviews so it is easier for the reader to track who said what. Sixteen students participated in interviews and focus groups and six of them participated both early in the semester and at the end of the semester. The other participants were involved either during the semester or at the end of the semester. There were 73 student participants who completed the questionnaire. Most of the questions on the questionnaire were open ended, asking students to recall specific experiences and interactions, so length of responses and type of responses is similar from both sources: the interviews and the questionnaire. Sometimes, as I explain the data, I indicate counts of how many students raised certain issues using the same words or phrases. I intend for this to help the reader follow my conclusions about the trends and interesting issues raised by students. I do not intend for these numbers to seem significant on their own. For those participants who answered the anonymous questionnaire, I refer to them as "a student" or "one student" as I report their answers. In cases where multiple responses are being tabulated, I occasionally combine the tally from both

questionnaire responses and focus group or interview responses, again, simply to show where student responses overlap when I cannot quote every answer.

"Eager to Learn and Willing to Work": Qualities Students Intend to Portray

When students were asked about their intentions for interacting with faculty, 53 different students focused on the qualities they hoped to embody in these interactions. Students overwhelmingly focused on coming across as professional (78 mentions) and respectful (61 mentions) and often these two words were used in the same response. One student said, "I interact with professors in a professional manner when I'm having trouble with the class concepts. I would like them to see me as respectful and driven to learn." Students also acknowledged that they want to receive respect as well as to show it:

> I approach them knowing that they know more than I do, so I should be respectful. I would like them to also have a respectful perception of me. If I go to office hours, my intention is to get help because I need it. So, I would like professors to respect me and my time as well. It's a two-way street.

The most commonly used word for student intentions was 'professional,' so I probed a bit on their connotation of this word: students generally responded that to be professional means that body language and vocal tone are appropriate for a more formal, business-like interaction. One student commented, "When I interact with professors, I behave professionally and put together. I would like them to see me as a hard-working student that wants to learn more, and that I can handle myself in social situations." Several students mentioned that they start off acting professionally, but the goal is to ultimately engage in more friendly and casual interactions over

time in getting to know a professor. One student from the questionnaire included these dual motives in their response:

> I try to be respectful of their time, but I also would like to get to know them personally. I don't want my professors to just seem like some entity. I would like my professors to be interested in helping me and getting to know me. I would like them to see me as someone who is interested in learning and respects their service of teaching.

One can derive both the sense of professionalism and respect this student desired as well as the personal relationship they were truly seeking.

The other very common response about student intentions was students wanted to be seen as serious and committed, as having a strong work ethic. The most commonly used word in this category of responses was hardworking and at least 26 students said they wanted to be seen as serious students. Students wanted professors "to know I care about the class and my learning," to "think I am a hardworking student," and to see "that I am eager to learn and improve myself and my academics." Another student said: "I try to show that I care about the subject, but struggle in some areas. I'd like them to perceive that I'm trying my best." Other students did not mention hard work and trying but articulated a similar response with the concept of commitment and seriousness. Austin said he wanted to "show them that I'm invested in the class…not trying to like, waste their time… And I'm trying to show how serious I am." Overall, it was important for students to come across as good students who care about the work of the class.

There were four other types of responses about qualities students intend to portray to faculty that I will summarize more briefly. It was common for students to emphasize their academic ability: some used terms that indicated competence while others said they just do not want to be seen as dumb. Derek said, "I want to come across as competent and intelligent;"

whereas, Micah was more blunt: “I want them to think I'm not stupid.” Eight students mentioned wanting to come across as deferential, as a good listener who is ready to take in the professor’s advice. One example of this type of response was Regan’s comment that she wanted to be “showing that [she’s] open to the answer or the direction or path or whatever they're going to point [me] in.” John said his approach was “‘I'd like to get your input and see what you think I should be working on.’ So, much more like I defer to you, because you are the teacher.” The last idea on how students want to be seen in their interactions was as purposeful and clear in their focus. John also captured this by saying, “I should have a purpose, I should have, you know, I should be concise, I should be clear.” Some students want to come across as independent and self-sufficient, so they do not go to professors for help at all or very rarely. Allen said, “I consider myself very independent, so I always figure out questions on my own, which is a bad thing, probably.” Matthew explained he is not typically in office hours because “I usually do the digging by myself.”

“Professional But Warm”: Qualities of Interactions Students Intend to Have

Aside from describing personal qualities they are trying to embody, students mentioned their intentions for the types and qualities of the interactions they want to have with faculty. Fourteen students expressed they wanted the interactions themselves to be friendly, familiar, and/or casual and eight of them said interactions should be efficient and a good use of time. Only three students indicated that they intended to have formal or businesslike interactions. For many students, even if the original interactions are professional, there is a desire to build a deeper connection, at least with some professors in their field of study. Students mentioned wanting interactions to be “amicable,” “friendly and approachable,” and to strive for a “little bit

of just casual, get-to-know-them" types of interaction. The theme of time was strong across all participants in the study, but when it came to intentions for students, they are mindful of not wanting to waste their time or their professors' time, so the concept of efficient interactions came up frequently. Todd said, "Their time's probably more valuable than mine. I, I'd really rather get the, um, the point across." Trent echoed that sentiment: "I'm not going to waste their time because they have a very limited amount of time to even set for office hours." Other students mentioned being "respectful of their time" and Todd said he is "trying to get in there and get out," often because lots of students are waiting for help and he wants to share time with peers who also need help. Only a few students mentioned intending for their interactions to remain formal, but one student put it this way: "When I go to my teachers it feels really formal. I mean, I don't want to say it feels like I'm going for an interview, but that's how I like to treat it, because, you know, I'm, I'm going to them." For some students, it seemed that formality maintains the professional and respectful tone that was the most common response about intentions for interacting with faculty.

"Trying to Make a Connection": Reasons for the Interactions Students Intend to Have

The final category of responses on student intentions was about the reason for the interaction. Students hold intentions to ask for help on particular coursework and often come with prepared questions. They also mentioned that sometimes their intention is to build rapport or a relationship with the faculty member or they might seek to have a conversation that goes beyond the scope of the coursework into deeper questions or career advice. It is intuitive that students go to faculty with questions on the course content and homework, but for some, it is harder to ask for help than for others (as seen in the intentions to appear independent and smart).

Micah said, “My intention, usually, when I'm talking to a professor, is to, you know, like asking a question, I'm asking for help. I'm usually like, ‘I don't know what to do next. What do you suggest?’” Sometimes, the goal is to get particular advice on homework, and for others, they approach faculty if they “struggle with the class in any way, shape, or form.” Austin said, “I usually just come to office hours, like, hoping that, at the very least, I can get a better understanding.” Along with these visits for homework help, and connected to the idea of being efficient with time, students report intending to come to office hours with prepared questions. One student said, “I approach them with a mission,” while Trent said, “If I ever come before a professor, even to office hours, it's usually with some questions I've already prepared.” In all, 33 students mentioned asking for help on course content or preparing questions to ask professors.

Outside of the academic purposes for interacting with faculty, some students also intend to connect with professors to go beyond the scope of their current coursework and to get to know professors better. Bruce, who excels at math, said, “If I go to office hours, it's because I have a question about further insight. It's not because I don't understand the base material.” And Todd pointed out the value of more informal career advising from faculty in office hours when he said, “I have a couple professors in the mechanical engineering department that are like, my um, unofficial advisors that I'll go and talk at length with.” Students value this kind of one-on-one time that allows them to talk about subjects outside of day-to-day classroom concerns and they seek connection with faculty when they have the opportunity. Isaac mentioned that the “power dynamic between professor and student” “kind of goes away” in office hours, so there is more opportunity for connection. Some students value relationships with faculty and seek a mutual connection, such as the student who said the following: “I only expect my professors to give me the opportunity to learn in their course, but valuing student-faculty relationships is a welcome

bonus." Taylor treats these interactions casually and said, "My intentions are just kind of to drop in, say hello, see how they're doing, and just kind of catch up, in a sense." Some students have a more focused purpose for their relationships with faculty, like Matthew: "My only other intention may be to just, uh, like get to know the professor better and maybe start a relationship because I intend to, um, start undergraduate research next semester." These responses indicate that there are several benefits for students to interacting with faculty and that their relationships are not based solely on classroom work.

Overlaps in Faculty and Student Intentions

It was notable, but also somewhat expected, that both faculty and students mentioned having the intention to be respectful and professional. In general, people consider schools and universities to be places of respectful and professional work, and teachers are generally respected by students and society at large. Especially at the college level, it is reasonable for students to expect or receive respect from their teachers. Taylor mentioned the difference between high school and college as an aspect of collegiality that was not present in high school; being treated as more of an adult is a huge shift for new undergraduates. She said, "In high school, we're children. Here, they treat us as if we're adults, even though we're nowhere near it (laughing). We're the ones in charge of our decisions now, and so, like, we're held more accountable than we are in high school."

I know that, as a professor, I have sometimes made assumptions that students are already confident, established adults, even though I had the experience of feeling completely unmoored as a freshman. There is a delicate balance between respecting students as fellow adults and still supporting traditional age students as emerging adults. Non-traditional students require different types of support: they may have family or work obligations that we forget to consider. This is a

case where the generation gap mentioned by Tonya could be an advantage for professors in relating to students—bringing our life experiences to bear on interactions could make them more reflective and supportive for everyone involved. Overall, both faculty and students want to be seen as individual humans sometimes, and they want to be acknowledged as fulfilling their academic roles well.

Students and faculty agree that they intend to have a solid academic relationship and that they will work together on questions, sometimes strictly about course content and sometimes beyond that content into personal and career topics. Some students did not expect interaction with professors at all beyond the classroom experience, and it is understood that faculty cannot help each student one-on-one when there are at minimum 100 to a maximum of several hundred students per professor. Faculty and students want to make a good impression on each other and are striving to do well in their own ways to fulfill their roles in the academic setting. In essence, we see in the intentions section that students and faculty are all wanting to be "good." Table 3 summarizes the significant themes from the stated faculty and student intentions, as well as some common intentions they expressed.

Table 3

Themes of Faculty and Student Intentions

Faculty Intentions	Student Intentions	Common Intentions
Actions faculty intend to take	Qualities students intend to portray	Respectful interactions
Qualities faculty intend to embody	Qualities of intended interactions	Academic relationship
Values faculty intend to prioritize	Reasons for intended interactions	Working together

Operational Curriculum: What Happened in Interactions

Now I want to turn to the operational curriculum by describing what actually happened in classrooms this semester for the faculty participants and the students. I was curious about when the intentions aligned with what actually transpired as well as when there was divergence between the intentional and the actual events. The data presented in this section comes from class observations of each instructor, both before and after the shutdown for remote instruction during the COVID-19 outbreak. I recorded segments of the classes I visited and also took notes during my observations. I also report from the second set of interviews with faculty and students and the students' course evaluations at the start of remote learning and at the end of the semester. Table 4 shows what data I was able to obtain for each professor, depending on their pedagogy and delivery during the pandemic.

Table 4

Data Obtained from Each Professor

Professor (academic field)	Observations Conducted	Other Data
Cortney (humanities)	Post-COVID Zoom class recordings Observation notes/memo	Journaling/Self-reflection Interaction Checklist Student Course Evaluations
Danielle (physics)	Face-to-Face Studio class observation Zoom office hours Observation notes/memo	Interaction Checklist Student Course Evaluations Questionnaire
Shawna (thermodynamics)	2 Face-to-Face classes 2 Zoom class recordings Observation notes/memo	Interaction Checklist Student Course Evaluations Questionnaire
Tonya (chemistry)	2 Face-to-Face classes Lecture recordings Observation notes/memo	Questionnaire
Tom (mathematics)	2 Face-to-Face classes 2 Zoom classes Observation notes/memo	Questionnaire

Faculty Intentions Realized in Classroom Observations

In the following section, I introduce the classrooms I observed and connect my observations to the intentions the faculty set for the semester. This section focuses on the

intentions realized within the classroom setting by spotlighting key features of the classroom environment and juxtaposing these details with the intentions set by the faculty. In this part of the analysis, I was specifically focusing on which intentions were able to be observed by me and I did not seek to analyze those intentions that did not transpire. I say more about unrealized intentions in the following section. For this section, I emphasize the key takeaways from my observer's perspective and support these observations with quotations from the faculty and student interviews and the course evaluations.

Engagement and sparks of learning: Danielle's physics studio. When I walked into the physics studio classroom, it was bustling. Dozens of students were gathered around the computer tables and in line by the front desk to ask Danielle questions. A steady stream of students continued to enter the room and find their groups. There was the vibrant buzz of a large number of engaged students and it was still a few minutes before the start of class. I sat my things down on a chair in the corner and looked around, soaking in the organized chaos. Danielle answered question after question, moving through five or six students and addressing their concerns as the rest of the students arrived. Then, as the clock struck the hour and it was time to get down to business, she launched into a review of the concepts from the recent discussion class students had attended. The important concepts they were to apply today in this studio lab were listed on a PowerPoint slide and reviewed before class. Within a few minutes, groups were assigned to begin the problems for the day and the noise level returned immediately to the high din of over a hundred students talking and working together on the problems. Danielle and her TAs began to walk around and answer questions right away and they were soon inundated with hands in the air, but they swiftly worked their way around to all of the groups. The engagement and the sparks of learning were visible, audible, and palpable.

Danielle had intentions to provide “balanced challenges” for her students and she talked in our first interview about the need for struggle in the pursuit of learning. She wants students to feel supported in their learning, but does not want it to be too easy either, so she aims for the middle ground in offering challenging content with lots of supports built into the class for working together and getting help. Her favorite aspect of teaching is seeing students show growth in their learning. She enjoys

> the students who end up coming to my office hours over and over again throughout the semester and just seeing their growth of maybe starting out thinking that their eyes are wide and they're like, "I have no idea how I'm going to even pass this class" to then seeing themselves improve and doing really well.

It was clear from observing her studio classroom that there is a challenge being posed in this class—the problems they are working are meant to apply concepts they have been exposed to in lecture, but there is also an element of extended challenge when applying concepts to real life problems. Danielle makes sure the classroom is organized around the support students need while they work on these challenging problems. There is a team of TAs available to answer questions as students work in their groups and the groups themselves are there to provide support to students so not everyone is working in isolation.

Danielle is also very hands-on in the classroom, helping as many students as she can. Not only did she connect with individual students during class, but she did it repeatedly, as she got down on their level and often was kneeling on the ground next to the space they were working. She was nodding and smiling and confirming what they did correctly while asking them questions about how they could move forward with their thinking on the particular problem. There is a lot of camaraderie in the groups and a great level of energy in the room as they work

together. Students have lots of questions, but they also get answers from the team of helpers. Danielle makes announcements to the whole class from time to time to encourage their patience and persistence on solving the problem: “I really like that people are taking their time and not rushing and asking a lot of questions. And we are going to get to all of your questions.” All of these design elements in the construction of the class give students exposure to challenges that are balanced with support and opportunity for growth.

Another intention of Danielle’s that was realized is her focus on students as whole human beings, not just members of a physics class. One way she did this is through incorporation of studies on the importance of sleep after she read the book *Why We Sleep.* (Walker, 2017). College students in general are known to lack quality sleep and RMT students in particular seem to struggle with sleep habits. Danielle led by example, telling students how the book changed her life, and also included content in her course to help them apply the concepts. She said,

> I talked about it a ton in class. I had these clicker questions that were about studies on sleep and just how detrimental sleep deprivation was. And then on every exam I asked them to tell me how many hours of sleep opportunity they gave themselves the night before.

Danielle carried this recent practice into her intentions for the spring 2020 semester and students noticed. Several students remarked on her course evaluations at the end of the semester about this practice. One said: “I appreciate her focus on encouraging students to maintain healthy sleep habits.” Another student commented on “her evident concern for student well-being” that “showed she cares about our lives as well as our learning.” In observing Danielle’s class and

office hours, her dedication to making sure students "get it" is clear. The TAs and Danielle show their clear dedication to helping students grasp the concepts in the problems they are working out. The content is challenging and the system supports their growth.

Rapt attention and clear learning goals: Shawna's thermodynamics class. When I walked into Shawna's classroom, students were quiet, getting their materials ready for the class period. Students came in to the room reverently and were ready to pick up with the lesson as they came in. The classroom is a tiered lecture hall with the instructor down below at the board and the rows of students are elevated toward the back of the room. The class is extremely organized: Shawna has a list of accomplishments they will get through on the board, a detailed agenda for the day, so the learning goals are clearly established. She makes notes on the board about the first thing they will cover and ties today's lesson to the previous classes. She very clearly articulates a plan for the day and students seem to know exactly what to do.

After a bit of lecture on a new concept, Shawna gives them a problem to work on with a schematic of an example on the board. She tells them they do not have to have the equation memorized. There is more chatter and involvement and volume while they are working on a problem because they are allowed to work with other people. Students are looking up steam charts and get out their calculators to work on problems. I take note that Shawna asks students why there is a negative in the problem and nobody answers the question. She rephrases her query. When she confirms one answer from a group, then it seems like more students begin to participate. As she is giving the lesson, most students are taking notes and paying rapt attention. She speaks in a soft, but clear and confident, voice. She is following her own notes closely and

students seem to be following her notes as they transcribe her lecture. She changes colors and emphasizes special cases as she writes on the board, always pausing to make sure students have time to record the new information and ask questions as they arise.

Shawna set the intention of learning names in the first couple of weeks and she accomplished that by the second week, as is her practice. In the first interview, she also described the intention of a smoothly running class with attentive students who participate and ask questions. Shawna was the only professor I was able to observe and interview twice before the COVID-19 shutdown, so I was able to see these intentions come to pass over the course of two face-to-face classroom observations. Shawna had the goal of seeing students adopt good work practices and was starting to see the payoff from that hard work at the beginning of the course by the time we met in early March for our second interview. The class I observed in early March was running very smoothly, with students taking notes during the lecture portion and feeling comfortable to speak up to answer her questions or ask their own questions about the lesson. Students also picked up on the well-run classroom and mentioned it in their evaluations of the course. One student said, "This course was taught incredibly thoughtfully and I learned so much." Another student elaborated on what worked well for them in Shawna's course:

> I can certainly say she is the best Prof. I've had in the […] department so far. Her lectures are structured in a way that really helps my understanding. [She] is very detailed in her work and explaining. I like that she works out a problem and then gives us a chance to practice in class and ask questions. What I really like about [her] is that she doesn't just stop at the right answer, she does a validity check to make sure that answer makes sense both numerically and conceptually.

Several other students simply commented that she is an awesome teacher and thanked her for the guidance in the class. It was not just course evaluations where Shawna received praise; one of Tom's students was also gushing about her in the student focus group. Taylor said, "I've already fallen in love with Dr. [Shawna]" and she was excited to take her classes again. Shawna's intention to create an inviting atmosphere for her students was clearly coming across to them. They enjoy the supportive environment in the classroom and in her office hours. Taylor mentioned she would just pop into office hours to say hi and check in about life, even outside of class assignments and content.

Encouragement and collaboration: Tonya's chemistry class. Tonya's intentions for the semester were mainly to connect with more students than she had in the previous semester when she had over 300 students, hopefully to talk about more than just chemistry. She also shared the intention to provide a welcoming space for questions to be asked about the content. The semester started off well, with more opportunity to get to know the approximately 170 students she had in class. In class, I observed her walking around to the different groups of students while they worked on example problems and asked her questions. She is personable and jovial in these small group interactions throughout the worktime. She walks slowly among the groups, looking carefully at what they are doing to assess whether they might need help, even if they do not have a hand raised or are not making eye contact. As students ask questions about the problem, she makes direct eye contact and nods as they speak, showing her engagement with their needs. As she circulates, she makes reassuring comments, such as "sounds like you're on the right track" and "yes, just remember to [do this step next]."

When Tonya is in front of the room, taking questions that apply to the whole group, she builds off the answers students give and restates some of the background knowledge that applies

to the question. This technique helps her address similar questions by students at different levels and give all of them what they need from the answer. Tonya consistently encourages the curiosity of her students by saying that they are asking good questions. At one point, describing an example of an unusual reaction, she said, "I like to give you weird things in class so you can ask; I wouldn't do that to you on a test." She emphasizes the overall understanding of the concepts and theories rather than particular current answers. There is a clear focus on the collaborative nature of thinking through these problems. Tonya encourages students to consider the economic impact and the practical, logical connections for the reactions they are working through as well.

After the COVID-19 shutdown, the only real opportunity to connect with students came in the final weeks when Tonya was counseling individual students on their grade and whether they should take the final exam. The Zoom meeting was required to determine the eligibility to take the exam, but it also gave both Tonya and her students a much-needed chance to connect in the midst of the stew of recordings and emails that marked the second half of the semester. Outside of these meetings, students were plugging away in isolation and Tonya was left to wonder how they were doing.

Exploring processes and probing thinking: Tom's differential equations class. For his larger differential equations class, Tom set the intention of running an engaged classroom where his teaching has more "theatrics" to keep the larger number of students connected to his presentation of the concepts. I saw this goal at play in my observation of this classroom. I can really see how his personality both comes through and is subsumed by this persona he takes on when he is going through the problems at the board. As Tom is teaching, almost all the students are paying rapt attention. Part of the lesson is description of the steps as he solves the problems

out loud, asking some rhetorical questions, but also inviting students to answer questions about how to solve the problem, what comes next, what are we looking for here, what does this reduce to, etc. Sometimes he clearly pauses for a response and other times he answers his own questions in the interest of time and for the flow of the lesson. The engagement of this class comes through the clicker questions Tom peppers throughout the lesson. Students use their remotes to silently choose an answer to an example problem or to select which method should be used to solve a given problem. Tom works out the problem for the class and later returns to the clicker responses to explain why those who guessed wrong may have thought that way and to validate those who answered correctly. With the clicker questions and with his ability to read the room, Tom can truly gauge the knowledge of the room and see who gets it and who does not. One type of question he asks is how confident they feel at the end of a bit of instruction so he knows if he needs to spend more time on the idea or is able to move forward with the next piece sooner. This technique accomplishes Tom's goal of making sure these students leave with the tools they need to do the homework and do well in the class.

Tom set the intention of raising the bar for his honors students, pushing them out of their comfort zones and showing them support in their growth as learners, so I was looking for these elements in my observations and notes. Tom gave a lesson on new material at the beginning with students speaking up to ask clarification questions. Then, when students got into groups to work on example problems, it was evident that these were challenging problems and they often were unsure where to start. By working together and talking it out, they began to process their ideas and try the problems while Tom walked around and probed them with questions to help push their thinking. As he did this, he connected with them as if he were the thinker in the problem, saying things like "What happens when we [do this]?" and then lets the group talk

about the impact of that idea while he watches and nods, ultimately walking away as they continue to work on the problem and generate new ideas based on his brief intervention in the group. He can also be heard occasionally shouting out class-wide reminders or guidance and saying things like "That's looking good" when the group is on the right track or does not need his help and "it's probably easier if you [try this method]…I'll come back and check in" for groups that need redirection. The spirit of this exercise is very much one of low stakes trial and error—getting into experimenting with the thinking and the process rather than following a series of discrete steps. This learning process helps Tom fulfill his intentions to push and develop students' thinking.

Personal anecdotes and making connections: Cortney's humanities classes. For my classes this semester, I saw some of my intentions come to fruition, particularly those regarding the planning and preparation of lessons, elaborating on the work I had done in past semesters instead of remaining static in my teaching. For the science communication class, I brought new readings and activities into the first two weeks of the class that sparked curiosity in the students and laid a foundation for the main content of the class. I worked on building relationships with students by forming groups early on in this class and meeting with them during class time, allowing me to learn their names more quickly and find out what topics interested them. In observing my teaching, I noticed that I often relay a brief anecdote about my life in order to try to connect with students and open the door for relationship building. Especially at the beginning of class, I often smile and laugh, talk about a common frustration or experience relating to campus life, or make a joke. I want the atmosphere to be relaxed and I want students to see me as a person and know that I want to know them as a person as well. In the first class after the break to prepare for remote classes, I started one class with a chance to share where students

were logging in from, commenting on those who had traveled farther away from campus. One student was in California and another in Montana, both places I would love to visit, so I shared a personal note about getting the travel bug even more now that I cannot travel. Then, before leading into the actual class content for the day, I opened it up to students to share something about the current situation of the pandemic, saying, "It occurs to me that there are some really confusing and crazy things happening, and there are also some really positive opportunities we have because of this." Students appreciated my attitude about the rapidly evolving situation with COVID-19 and the way I extended that into a respect for their mental health and their differing life circumstances. Austin reflected that he noticed my understanding that "not everyone would be, I guess, on the same level in terms of how easy it would be for them to access class or how easy it would be for them to do the final presentation and things like that." My approach to students is to try to see them as part of a much larger system that is shifting and influencing us all in different ways.

Faculty Intentions Unrealized—
What Happened Differently

In examining the operational curriculum, part of the value of this layer of analysis is that we can assess the whole process of what actually happened—both the intended and the unintended. Some of our faculty intentions were not realized during the course of the spring 2020 semester and are discussed briefly here. The previous section highlighted the ways in which class observations and student comments show faculty realizing the intentions we had set for ourselves at the beginning of the semester. However, there are always unpredictable factors in any semester or class. Sometimes when our intentions do not come to pass, the results are better than we could have planned, and other times, unintended results call for our attention as ways we can improve our teaching or learning. For the Spring 2020 semester, many of the

unrealized intentions could be attributed to the drastic shifts in practice that were required of both faculty and students due to COVID-19, and these factors are the focus of the next section. In this section, I draw attention to a particular example of my intention that was not realized, and this behavior pattern was observed before COVID-19 came along. I hope this example illustrates that best intentions sometimes do not come to pass, and as such, they call for reflection—perhaps we learn that the unintended outcome was more desirable or perhaps we come to understand our behaviors more fully so we can make desired improvements in our practices.

As mentioned in Chapter III, my data collection and analysis process were thrown for a loop because of COVID-19, and I was unable to carry out some aspects of my study design. One of those was the interaction checklist. I had planned to record the qualities of my interactions with students outside of class in office hours, but as it turned out, the normally busy times in my office were converted to staring at a Zoom screen on which no students appeared. As I began to analyze the data from student interviews and heard their comments about dismissive or unresponsive instructors, I wanted to reflect on this for my own practice this semester. Therefore, I modified the interaction checklist piece of my data analysis by reviewing my email exchanges with students instead. One of my intentions had been to be responsive to students for spring 2020 and I always want to show them care and support throughout my time as their teacher and even beyond the classroom relationship. However, when I looked back at my emails from the semester, I was surprised to learn just how often I did not respond to student requests.

I have long known that email gets overwhelming to me. Some people have learned how to master this form of communication and keep their inboxes emptied and sorted, but I am not one of them. A colleague once told me that email is the opposite of fine wine: it does not age

well. He was absolutely right, and I have tried to respond more quickly, especially to important messages, but they often get buried by the flood of new messages that come in, despite my best efforts. When reflecting on interaction with students, email is the primary mode of communication and they are encouraged to reach out this way to document absences and raise concerns about the class.

Of the 70 entries I logged for students reaching out through email, I noted 25 of them for which there was no reply from me. It is possible that I opened a new message thread to reply or that I responded to their query in class, but it is more likely that for most of them, I simply did not reply. This unresponsiveness was disappointing to note because email seems to be a simple way that I could be interacting and showing care. Instead of spending two to five minutes on responding to student queries or letting them know I got the message and heard what they were going through, I let them go unanswered. However, I also know that on any given day I was doing my best. I know that I care about students and want to support them, so the question remains whether they receive that intention of care and support from me.

On the positive side, my data shows that these non-responses typically had to do with basic class issues and it is possible that my in-person interaction with the student or my class-wide announcement on Canvas took care of their question. At least twice, the unanswered messages were students from a team-taught class, so it is possible that the other faculty member responded and even maybe copied me, but I do not have that record anymore. However, there was a message from a student about being food poisoned to which I did not respond, which was a more serious need. For another student, one of the participants in this study, there was a message about a friend dying by suicide and I did not have a record of a response. I remember this being a very difficult time and talking to this student a couple of times, but I do not know

why I did not respond immediately in a caring way to that very tragic email message. Perhaps I responded verbally, but do not have a record of that. I often wait until class to respond to more personal messages because then I can go in more depth and I can make a personal connection; whereas, email is a colder, more formal medium. However, for the second half of the semester, I also found at least seven messages to which I did not respond. At this point, we were meeting via Zoom and there were no opportunities to respond in person. I concluded from these data that operationally, the communication support from me was very inconsistent and did not meet my standards for responsiveness.

As I reflected on what happened with email responses in my own classes, I was also learning from the data that this issue extends beyond me—both students and other faculty can find email to be onerous. Students in the focus group mentioned problems with professors and email as well. Callie said she appreciates

> teachers who make themselves kind of available and, like, easy to find and respond frequently to emails and stuff online is important to me because I feel like a lot of teachers and departments in the school, I have to email over and over and over again to kind of hear back from them, which can be really stressful.

She also noted she is not the best with email herself. She said that after the switch to remote, she "definitely checked [her] email more." Then with a laugh, she continued, "but … It's hard to kind of look through it and then I get angry when, like, other people don't."

Email responsiveness was a theme that came up in both the initial focus groups with students and at the end of the semester when we had all lived through the shift to remote classes, so it seems like this is an issue detached from the changes of the pandemic. I actually noticed in my interaction log that I was more responsive post-COVID-19 than I was at the beginning of the

semester because about three quarters of the students I neglected to reply to sent their messages before early March. Austin talked about a professor of his who was great at in-person, class time interaction and really showed he cared about their schedules and lives, but "he may not be like, the best at getting back to your emails 'cause like, he has like 25,000 unread emails." It sounds like a discussion of this professor's inbox may have come up in class before, but students like Austin were feeling supported and cared for in his classroom because he accommodated their needs in determining due dates and schedules. In a different type of email unresponsiveness, Todd mentioned that "sometimes, when you don't get an email back after you've sent one, like, that can be... Make you feel like it wasn't... Maybe it wasn't... justified. And it may be a stupid question. But I mean, it, it could've also just gotten lost in the thousands of emails, I'm sure, professors get a day." For him, not receiving a reply could turn into a spiral of self-doubt, wondering if he was being clear or asking a bad question. While he acknowledged the professor might just be too busy, there was no way to know for sure. Finally, Derek recalled a professor who gave a take home final exam and told students, " 'I'm going to be out of the country during finals week, but I'll be available through email to help you out.' Well, he wasn't. People emailed him, and no one got any response from him till he got back into the country." This experience was frustrating for Derek and his classmates because it was a final, and they had been promised support that they couldn't receive. Derek recalls that the professor said the exam should not take more than 12 hours, yet Derek "was on the low end, having spent 37 hours of pen to paper on this thing." This kind of unresponsiveness is another form of unresponsiveness entirely, where an entire class is let down or ignored. While there is solidarity in that experience, it is an obvious let-down for students.

I did not talk to individual students and faculty about which intentions they held for the semester came to pass or fell by the wayside. In the final focus groups and interviews, there was a strong focus on the impact of COVID-19 and remote learning on students and instructors, so the rest of this section focuses on those major changes to everyone's experience of Spring 2020 semester. Table 5 summarizes some of the general faculty intentions, some ways in which these intentions were noted in classroom observations, and some intentions that went unrealized for various reasons, particularly during the pandemic.

Table 5

Faculty Intentions Observed and Unrealized

Faculty	Intentions	Observed intentions	Unrealized intentions
Cortney (humanities)	Thoughtful lessons	Careful course planning	Change in interactions
	Timely feedback	One-on-one feedback	Email unresponsiveness
	Support for whole student	Accommodating due dates & expectations	Missing stressed students
Danielle (physics)	Support for whole student	Academic content and email responses	Lost touch with students in pandemic
	Answering questions live	Classroom & help hours	Lack of group work
	"Balanced challenges"	Perseverance through problem sets	Pandemic teamwork more challenging
Shawna (thermodynamics)	Smooth class structure	Clear agenda	Less class time
	Independent mastery	Students focused/engaged	Students isolated
	Knowing names	Using names	Lack of contact
Tom (mathematics)	Live feedback & interaction	Responsive to questions	Black-box students
	Providing tools	Assessed with clickers	Unsure who gets it
	Inspiring depth of thought	Active learning in groups	Harder to gauge thinking
Tonya (chemistry)	Connecting with students	One-on-one interactions	Futile communications
	Making sure they get it	Catering to several levels	Lacking live feedback

"Struggling with This Transition to Remote": Lived Experiences of COVID-19

Part of the operational curriculum of spring 2020 semester was about pandemic living and crisis adaptation. None of us had done it before, but we all figured out how to manage to the best of our ability. The section that follows highlights some of the themes in the data from the final interviews and focus groups, the course evaluations from students, and the questionnaire responses from students. Without a conscious choice, we all, to some degree, shifted our intentions to "survive the semester." Our normal, in-person interactions morphed into endless emails, our typical classrooms became Zoom rooms and pre-recorded lectures, and we all began spending much more time on learning management systems. The lived experience of this moment in time—the curriculum of COVID-19—has much to reveal about what we were learning and experiencing in the spring of 2020.

It was no surprise that the pandemic caused a major upheaval to the normal business of the university as it was also shutting down the world. Students and faculty highlighted several major themes about how their experiences shifted during and after the lockdown in spring 2020. These categories tend to overlap each other a bit, but I will discuss the logistics of making the switch, the negative and positive aspects of remote learning, the workload increases, and the impact on communication and interaction.

"I had a lot of anxiety. I mean, I didn't sleep": Logistics of the switch. One of the most immediate and lasting issues with the switch to remote learning was in the planning and organizing of all the changes. Professors were responsible for communicating with their students, which involved lengthy, detailed emails and posts to learning management systems about the changes. Simply the act of writing and reading these messages was a daunting addition

to workload as detailed below. Administrators had to create policies and designate teams to address the crisis, and teachers and IT professionals scrambled to figure out how to deliver courses remotely that had never been done that way before. Everyone felt very out of their element but began to rise to the occasion. For faculty, the logistics related to changing the delivery of our classes and assessments, bulking up the communication we offered to students, and in many cases, learning new platforms and technologies to teach as well as possible. For students, the logistics were often of a broader scope than how they were going to access classes and learn the material. They were also focused on their grades. Students started a petition to administration to change grading to a pass/fail system. Once that change was approved by administration, they had to choose which classes to use the pass/fail option on, and this was required by a certain deadline that shifted at the end of the semester. Students also had to worry about housing with questions like these: Could they stay in town? Did they have to travel across the country or world to their parents' home? When would campus housing let them move back in after they left? For older students, the bigger questions were about job offers and internships they had lined up—would they still have the offer or the experience? It was understandable that with all of these life elements shifting for students, the reliability of the structure and communication for their coursework became that much more important when everything else was in an upheaval.

When I asked students about the switch to remote learning, some said outcomes were mixed for them because they had faculty members who made a relatively smooth and supported transition for them and they had other professors who made things confusing or more difficult as a result of the transition. There were also faculty responses that pointed to the mixed results of the semester because, despite the challenges and frustrations of this time, there were also

opportunities for growth and new ways of teaching. As I discuss specific responses from participants, I focus on those that were explicitly negative or positive to give a sense of the contrasts between the two. I think we can learn the most from the specific failures and successes during that time.

"In all cases, it was worse than being face to face": Shifts in pedagogy. One of the major negative outcomes for faculty was the forced pedagogical change. For each faculty member in this study, the particular impact was different, so I highlight what each of us found troubling or difficult about the shift to remote delivery of our classes. For me, as an instructor of discussion-based classes with little to no lecturing, I was at a loss for how to do the same kind of monitoring and interacting with groups online as I had in face-to-face classes before the shutdown. My typical class involved me at the front of the room, giving a brief overview of an activity, sending students off into groups to have a discussion or complete a task, and then reviewing it together as a whole class before dismissal. In the Zoom class, it was possible to create breakout rooms and have small group discussions but it was just not the same as moving around the space and letting students gather more organically, having the ability to gauge their progress quickly across all the groups. For Tonya, she began recording her lectures so she was virtually teaching to a screen. She did not have any of that same feedback from students she was used to. Worse yet, she really suffered from the lack of energy received from the students. She felt she could not translate her personality and excitement about the lesson in the same way in a recording, and she knew students were suffering from that lack of energy exchange as well. Most specifically, they could not gather in their groups to talk about their answers on the problems. They were more on their own for that kind of learning, which took away an important element of her class. Tom's reaction was similar. He was really just missing the live experience

and the ability to read the room. Shawna thought her thermodynamics class was relatively easy to transfer over into a Zoom format, but her summer course was a different story. The summer session involved the hands-on learning experience of being in the lab with equipment which gives the students important practical industry experience, but they were not able to offer that course in the same way. Instead, faculty had to provide data to students that normally they would learn to gather themselves. Finally, Danielle mentioned having a similar problem with working with individuals instead of groups. Not only were her students not able to connect with each other to solve problems in real time in the class, but she also had to work with many more individuals than groups in the help hours. Whereas on campus, she could group students with similar questions in different study areas during her help hours, now each student was behind a separate camera and it was more time-consuming and confusing to sort out how to help students with their questions.

Danielle and Tonya and many other faculty on campus were also worried about test delivery and proctoring with the switch to remote learning. On campus, it was easy to control what was brought into the room and students could all take an exam at the same time, but online, there was no way to standardize timing for students around the world and there was no way to monitor what resources were used by students taking the exam. It makes sense that this was a concern for faculty around the world because they instantly had to convert to testing students from their homes. However, it was a problem for students too. Some of them were also worried about delivery, as John discussed: “I was really worried about what was going to happen with tests and stuff because, you know, I. I haven't really taken any online tests.” Concerns about test delivery and fairness also led to other problems for students, particularly being accused of cheating when they were just trying to get through the class. Austin explained his experience:

“This one teacher, like, accused all of us of cheating on the tests and, I mean, the only thing that she would talk to us about after that would be, like, ‘Again, I know you guys are cheating. So I'm going to do this and, like, make this harder for you guys.’” As Austin noted, part of the problem with these accusations for students was it led to more homework and longer homework. Some faculty who were worried about cheating compensated for that, in part, by adding work to the course.

“There's just more pressure and more workload”: Increases in workload. Both faculty and students mentioned increases in their workload that were a negative impact of the shift to remote learning. For faculty, there was the time investment of learning new skills and technologies and perhaps acquiring and setting up equipment in addition to rethinking the assignments and pedagogy of the course. We had to make decisions on whether there would be live class meetings via Zoom and the class would remain synchronous or whether we would create recordings or other content and the class would become asynchronous. Faculty then had to practice and troubleshoot for whatever plans they decided upon, often attending trainings on educational technology or additional meetings with department colleagues to make decisions about programs, standards, and exams. For faculty and students alike, the number of emails we were sending and receiving increased dramatically. Shawna said her emails from students easily doubled and Danielle mentioned that every time she sent out a carefully crafted announcement via email, she “tried to be very clear and intentional” but “would immediately get like 15 emails back that made it clear that they hadn't read what I had written.” Tonya also mentioned that the follow up to the original emails was often the most time-consuming task. And there was a

growing frustration when emails did not accomplish the job—for students who did not read or respond to emails, faculty did not know what to do to help them or get them information about the ever-evolving course.

Although the administration had asked faculty to ease the burden on students during this time, students reported significant increases in their workload after the switch to remote learning. The campus closed right before our midterms, so we had a week of staying home with no classes before a week of spring break. The administration announced that no assignments could be due during that two-week period, so that compressed the end of the semester. Callie described it this way:

> So it kind of just felt like the first two weeks back, it just felt like there was something due all the time. And then there was a lot of exams that got moved that kind of were all on top of each other. And then there was like a week after, I had a bunch of assignments due, and then a bunch of postponed midterms, and then like two weeks later I had finals.

Another student remarked that they were "overloaded with work and having to go without necessary sleep in order to maintain a good class standing. I highly appreciated faculty who were willing to be flexible with me on the due dates and had an understanding of my workload." One of Tonya's students said in an evaluation that a single one-hour lecture of hers took him 10 hours to process. Several students expressed the notion that it was confusing to have such different expectations from each instructor—so many different techniques and platforms and assignment expectations were out there that students spent a lot of time working out these new systems and procedures.

In reflecting on the feeling of the post-COVID-19 part of the semester and how the workload was perceived, Regan made the insightful comment:

> I remember that feeling like, oh, it's supposed to be easier, administration is telling people it's easier. They're even, you know, like I do remember, a few assignments got dropped, and it still felt like more. And I remember like being like, why, like, it doesn't…the math isn't adding up.

I knew instantly what she meant. Because we were all in a time of shock and confusion as a global population and as Americans, everything we did took a little more energy, so adding that all up made for a much more exhausting day-to-day life. Simply existing was hard work during this time. Tom told me about how he is impacted by external stressors—they impede his ability to be present in interpersonal relationships. He recounted that "if [he's] losing energy other places because of just, overall workload or stress or, say, like, a pandemic," then it is harder for him to interact with others. It is likely students were experiencing this too with all the strain on relationships during a crisis and the isolation of the shutdown. John reinforced that there was a broad problem for students with what was expected of them, despite the administrative push for a lighter workload: "Like we've been saying, like, almost every other class had workload increasing." He emphasized that he hoped by the fall, we would figure out a system to have a more "even workload that can be managed for all students" versus the extreme differences they noted between classes in the spring of 2020.

"I emailed multiple times; I don't know how else to reach them": Limits on communication. I discussed the significance of increased workload through email during COVID-19, but there were also larger scale changes in how and why we communicated with each other. Shawna made sure to communicate early on about how her expectations and policies would change: "I thought that was kind of important, as far as, like, conveying whatever

measures that I was going to, exceptions I was going to give students—that that information was freely available to all students." She said, "All of the things I was willing to do, I laid out up front. So then that helped me stick to policy when people were, like, asking for more."

Danielle communicated frequently and clearly about the ways to get help and ask questions but found some students were resistant to or ignorant of these efforts. She said,

> So even though I had set up, like, online discussion forums and things where it was like, "Okay, if you have a question, and you ask it here, then I can answer it once for the whole class," I was still getting students emailing me individually, and I can't, I can't help 600 individual students read their email.

In a regular classroom scenario, announcements would be made and students would have a chance to ask clarifying questions for the rest of the room to hear, but when teaching remotely, everything went down to a one-on-one interaction that made it much harder to manage for both faculty and students. This was particularly difficult for Danielle because she felt like she was put in the position of choosing who to help and who to ignore. She guaranteed students individual attention during help hours; otherwise, "ultimately, there's no way around it; I'm picking and choosing who I give individual assistance to and I don't think that's fair because we're all biased human beings." Even within these systems she set up, there were students who did not follow the protocols and ended up not getting the help they needed.

My communication with students was through email and Canvas announcements for the first weeks of lockdown. I retooled the schedule to lighten to load on students, cancelled a couple of classes for each section I was teaching, but also held Zoom sessions during our regular class time. The first classes back were not classes as I usually taught them—with objectives and activities and discussions. Rather, I treated these as a verbal check-in to see everyone, share

stories about where we were sheltering in place and how we felt about the situation. I also used these sessions to talk about logistics. Even though I had emailed about them and posted an announcement on Canvas, it seemed like we all needed more time live to process all the announcements and changes that were being made. It was manageable for me to run class sessions this way because my largest class was 35 students, as opposed to the 65 to 100 or more students other faculty have in large technical classes.

Tonya mentioned email was her only means of communication with students, but it felt like she was throwing information out into the ether and had no way of knowing if it was received. The only real measure of communication from students during this time was whether or not they turned in their assignments. It was only after a series of missed tasks or assignments that faculty would know if a student had fallen behind or perhaps was struggling. Most professors were much more flexible with attendance at live Zoom classes and did not require recorded sessions to be watched at a particular time, so there were students who kept up with the flow of the class, but other students simply disappeared. And when a student did go missing in some way, the professors' only way to reach out was via email. This was a frustrating cycle for faculty. Tonya said:

> Now it's like I lost so many kids that I literally just I emailed multiple times, I don't know how else to reach them, you know, and,…I'm sure [for] some of them, it's not just the class that's the problem. There's other issues going on. Great. But I don't know because I don't know. Are they just sick of chemistry and they've given up, or are they having problems with their parents? I don't know. And I can't even get a look at it because I can't reach them because they won't respond.

Students experienced a mix of helpful and unhelpful communication from the professors during the switch to remote learning. Students mentioned that many professors had "given us a ton of different ways to reach out for help if we need it," and this might have come in the form of group chats or personal cell phone numbers, extra office hours via Zoom, and remote study sessions. Another student said,

> Professors, naturally, are reaching out more from email, but unfortunately [it] is less often than in-class interactions. I can already see that this physical detachment is going to harm my relationships with professors and make it harder to get support both academically and emotionally.

That student's experience was overall a negative one, but this student experienced shifts in communication as a positive turn:

> All of my professors have been checking in to see how all of their students are doing and have become more lenient and understanding, given the circumstances of the COVID-19 pandemic. I have been in more contact with my professors than before the shift to remote learning.

Restraints on how we were able to communicate with each other added importance to having clear communication during the shift to remote learning.

"Staring at my computer…very stilted and boring": Changes in interaction. While communication changed significantly in the amount and type of messages, the more prominent shift due to COVID-19 was in the ways in which we interacted, which was the primary focus of this study. I highlight what students and faculty described as the changes in interaction. For students, the shifts in interaction were mostly negative, but not all. In the questionnaire, a student shared the positive perspective that because of the changes in communication, they were

feeling more able to connect with faculty, remarking, “Although I cannot see my professor in person, it is a lot easier to find motivation to seek support because of all the emails I have received from them telling me they will be available as much as possible.” For other students, though, the idea of never being face to face was a negative shift. One student speculated in the questionnaire about what was to come at the beginning of the shift to remote learning: “I feel much more removed from professors as a result of COVID-19. Remote learning promises a decrease in interaction and a change in habits unfortunately away from engaged learning.” Another student said it felt like a punishment to be separated from faculty: “There have been faculty members that I enjoy interacting with in person, and I feel like that right has been taken away from me.” After classes switched to Zoom, this student felt invisible: “I feel like the professors no longer see my face in class and that I am just a student silently in the corner.” These responses emphasize what was missing in interaction even when we tried to maintain similar teaching methods online.

Interaction is certainly a challenge in the virtual classroom, and it seems to have to do with being seen and being heard. It is just harder to engage, and Regan described her classmates’ actions this way:

> I feel like it's really hard…to get people to, like, talk. Yeah, like, I get it, no one wants to turn their camera on. I mean, I get it, … Normally in class, like, you can just feel when … someone's having an off day to talk or whatever, but online, like, there's no way to know.

Austin described the frustration of trying to interact with professors in the following example:

> I would say it was a little more difficult to talk to them just because in some cases there would be a terrible connection. So, like, they would say something, and like, even if I

> want to ask questions, they wouldn't necessarily hear what I had to say or even if they did respond, there'd be like this delay, or, so I wouldn't be able to know for sure whether they heard my question, or whether I'm hearing their response correctly. So I would say there was definitely some, like, difficulty in interacting with them in that regard. And so I would, I think that in some ways, made our interactions, just less meaningful.

Part of what Austin described was about timing and technology, but he was also describing well-meaning students and faculty who were trying their best, and still, there were palpable detriments to the virtual interaction.

Office hour interactions also had to shift online because of COVID-19, and both students and faculty mentioned impacts of this change. One student simply remarked that there was "less frequent casual conversation" and this is significant because part of interaction is the ways in which we can form relationships outside of class that go beyond the subject matter of the classroom and help us relate human to human. These more informal interactions are often what students and faculty value most. Tom noticed the change in how students approached him in office hours, recounting that

> some of the best office hours were just people like "I was in the neighborhood and kind of had questions, but not really. But hey, let's talk academic stuff for right now" and you're like, "Well, that's cool." That's totally what this is for you, but zooming makes it feel so much more formalized, that they've got to come in, get stuff done, and then exit Zoom. There's zero chill about it.

While Tom thought the formality of Zoom made it stilted, Danielle noticed something different:

> I actually really like helping students through Zoom because I think it naturally forces them to take on a little bit more ownership of what they're doing and there's not as many

> crutches, in terms of like, well, [students] can just, like, see what I did on my paper and you know, so it automatically raises the level of discourse I feel like, and forces them to think more critically about what they're trying to do. So I felt like it made for more authentic physics problem solving, and that was more enjoyable to help students with.

After the switch to remote, students stopped coming to Shawna's office hours much at all. She was glad she had the chance to meet them in person before going online, but she noticed that

> in all cases, it was worse than being face to face. Yeah, a lot of what they want help with is to, like, look at their solution. You know, kind of talk through what went wrong. And it was just harder to do that virtually, like, they had to share their screen and then I couldn't be looking at them. Well, I don't know. It just took a little bit more back and forth to establish the same end goal.

My experience with Zoom office hours was that it was equivalent in many ways. I have very few students who come to my office hours because I do not teach technical content and there usually are no questions on homework because the nature of reading and writing is much different than solving complex problems. I usually require or strongly suggest a one-on-one meeting with each student when they begin working on final projects because we can quickly talk through the particulars of their ideas and plans. Using Zoom for these conferences worked really well and I will continue to offer this option even when teaching face-to-face classes again. Connecting through technology can save students time by not requiring a walk across campus or even a drive across town to meet with me at a particular time. However, these meetings were decidedly more awkward when students could not or would not use their cameras to provide that added means of connection.

Tonya also met with students one-on-one via Zoom. She required a meeting if they were considering taking the final exam because the faculty had set up the grading structure such that the exam was an optional way to boost their grade, but not required. In any student meeting, she likes to ask about how they are doing outside of her class, but she found that more difficult in the virtual meetings. Like Tom, Tonya found these interactions to be much more formal:

> None of them would really, like, open up, so I tried to talk to them about, you know, well, "How are you adjusting?" and…you know, "Are you getting sleep?" and they just pretty much blew me off and didn't want to… They just wanted to get to whatever the point was, you know, "I need to know if I have to take the final" …and they weren't interested in, like, just having that conversation, which is something, when they come to my office, and I don't know if I'm better at it or if they feel like they have to because they're sitting in front of me, or what, but they were much better at responding to my queries on how they are doing, not just chemistry but how they're doing, in person. They were very not into it online.

In addition to the formality, there was just something missing in these interactions, according to Tom. He tried to put his finger on what made these Zoom meetings feel less than desirable for many students and faculty:

> The one-on-ones are there, but the one-on-ones are… There's like a longing in all of them, and most of the one-on-ones that I've had is that people are scheduling them regularly because they need something, and they're getting not zero of that something through the one-on-ones. And the longing is that, like, I think both parties want it to be different, or more, or something. But we also know that it won't be, and can't be, so we just have to accept what we have, you know?

Tom's experience of having students come by regularly just to have some form of connection makes sense. It seems that many of us were looking for some structure and some connection, no matter if it was able to fully satisfy that need.

Certainly, the change in how we taught during the pandemic impacted interactions. For Tonya, her pre-recorded lectures for students were a substantial departure from her normal teaching style. She reflected about the difference between live classes and recordings:

> I tend to have some humor and lots of interactions and stuff, and I can't do that, staring at my computer, so I felt that I was very stilted and boring and, I don't know, just dead, you know? Reminds me of the, the Snoopy "wa-waaaa-waa-waaa-wa," I felt like that's what I was doing. Now I did have a number of students say that they felt that I was similar to in class, as far as, you know, I must have been more energetic than I thought I was, so obviously, they didn't take it as bad as I did, but that, that connection was totally gone.

When I observed the chemistry and physics and math classes, I witnessed that teaching interaction often could not transfer to the online space. I told Tonya in our final interview what I experienced:

> When they're in these small groups and they can start to work on a problem, just the energy that just rises, you feel it. There's this, there's this learning, there's this buzzing, and questions are getting answered and thinking is happening. And if you just have a bunch of people sitting in their homes, looking at a screen, you can't replicate that.

Tonya agreed and took the concept of classroom energy further, noting how it impacted both students and faculty:

> Well, it's not just [students]. I, I need that in-person. Me. I mean, I figured it would be hard on most of the students just because I know the students. I've worked with them a

> long time. I know how they work. And I know that the change, that, one, they don't deal with change, but I knew that this was going to be hard on them. I didn't realize how hard, I guess I could call it, emotionally, on me, it was going to be.

After she did the Zoom conferences with students about the final exam option, Tonya was so relieved to have some connection again. She reflected on her surprise about this: "I was like, wow, I knew that I got my energy from the students, but I didn't realize how big a piece of me and my teaching that was."

A final impact on teaching interaction to mention was the lack of ability to "read the room" in a virtual space, especially for those faculty who were teaching large classes. Typically, a glance around the room, a series of facial expressions, or a quick show of hands gives a professor lots of valuable information on how to continue with the lesson. Tom talked about the loss of this in-person intuition, especially for teaching high level content, at length:

> But the big, big negative is that, in that live experience, there are things you intuit from the live experience that shape the experience more than I could have ever really estimated. Right? … But I mean, I think for me, it translates to probably a 20% loss in material, and it probably happens more pronounced in the harder concepts because you're trying to guide people. And so you look back, and you turn around, and you're like, you say it, and you've said it that way 1000 times, but you say it, and you turn around and then you're like (mimics squinting inquisitively at the room). And then based on the vibe you're getting, you're like, "Okay, I've got a couple more things." So I say this, and then you turn around. And then you maybe you go into the third string, fourth string, fifth string, you know? But tempering that, and having intuition over the nothingness that's happening in Zoom—even with a little bit of chat, it helps, but still—there's that mirror

> neuron situation that's going on, where you turn around, and even out of a group of 100, somehow, within moments, you can size that group up. You can identify whether or not something worked at all. And then you can move forward past that. And because of that, the inability to do that quick sizing up, like, it gets dry and it gets dull, and it gets long through periods… [With] the live practice, you had more options to kind of keep that ball rolling and keep the train going. I think that there's a lot of drop off in the hard stuff because I am probably droning on and on about it when I don't need to be, but I can't tell. And I also know, if I don't do a thorough job, there's going to be just so much damage in terms of whether or not they cognitively got it.

Tonya and Shawna talked about the loss of this kind of interaction too—it is about the energy exchange and the ability to judge the quality of one's teaching in the moment, without asking students to give explicit feedback on how the lesson is going.

The last impact on interaction I mention in this section is that of the peer connection. Students rely on their ability to interact with their peers both in class and out of class, for academic support and for recreation and friendship, and most of that was shut down during the early weeks of the pandemic. Ellen talked about the importance of their sorority sister friends, particularly connecting with them in "a group chat, where we can be like 'Hey guys, I'm not feeling great right now, like, send me pictures of your dog.' So it was a good way to, like, stay in contact and like not feel so alone during this pandemic." Regan had a similar need for virtual connection with a friend. Just to be in the presence of someone else, they "just, like, sat quietly on Zoom…watching lectures quietly, like, you know… the sound muted and stuff like that. Just hanging out." John agreed that connection with peers was important and he had a professor who created a virtual space for them: "The really nice thing about the class I'm taking is that our

professor set aside a scheduled time and, like, a place on Canvas for us to go to interact with other students that are working on the homework." It was not the same as gathering organically after class in various campus locations, but there were ways that students found time and virtual space in which to connect. Faculty noticed this need for peer connection too, and Tonya was disappointed that students were missing that part of her class. She said,

> It's just not the same. I mean, yes, they're going to do the problem, at least the good ones. But they can't talk to each other. They can't say, "Oh my gosh, I don't get this," you know, it's literally "Okay, I did a problem. Oh, I got it wrong," you know, and it's just, it's horrible.

Some of the students, as mentioned above, were able to fill in this gap for themselves, but other students were more isolated and did not have the means to replicate peer support from behind their screens.

Students who also help teach found themselves on both sides of the equation of interaction and it was interesting to see how TAs adjusted to the virtual teaching space. Danielle noted that her TAs for physics really benefited from the interaction of working with her students:

> A lot of them were struggling too with this transition to remote and just being isolated, and it was cool to see them, like, have their mood improve by coming to studio and helping students. You know, helping students, or just helping people in general is such a positive influence on people, like, on the helper. And so it was nice to see that when a student, when a TA was struggling, that they could, like, have a job that they could come to where they could have like real interactions with people, even if they weren't face to face.

A student participant in the study, Isaac, was also a TA and he got creative with ways to interact with his students. He and his professor offered more virtual office hours on additional days, but he also took it a step further to help students more quickly and efficiently:

> I made a server, and so I just had all of my students join this server. And I was like, you can ask me a question, anytime of the day, and when I see it, I will answer it. And so I was, and I had office hours go for about two hours a day Monday, Wednesday, Friday. It was just like I extended a lot of the help there. And I think that that went over really well with a lot of students, like, I think having the extra support to make sure they learned the material… And so it was a big difference to actually see people show up to the office hours and actually, like, want to like try to get the material.

Isaac's solution was a clear example of how people stepped up to support each other where we knew we could have an impact, and it was especially heartening to see this among students.

"Doing everything to keep this as smooth as possible": Consistency and connection. The switch to remote learning was not without its benefits, but those comments were fewer among both students and faculty. It is important to note that few students talked about only positive outcomes. Most often, they said some of the faculty were accommodating but others were not, that some had smooth transitions and others did not. One purely glowing review of faculty behavior and interaction was from the questionnaire:

> Since the COVID-19 announcement that classes would transfer to online, my professors have all made sure to reach out often to keep us updated and make sure we understand every change that is about to occur. They want to make sure we have low stress about our learning change and really have taken a lot of that stress onto themselves to make

> sure we all have a successful rest of the semester. I can confidently say that all my professors are here to support me and want me to do the best I can in their courses.

There were some clear advantages to trying out different methods of delivery via virtual and digital means. In particular, the difference between asynchronous and synchronous classes is significant, and some students benefited from either type. One student had a bit of a mixed reaction but acknowledged the efforts of faculty to offer positive support to students: "Some of them are more understanding about chaotic worktimes and less efficiency, and the weirdness of online classes. They're also being good about changing things such that it's easier to submit work online, and that some kids don't learn well online."

Students overall appreciated that there were more resources and praised consistency in teaching style and format. When instructors were able to keep the delivery relatively close to what they had been used to, the shift was less abrupt and less confusing. Shawna said she "ended up just getting a whiteboard and delivering [her] lectures pretty close to how [she] would have in person." Her students took note and appreciated this consistency in the course evaluations completed right after the switch. They said, "I really like how [she is] still using a whiteboard and teaching with the same style as before," "the transition…was extremely smooth and is similar to how she used to teach us," and "I like [her] intentions to keep everything as normal as possible by standing up to do [her] lectures." Tom's class also kept a similar structure of working on the board, writing out and talking through example problems, as he had in his live classes. The change was that the "board" was an iPad with a pen he could use with different colors, just as he had used color-coded dry erase markers in class. Tom's experience was that he

> started getting ahold of tech pretty early, so that [he] could transmit through the internet, you know, something similar to what could be the classroom experience, right, in terms

> of how [he] would do work at a board and stuff like that. And so that part transitioned pretty smoothly and [he's] pretty comfortable with where that's at.

Tonya also talked about the importance of consistency for her students:

> My class wasn't a huge change from the original in that I, you know, because I tried to keep everything very…similar. So I posted my lectures at the same time. I required them to do an activity in this Canvas quiz instead of clickers and they said, unlike some other courses, mine felt as much normal as you could under the circumstances.

I also had consistency as my goal in transitioning to remote instruction. My classes operate quite differently from the other faculty in this study in that I do very little writing on the board, never work out problems with students, and very rarely lecture or give teacher-centered instruction for more than 5 or 10 minutes. My classes are typically structured around whole class discussion or small group discussion and activities, and I was able to maintain these elements. On the course evaluation, one student said I "seemed to handle the transition to online learning better than most instructors, especially considering our focus on presentation." I tried to make use of the breakout rooms in Zoom as much as possible, so the students were still able to engage with their peers. Small group time also helped the flow and speed of the class because sometimes we could have everyone together and others we could break away to have more interaction. One student said in the course evaluation, "I think the breakout room discussions are good and helpful! I like that the class is still focused on discussion, even though we are all online and separated from each other." Running class discussions with the whole group was slightly stilted by lags in connection speed and the general awkwardness of working with screens, but in some ways, it was easier to run the discussion because instead of waiting for someone to volunteer a response, I was more apt to call on students by name to help the flow of conversation.

"You're going to have access to the resources": Advantages of technology and accessibility. One of the favorite outcomes for students was that with recordings, they could pause and rewind and watch again. For technical topics like engineering, science, and math, it makes sense that being able to dictate the pace of instruction is really crucial. Some material might be review for some students, while others have to study the same clip several times. They do not have this option in a regular live classroom. However, after the shift to remote learning, everything was recorded. Some teachers were choosing to pre-record their lectures, so students watched them asynchronously. Others were offering live zoom sessions that were also recorded and posted to allow students to watch them who were not able to attend at that time. In all these cases, the student had the option to not only slow it down or re-watch it, but also to speed it up, and students really liked these features. Tonya reflected on this shift: "I got a lot of students, saying that many of them really like the idea that class wasn't live so they could watch it, not only so they could watch when they want… they said that they were able to rewind and listen again." Students in different times zones in the United States benefited from recorded classes, but for students who traveled home to other countries, recordings made classes feasible and accessible.

Another advantage to students was that there were additional resources available to them that teachers had not been willing to provide before, but now were posting for the sake of convenience during this time. For example, Shawna said she typically did not post answers to homework problems, but she recorded videos of the solutions to make sure they did not get stuck on homework with no help:

> Because it was harder to do that, like, help them solve problems, I did put a few more things online…I always do give them exam review problems, but I never give them the

> solutions because I want them to come talk to me if they're getting stuck on it. But I just said "Here's the solution," so that they can do a little bit more on their own without having to have to interact, I guess.

Students appreciated those additional resources, as seen here from the questionnaire:

> It's definitely a drastic change with different learning standards. Now that classes are online, some subjects that previously did not have much material for students to utilize now upload slides of detailed notes along with comprehensive video lectures. There is an emphasis on providing more than enough for online learning purposes.

John talked about a class that had been hard to follow before the switch, but after the COVID-19 shutdown, the professor started posting slides that were much more helpful. He said, "There was a lot more detail to the notes so it was, it was kind of interesting, like, the shift online actually made the class more bearable, I guess is the word for it." It is interesting to reflect on what helps students learn and why the shift to online learning is what prompted resources to be more freely available to all. As Shawna noted, students can often learn more from talking to someone in person when they get stuck. but it also seems like students would not slither away into the shadows and always skip class if there were more resources provided in a face-to-face class.

An unintentional advantage of the switch to online learning was that it accommodated some students with health issues or disabilities. To be sure, there were some students with health challenges whose experiences were worse online than for in-person learning, but some students benefited. In my interview with Regan, she mentioned that we often hear about internet inequality, and internet access has certainly been a problem for some during the pandemic; but for others, she said, "I feel like maybe it's removing some of the barrier, like, the disability barriers, I think that some people have." Ellen talked about her own experience with serious

health issues as a student: “You know, I don't hate this whole online thing, especially since, you know, I do have chronic pain issues and getting to class, sometimes it's hard for me. So like, being able to be at home and take breaks when I need to and stuff like that has been nice.” This was another area we could easily learn from as we eventually resume in-person learning and perhaps providing digital or asynchronous accommodations was easier than we thought.

Finally, another surprisingly positive switch happened for Danielle in physics. Since physics faculty were worried about cheating or making the exam fair, they knew all students would have access to online resources and each other so they decided to offer a final exam with very different objectives and outputs than they were used to. Danielle said, “I think it was a better learning opportunity for the students. We're just not assessing them in the same way that we usually are. So the assessment isn't as critical, but I think they probably learned more from doing it.” Then she went on to recount one particular student’s reaction to the new exam format:

> I actually got a really sweet email from a student right after the exam was over. And he was just saying how he was super nervous coming into the course, like, had never taken physics before, and it was going to be really hard and didn't think he was going to do well. And then the final exam was actually the highlight of the semester for him and he ended on a really positive note. Just being able to collaborate and actually feel like he knew the stuff he was submitting versus like “I hope this is right,” you know? So, yeah, so that was cool.

In the physics faculty’s initial communications about how the exam was going to be run, some students were skeptical of this ability to collaborate with peers and use books and resources on the test. Danielle recalled “trying to assure them that, like, yeah, we know you're going to score

really well on it, but you're also going to have to learn a lot to score really well on it." Perhaps this new way of thinking about exams can carry forward as a positive outcome of the inventions born out of necessity.

Overall, the observations of what actually happened in our classrooms this semester illustrate the ways in which our intentions came to pass, as well as the ways in which our intentions did not pan out. Reflecting on what happened and why is an opportunity to consider the benefits and drawbacks of intentions and to assess the value of the outcomes, whether they were intended or not. Much of our reflection as faculty and students on this particular semester centered on the impacts of COVID-19 and engaging in university learning during a pandemic, and there is much to process about this experience we can build on going forward. Table 6 highlights the themes of faculty and student responses about teaching and learning during the pandemic.

Table 6

Themes of Pandemic Impacts on Faculty-Student Interaction

Themes of Pandemic Impacts	Representative Quotation
Logistics of the switch to remote	"I had a lot of anxiety. I mean, I didn't sleep"
Shifts in pedagogy	"In all cases, it was worse than being face to face"
Increases in workload	"There's just more pressure and more workload"
Limits on communication	"I emailed multiple times; I don't know how else to reach them"
Changes in interaction	"Staring at my computer…very stilted and boring"
Consistency and connection	"Doing everything to keep this as smooth as possible"
Technology and accessibility	"You're going to have access to the resources"

Received Curriculum—How Students and Faculty Perceived Experiences

Received curriculum has been defined as "that which students learn and experience, whether intended or unintended" (Uhrmacher et al., 2017, p. 52). Eisner (1991) argued that "perception manifests itself in experience and is a function of the transactions between the qualities of the environment and what we bring to those qualities" (p. 63). For this study, it was crucial to examine how our perceptions of our experiences were manifested as the received curriculum. Received curriculum can be considered simply as the perception of experience. In higher education, the received experience of the faculty feeds into the received experience of the students and vice versa. There is an interplay in any relationship that each person in the relationship interprets differently. In this section, I want to explore how students and faculty impact and influence each other. I want to learn more about the shared perceptions that both faculty and students agree upon as well as the divergences—places where students and faculty interpret a situation or an interaction differently—so we can learn from these perceptions. We know that our feelings and attitudes about our school environment shape our moods and our overall well-being, so I want to explore how faculty and students can seek supportive situations and high levels of well-being. These themes are the main focus of Chapter V but the data presented in this section shows how faculty and students perceived and reflected on their experiences and the actions of one another in the spring of 2020. Table 7 displays an overview of the themes of the perceptions of faculty and students in this study. It is interesting to note the different ways faculty and students described their perceptions of each other and what they received from the interactions with one another this semester.

Table 7

Themes of Faculty and Student Perceptions

Faculty Perceptions	Student Perceptions
Caring students	Cared for via good teaching
Struggling students	Cared for via clear communication
Beneficial interactions	Cared for through time spent
Problematic interactions	Let down by poor teaching
Lacking communication	Let down by rude, dismissive behavior
	Let down by disconnected faculty

What Do Faculty Perceive About Students?

When faculty reflected on the semester and on their teaching in general, there were a few themes of what they noticed in student intentions and interactions. As I looked at the interview data from faculty, there emerged a clear category of reflecting on characteristics or qualities of students so those are described first. The next categories that emerged were about the interactions the students engaged in; faculty described both beneficial and problematic interactions students participate in or initiate. Finally, other comments did not fit neatly into any of the above categories, but they were significant observations about students and interactions that played into the conclusions in Chapter V.

Overall, the faculty at RMT speak very highly of our students and we feel lucky to get to work with them. We appreciate many qualities of this group of students; stellar academics, excellent work ethic, diverse interests and talents, and engaging personalities are among the most prominent compliments of these students. However, in this study, the questions led faculty to

talk more about some of the qualities that interfere with good interaction and successful academic accomplishments. Because we were talking about the switch to online learning and challenges we faced as faculty, there was more tendency to talk about the ways in which students struggled. This section is brief but highlights some student qualities faculty noticed in the spring of 2020.

"We have to be understanding": Caring students. Faculty in the study mentioned that students show them understanding and patience within the context of class and office hours, and sometimes this understanding and patience relates to the personal experiences of faculty. Danielle described two different examples of this student understanding she experienced this semester. For one, when the first online exam had extreme technical difficulties, Danielle felt terrible about the impact on students, but several students reached out, showed understanding, and thanked her for "fixing it within 45 minutes" and said they "really appreciate how hard [faculty] worked." She also had an experience letting students know she was having an off day emotionally and told them not to take it personally. One of Danielle's TAs who had had their own recent personal struggles showed her the compassion she had shown them, saying, "I don't know what's going on, but I hope you're doing okay or hope you do better tomorrow than today." In one end-of-semester student focus group, we discussed the teaching methods and actions of professors during the pandemic and Austin showed a lot of understanding toward the faculty experience. He said it was hard to prescribe what faculty should do because

> all the teachers and stuff, like, they have things going on in their own personal lives. So it's hard to, like, ask them to do one thing or another or keep asking for extensions or to make this easier, just because like they're also dealing with things… We have to be…understanding about their situation also.

Perhaps students always notice the kinds of stressors faculty face, but there was also a heightened sense of empathy during the early days of the pandemic because the nature of work and relationships shifted so drastically.

"I could almost hear his heartbeat": Struggling students. Faculty expressed their concerns for students who were struggling in some way. One quality that impacts faculty-student interaction is students who are hesitant or afraid to come in and ask for help. Related to hesitancy to ask for help are students who faculty perceive to be stressed, anxious, and overwhelmed. Shawna recalled a student who stopped by office hours and "her face was kind of frantic," but she needed to be specifically questioned about how she was doing in order to open up. I also had a student who was in two of my classes and had stopped attending altogether, rather early in the semester. After reaching out by email and using the student services supports to also reach out to him, there was still a real hesitancy for him to ask for what he needed. It seems that students assume once they have reached a certain number of questions asked or extensions granted, they cannot ask for any more help. One of my students who struggled with a bout of depression that semester told me just that. He said since he had already asked for one assignment to be turned in late, he thought he had used up his 'asks' for the semester, even though he had started to struggle even more. Danielle had a student come in to ask a question about homework, but she could tell that he was unwell. When she asked him a direct question about how he was doing, he revealed "he had been having panic attacks almost nightly because his anxiety was so high." After this was out in the open, they were able to talk more candidly throughout the rest of the semester and he started to both feel and perform better. Faculty can help students overcome this hesitancy, but we have to first notice the problem and take the time to reach out personally.

Faculty also perceive some students to be resistant to learning in some way. Perhaps they come across as apathetic or lazy—just not wanting to invest the time required to do well in a course. Other times, there is a perception of lacking resilience, so students come across as resisting the process of the course or lacking the persistence needed to overcome obstacles to learn the content. In any given semester, there are students that cut corners, cut class, and just do not put forth the effort needed to do well. Those students decide by inaction to take a low grade in the class in exchange for those habits, and some of them end up dropping out or failing the class. Tonya noticed that this semester, some students did not even take the time to run the calculation to decide if they should take the final exam; they asked her to do it for them. She said, "We gave them two different tools to calculate the grade with. They were too lazy or, I don't know, they couldn't figure it out." Tonya also shared that some of the chemistry faculty ran some analyses of which students were watching the recorded lectures they put out. They found that right after the switch to remote learning, most students, about 75% of them, were watching the lectures, but by the end of the course, only 30% were. They were still trying to do the homework without having gotten the lesson on the new concepts from the lecture. Tonya could not make sense of whether this was a time management issue or hubris or something else, but it was frustrating to know that all the work poured into creating those lectures did not even benefit all the students.

The other issue related to resistance that faculty perceive is a sense that they distrust their ability to do well in terms of a lack of resilience. Shawna talked about the differences between her time as a student and her time as a faculty member at this institution. She said, "Just in my 10 years of being here and looking back to my mindset when I came in, I feel like it's evolved…there's just a different mentality I think that honestly might be setting students up in a

worse position for mental health issues." When I asked her what kind of changes she noticed, she mentioned the Greg Lukianoff and Jonathan Haidt (2018) book, *The Coddling of the American Mind*, saying his thesis rang true for her. She thinks students are coming in with less "resiliency and ability to deal with failure." Even though the ideas of the book relate more to parenting styles than student choices, she can see the negative impact on students who are afraid to try and fail because this is a large part of the education process broadly, and of engineering thinking more specifically.

"More engagement and confidence": Beneficial student interactions. Danielle and Shawna both talked about students who exhibit the behaviors of a conscientious student, noting this pays off and helps them gain confidence in their work, even when they start off the class being extremely challenged. Around mid-semester, Shawna noted that for students who followed her suggestions for student practices, "it's starting to pay dividends in their success in the class. So, a lot of the quiz averages have gone up, and just more engagement and confidence out of them in the class." Danielle noticed a similar trend with virtual office hours and the virtual studio class post-COVID: "It was really cool to see how they, yeah, took ownership and interacted and I felt like I was seeing students develop more confidence than I normally do." She did make sure to qualify that this trend did not hold for all students—some students were struggling more and some were not showing up to virtual class or office hours. However, for the students who put forth the effort, they experienced success.

Faculty also perceived that students benefit from interactions and policies that promote fairness, especially when it comes to common exams. The standard practice for in-person exams is that they only bring an ID and a pencil and they are monitored by faculty and TAs while they take the exam. Faculty develop policies and rules around the submission of homework, how

class attendance works, and the like, and those policies are followed carefully to create a level playing field. Whenever a situation arises that asks them to reconsider a particular policy, the student's needs are weighed against the fairness for other students. For Danielle, the exam policy is "very strict and we tell them it's not because we don't trust you, overall, it's because one person cheating ruins it for everybody else." This policy was tested with the switch to remote learning because there was no way to monitor students from their homes, so the solution was to change the nature of the exam, as mentioned in the previous section. For Shawna, the idea of fairness was also reexamined in her class after the switch to remote learning because she had to create new policies. At the same time, she knew there would be a need for flexibility, so she let students know what exceptions would be allowed in advance so she was not put in the position of weighing requests against one another. Shawna recalled "that helped me stick to policy when people were like asking for more. I was like, no, that's not fair for me to grant you these eight things when I've only, you know, announced that I'll grant these three things." In general, faculty perceive that a level playing field benefits students, so they respond to that need in their practices.

The most beneficial student interactions perceived by faculty are students who make an effort and who come to office hours. These two responses were the most common, with each faculty member saying something related to this theme; they are interrelated, so I talk about them in tandem here. Tonya recalled that she likes to offer office hours in the advising center, a building that is on the student side of campus and is more convenient than her office for students. She is used to having a steady number of students come through there in a given semester, but after the shutdown, she said it was "way, way less. I mean, literally, I don't think I had 1% of [my total] students showing up for office hours, which is much less." The low turnout was

disappointing because she was offering many more Zoom office hours during the regularly scheduled class times, so they should have worked with students' schedules. She knows that struggling students would have benefited from one-on-one attention there. Shawna has students come to office hours to pick up their exams, so she gets to interact with the students, especially those who are struggling and do not perform well on an exam. She talked about one student who got a 42% on an exam and was not coming to pick it up. Once the student did come in, they were able to start working together to improve the student's performance in the course. Danielle also noted that effort to come to office hours is the first step in getting the support students need academically. Just by showing up, "they're already making that effort." Tom had a steady group of consistent office hour visitors before the shutdown:

> There were maybe 10 people that I was solidly interacting with on a regular basis. And of the 10, I'd probably say, I would have estimated five or six were going to make their goals and then another four were going to probably dissipate into the ether and that doesn't mean fail out, that just means that, I don't know, to quote, maybe some Top Gun or something, you know, "They were writing checks that they weren't going to end up cashing."

Tom's perception of these interactions supports the notion that showing up and making the effort go hand in hand—that both are necessary for student success.

We thought we could trust them: Problematic student interactions. Faculty mentioned beneficial interactions 21 times but talked about problematic interactions 44 times, so these student behaviors were more of a concern across the board, especially after the switch to remote learning, which put a damper on communication and changed regular pedagogies and processes.

Cheating is one of the most difficult issues for faculty in regular times, so the abrupt shift to online learning exacerbated this swiftly. Tonya described it this way:

> I mean the cheating has gone astronomical. And it's not just us. I mean, if you look on the news, all the schools are struggling with this. One of our colleagues in math put a take home test online and within half an hour, found it on Chegg—the whole thing, all answers. I mean, you know, that was an upper level class where he thought he could trust them.

Chegg is an online answer board that students become intimately familiar with, whether they use it or not, and professors are no stranger to this crutch that students use. In a regular semester, Chegg regularly is used for homework, not exams, but COVID-19 changed this dynamic. Danielle said "academic misconduct is just the worst" problem to deal with because "it's frustrating to take time that we could be spending helping students on investigating students to protect the integrity of the course." She was feeling stretched for time, as mentioned in the workload section above, and this increased the demands on her time and patience:

> Even though we gave really clear instructions for our first remote exam, like, you can use any resource, except for other people. Then like going through and seeing solutions that look really identical to each other and saying, "okay, it seems like you two worked together." And then if the students don't admit it, it's just a really tough thing.

Shawna talked about students cheating the system, which was also hard to navigate:

> He had just completely slacked off the whole semester, like, didn't even show up for exams and stuff and then, you know, a week before the final, just emailed me, was like, "Hey, I've been having some mental health issues. Um, can I like basically make up

> everything I've missed for the semester?" So, the answer was no…I'm sure they really were having issues, but they were trying to extend it beyond, you know, what I felt the limits of the situation were I guess.

These scenarios were hard for faculty because they want to support students, but hearing last minute from a student puts a lot of pressure on those final days of the semester and probably means extending an incomplete versus issuing a grade. Once again, the issue of fairness overlaps with what to allow from students and complicates the interaction about grades.

They "don't want to speak up": Lacking communication. Professors in this study also perceived students as struggling with how they communicate and how they perform in classes, in particular after the shutdown. However, these behaviors occur in any given semester; they were just exacerbated due to the pandemic. Faculty noticed that students communicate poorly or not at all, especially when they are struggling. There is a perennial problem with last-minute email to a professor at the end of the semester, asking for more points or more time or more leniency, and this trend seemed to increase for all of us, simply because of the added stress on everyone during a pandemic. In the most basic sense, faculty expect students to receive and read the messages we send. Danielle talked about an interaction when a student said,

> "My friends said that there was an email about [the test], but I can't find it." And he was sharing a screen with me and I could see the email that was unread from me about the final exam and the subject line is Final Exam Logistics. And I was just like, this is not the right use of my time.

Other times students communicate, but they do not clearly get their message across or do not fully absorb what the faculty member is communicating. One of my frustrating interactions in spring 2020 was with a student from the previous semester who was working on rewriting a

research paper for me. He needed help with citation of research and I had asked him to visit the writing center for support with this endeavor, but instead he turned in a paper on an entirely different topic. We had to talk several times about my original critique of his work, the importance of proper citation of research, and what the writing center could help him with, so this interaction took weeks longer than it might have with better communication. A related issue of communication about performance was an experience Tom described. He has students who might struggle through the beginning of the course but have grand plans to rectify their performance throughout the semester:

> People can kind of lay in the in the shadows for a long time because they're just relying on hope because the grade stacks so much, so, like, "Don't worry, I'm not gonna do anything, but I'm going to make it all better come exam two…I'm going to change all these things" and mentally I don't disbelieve them. I just think that if you stand back from a third party, you're like, man, I don't know if I could do that lift.

In general, faculty perceive that students would do better for themselves in classes if they could communicate more effectively and have more of a support system when their performance is lacking as the semester unfolds.

A final perception of students by faculty in this study is that there are many students who struggle in silence. Sometimes they struggle with academics, but other times, it is their personal lives that are impacting academics and these problems cannot be separated. I did not notice a problem with one of my struggling students until it was a major one. I thought he simply was not coming to class, but learned too late that he had turned in few to no assignments and would have a hard time catching up after midterm. Tom recalled a semester when he was engaging in high-level lectures every day and there was a group of students that was completely in synch

with the concepts he was presenting. He did not learn until the end of the course that there was a cohort of students who were lost along the way but had kept silent about their struggle. He characterized them as thinking

> "I don't want to speak up that I'm getting wrecked. I don't want to speak up that I'm not getting what's going down." And that was a point where things diverged and they diverged long enough during the semester…that I think that they weren't happy with what was going on, but they liked me well enough that they couldn't really resolve that and just have the heart to heart [with me].

Beyond the struggling in silence, students are grappling with any number of issues in their lives outside of academics and faculty cannot be expected to understand that unless students reach out. Danielle talked about a student who informed her of an absence for a domestic violence case at the beginning of the semester:

> And then it was March, and she came to meet with me about class. And she just hadn't been doing well, had to miss a couple of exams. And I sort of asked her about like... I was like, "You don't have to talk about it, but with the domestic violence thing, and how are you doing?" And anyway, come to find out, she had not been on the school's radar at all. No one at the school knew that she had gone through that, and so she wasn't getting any resources and she was super struggling. And I just dropped the ball on passing that off to someone.

In retrospect, it made perfect sense that this student was dramatically impacted by this incident, but there was no system in place to catch that unless the student advocates for it or is asked a direct question by a professor, as Danielle did in this situation. Tom speculated that students

often need support for personal issues they are experiencing, but it might originally be disguised as an academic struggle:

> I feel like in situations where I have a student and they're not meeting their own expectations and they're needing advisement or help with meeting those expectations, I would say 60% of the time or more, it doesn't have to do with technical content…I think that there is this aspect or component under the surface where it's, it's the person's attitudes and feelings as they relate to their behaviors that are really getting in the way.

Tom is learning to pick up on this more readily and is finding more confidence to address personal issues after the pandemic put us all in the position of sharing a difficult experience.

What Do Students Perceive About Faculty?

When students reflected on the intentions and interactions of faculty, some clear categories of responses emerged. Most often, they talked about interactions that met their expectations or helped them feel cared for: 140 different bits of dialogue were recorded for this category from 91 unique students, so all student participants had something to say about what makes them feel supported. Students also mentioned interactions with faculty that made them feel let down or uncared for; 81 responses fit this category from 43 unique students. More than half of student participants reported they did not have a clear negative experience to report. As with the faculty responses, some unique observations by students connect well with the discussion in Chapter V. However, for the student perceptions, I also discuss some opposing viewpoints in this section. I found in the data some dichotomies students mentioned in response to the questions, and it was interesting to note that there were opposing views about what different students need from faculty.

"Listening and being in tune with what I'm working through": Students feeling cared for. When I asked students about how they perceive the intentions of their professors, a series of responses reflected professors who meet their expectations, which in turn makes them feel cared for and supported. The most common response about what meets their expectations is just good, helpful teaching practices. There were 30 coded responses about helpful teaching and each professor was mentioned by name. About Shawna, one student said she is

> relatable, helpful, sincere, and knowledgeable. She is very eager to help us learn in office hours, she goes through examples in class and always answers questions, and she shows how excited she is about the material and teaching it. It seems that she is trying to achieve a good relationship as well as for us to establish an interest in the material. I appreciate her intentions and feel that they are delivered very well. She is very kind, welcoming, proactive, and punctual.

Another student wrote about Danielle, "She was so helpful. She had us walk through our process and then asked us questions to help us figure out how to get out of the rut we were in." Tom's student said, "I think by interacting with me, [he] teaches me the material and hopes to learn more about my learning style and how to teach me best." Other students appreciated that Tom "seems to educate with other formalities sort of pushed aside for the sake of a better educational experience." One of my students remarked in course evaluations that I made the semester "a very meaningful and positive experience. I feel like I learned a lot from this class and I'm on my way to becoming a better presenter." Senior student Derek stated simply that teaching well is the only expectation he has for faculty: "I don't know, I feel like I set pretty, pretty low expectations for pretty much anything for, you know, teachers. It's like, well, show up and teach, do a decent job, and if student asks a question, answer it as best as you can. You

know?" What really makes Derek's comment significant is not that it is surprising that students expect good teaching; rather, it is the contrast with faculty who do not teach well and do not answer students' basic questions. The fact that sometimes this basic need is not met is what stood out from these student comments.

Aside from the general comments on good teaching, students pointed out other qualities and characteristics they expect from their professors. Each of these got about 10 mentions in the codes from interviews and the questionnaire: communicating well, seeking student success, and taking time with students. Clear communication is really important for students. In the questionnaire, a student said of Tonya, "She makes it clear that she is there to help me and that I can come to her whenever I need help. She is very supportive and does her best to make everything in her class clear. She is by far one of my favorite professors that I have had at [RMT] so far."

Danielle's student said of her, "She always has the intent to help you understand more and listens to what you have to say to make sure that she can provide more clarification." Taylor, in reflecting on a professor who did not teach or communicate well, said, "If you don't have a professor who is extremely, extremely good at being able to communicate that information in ways that is comprehensible…then it's just, it's a, it's a very difficult class." Students like Austin and Ellen pointed out that there often seems to be an expectation of prior mastery. Ellen expressed frustration with professors who say "you should know this by now," "you learned this in another class," or "it's just rote memorization; just, you just need to study" because for them, these are not always reasonable expectations. Austin said, "They think that you know the material, I guess." Students think it would be more appropriate for the professor to ask if they already knew the material before making assumptions. Even if it is unrealistic for

students to always know the answers, they expect faculty to know the answers or to participate in the quest for finding them. Bruce said, "I expect for them to at least know the answers to the questions that they are asking (laughing)." He recalled an experience where a professor's diagram and example was incorrect but she could not seem to realize this and help him and his peers solve the problem, leading to lots of confusion. Derek, continuing from his response above, said his "low expectations are basically to, like, do the bare minimum. Answering the questions as best you can, and remaining calm and professional with the student."

Students also perceive that professors intend to help them achieve success with the course material. Nine students specifically used the phrase "wants (all) students to succeed" when asked what their professor's intention was, as expressed by this student: "In my opinion, all of the professors want to see me and my classmates succeed at this school and will do what it takes to ensure I get the grade and understanding that I am willing to achieve." Tonya's student said, "I genuinely believe that [she] wants all of her students to succeed, and that's really important for students to know that she believes in us." Danielle's students shared that "when [she] interacts with me, she is very kind and supportive of learning. She wants her students to struggle and to come to her for help. She wants her students to succeed." Tom's student said he "seems genuinely interested in my understanding and interaction in the class. He makes class time inviting and engaging with his teaching style. He does a good job of bringing your attention back to the subject with his interjections." One of Shawna's students said she "makes it clear that she wants all of her student to succeed." The common response about success for *all* seems to indicate attention to the individual and the collective, which is an important aspect of students perceiving and receiving care.

Fewer students pointed out the expectation of patience, but for the students who did, it was a crucial criterion of helpful teaching. Isabel mentioned the term several times in general and then in praising different professors. About Danielle, she said,

> She was super nice and patient, and for me, if anything, I feel good when, um, an instructor or a professor is very patient with me because sometimes I just take quite a bit to digest the information, and so, at the end, she was very nice and positive. She's like, "I'm glad that you guys are seeing this in a positive light," just ending it on a positive note.

Matthew was a student participant who had not had any negative experiences with faculty at RMT and was performing well in all his classes. His expectations of faculty are "making sure that I am fulfilled in the answer and I can continue on to the problem. And also not feeling, you know, rushed through the process, that they're just trying to answer my question to get to somebody else." Micah also felt like he needed patience from professors to be thorough with him. He expects, "you know, being able to take the time to help, help me out. And, you know…listening and being in tune with what I'm working through."

Another less popular, but strongly held, expectation students hold for professors is mutual trust. For Ellen, this expectation comes from their experiences not being trusted by faculty. They have had to miss so much school for their various health challenges that they know some faculty mistrust their motives and that feels awful. They believe

> part of that trust is just having any amount of respect for your students. Yeah. Because …I'm a grown woman, and I'm not a child. I understand that some people do take advantage and cheat and you know, whatever, lie. But that's not the majority and I feel

> like as a person, I have given you no reason to think I would do that. So, I don't understand why it's so difficult for some professors to trust their students.

Holly talked about the other side of this—the trusting of professors: "I feel like, the mark of a good instructor is, the student can trust them immediately. I feel like that should be, should be their goal in every interaction with a student." Related to trust are the concepts of professional and respectful behavior that came through in the intentions section earlier in this chapter. Students continued to mention these traits when discussing their perceptions of faculty intentions. One of Danielle's students recalled that "All of my interactions with [her] have been great, as she is professional but also quite personable and makes you feel like you have a safe learning environment." Tonya's student said she "works to help her students and is professional in doing so. She makes herself available for contact and holds herself to her word." This student's comment combines the notion of trustworthiness with that of professionalism and these concepts seem to be closely tied in students' minds.

Less frequently, students said they expect professors to be friendly, but they often mentioned that the faculty in this study intended to be friendly and were perceived that way by their students. At least 11 separate sections were coded as examples of friendliness. Students mentioned the participant faculty by name as well as other faculty around campus. Tom's student said he is "a very friendly and funny professor, but still holds his job above those yet. He is a great example of a good professor, both in and out of class in his intentions and appearance." Danielle's student said, "She is always very friendly and very good at explaining content" and Tonya's said she "is very friendly and caring in our interactions." About other professors, one student recalled "a meeting with my [writing] teacher meant to discuss a paper I was writing. She

was very friendly and we spoke about the paper at hand as well as a couple other miscellaneous things." Another student recalled an impactful office meeting:

> My professor went way over his allotted office hours in order to make sure I truly understood what was going on. He also talked about his kids and his home country. It was super cool getting to know him in that way. It made me view my professor as more of a friend.

Holly made the point that friendliness goes beyond the way professors help students in class or in office hours; it is also about a human connection outside of class:

> Even if it's just remembering your face and saying hi when you pass them on campus. Like I, this one professor I had, like I think it was a year, year and a half ago now and like, I still run into him. I think we just passed each other, um, and he still says hi every time.

Holly's response speaks to the ways in which small casual efforts can make a lasting impact on students, even well beyond the time when they are listed on our rosters.

Finally, in this section on what makes students feel cared for and meets their expectations, it is a quality of interaction I call connectedness. When students talked about feeling noticed and seen or that faculty are just in tune to their needs, they were expressing a sense of being positively connected to their professors. Several students described interactions like this with Tom. One said he "seems genuinely interested in my understanding and interaction in the class." Another student said that in their interactions with Tom, "I feel as though he is trying to balance school and life while encouraging us to be academically successful. When discussing class topics, he is more than willing to help students take their knowledge to the next

level, but understands when they need a break." Danielle's student also described the connectedness felt in her classroom and from her demeanor:

> I cannot say good enough things about her. [She] clearly works hard to get to know her students despite the sheer number of faces she sees on a given day. Knowing that this instructor cares about me as an individual does motivate me to participate in discussion and do well in the course. Their intentions seem to be exactly that. It makes a lot of students feel more comfortable to ask questions, seek help, and dive into the material.

The concept of connectedness and of being in tune with students is harder to pinpoint in the traditional language of course evaluations, but came out in these questions about perceptions of faculty intentions.

"The professor told me I should figure it out for myself": Students feeling let down. There were fewer responses about feeling uncared for or let down by their expectations of faculty, but there were still some clear concerns of students about what professors are not getting right. Not surprisingly, several of these are the opposite actions or qualities from those described in the previous section. Students are really let down by poor teaching and unhelpful behavior. This student from the questionnaire goes into detail about one professor who is not teaching well at all:

> One of my professors focuses on piling on the work without giving us notice of new assignments. Additionally, he gave us an exam review guide the night before the exam without notifying us. His teaching style includes facing the board the entire time, copying notes from his previous classes, moving very quickly, stating that he will post his notes (which he sometimes does), and disregarding students' questions. He does not include units and has horrendous and unclear handwriting. Basically, I do not feel

> respected or understood as a student when I am in his class. He says that he cares about students' learning, and though he has made small strides to change aspects of his class, it is still not a great experience. Teaching is very important to me, and I think that a teacher can show respect and care through their teaching.

Another student explained what can be meant by an unhelpful professor:

> I asked a professor to clarify exactly what I was supposed to be learning through a particular topic and what I was being graded on as I was having a difficult time in the class. The professor told me I should figure it out for myself and that I wasn't in school to have all the answers handed to me.

Sometimes instructors did not know the answers and confuse students or waste their time, as in Bruce's experience. He mentions liking this instructor, but was frustrated:

> It was really disheartening when I asked the question about the lab, and literally every other person that I asked got a different answer. But then, I tried to ask the teacher how she got it and she was like, "Oh yeah, you just connect this. You connect this and this." I'm like, "But what... Like, this needs to be swappable. Like, you need to be able to change these two at any given time." And she's like, "I mean, I guess so." And then I tried doing the problem with her circuit diagram, and it just wasn't right.

Throughout this study, students mentioned having problems with graduate student instructors, such as in this example from Holly: "Asking him questions, he couldn't really answer them in a way that made sense to beginners." Regan also had a negative experience with "another grad student and…they were TA'ing a class and you could tell it was, they were very freshly grad students…and they were just extremely disrespectful in terms of like interactions, um, like answering questions just like condescending." There are several ways that poor teaching and

unhelpful behavior can lead to students feeling uncared for and let down by faculty, and sometimes these faculty have primarily research responsibilities or are graduate students.

Students also perceived faculty to be disrespectful or rude, disconnected from student needs, and rushed in their interactions. One student said, “Last semester, I went to office hours for a professor and I always felt uncomfortable there for some reason, as if I wasn't welcome or I was being dumb.” Three other students had a very similar response—that the professor’s actions and tone made them feel stupid, and reflecting back to student intentions, they frequently said they do not want to appear stupid to their teachers. When this happens, they shut down and do not ask questions. Austin recalled what happened with one of his professors for chemistry:

> Someone would ask a question. And then the professor would just say like, "Nope, that's completely wrong.” So then I, I feel like that's, that's pretty off-putting. And I feel like it discourages students from asking questions. So, I'm, I don't really wanna go to him to ask questions, just 'cause I already know that I don't know anything, but it just feels a little better when they don't exponentiate on the fact that I don’t know anything.

In response to this story, Trent commiserated with Austin: “Yeah, you don't need to put me in my place every time we speak.” Dismissive attitudes are certainly one way professors can come across as out of touch. Ellen recalled their experience with professors giving workload expectations: “My professors were like, this should only take you an hour…I'm not giving you that much homework; this should only take you one or two hours.” But their reality was that their mild dyslexia and ADHD can make a one-hour assignment for some take many hours for others and this is a major disconnect with some professors. Derek recalled why these assumptions about homework time are often disconnected from reality. He described

transferring to RMT and learning the hard way about student shortcuts and cheating and how disconnected professors can be from what this means for students in their class:

> You've got homework due, and it's eight problems online, takes you maybe four hours, something like that. 'Cause you- you're new to this, you're doing it all by hand. You're referencing the book, whereas then there's some students that are, like, "well, what's Chegg say," or "I've got last semester's answers right here. Took me 45 minutes." So the teacher asks the class, "how long did it take you to do those, that homework?" On average, it took them an hour. And then, like, "Well, we should give them more [homework], then."

This anecdote points to a flaw in communication and trust as well as the problem of cheating that is mentioned earlier, and at the root, it shows a lack of connection with students' lived experiences. Students mentioned that professors can lack patience with them which is another way they are let down from their expectations. Todd said, "Sometimes you go to office hours and it is clear that the professor wants to be doing their research, that they don't really want to answer your question and are hurrying you out of there." Sometimes students are scared or intimidated by their professors too. Isabel said, "It does make me scared of them, like if they're impatient with me or something, I'm less likely to go back into office hours. I feel less motivated about the class or less supported." Lastly, sometimes students are just made to feel ignored or dismissed by faculty and this is one of the most damaging perceptions because it often ends any interaction as students pull away further. From the questionnaire, a student recalled this experience: "I felt like the teacher was always annoyed at us for not understanding. On more than one occasion I asked a question and he looked off-put and said it was a dumb question, which discouraged me from asking things in the future." Another student was frustrated trying

to get a question answered in class: “One of my professors first semester was rude when I answered a question wrong. He was condescending and made me feel dumb. When I tried to explain how I got my answer and asked where I went wrong, he just ignored me and continued on.” From a student’s perspective, any of the interactions in this section would clearly be discouraging and lead to damaged relationships between faculty and students.

One Approach Does Not Fit All: Conflicting Needs and Perceptions of Students

In the sections above, students described perceptions of faculty that were obviously positive or negative for their experiences. However, for some of the perceptions and expectations they described, there was no clear preference in terms of what was supportive for all students. For example, some students prefer a casual or friendly approach and some prefer a professional or formal approach attitudes in office hours and classrooms. Some students really seek flexibility from their professors, but others appreciate rigidity for a level playing field with their peers. In terms of teaching style, some like pre-set lesson plans that are posted in advance and that they can follow on their own, while other students need creative, multi-faceted approaches in which faculty can describe concepts in several different ways on the spot. In a similar vein, some students are served best in office hours or one-on-one interactions by being led through the steps to solve a problem; whereas, other students thrive on a more Socratic approach in which the professor gets them to answer their own question. One student said they go to office hours for the professor to “work through the problem with me.” Another expressed this frustration with the Socratic method: “I am coming to them with a legitimate concern, and it would be nice if they, in turn, gave me a legitimate response, instead of simply asking me more questions and dancing around a solution.” On the other hand, some students said they prefer

professors to be "allowing me to discover answers and make sense of things on my own." For some students, it makes sense that professors get them to do the thinking: "I ask the question and the teacher might ask another question in response to my question." These responses indicate that different student expectations are an opportunity to modify our approach as professors to use both techniques depending on the needs of the student or the lesson.

Learning from the Instructional Arc

Exploring the data through the instructional arc allowed me to reflect on the overall experiences of faculty and students in order to address the main focus of the study, Research Question 1: What are the qualities of faculty-student interactions and relations that support care and well-being? In the following section, I present data that speak to both faculty and student responses about what makes them feel supported and unsupported in their interactions and in their roles on campus. These responses come from all parts of the instructional arc and from all data sources in the study, but are primarily drawn from the interviews and questionnaire responses.

What is Supportive and Unsupportive For Faculty and Student Well-being?

When students and faculty talked about the aspects of higher education that make them feel supported and cared for, there were generally two types of responses. Some responses focused on the qualities of the people they were interacting with and others emphasized the types of interactions or the outcomes they could expect from those interactions. Even though my research question focused on what feels supportive for both faculty and students and what leads to well-being, it is natural that I also learned about what is not helpful, what holds us back from feeling supported and cared for. Often the negative experiences are even more impactful than the positive ones, and they are of interest to this study because those are the areas where growth

and reform might be more necessary. Being honest about our experiences in this way is the only path toward improving the systems and the relationships we value in higher education.

The following section highlights the ways that faculty and students feel supported and cared for, times when they experience well-being. I present these alongside examples of when faculty and students felt unsupported and suffered from low well-being. First, I highlight faculty responses and then move on to student responses. With both of these sections, I summarize the general concepts as well as give some specific examples from the participants. My main research question was directed to the qualities of the interactions that are most supportive, and I also emphasize the types of interactions that foster well-being. Table 8 summarizes the types of findings for what is supportive and unsupportive for both faculty and student well-being.

Table 8

Supportive and Unsupportive for Faculty and Student Well-Being

Theme	Representative Quotation
Faculty Well-being	
Institutional factors	“The workload was oppressive”
Personal factors	“There were some dark days”:
Temporal factors	“There’s just not enough time”
Interpersonal factors	“I want to know them more”
Student Well-being	
Unsupportive faculty	“You don’t have to degrade me”
Caring faculty	“You have no idea how much it meant to me”
Caring interactions	“That really encourages a closer relationship”
Unsupportive interactions	“Okay, I'm never gonna talk to you"

Institutional, Personal, Temporal, and Interpersonal Factors Support Faculty Well-Being

Faculty expressed that their well-being is influenced by several factors that I have categorized here as institutional, personal, temporal, and interpersonal. Often, a combination of these areas influenced faculty well-being in both positive and negative ways, so the following descriptions should not be seen as isolated elements. Rather, there is a synergy among all the areas that can lead to either enhanced or depleted well-being, depending on the faculty member's circumstances at a given time.

"The workload was oppressive": Institutional factors. Faculty feel cared for when the institution and their colleagues are supportive of their work, perhaps by honoring them with awards or recognizing their efforts in more informal ways. On the other hand, faculty feel unsupported or suffer from low well-being when institutional policies or circumstances cause overwhelm or create tension. Sometimes, work stresses that contribute to faculty feeling unsupported in their teaching and interaction with students. This can come in the form of administrative and service work that demands more time and energy than faculty can give. Tom said that when he is "losing energy other places because of just overall workload or stress, or say, like, a pandemic," this impacts his ability to interact with colleagues and his external responsibilities as he begins to feel spread too thin. Tonya shared a similar experience due to her administrative role:

> The stressors at work, I feel like they're getting worse and worse every semester and that I'm dealing worse with them. And I don't know if that's me not being able to deal or it's just, there's so much, and it keeps piling, on that I'm just struggling to figure out healthy ways other than working 24/7 to keep up and deal. And I've never been really good at,

> "Step away from work. Take a break. Don't think about it for a week." Just, I've never been good at that ever, but I feel like it's getting worse and worse.

These comments show the connection of well-being to overall workload. When workload is manageable, faculty have the bandwidth to deal with all their responsibilities, including interacting with students.

One particular aspect of workload is class-size: the sheer number of students in classes can be hard to handle in terms of ability to interact with students and assess their work. On the other hand, when class sizes are manageable and the teaching role is well-defined, faculty feel supported and experience well-being. Tom and I both recalled times in our teaching when we were experiencing high well-being because we were feeling dialed into the content and the process of teaching our courses. Tom explained a time when he had taught the same class for several years and class sizes were manageable and he "could just do it…And it felt so flowy." He continued to explain that there was an "effortlessness" in this time: "not really having to think…It's just like, it was there. You were just so with it. It was just so well practiced and so well trained that there wasn't any anxiety anymore." I had a similar experience when I was leading the freshman program and "my teaching felt really vibrant and invigorated, and I had this great administrative position." I also recalled the time when I had the same role and was teaching the same class, but there was a new administrator hired who stymied the departmental operations and created immense tension and confusion amongst the faculty. Everything about the job felt stressful and difficult during that time and this situation left little energy for teaching until she was replaced. Overall, institutional policies and administrators can strongly impact the ability of a professor to do their job and to feel supported as an employee and as a person.

"There were some dark days": Personal factors. Sometimes professors have issues with their health or their home environments that get in the way of work or make teaching more difficult. I have discussed some of the details of my personal struggles while being a professor in earlier chapters, and I relied heavily on my colleagues during those times. The collegiality and support my department has shown to each other in times of crisis is both a personal factor of support and an institutional feature that may or may not be present for faculty. My department has had several instances when one of us has been severely injured or needs to care for an ailing parent or loses a spouse, and we have stepped in to cover their classes and support them in reducing their workload so they can focus on themselves and the needs of their loved ones. All sorts of life events, minor and major, can impact the work of a professor. Tonya noticed that "if [she is] more tired, or…having an argument with [her] significant other, or something, how that definitely affects [her] behavior." Danielle and I both mentioned that going through a breakup had an impact on our attention and mood at school. Shawna recalled the first year of new motherhood, saying that work felt "like a reprieve" but that she was unsettled until she and her husband "got some help with childcare." Sometimes we just get through these times and other times we need support, but it is nearly impossible to fully separate these experiences from our work life.

Some faculty members keep personal and family matters to themselves and do not share their struggles with colleagues, while others appreciate attention to their individual well-being in the consideration of institutional policies and procedures. However, in the age of the COVID-19 pandemic, everyone was experiencing additional tension at home at the same time that demands at work were increasing. Living with young children was one factor that made teaching from home more difficult and distracting. Tonya has two young grandkids living with her and was

surprised that during a meeting, the four-year-old ran into the room naked and started yelling; this is normal behavior for a little kid, but not a typical feature of a meeting in higher education. Tom talked about balancing the teaching duties for his elementary age kids with his wife, switching from teaching differential equations to trying to learn and teach digraphs for reading lessons: he described "walking around upstairs, saying 'double e makes eee'" and then downstairs, it might be "integrate the function with respect to x." My experience was living with teenagers who needed no help with the technology of remote schooling, but we quickly found that motivation is hard to come by when there are no peers involved in high school and it is harder to ask questions of teachers. In general, the isolation faculty experienced from our colleagues and students, combined with the added tasks of working from home proved to be unsupportive for well-being.

"There's just not enough time": Temporal factors. In general, faculty feel supported when they have the time to do their job well—when they can be patient with students and help those who need help. Danielle said she loves office hours, the time she can spend with students is her "favorite" and Tonya said "that's the part [she] really like[s]; the one-on-one, the interaction." Relating to the class size comment above, Tonya acknowledged "they have to come to me because there's too many of them for me to get to all of them." Faculty feel fulfilled when they get to experience those teaching moments with students and see their improvement academically and personally. Shawna shared that "finding a way to make the light bulb go on is probably the single most satisfying" aspect of her job. Seeing students improve over time is especially rewarding. Danielle recalled a student who "got an F in the class the first time she took it, and then came back and retook it and got an A." These time investments feel worthwhile to faculty and students alike.

Faculty struggle with last-minute demands on their time, wastes of their time, and students who just aren't putting forth the full effort to do what they need to do to succeed in the class. Often this comes in the form of students who do not ask for anything until the last week of class when they ask for a grade boost. Tonya struggles with students who say, "Oh, I was only half a percent off of this. Can't you just give me the grade?" Tom described students who "suck a bunch of time and don't do necessarily well" after receiving help. Danielle said, "When I get the sense that the student just doesn't want to think, that they just want an answer, and they're just trying to check a box rather than actually learn something, that's probably the most frustrating because I don't like spending my time on that." All in all, the careful and efficient use of time is important for faculty because there are many priorities to juggle in the limited hours of the day. Therefore, time pressures are directly connected to the personal and institutional factors discussed above.

"I want to know them more": Interpersonal factors. Finally, faculty feel supported and experience well-being when they are engaged in meaningful connections with colleagues and students. Professors often work in isolation on research and teaching tends to be a solitary act, and depending on whether one is an extrovert or an introvert, collegial relationships may be more or less necessary. However, the faculty in this study feel best when they know the students and can form relationships with them, either through research or as part of a regularly scheduled class. Tonya had closer relationships with students at her past institution because of the research relationships there and she is still friends with some of those students, staying in touch and receiving Christmas cards, and the like. Here at RMT, she says, she "really miss[es] that

personal connection that [she] just do[es]n't feel [she] get[s] enough." Faculty also feel supported when students are respectful and independent, when they engage with them and aspire to friendly working relationships.

More rarely, faculty encounter students who are completely disengaged and occasionally there is a student who complains about teaching policies and practices, and these encounters can negatively impact faculty well-being. Most detrimental to faculty well-being, though, are the interactions with students that involve cheating and blatant dishonesty; Danielle stated that "academic misconduct is just the worst." These scenarios are most difficult for faculty, in part because of the impact on their time and also because it takes focus away from students who are behaving ethically and need faculty support. Tonya said confronting students about academic dishonesty is "so draining" and I feel the same. I do not like being the bearer of bad news and I tend to resent the time and effort needed to sort a plagiarism issue. For faculty who give exams, especially the remote ones during the pandemic, "the cheating was crazy" and "there was nothing [they could] do to stop it." Cheating is a major violation of professional and relational boundaries, which is why it has such a deep impact on faculty. It breaks trust and the social contract of teacher-student interaction.

Faculty appreciate when students can respect the boundaries and meet the expectations they set forth because this shows respect for their time and their position. Shawna said that holding these boundaries is part of her job, and Tonya mentioned that it becomes difficult when students ask for too much leniency in the expectations. Accommodations for special circumstances are reasonable, but consistently asking for different treatment crosses the line for

most professors. Tonya mentioned students expecting her to be available on a Saturday, for example, and Shawna recalled students wanting to make up work in the last week of the course, which goes beyond the allowable bounds she had set.

Caring Faculty and Interactions Support Student Well-Being

When students talked about times of their well-being, their responses overlapped with faculty answers in some ways. Most markedly, students also seek strong interpersonal relationships that are friendly and that support learning interactions. These student participants were also frustrated with oppressive workload demands and the cheating practices of their peers.

Students also talked about well-being in different ways than faculty. The main differences in student responses about well-being is that they had a lot to say about the qualities of the faculty they encounter in their courses. They had much praise for connected, well-intentioned, excellent teachers. However, they also pointed to several flaws in faculty behavior and attitudes involving unnamed instructors that were not part of the study.

"You don't have to degrade me": Unsupportive qualities of faculty. I asked students what leads to experiences of low well-being and high stress, and they discussed faculty who are condescending or dismissive as by far the most difficult to handle. Actions of these faculty can range from unresponsive to uncaring to downright rude. Several students gave examples of times when their questions about course content were dismissed or ignored:

- "When I tried to explain how I got my answer and asked where I went wrong, he just ignored me and continued on."
- "He did not seem to care at all that I was struggling (and making a sincere effort to get extra help). He would often brush off my questions."

- "He looked off-put and said it was a dumb question, which discouraged me from asking things in the future."
- "He would only say that it was 'obvious' or 'something I mentioned before' and then leave without explaining it."
- "He told me that out of class issues are no excuse for not keeping up."

Ellen shared their experience with having absences for medical struggles and getting no support from certain faculty members. In one case, Ellen said, "He just completely blew me off. And I ended up having to drop his class and take it again the next semester." It does not go unnoticed that all of the above responses include the pronoun "he" and I did not find student responses that indicated female professors acted in this dismissive way, but I am not making presumptions about gender here. RMT has fewer female faculty than male faculty, and gender was not part of my research questions. However, care is often associated with the feminine and there is plenty to be said about emotional labor and the care of teaching in higher education, which I discuss more in Chapter V.

Aside from rudely dismissing questions, there are also situations when students feel personally attacked by a faculty member. Isaac has experienced faculty who are not able to get their point across and then it seems they are taking it out on the students. He made the point that a lesson might take multiple explanations for a student to get it and that "you don't have to degrade me just because, like, I don't necessarily understand something."

Students also pointed out that their well-being is negatively impacted by faculty who implement unrealistic expectations or create situations where the strict rules or rigidity of the curriculum take precedence over their needs. One student mentioned a faculty member who was

"piling on the work without giving [them] notice of new assignments." John told a story of being given an assignment to interview a professional in the community in a quick timeframe:

> It was really ridiculous to us that we were expected to do all of these things within the week…because we had a ton of time for these other projects that were very simple, and this one that was really imperative to the success of the project in the end was basically thrown out and said, "You can do this in a week."

Derek described a friend's experience with a strict policy: "If you are even a minute late, every late attendance is three percent off your final grade." He went on to discuss the impact on students of the overall expectations at the school: "It's the standard that's being, you know, called for that's making students feel like absolute crap. Or they have to, you know, pull multiple 20 hour days in a row to get the grade that doesn't make them feel like crap."

Several students talked about having multiple exams in a week and the difficulty of getting a doctor's note for a mental health absence. Sometimes the rules and policies seem to exist arbitrarily. Often, students just need to find a way to accept the negative consequences to their grades and their well-being. Holly spoke of a class she had to drop because the grade was based on "100% exams. It was two mid-terms and a final: 30%, 30%, 40%, which is already really stressful…but then…there was no homework…and so [she] had no idea how to prep for the exams." The increased pressure from unrealistic expectations and stringent academic demands add to the problems students experience with dismissive or rude faculty, and these factors negatively impact student well-being.

"You have no idea how much it meant to me": Caring faculty support well-being. By far, the most common responses by students for the ways they feel supported describe when faculty exhibit certain qualities that are associated with care and interpersonal connection. It is

important for students that faculty are accommodating and caring. Students appreciate accommodation within the normal operation of classes. Holly said that, especially in upper-level classes in the major, professors will sometimes "try and figure out the best time for the midterm where it doesn't conflict with the rest of your major exams or projects which I really appreciate." One student shared that Tom is "more than willing to help students take their knowledge to the next level, but understands when they need a break." Even more importantly, students need accommodation when they are experiencing some personal struggle. Regan shared that when she had a mental health crisis, Danielle "went way above and beyond, not like I expected a professor [to behave]" in following up with her. Another student shared an experience of receiving support during a crisis:

> I had an issue regarding my personal safety on campus my freshman year that impacted my sleep and mental health. Upon speaking to a couple of my professors at the time, I felt cared for and supported as individual due dates and scheduled time was created so I could catch up and not be left behind.

Students also feel well-supported when faculty make an effort and give of their time. One student reported that professors "have made points in every class period to attempt to gauge our fears, anxieties and needs as well as remedy them. So far, their care has seemed genuine and refreshing." One professor "went way over his allotted office hours in order to make sure [a student] truly understood what was going on" and another professor "took time out of her day to meet with the group…and helped the team progress as a whole." Isaac also recalled a professor working to make things go smoothly for students: "It was nice that he took the initiative to be

like, ‘Hey, let's figure this out together.’” These examples show that students clearly notice when professors give their time and energy to interaction with students, whether in routine ways or in special circumstances.

Above all, students want faculty members to be personable, positive, and encouraging. One of Shawna’s students reported that she “is always friendly and polite and never makes students feel inferior.” A questionnaire respondent said, “Both [Tom] and [Tonya] are very personable and intelligent instructors” and several other comments like this were made about study participants and about other faculty on campus. Isabel shared an experience about doing poorly on an exam and receiving support from her professor: “I burned through an entire box of tissues, but, you know, I kinda learned what I did wrong. [The professor] said ‘You’re not gonna fail. This is a perfect way to bounce back from your first exam.’ And she gave me a really big, warm hug.” Students also feel supported when professors show their human side, not just their academic expertise. Trent discussed

> leaning on professors in different capacities for [questions] like, "Hey, I really need professional advice." Or, you know, "Can you put yourself in my shoes for five minutes?” And, you know, “When you were in my shoes, what did you do? What was your perspective like?"

And a few simple words of encouragement can mean the world to a student. Ellen talked about receiving this kind of praise from a faculty member in their major and thanking the professor, saying “you have no idea how much it meant to me to hear you say that my work was exemplary because I work really hard and I don't always get the reinforcement.”

However, in terms of the type of interaction that most supports student well-being, the focus on mental health and the whole human being came up most often. General concern for

student welfare can come across in day-to-day operations. One student said, "I asked a professor for an extension and the first thing they did in response was ask if I was doing alright." Isabel mentioned a trip to office hours to prepare for the exam when the professor made it clear that "she cares about your mental health…she was like, 'Okay, and also remember, last thing, get plenty of sleep, eat good food.'" Caring for mental health is also important during times of crisis. A student in the questionnaire mentioned Tonya, saying she

> is very kind and really cares about whether her students are learning or not. When there was a suicide on campus a few weeks ago, she cried in front of my class of about 100 or so kids. That, to me, shows that she's not just here to make money or talk about chemistry, she really cares about how we're doing.

Sometimes the most important action a professor can take is asking a direct personal question and helping the student feel seen. One student reported it was supportive when a professor "asked how I was handling things and reminded me to take breaks as needed." Derek pointed out that "it's much easier to answer being asked than it is to just tell someone," emphasizing there is sometimes a power barrier or some kind of shame or worry that prevents students from asking for help on their own. Also, simply being noticed as a fellow human can go a long way to supporting students. One student said,

> What really stood out to me is when she remembered my name later outside of class and said hi—I was just walking through campus to get to the grocery store and I happened to see her leaving for the day. I didn't say anything because I imagined she was busy and had hundreds of students—but then she called me by name and asked how I was doing, said to have a good day. It was a really good feeling!

Finally, students feel supported when there is a sense of belonging. Regan talked about community events and camaraderie in her department, that professors arrange "a poster session and they order food and like it's just like a hang out kind of thing, but it's really nice." Isaac also appreciated the "coffee and zoom meetings throughout the summer that are happening" to keep students and faculty connected.

"That really encourages a closer relationship": Caring interactions support well-being. Just like faculty, students feel supported by the lightbulb moments, the one-on-one interactions when we can really make some strides academically. One student said, "Whenever I go to office hours with [Shawna], she always ensures that I understand the reasoning behind the questions I have. She ensures I am comfortable with doing the problems we are working on and completely understand the steps." Another student reported that "the professor helped understand what [they] did wrong and how [they] could change [their] study habits to be able to succeed in the class." Holly mentioned the value of building a relationship over time in office hours attendance:

> I think that really encourages a closer relationship because I've had, I've had a couple classes where I've really struggled and I was one of those kids who was in office hours every single week and I got to know everything about my TA or my professor, my professor got to know everything about me, and that actually really helped me in my class, so I like that.

Students also feel supported in their well-being by interactions that influence course plans and career opportunities, undergraduate research and internships. Todd reflected that "the teaching faculty, especially in the mechanical engineering department is really good about that. They're preparing us for industry." Isaac said, "Sometimes it isn't necessarily, like, passing the class, but

it's more of just getting to know your colleagues and…they help you network and stuff like that." Bruce attended required office hours and got advice from a professor to pursue a 4+1 master's program instead of a double major, for which he was grateful.

"Okay, I'm never gonna talk to you": Unsupportive interactions with faculty. On the other side of the spectrum, students also have experience with low well-being and high stress. These experiences are often marked by professor behavior that seems to ignore or misinterpret the student experience altogether. Sometimes students recognize that faculty are out of their element, that there is something in their situation that is making them uncomfortable or that is providing a new challenge for them, but it can impact the students' ability to feel supported. Several students talked about new, inexperienced teachers. Taylor reflected that professors struggle "when they're thrown into an environment they're not used to." And later, she said, "The more we talk about it the more I realize, like, the teachers that can't help us are just as lost." Bruce responded to Taylor, agreeing that "they can't support you 'cause they're still trying to find their own bearing." There are also faculty who come across as out of touch, simply not recognizing what students are going through. Bruce said, "The times that I felt most unsupported by teachers is when they don't quite fully grasp the situation of the students well enough." One of these areas is in assigning group work. He understands why group work is assigned, and acknowledges that time spent in groups can be rewarding, but it also takes lots of time, often requiring the equivalent of an extra credit hour's worth of time commitment. Ellen told me the biggest struggle has been working around performance expectations as a student with learning disabilities. When a professor insists an assignment "should only take you an hour" but it takes them several, there is a real disconnect. Ellen was also disadvantaged by "hav[ing] to turn in handwritten notes" during remote learning because this required many extra hours that

were not supporting their learning style. Depending on the type of class, there can also be a disconnect between faculty and students. Holly said she can recognize when there will not be interaction with a professor, “especially in those bigger classes where it's like, ‘Okay, I don't need to go to office hours and you're not calling on individual people. Okay, I'm never gonna talk to you.’” Adding to the above, students report receiving mixed messages on assignments and professors who are confusing in their delivery of information or scattered with their systems for running the class and all of these issues take student time and energy to resolve.

Poor teaching, in particular, can make students feel unsupported and contribute to low well-being. Regan recalled an experience when, in an attempt to run a flipped classroom, “the professor kind of ended up making us teach ourselves, and not through problem solving, it was just, it was just really poorly done.” Derek said his cohort served as guinea pig on a new class rollout: “He was just kind of throwing up notes that had been given from the other instructors, and, uh, you'd raise your hand and ask him how to do something, and he'd just say, "’It's right there. It's right there. Just- just look it up. Just look it up.’" Inability to connect with students also impacts advising. Isaac said it is well understood among students that “you can get really good advisors and really horrible advisors.” There was also a consensus from these student participants that research faculty and graduate students are the most apt to be out of touch or poor teachers, they presume because of the focus on research for both categories and because of the inexperience for grad students. Holly shared that grad students “just came across as very patronizing” and Allen’s Ph.D. student instructor “just reads off the slides.” Trent, as a non-traditional student, tried to connect with graduate students who are in his age group and encountered exclusionary rhetoric from them. He had become frustrated with the attitude of “some grad student who just thinks they're better than you all the time.” Regan had a rough

semester when she was undergoing physical therapy for an accident, which had led to migraines during the same semester when her mom had a stroke. She experienced intense criticism of her work from a graduate student teacher, and although she realized "it was clearly not completely about me," it was still hurtful.

Summary

This chapter highlighted data from faculty and student participants to explore the instructional arc—from the intentional to the operational to the received. I expanded the instructional arc to include the experiences of faculty in the conception of curriculum: how students intended to interact with faculty and what faculty received from their interactions with students. By including faculty with students, the conception of curriculum becomes a complete interchange, a cyclical entity that can articulate the interplay between the students and their teachers. This expansion of curriculum is especially important in higher education where the relationships are between adults playing different roles within the system. There is still a hierarchy and a power dynamic between faculty and students, but it is noticeably tempered from the K-12 experience.

It is also noteworthy that I frequently use the concept of perception in the third part of the analysis, rather than only the reception or the received curriculum. By understanding the experiences of faculty and students in the instructional arc, I was able to explore the ways that both faculty and students feel supported in their well-being, as well as how they feel unsupported. Table 9 displays an overview of all six research questions, the main themes of the data for those questions, and some representative data. In the final chapter, the data and framework presented in the present chapter will help to answer the research questions directly and to build a case for what actions should be taken to make changes in response to these

findings. The focus of the final chapter is on shifts we can make to be more supportive of faculty and students, especially when addressing the culture of suffering and struggling in silence, to foster more well-being throughout the university system.

Table 9

Research Questions and Themes in the Data

Research Question	Themes of Responses	Examples or Sample Data
Q 1 What are the qualities of faculty-student interactions and relations that support care and well-being?	Supportive for Faculty	Time to interact, manageable workload
	Supportive for Students	One-on-one interaction, clear communication
	Unsupportive for Faculty	Personal stressors, institutional demands
	Unsupportive for Students	Unrealistic demands, disconnected interaction
Q 2 What intentions do faculty hold for their interactions with students?	Intended Actions	Good teaching, individual student support
	Intended Qualities	Approachable, respectful, friendly, fair
	Intended Values	Time boundaries, whole person
Q 3 How do students perceive faculty intentions and interactions?	Caring Faculty	"very kind and really cares about whether her students are learning or not"
	Uncaring Faculty	"He told me that out of class issues are no excuse for not keeping up."
	Caring Interactions	"ensures I am comfortable with doing the problems … and completely understand the steps."
	Unsupportive Interactions	"they can't support you 'cause they're still trying to find their own bearing."
Q 4 What intentions do students hold for their interactions with faculty?	Student Qualities	Respectful, committed, engaged
	Interaction Qualities	Friendly, efficient, professional
	Reasons for Interaction	Content help, building rapport, career advice
Q 5 How do faculty perceive student intentions and interactions?	Caring Students	"We have to be…understanding about their situation also"
	Struggling Students	"I could almost hear his heartbeat" and "her face was kind of frantic"
	Beneficial Interactions	"more engagement and confidence…in the class"
	Problematic Interactions	"academic misconduct is just the worst"
	Lacking Communication	"don't want to speak up" and ignored emails

Table 9, continued

Research Question	Themes of Responses	Examples or Sample Data
Q 6 How did remote learning during COVID-19 shutdowns impact faculty-student interaction and faculty and student well-being?	Logistics of the Switch	"shifting norms in the middle of the semester"
	Shifts in Pedagogy	rethinking everything about how teaching works
	Increases in Workload	"it just felt like there was something due all the time"
	Limits on Communication	"I can't reach them because they won't respond"
	Changes in Interaction	"it was more difficult to talk to them…made our connections, just less meaningful"
	Consistency & Connection	"transition…was extremely smooth and is similar to how she used to teach us"
	Technology & Accessibility	Recording lectures and providing resources

CHAPTER V

REFLECTION AND DISCUSSION

Reflecting on the Study

The purpose of this action research study was to investigate the ways in which faculty-student interaction impacts well-being for both faculty and students. The impetus for the project was born out of several years of personal struggle and challenge for me, the researcher. I had gone through several family and personal traumas and the great loss of my spouse, all while being a student in a doctoral program and a faculty member at a university. These experiences showed me how difficult it can be to continue on as a student when home life is so challenging. At the same time, I understood how challenging it can be to carry on as a faculty member, supporting one's students, and bringing inspiration to the classroom when one's personal life is overwhelming and consuming of almost all time and energy. I also experienced firsthand how a good network of support, both in personal relationships and in a work community, can buffer the challenges life can throw in one's path. My personal journey through both struggle and gratitude brought my attention to the ways in which my colleagues and my students m be experiencing challenges with their work/life balance or support through community when they face personal challenges.

At the same time, I was driven to investigate the regular business of the university and the more typical student-faculty interaction to better understand what practices and behaviors were serving us well and which ones can be improved to better support faculty and students on campus, i.e., not all about personal tragedy.

As it turned out, my semester of data collection was Spring 2020. Everything started out normally—the typical cycle of returning from the holidays to begin a new semester of teaching and learning. The news of a novel virus circulating in China did not set off any real alarm bells in the United States or on RMT campus as the semester began, but by early March, as we were all gearing up for the midterm and the Spring Break that was to follow, the campus shut down along with most of the rest of the country. As of March 13, the campus closed for two weeks to allow faculty time to prepare for remote instruction, which ate up the break we had been anticipating. Students hunkered down in their local apartments or packed up to return to hometowns across the state, nation, and globe, and spent their spring break trying to determine how they would be learning for the rest of the semester.

Although it was not my intention to gather data both from in-person classrooms and via Zoom sessions, that was the turn this study took after COVID-19 shuttered buildings and canceled plans. It was interesting to be able to look at my research questions from both before and after this shift in global attention. The change provided some perspective and provided a mutual hardship that faculty and students were all facing together. At the same time, we were all facing the challenge alone in our own ways. As a result of the new modes of teaching and learning in the second half of the semester, I added an additional research question to my analysis of the data so I could reflect on what the pandemic added to our perspectives on our interactions with each other. The added question six on COVID-19 impacts became an additional layer of data analysis with which I sought to understand what we experienced and learned from remote learning and isolation so I could incorporate this knowledge into the action steps that come at the end of this chapter.

Answering the Research Questions

In order to learn more about how faculty-student interaction impacts well-being for the students and my colleagues at RMT, I posed the following questions:

Q1 What are the qualities of faculty-student interactions and relations that support care and well-being?

Q2 What intentions do faculty hold for their interactions with students?

Q3 How do students perceive faculty intentions and interactions?

Q4 What intentions do students hold for their interactions with faculty?

Q5 How do faculty perceive student intentions and interactions?

Q6 How did remote learning during COVID-19 shutdowns impact faculty-student interaction and faculty and student well-being?

As mentioned in Chapter IV, the data analysis began with Research Questions 2 through 5, focusing on the intentions and perceptions of faculty and students as they interacted with each other and approached the semester in relationship to one another. As I described the observed curriculum and how intentions were realized or unrealized, much of that discussion centered on the impacts of COVID-19, so question six was represented there. I ended Chapter IV with a lengthy discussion of the data pertaining to research question 1, describing what is supportive and unsupportive for faculty and students in their interactions. This chapter reviews each of the research questions, making arguments about the findings overall and connecting to theory and research as I cover them. The conclusions I draw from examining the post-COVID remote learning practices on campus also led to interesting insights about how we can better function in our interactions moving forward. There has been great suffering and turmoil in the United States and throughout the world during this time and many seek to find lessons we can learn and changes we can make to our way of life so we gain some benefit from these trying times. After

the direct answers to my research questions, I continue with discussion about the potential impact of these findings on higher education and STEM programs in general, proposing how my findings might propel new ways of thinking. I relate my thinking to research and theory as I discuss how we can envision care and interaction in higher education. Finally, I end the chapter with the action steps I plan to take and propose future research opportunities in this field.

Research Question 1

Q1 What are the qualities of faculty-student interactions and relations that support care and well-being?

Noddings (2005) argued that "there is no recipe for caring" and we have to pay attention in order to give care. Since "caring is a way of being in relation, not a set of specific behaviors," we must pay attention to both the carer and the cared-for (p. 17). The data for Research Question 1 showed that faculty and students described ways in which they had felt cared for and uncared for—in other words, supported or unsupported in their well-being. Faculty defined instances of feeling either supported or unsupported that fell into four categories: institutional, personal, temporal, and interpersonal factors. Students reported that the qualities and actions of faculty can make them feel cared for or uncared for, and that types of interactions can be either supportive or unsupportive of their general well-being. These findings connect with some of the research on care, gender ethics, and student-faculty interaction in higher education; I highlight those connections here.

In terms of positive interactions, students and faculty benefit from the relationships and connections that are supportive of their work in the university and of their personal well-being. In other words, caring relations, a concept delineated by Noddings (2005) and Held (2006), are mutually beneficial. Noddings helped us understand caring relations as she described the necessity of both a giver and a receiver of care: "A failure on the part of either carer or cared-for

blocks completion of caring and, although there may still be a relation—that is, an encounter or connection in which each party feels something toward the other—it is not a *caring* relation" (p. 15).

Student and faculty participants acknowledged both the benefits of receiving care and the drawbacks of being uncared for, emphasizing the importance of examining both sets of interactions in higher education. For example, a student said this about receiving care:

> When I was going through a hard time with my anxiety, I opened up to a professor about it because it started to impact my grades and he helped in supporting me by giving me resources and told me about the kind of accommodations I can receive which has helped me be more vocal about my needs as a student.

On the other hand, another student described an incident with their safety on campus that was impacting their work and their mental health. While some professors were accommodating and supportive, in another class, the student said, "I had no other option but to take an exam I was fully unprepared for, causing my grade to slip beyond what I could come back from. He told me that out of class issues are no excuse for not keeping up."

Held (2006) argued that "caring is a relation in which carer and cared for share an interest in their mutual well-being" (p. 35). Noddings (1984) also indicated that being supportive to each student individually need not be all-consuming, but it should be given priority in the moment: "What I must do is to be totally and non-selectively present to the student—to each student—as he addresses me. The time interval may be brief but the encounter is total." (p. 180). Noddings emphasized that even the smallest interaction can have a huge impact and we must be aware of that impact as faculty.

Held (2006) also articulated that "relations between persons can be criticized when they become dominating, exploitative, mistrustful, or hostile," which is what students reported about unsupportive faculty interactions and faculty indicated was a problem when it comes to institutional factors that negatively impact their well-being (p. 37). Unsupportive faculty actions and behaviors are the focus of Hawk and Lyons' (2008) study about the ways in which faculty give up on students and the impact that can have on the well-being and academic performance. Hawk and Lyons cited Buttner's findings, which indicated that when students are not treated with care or respect, many of them report accounts of how their self-esteem suffered and how their behavior toward the course and the instructor changed. Many said they declined to participate in class discussions, came late or left early, missed class, dropped the class, or did a combination of all these behaviors (Buttner, as cited in Hawk & Lyons, 2008, p. 333).

If student actions and well-being are significantly impacted by professor behavior, we can pay more attention to this in all of our interactions. Sevenhuijsen (1998) discussed the caring actions we take as "an ability and a willingness to "see" and to "hear" needs, and to take responsibility for these needs being met" (p. 83). This ability to meet needs is the responsibility of a teacher and is made more difficult in a remote learning environment and when the numbers of students a faculty member is responsible for is larger and larger. It is also clear that a bad day for a professor can translate into deep impacts for a student, even when there is no intention to ignore or misinterpret a student's needs.

Research Question 2

Q2 What intentions do faculty hold for their interactions with students?

In Chapter IV, I described how faculty answered questions about their intentions for teaching and connected those intentions with their personal experience as college students.

Several categories of responses were explained: faculty hold intentions on how they teach, how they want to be seen, and how they want to show values in the classroom. In Knobloch's (2004) study on "Exemplary Teaching Professors' Conceptualizations of Care," he found that "the professors' wisdom of practice emerged into two groups of conceptualizations of pedagogical care: (a) caring about student learning, and (b) caring for student development. The first group's conceptualization of pedagogical care was instrumental. The second group's conceptualization of pedagogical care was relational" (p. 41). These categories also emerged in my study. Faculty described situations in which they sought to support students' academic success (instrumental pedagogical care) in one-on-one meetings, working with groups during class time, providing alternate explanations, and giving advice on courses of study and professional opportunities. Faculty also described their interactions in which they aimed to provide personal, developmental support (relational pedagogical care) through building relationships in office hours and research groups, asking questions about their well-being and extracurricular interests, and paying attention to all aspects of the person as a whole human being.

Approachability is one of the main qualities that faculty articulated their intentions to achieve. Hagenauer and Volet (2014) reviewed the ways researchers discussed approachability and its benefits. Not only does this quality lead to "positive teacher-student interactions," but it also contributes to feeling connected to the university and feelings of belonging and helps first-year and first-generation and low socioeconomic status students adapt to college (Hagenauer & Volet, 2014, p. 378). Hagenauer and Volet also noted that approachability is not firmly defined. The term can be seen as either instrumental or relational, or both, and can be explained by students in different ways but students identified this quality with positive impacts. When students cannot approach a professor, they say things like this: "I always felt uncomfortable there

for some reason, as if I wasn't welcome." On the other hand, when students feel like they can approach a professor for academic or personal reasons, they notice that support. One student said it is clear Danielle "wants to foster a safe, challenging, and engaging learning environment" and "wants us to do well academically and personally." Overall, what I noticed about faculty intentions is that many of the behaviors faculty want to show and that students want to experience from their professors are caring practices. They are practices that comprise typical expectations from teachers of any kind—engage with students and teach material, but also notice and respond to individual needs of students.

Research Question 3

Q3 How do students perceive faculty intentions and interactions?

Students perceived faculty participants as having good intentions and being helpful, supportive, quality teachers as a whole. Even in the questionnaire where students were anonymously reporting on their experiences, faculty participants were explicitly praised and other faculty outside of the study received accolades from students. At least a dozen of the 73 respondents wrote they did not have an example of an unsupportive faculty member to share and 3 of the 16 interview/focus group participants said the same. There were also reports of poorly executed teaching and negative behaviors of faculty on campus and those stories, while fewer in number than the positive ones, deserve perhaps more attention because they point us toward areas of improvement. In particular, rude and dismissive comments to students, withholding resources or answers to content questions, and demeaning student needs and experiences were the most egregious behaviors noted by students. However, Stanton et al. (2016) explained that students reported that "experiences of feeling connected with both classmates and instructors could help them overcome fears and insecurities, allowing them to participate more fully in their

learning experiences." (p. 93). This finding shows that our continued growth in understanding of these interaction mechanisms is beneficial to students.

A primary issue that students take note of is the approachability concept introduced in the previous section. Students see professors as highly approachable when they engage in "behavior such as knowing students' names, staying in class to meet with students, saying 'hi' to students on campus, smiling often, and exhibiting warm and caring behavior" (Hagenauer & Volet, 2014, p. 377). On the other hand, professors who are seen as unapproachable are "described by such items as 'talks down to students,' 'misses office hours,' and 'appears bored when teaching'" (Hagenauer & Volet, 2014, pp. 377-378). There is a clear correlation with what my study found to be supportive and unsupportive behaviors of faculty reported in Research Question 1 with these definitions of approachable and unapproachable from Hagenauer and Volet.

Students also talked about two dimensions of support that Hagenauer and Volet (2014) identified in their survey of this field: the affective and the support dimensions. The support dimension has to do with how faculty provide academic and logistical support for student success in their course (for example, responding to students emails to answer questions in a timely manner and giving clear instructions on assignments). The affective dimension "describes the bond built between students and teachers" and perhaps this is the area in which most faculty need more focus or support or time (Hagenauer & Volet, 2014, p. 374). Affective and support dimensions are variations on the theme of instrumental and relational pedagogical care discussed by Knobloch (2004) in the previous section. Students perceived both of these kinds of care in their responses. They noted the importance of the instrumental or support dimension in a professor who "leaves encouraging notes on exams, and ensures students have every opportunity to succeed in his classes." Another student said professors are "trying to

establish a learning environment where I can seek help if I need it and not be afraid to be wrong and ask questions." Students also notice and appreciate the relational or affective dimension. One student with a Title IX case said professors "reached out to me to provide support" and in Regan's mental health crisis, Danielle "made sure [she] got through the class and checked in with [her] if [she] didn't show up for a few days." Both the affective and the support dimensions are important to care and interaction in higher education.

Students also perceive a noticeable difference in the type of faculty with whom they are interacting. A few students commented on the difference between faculty who primarily teach and those who primarily conduct research. Half of the focus group participants mentioned struggles with graduate students in their capacity as instructors for their courses. Some of these student concerns connected to the quality of the teaching from these novice instructors (the instrumental/support dimension). Trent explained his problem interacting with a grad student instructor "who just thinks they're better than you all the time," giving off the attitude that academic questions are unwelcome by implying, "I got through it when I was undergrad. Why can't you?" Others expressed problems with condescending attitudes and dismissive actions by graduate student teachers (the relational/affective dimension). Holly gave an example of a graduate student TA who was "just extremely disrespectful in terms of interactions, like answering questions in a really condescending way".

Another perception of students that is perhaps neutral but that also can impede faculty-student interaction is the issue of time and availability. Students perceive faculty as very busy, and likely not available to them because of other demands on their time. Research by Jaasma and Koper (as cited in Hagenauer & Volet, 2014) showed only 50% of students ever attended any office hours and these exchanges lasted only a few minutes. From the students'

perspectives, they questioned whether professors were interested in interacting with them, perceived faculty to be under high time pressure, and were unclear if they would receive any benefit from these interactions. Beyond these perceptions, students were aware of the negative costs associated with a bad interaction with faculty—if they were put down or dismissed, that left a lasting negative impression. Students were also less likely to visit other buildings as the separation of spaces had a big impact on their motivation. Some students also reported preferring to remain anonymous to the possible spotlight on their behavior that could come from interacting with faculty (Hagenauer & Volet, 2014, p. 381).

Finally, I again mention the carer and the cared-for in this section. As Noddings (2005) described the cycle of caring, student perceptions are of the utmost importance—"no matter how hard teachers try to care, if the caring is not received by students, the claim 'they don't care' has some validity. It suggests strongly that something is very wrong" (p. 15). There are myriad problems with student evaluation of teaching, one of which is that data is typically gathered at the end of the semester, long after any changes can be made. They are much too correlated to racial and gender biases and student performance in the course. However, higher education could do better to hear and respond to legitimate student concerns about teaching that are too often swept under the rug or overcome by research prowess. Especially when student evaluations identify uncaring or even cruel behavior, we owe it to students to follow up on their concerns while protecting faculty from unwarranted persecution or slander.

Research Question 4

Q4 What intentions do students hold for their interactions with faculty?

In this study, student participants described their intentions to present themselves to faculty as respectful and committed to learning, as independent and competent. They told me

they seek encounters with faculty that are both a good use of time and that are friendly. Their reasons for interacting with faculty were primarily to ask questions on course content, but they also reported wanting to achieve a particular purpose and to build rapport with faculty when possible.

Stanton et al. (2016) reported in their literature review that they "did not find any articles that explicitly aimed to explore students' own definitions of and experiences with well-being in higher education learning environments" (p. 91). Therefore, their study sought to ask students to talk about their definitions of well-being and how they engage with faculty in their courses. While this is not the same as asking students about intentions as I did in the present study, there were some findings that shed light on what students want to achieve. Stanton et al. found "students also described how a positive relational rapport with the instructor and their peers could enhance their engagement, satisfaction and deep learning in class" (p. 94). They identified three areas of concern for students which they called pathways to well-being, namely "experiences of social connection and learning in 'relation'; experiences of participation and flexibility; and experiences of making a real and valued contribution" (p. 93). This list of categories described by Stanton et al. provided a window into student thinking about their well-being and showed a merger of the intentions for interaction that students shared with me in this study and a rationale for why they want to make these efforts. Students intended to be involved with other people in their classes—both faculty and fellow students. They intended to participate actively in their courses and they appreciate the flexibility faculty can provide to support their needs. Finally, they wanted to be part of practical and meaningful work that applies to their lives and career goals, so they seek connection to faculty who can support them in these efforts.

Research Question 5

Q5 How do faculty perceive student intentions and interactions?

In my analysis of the data for this study, faculty reported that they perceive students with a variety of characteristics: respectful, resistant, stressed, insecure, understanding, and hesitant, to name the most prominent. They also described types of interactions that students engage in that fall into two categories—interactions that produce benefits for students and those that create problems for them. Gandhi-Lee, Skaza, Marti, Schrader, and Orgill (2015) also studied faculty perceptions of STEM students, specifically asking them what factors contribute to student success in STEM programs. They found students need positive attitudes, a desire to learn, curiosity, and problem-solving skills. Students also need to engage with the material and the people in the courses, all factors that are personality traits and general behaviors, not discipline-specific skills. Gandhi-Lee et al. also reported on the findings of Sullins, Hernandez, Fuller, and Tashiro (1995) who "describe general student/faculty contact as being beneficial to students' persistence in STEM" (p. 31). Other research delineated three specific types of faculty interactions with students that impacted persistence and success in STEM programs: classroom interactions, research interactions, and mentoring interactions.

Faculty in my study agreed with the general findings about interactions that help students succeed and also mentioned interactions that lead to struggle and failure. Faculty reported that some students are engaged while others are disengaged, some students seek help and others disappear and drop out. Some students present to faculty as independent and others appear as coddled or lacking resilience. In terms of one-on-one interaction, some students clearly benefit from office hours, whereas others prefer to struggle on their own or come in but do not use the

support to follow through on succeeding in the course. Some students understand the busyness of faculty, whereas others seem to demand more time and energy than is available.

Research Question 6

Q6 How did remote learning during COVID-19 shutdowns impact faculty-student interaction and faculty and student well-being?

When students and faculty reflected at the end of the semester about the impact of COVID-19 shutdowns on their interactions and well-being, they described the drastic changes in interactions—no face-to-face interaction, more recordings, copious Zoom meetings—and the increase in workload, both from expenditure of energy and additional tasks. We noticed both more and less communication—seemingly endless emails and announcements and also isolation and detachment from others. There were additional concerns about cheating and accessibility, while new pedagogies emerged alongside traditional processes and methods translated to a digital transmittal format.

What was interesting about March, April, and May of 2020 is that there was increased focus on health and well-being as much of the world was gripped in fear about COVID-19. Because we turned our attention inward and drew our immediate family and personal needs closer, we realized the needs of others in new ways. We began to see more in the news about the physical and emotional struggles of our fellow humans. Sickness and death due to COVID-19 topped the headlines, but we also heard more about all manner of human suffering: isolation, depression, anxiety, marital/partner/family struggles, parenting stressors, work-life balance challenges, economic pain, and poverty of all kinds—struggling to make ends meet, food insecurity, lack of support networks, and more. Of course, all of these problems existed long before COVID-19 entered the picture, but we had also created many systems for overlooking or downplaying these problems, especially in our external, public lives or in academia, for example.

Now, in the age of COVID-19, our attention was drawn to many of these human struggles in new ways. Any problems we had before the onset of the pandemic were intensified and new ones emerged. There had always been barriers to good teaching and interactions, but those were now brought into stark relief. With personal relationships and hobbies canceled or postponed due to the pandemic, there was added stress put upon everyone too.

The Chronicle of Higher Education (Williams, 2020) reported about the shift to remote learning, the shuttering of campuses, and the impact on faculty and students as events unfolded in 2020. Some of the observations match the responses of students and faculty in my study. One of the most basic aspects of the switch that impacted students was internet and technology access: about one in five students lacked consistent access to reliable technology (Williams, 2020, p. 11). Kornbluh (2020) argued that "faculty members, already stretched thin, are being asked to do more" (p. 44). Specifically, as Kanuga and Dhillon (2020) explained, faculty were being asked to

> skill up overnight; simulate face-to-face classroom interaction through a zoom screen; be flexible and responsive to needs as they come up, while still putting "productivity" and "efficiency" first; divert all our efforts to seamlessly making the shift to the new feel as much like the old as possible. In short, we've been asked to do the impossible: to maintain the university's status quo as the world breaks apart. (p. 22)

Kanuga and Dhillon articulated a thought I have had many times throughout the pandemic: why are we being asked to "tend to the university's economic health over the health (economic, psychological, and physical) and flourishing of our students, our communities, and ourselves" (p. 22)? These authors speculated that the pandemic offers an opportunity to reject systems that had been stifling us and embrace new ways of being. This is a chance for "questioning the long-

standing barriers to cultivating holistic connections with our students and colleagues. We are not just unattached teachers anymore—and, in fact, we never were" (Kanuga & Dhillon, 2020, p. 22).

Both students and faculty were negatively impacted by the lack of face-to-face interaction and mentioned these shifts in their responses to me. Shawna said, "On the whole, it was not a good switch for keep maintaining interactions. I mean, they just went down." This lack of interaction was disappointing and frustrating for several reasons and Tom pointed to one of the most crucial. He said he was meeting with students via Zoom, one-on-one, but there was "a longing in all of [these interactions]" that "both parties want it to be different or more or something, but we also know that it won't be and can't be." It makes sense that these changes in interaction made us feel a lack and made some of us feel badly. Bubeck (1995) pointed to the necessity of in-person interaction for caring in this definition:

> Caring-for is the meeting of the needs of one person by another person, where face-to-face interaction between carer and cared-for is a crucial element of the overall activity and where the need is of such a nature that it cannot possibly be met by the person in need herself. (p. 129)

This observation about caring explains why we felt so alone and confused during these early months at home and throughout the isolation of the pandemic. We cannot meet all of our own needs without live interaction.

It was also common for students to comment on the need for flexible options during this time. It is always true that students benefit from accommodation when they are struggling with a challenging life circumstance, and now all of us were in one of those circumstances. Stanton et al. (2016) described the importance of accommodating faculty: "Students gave numerous

examples of how their professor's willingness to adapt and be flexible to their needs and challenges could minimize their experience of stress and make it easier for them to focus on learning the class material in a deep and meaningful way" (p. 95).

What we do not see represented in Stanton et al.'s (2016) research is the need for flexibility and accommodation on behalf of the faculty and administration implementing these changes. To be sure, most faculty and administrators would choose to be of service in this way, as meeting student needs is their job, but there was a certain lack of care toward these individuals as well. In a recent piece in *Scientific American*, Langin (2021) highlighted key quotations from the National Academies of Science, Engineering, and Medicine's (NASEM, 2021) study on COVID-19 impacts on female faculty in which women of different ranks shared their experiences of living through the pandemic. An assistant professor reported, "There's a major increase in stress and anxiety as I feel like I'm working more/harder and accomplished less. This stress has taken a serious toll on my personal well-being" (NASEM, 2021, p. 45). A senior lecturer reported that she was "pulled in too many directions and spend[s] 2–3 times the amount of prep time on lectures and materials" (NASEM, 2021, p. 57). An associate professor said, "As a professional engineer working in academia, and single mother of three girls, the pandemic has radically changed everything. … I simply do not have the mental bandwidth to be a full-time homeschooling mom, housekeeper, instructor, researcher, and family member" (NASEM, 2021, p. 48). The NASEM found "the COVID-19 pandemic had overall negative effects on women in academic STEMM [Science, Technology, Engineering, Medicine, and Math] in areas such as productivity, boundary setting and boundary control, networking and community building, burnout rates, and mental well-being" (p. 158). As I write this, a year into the pandemic, many

faculty and administrators, both female and male, still have not truly gotten a break or a chance to recharge from the upheaval and often trauma they have experienced during this time.

Theoretical Connections for Care in Higher Education

In reflecting on my research questions and how they connect to other researchers' findings, several conclusions came into focus for me. The main conclusion was a need for more focus on care in higher education, in particular, care that is directed toward the mutual well-being of faculty and students. Several elements can contribute to the implementation of research findings on care that will be discussed in turn in this section. We need to find ways to value and support faculty-student interaction and teacher-student relationships; one way to do this is through feminist pedagogical practices and implementation of equitable hiring and compensation for all levels of faculty. Curriculum is another major area ripe for reform in higher education, and these changes can be motivated by an understanding of types of curriculum that are rarely discussed with regard to college education. Hidden, complementary, and shadow curricula can teach us much about what students experience outside of their performance in academic subjects. As part of curricular reform and investigation, faculty can make better use of technology and resources for their students, and college administrators can do the same for faculty. Finding more concrete ways to value good teaching and root out poor teaching practices can help eliminate the lack of care and foster reciprocal respect, understanding, and empathy. Finally, I talk about a model for the flow of care from the institutional level to the personal level and back out to the community level. I explore the ways that we can conceptualize care in higher education in such a way as to promote well-being for all parts of the community.

Definitions of Care: "Care-Less," "Care-Full," and Care for Well-Being

Mariskind (2014) reviewed care research in higher education and pointed out that both faculty and students "consider caring to be important," but "care is a disregarded aspect of university teachers' work," "and what is meant by 'care' is not often made explicit" (p. 306). One can find direct disagreements about care in university settings, as some faculty "regarded it as 'unnecessary' and even 'harmful,' reporting that they did not want to coddle students"; whereas, other faculty valued "a safe environment" and "positive opportunities for interaction" (Hagenauer & Volet, 2014, p. 376). In this section, I review some popular and novel conceptions of the meaning of care and later in the chapter, I define how we can bring different definitions to bear on faculty-student interaction in higher education to support faculty and student well-being.

Most discussions of care in higher education cite definitions of care ethics based on the thinking of Nel Noddings, cited frequently throughout this text, and Carol Gilligan (1982) and Joan Tronto (1994), both of whom I briefly introduce here. Gilligan developed the notion of an ethic of care as a response to Kohlberg's stages of moral development based on an ethic of justice, and she explicitly connected care to her studies of women. Her work has been both criticized and praised for focusing on women, but it is clear that Gilligan introduced the ethic of care and other thinkers have been building on her ideas since. Tronto's model of caring relations has been often referenced to illustrate the different roles we can play within a care relationship. Hawk and Lyons (2008) elaborated that "for Tronto (1994), caring is 'a practice and a disposition' composed of the elements of attentiveness, responsibility, competence, and responsiveness found in the context of caring about, taking care of, caregiving, and receiving

care" (p. 320). Tronto (2013) later added a fifth aspect of care she called "caring with," which connects to broader social and institutional efforts toward care. The key elements of "caring with" are the trust developed over time when one can begin to rely on care to be given and the solidarity derived from the recognition that working together on care is more effective than caring in isolation.

Mariskind (2014) also described communal care, care-as-activism, care for oneself, as well as pastoral care and pedagogical care, all of which had an impact on my thinking in this text. Communal care is determined by cultural context and is connected to society and justice. On a campus, we might experience communal care through efforts to reduce energy use and waste streams or in campus-wide efforts to reduce the stigmas about mental health. Care-as-activism is defined by care that aims to "change existing academic practices," such as advocating for new pedagogy to better meet the needs of diverse learning styles or establishing a mental health absence policy (Mariskind, 2014, p. 312). Care for oneself, taking care of one's own physical, emotional, and psychological needs, is a basic principle that can easily be overlooked within capitalistic institutions because there is a drive to always do more, to compete more vigorously, and to push through pain or struggle. However, forming healthy care practices and personal boundaries can be the very resources required to thrive within such systems and institutions. Mariskind also delineated the differences between pastoral and pedagogical care, yet another dichotomy related to the instrumental/relational and the support/affective types of care discussed earlier in this chapter. Pedagogical care is "relating to teaching and learning" and pastoral care is "relating to personal well-being of students, colleagues or oneself" (Mariskind, 2014, p. 311). One might show pedagogical care by creating deadlines that do not conflict with other exams or with breaks or by seeking student feedback on their preparation for a project,

meeting one-on-one with students who are struggling. One might show pastoral care by asking after colleagues and students who have been ill or by modeling meditation practice or good sleep habits for students. Sometimes pedagogical care is linked to pastoral care: for example, giving academic support while showing concern for the emotional well-being or other life stressors of a student. Both of these types were mentioned in faculty intentions and student perceptions of interactions they desire.

Held (2006), in her book on the ethics of care, articulated how care is both something we practice and something we value. As a practice, "it builds trust and mutual concern and connectedness," and as a value, we can confer importance to the cultivation of interactions and relations (Held, 2006, p. 42). She made the case that care is central to small units of relations as the basis of any larger scale communities and that "for progress to be made, persons need to care together for the well-being of their members and their environment" (Held, 2006, p. 43). Agreeing with Noddings and Tronto, Held also argued for the expansion of care beyond the personal: "care should be recognized as a political and social value," not just "limited to the household or family" (p. 38). I rely on this concept in discussing institutional care in the final sections.

So far, I have talked about the positive aspects of care, about the relations and the benefits involved with caring practices, but I also want to include an opposing notion. Lynch (2010) argued that there is a base assumption in higher education: that to be successful, one must not have caring responsibilities. She argued that what she called "care-less" individuals are often, but not always, men. She made the case that "care-full" people who do primary care work in their personal lives have a hard time succeeding in academia because "there is a 'care' ceiling operating in the workplace that is as powerful and embedded an exclusionary device as" other

forms of gender or racial discrimination that prohibit individuals from positions of authority in the academy (Lynch, 2010, p. 57). By contrast, "the person without immediate care responsibilities is expected to have total time for the organization, as self-care is also marginalized" (Lynch, 2010, p. 58). While Lynch was directing her argument to faculty and administrators, it is easy to imagine how these definitions correlate to the student experience as well. Students who have responsibilities outside of coursework, whether those are necessary jobs or primary care responsibilities for family members, are at a disadvantage to their peers who are "care-less." The ideal student, in particular the ideal engineering or STEM student, has all their time available to devote to the process of working through the engineering curriculum, and this has serious implications for diversity and inclusion efforts across institutions.

Care Through Valuing Faculty-Student Interaction and Teacher-Student Relationships

Peta Bowden (1997) said caring "expresses ethically significant ways in which we matter to each other" (p. 1). This basic definition emphasizes what is at stake in any important relationship and why care is essential to the study of faculty-student interaction (hereafter, FSI) and teacher-student relationships (hereafter, TSR). Faculty-student interaction and TSR have tended to be studied in higher education literature through lenses of academic success and systemic advantages to institutions. From retention to affinity to the institution to better academic and social outcomes, the benefits for students are multiple. However, Lynch (2010) showed how FSI and TSR are tied to well-being and care:

> Given the fact that much of human mental health and wellbeing is dependent on having supportive and rewarding personal relationships, and that nurturing affective relations are

> central to this, the neglect of care as a subject for research and teaching is a serious educational deficit. (p. 62)

Hagenauer and Volet (2014) argued that TSR should be investigated more because "the need to belong also affects university teachers" such that positive classroom environments and interactions can very well "have positive effects on the teachers themselves (e.g., on teachers' positive emotions)" (p. 371). In fact, they posited that TSR prefigured "excellence in teaching and learning," as we are discovering in the scholarship of teaching and learning, and that there is much more to learn through self-study (Hagenauer & Volet, 2014, p. 371).

In light of this research, I argue that universities must do what they can to encourage FSI and TSR research and support the value of faculty-student interaction and relations, both financially and structurally. Institutions can provide time and space for meaningful interactions that support great thinking, learning, and research across campus. Students and teachers need to be at their best levels of well-being to be able to give the energy to their academic pursuits they require. One way to foster TSR would be to create a system in which students could take courses with the same faculty over a series of classes, either within or outside of their majors, to allow for deeper relationships to be established over time. Faculty would be able to work with more of the same students to establish more robust curricula and more mindful relations and interactions. Cotten and Wilson (2006) suggested several ways to support TSR:

> Given that students and faculty must be present in the same location for substantive engagement to occur, institutions need to keep this obvious fact in mind as they design physical spaces and programs in order to create spaces that are attractive to both students and faculty, and to desegregate respective activities on campus; smaller class sizes, putting classrooms near departments, setting aside student spaces in departments, and

> instituting university programs that bring students and faculty together to the same spaces and places are all initiatives that our findings suggest would increase student–faculty interactions. (p. 515)

In addition to the institution supporting the systems that can allow for time and space for TSR, I also argue that faculty need to reach out to students specifically to offer interaction and relationship. Sometimes, this will take the form of asking questions about specific circumstances of individual students to see what support they need, especially after a notification from student support services or when a student has indicated they are experiencing a difficult time. Other times, faculty can offer increased invitations for their support or even build one-on-one or group meetings into the course planning. Noddings (2005) took this notion one step further and suggested there is a mentoring of care faculty should provide to students: "When we discuss teaching and teacher-learner relationships in depth, we will see that teachers not only have to create caring relations in which they are carers, but that they also have a responsibility to help their students develop the capacity to care" (p. 18). With this idea, Noddings hinted at a trickle-down effect and a cyclical interaction of care that I discuss later in the chapter.

Care Through Feminist Pedagogy in Higher Education

To reach interpersonal and pedagogical goals regarding care in higher education, feminist pedagogy and theory offer concrete paths toward progress. Crabtree and Sapp (2003) explained that "engaging in student and teacher self and mutual reflexivity is central to feminist pedagogy" which brings focus to both individual and community well-being (p. 132). These authors acknowledged that feminist pedagogy often has to work against the traditional patterns of the university, but it also offers freedoms and progress that we will not find within the traditional bounds of the academy. Within feminist pedagogy, there is an emphasis on embracing the

benefits of working together as co-learners and a de-emphasis on hierarchical naming practices and (Crabtree & Sapp, 2003, p. 135). Crabtree and Sapp also highlighted "feminist approaches such as negotiating course assignments and schedules with students, having students facilitate class discussions, and using portfolio assessment of student work to delay the judgment associated with grading" (p. 136). There is definite resistance to rethinking grading practices, because of their embeddedness in the entire system of education, but "traditional schemas of grading include practices such as 'weeding out,' competitive curves, and 'tough' grading" that impede student well-being and even mastery of important material (Crabtree & Sapp, 2003, p. 136). However, grading curves in a feminist classroom are unnecessary if the teaching and performance is better: "within feminist pedagogy…it is argued that the better the teaching, the more empowered the students; the more engaging the course, the higher student outcomes are expected to be" (Crabtree & Sapp, 2003, p. 137). This is not to say that standards should be lowered or content should be changed, but that there is a responsibility on the professor to teach well and to teach all students, not to set an unattainable standard and let students flounder. McMurtrie (2019) reported that in 'gateway classes' in STEM fields, the large sections most everyone takes early in their programs, students can expect a grade lower than their GPA and women do worse than men. For a biology course she reviewed, Black women scored .75 points lower than their GPA and for white men, it was .33 points lower. Despite these inequities, administrators can put pressure on faculty to produce certain traditional grading curves and bemoan the flawed concept of grade inflation. But teaching is not a zero-sum game: we can teach rigorous content without creating unachievable standards.

Gender Dynamics of Care:
Contingent Faculty and
"Women's Work"

Following a section on feminist pedagogy, it is important to address gender dynamics of care work and emphasize that these proposals are directed to all faculty regardless of gender. However, the gendered understanding of care cannot be ignored. As mentioned above, the ethics of care were developed in response to an overly-masculine ethics of justice that ignored care practices. Bowden (1997) pointed out that there are critics of care ethics who believe that focusing on care in general, and care by women in particular, can be said to perpetuate the patriarchy and subject women to further exploitation by the system. There is validity to this perspective when it is matched with other gender disparities in higher education. For Lynch (2010), "women are care's footsoldiers while men are care commanders" and this issue gets to the heart of power dynamics in the academy (p. 58).

I cannot discuss the issue of gender dynamics in higher education in depth here, but I want to acknowledge the trend of contingent faculty in college and universities, many of whom are women and most of whom are providing much care to university students with little to no care shown to them by the university systems they support. Bowden (1997) called this the "lack of reciprocity in women's practices of care" (p. 8). Contingent faculty cannot rely on the next semester's teaching appointment, nor do they have the possibility to receive health insurance in most places. Weatherby (2020) reported that as of 2018, around 60% of all classes were taught by adjuncts, including graduate workers, which continued to bring attention to the lack of support for many college instructors. This trend emphasizes "the oppressive conditions in which many women's practices of caring occur," and in this regard, "women's caring is seen as a coerced practice on which their survival depends" (Bowden, 1997, p. 8). This is not to say that

adjunct faculty always feels coerced, and again, they are certainly not always women, but there has been an undeniable exploitation of contingent faculty in the current business model of higher education that exacerbates gender dynamics and power relationships on campuses. Classes need to be taught and contingent faculty need jobs and these low-paying, low-benefit jobs will continue to dominate the higher education landscape unless financial priorities significantly shift.

The pandemic has shown us the value and exploitation of contingent faculty in higher education in additional ways. Kornbluh (2020) pointed out that faculty were charged with a "herculean transition" on top of the existing extreme conditions: somewhere between two-thirds and three quarters of college and university teaching is performed by non-tenure-track faculty members or by graduate students, many of whom handle heavy course loads without health insurance and with suppressed wages, housing insecurity, and stifling debt (p. 44)

Part time faculty with no benefits or contract guarantees had to invest just as much time to convert their classes to remote learning as did full-time and tenured professors. Often, those who are paid the least were found to be teaching in the worst conditions as campuses opened for in-person classes in the 2020-2021 school year. Stripling (2021) noted that at Auburn this year, "lower-ranked instructors bear a disproportionate share of the risk of COVID-19 exposure" and "nonwhite and female instructors…are more likely to be in classrooms ill-suited for physical distancing" (para. 1). In addition to these health risks, there were also financial ones. Zahneis (2020) reported that "adjunct faculty members say the pandemic has made them even more vulnerable to money woes, decreased wages, and job loss," all amidst the added pressure to produce more during a crisis (p. 8). Zahneis told the story of one union member adjunct who volunteered her time to train her fellow adjuncts to use Zoom during the transition with no hopes of compensation by the university system. This is precisely the kind of caring work, often done

by female and contingent faculty, that is essential to the operation of the institution, but that tends to go unnoticed or uncompensated by administration. Weatherby (2020) noted that the hiring freezes many institutions announced as the pandemic unfolded can be interpreted as "adjunctification on an unprecedented scale" so it is quite possible that we will see numbers of contingent faculty go up even as faculty size shrinks at many campuses (p. 20).

The issues brought to light by the pandemic returned my attention to the gendered aspect of care work because there is a shared responsibility in navigating what this means for institutions and in thinking through what policies might be required moving forward. Mariskind (2014) asked, "How might care be reconceptualized to break the traditional connection to women and femininity that implicitly excludes men and masculinity?" (p. 306). I share the motivation behind answering this question for higher education, and by the end of her article, Mariskind argued the following: "Care is more complex than simply meeting needs; it involves both reasoned judgment and empathy for others, suggesting that care can be understood as both feminine and masculine" (p. 313). I also want to be careful here about making any assumptions about faculty or students based on their gender at all. Gender and any attributes associated with gender are on a spectrum and should not be considered strictly or in isolation. Demographically, when it comes to accessibility and policy, we might need to consider factors of gender in our decision making, but as I move through the ideas to come, I am working from the assumption that care is a human practice, not solely a feminine one.

Care Through Curricular Evolution and Curricular Freedom

Nel Noddings (2003) argued in *Happiness and Education* that the aims of education need revisiting. She reminded us that Plato and Dewey were both concerned with a certain form of life satisfaction, but Noddings argued that we have moved away from this goal in education. We

need to seek the happiness of individuals more broadly and this should concern all areas of our lives, not merely narrow academic pursuits. Educators have much work to do here, especially in the United States where overall happiness is declining, according to the World Happiness Report (Helliwell et al., 2021). One of the problems, according to Noddings, is that "today's [education] reformers say little about forms of personal well-being that are aimed at neither the country's nor the individual's economic status" (p. 81). I would argue that this issue is even more pronounced in higher education, as it increasingly seems the pursuit of a college degree is for a job and a paycheck only; we are less able to communicate the value of higher education in a different way. Maxine Greene (1995) discussed the "dominating visions and prescriptions" of curricula:

> The formulations of those who talk in terms of curriculum frameworks for curricula oriented to specified outcomes, outcomes spelled out in terms of competencies and proficiencies demanded by the technological society and by the competitive needs of an economic system evidently in decline. The preoccupation with standards, with mathematical and scientific superiority, is so great and so convincing that the old categories, the exclusive structures…are allowed to stand and to remain unquestioned. (p. 217)

Reductive norms and standards are useful for measurements and comparisons, but ultimately, are not beneficial for education. Noddings (2005) explained our traditional notions of curriculum this way: "the desire to reduce all teaching and learning to one well-defined method is part of a larger pattern in science, epistemology, and ethics" (p. 7). Teachers and administrators might be most familiar with this concept expressed as 'best practices," and to be sure, we can learn much from researching teaching and learning. However, Noddings and I critique the trend that "now the demand is that every lesson to be driven by a 'standard' and evaluated on the basis of

whether students meet it. The pervasive goal is control: control of teachers, and students, of content" (p. 9). All of this desire to expect particular outcomes in the same way from everyone assumes homogeneity of the people and contexts of education, which is impossible and undesirable. What students and faculty often seek is more freedom. Freedom has long been associated with university learning, but trends toward seeing curriculum as a product and focus on return on investment pull us away from some of those freedoms. Furthermore, any problems students or faculty are experiencing in their personal lives that are bleeding over into their academic performance are made worse when there is no freedom in curriculum. Greene (1995) argued that traditional disciplines in higher education "must be responsive to changing interpretations of what it is to exist in the contemporary world—at the margin, in the center, or in between" (p. 217). To this end, the disciplines should be seen as contextual and cumulative, as "always open to revision" (Greene, 1995, p. 217). I argue that in the STEM disciplines, where curricula have been traditionally very stringent and focused on highly technical content and skill-based learning, there needs to be more openness to evolving with the changing needs of communities and more focus on students as individuals within the system. Instead, in some cases, the content of required courses becomes more and more compacted as the expected content expands. Bruce put it this way:

> The teacher doesn't have enough control over their own course schedule to be like, "Okay, so we fell behind 'cause we went down this really interesting topic…but now we have to cut out the rest of the schedule because there are five other teachers who are teaching this exact same class and we all have to cover the exact same material on the exact same day, because I can't push the homework out for you guys, because if I push

the homework out for you guys, that means that the other teachers also have to push their homework out."

In this kind of a system, there is no room for answering students' related questions or exploring passions of the teacher or students. Making connections across topics and disciplines is the very nature of learning, especially in higher education, I would argue, so both students and faculty can be stifled within this practice.

Care Through Analysis of Curriculum Types: Hidden, Shadow, and Complementary

As we look toward curricular reform to incorporate care, it is important to consider all aspects of curriculum in those decisions. Here, I discuss three types of curriculum that I believe most impact STEM programs in higher education and are often overlooked in decision-making and course planning: hidden curriculum, shadow curriculum, and complementary curriculum. I want to make the case that these curriculum types offer cautions and opportunities we should consider for enacting change and incorporating care within any system of higher education, and especially for STEM programs.

Hidden curriculum. Hidden curriculum is defined by Jackson (1990) as expectations that "may be contrasted with the academic demands" or "the 'official' curriculum" (p. 34). He explained that "the crowds, the praise, and the power that combine to give a distinctive flavor to classroom life collectively form a hidden curriculum which each student (and teacher) must master if he is to make his way satisfactorily through the school" (pp. 33-34). There are always unspoken rules and lessons students and faculty are learning from the way the system is designed. We interpret hidden curriculum through what we observe as getting rewarded or punished from within the system. In the case of higher education and of STEM programs in

particular, it seems we are inadvertently teaching students and faculty to be extremely stressed, to push ourselves to the limits, often sacrificing elements of personal well-being such as good sleep, quality relationships, recreational activities, and other care responsibilities.

Some faculty and students learn that they have to choose between meeting work demands and giving priority to responsibilities to themselves or to their families. Faculty are under pressure to produce research, teach brilliantly, serve the institution, participate in conferences and research groups, and perhaps, if time permits, take care of oneself. Snieder and Schneider (2016) pointed out that "there is an even more insidious aspect to the pressure that many scientists feel, which is the commonly held belief that no matter how hard we work, *it is never enough*. Or perhaps we feel that *we* are never enough" (p. 6, emphasis in original). The pressures put on faculty are modeled for our students, even if we do not talk about them and try to hide the signs of our stress. Students also can perceive their own efforts to handle the pressure to produce and succeed to be futile when they see through the cracks of the façade. Students have identified this phenomenon as the "culture of suffering" and several interviewees approached this issue in their responses to me. Ellen talked about a friend who hid that she was suffering in silence, telling Ellen, "Oh yeah, I never slept. That's, that's how I finished undergrad is I got maybe three hours of sleep every night." Regan served as a peer mentor and that group has been working on addressing the culture of suffering across campus, raising awareness and seeking change from all aspects of the institution. She told me she feels that some professors are "difficult to be difficult" but the peer mentors' hope is to impact the "trickle down" effect from professors to students. Regan admitted, "It's very easy to fall into" the culture of suffering, almost bragging about how little you slept or how hard you worked, "especially if it's coming from professors." There is an opportunity for growth here, on behalf of both students and

faculty, to reduce the dependence on unrealistic models of workload expectations and a support for sustaining practices of self-care.

In my interviews with students and faculty, other elements of the hidden curriculum mentioned were the strictness of policies, the rigor of curricula, and the challenges of assessment. On the one hand, it is easier to hold the same standard for everyone because accommodations take time and there is emotional energy involved in negotiating differences. There is also the element of fairness: strict rules and systems help level the playing field to treat everyone the same. However, any parent or disability advocate knows that equal treatment of individuals can be quite unfair in terms of access and outcomes: equality is not equity. Students and faculty can both be impacted by unequal treatment and it can impact their ability to have meaningful interactions and experience personal well-being. Van Petegem et al., (2007) explained that

> there appears to be a direct link between the wellbeing of the teachers of academic subjects and the wellbeing of their students. Students who perceive their academic teacher as leading, helpful and friendly score higher on wellbeing, while wellbeing decreases when an academic teacher is perceived as strict and admonishing. (p. 447)

Strict rules and policies are applied as the status quo, so they are also not able to take into account any distress or special circumstances faculty or students might need in a difficult situation. By their very existence, policies discourage people from asking for accommodation, even when it is desperately needed because self-worth and performance expectations are often tied to meeting the expectations of the system.

The rigor of STEM curricula and the phenomenon of weed out classes are additional elements of the hidden curriculum. Students learn quickly which courses and which instructors

are the most difficult and sometimes they avoid such classes when possible. In some majors, there is a strong network of peer support to help each other figure out "which classes you should take with which professors [and] what their teaching styles are like," according to Bruce. For required classes, students can lean on each other and the resources provided by the university to succeed however possible. For others, students have to accept that lots of time will be required because, as Bruce shared, "The number of credits does not accurately reflect the number of hours that were put into the class." Weed-out classes are another issue entirely, though, because they are designed or at least perceived to be intended to cull students from a particular major. In a recent piece for *The Chronicle,* deBoer (2020) said he learned at Purdue that "only one in three students who started as an engineering major would finish with the degree, and that early courses in the major were actually designed to be 'weed out' classes, meant to compel students to drop the major and choose another." At RMT, students attend the institution for STEM degrees, and there are only technical-based degrees available, so if they fail out of a program, they might need to leave the institution altogether. However, it is accepted in many technical degree programs that not all students are intended to make the cut. I would argue that if a student is accepted into a program and the institution begins to charge them money for that degree, there is a certain level of responsibility owed to the student to support them and RMT shares this philosophy, iterating to students that if they are accepted to the school, they have what it takes to succeed here.

Some students are getting the message that cheating is how they will succeed within a strict system. If difficult exams and tight deadlines on papers are part of the curriculum, some students will always plagiarize papers, collaborate on homework, or copy someone's test. In many ways, "a lifetime of schooling has conditioned [students] to see their task as finding an answer that someone else has already figured out, with a good grade being the ultimate goal"

(Supiano, 2020, p. 1). According to Supiano, researchers found the main drivers for cheating were stress and disconnection so faculty and administrators might have more influence over when and how cheating occurs if curricular objectives are modified. If we choose to ignore these issues, cheating under pressure becomes part of the hidden curriculum. Clearly, many courses require testing to understand both student learning progress and efficacy of the course or program. However, teaching through a pandemic brought several issues to light in terms of how assessment is completed in person versus in remote courses. Exams should be able to accurately reflect a student's learning in a course, and it also should be completed in a reasonable amount of time. Stanger (2020) reported on a student who was approached by peers to cheat on homework and exams in the new remote environment and told the professor what was going on. The professor "responded that he would just have to make the exam harder" (Stanger, 2020, p. 46). Students in my study also told me about exams and homework assignments that were made more challenging and more time consuming as a result of other students' cheating. Practical application questions on exams seem to measure learning more effectively but also take much longer to grade for professors, who are already overworked. Tests that are easier to grade electronically can also promote cramming, which does not help students learn. It seems strange to assess what students have memorized on a given day at a particular time in a world where we always can reference the internet, books, and other people as resources. If the written kind of exam is a better measure of thinking and makes students feel better about their learning, then we should make a shift to that kind of exam.

Supiano (2020) discussed the debate between professors about the need for particular types of exams and assessment. There is strong disagreement among faculty about what students need to do to show mastery of particular subjects, and the debate within STEM subjects is

especially wide-ranging. Supiano interviewed a professor who was trying to modify her lab course to prevent cheating by talking about it with students directly. She has found that some students cheat because they are desperate to pass exams and others see using a site like Chegg to be a resource, not a case of academic misconduct. Conversations with students are crucial to navigating the purpose of assessment and uncovering the hidden curriculum that accompanies our current policies and procedures around testing.

Shadow curriculum. Uhrmacher (1997) defined the shadow curriculum as an aspect that "represents a perception meant to sharpen the curriculum imagination" (p. 328). He argued that "any particular curriculum has a shadow that one could observe by reflecting on what the curriculum privileges and what it disdains" (p. 318). Looking for our shadow can produce opportunities for growth in the curriculum so Uhrmacher is inviting us to explore how our blind spots can inform our next moves. In higher education programs of all kinds, there is a tendency to privilege content and expertise and to disdain experience. STEM curricula tend to honor academic rigor and denigrate exploratory play, to prize logic over intuition, and to perpetuate the problematic dichotomy of 'hard skills' over 'soft skills.' What Uhrmacher envisioned for the application of the shadow curriculum to any system was that we seek positive benefits from that which has been previously ignored or downplayed. In this case, STEM curricula in particular and university systems in general can develop a curriculum by investing in those forgotten areas. What would it look like to have a curriculum that is more invested in experience, play, intuition, and the interpersonal values of integrity, communication, and empathy, among others? Of course, I am not arguing that STEM programs and universities in general are completely devoid of these elements, but rather, that they have taken a back seat to what is deemed more important: performance and grades, content mastery, credit hours, and individual prowess or achievement.

There has been an emphasis on the numbers for far too long: that which can be counted and measured and compared becomes the primary value of a higher education, rather than what can be experienced or shared among the people in the system. Many curricula suffer from a detachment not only from the humanities as subject matter, questioning the purpose of those practices and disciplines, but also, sometimes, a detachment from the human and the humane in the operations and goals of the institution. The drive toward more corporate management practices is just a small element of this trend in higher education.

In many ways, I believe what students identify as poor teaching when they talk about feeling unsupported is actually an element of the curriculum's shadow. Students are picking up on what is missing from their experience in the classroom, whether that is meaningful interaction or connection to the material. When the facts and the details are less important than the human interaction in a classroom, there is a disconnect that cannot be bridged and education ceases to happen. We live in a world where anyone can find the information or instruction they seek freely available on the internet, so in order to stay relevant, universities need to invest in the human capital that fosters meaningful interaction. A large part of what makes for meaningful interaction is the element of care that is discussed at more length in the next section. It makes sense that care has gotten lost in the shuffle of the priorities of institutions of higher education, that it has been mitigated by a focus on return on investment for the consumer/student. Certainly, institutions have to succeed financially to keep their doors open, but we also need to make sure we do not let students suffer the consequences of a short-sighted approach. Ultimately, rather than being simply a thought experiment, exploration of shadow curricula can "make curricula educationally stronger, richer, and more meaningful for those they are intended to serve" (Uhrmacher, 1997, p. 327).

Complementary curriculum. Complementary curriculum was defined by Moroye (2009) as "the embedded and often unconscious expression of a teacher's beliefs" (p. 792). While Moroye coined the concept of complementary curriculum to highlight teachers' ecological beliefs in the classroom, there are many ways that teachers can embed their beliefs in their teaching, and we see some of these examples in my study. Complementary curriculum gives rise to opportunities to enhance teaching from within a defined system or offer avenues to reform curriculum at an institutional level. Danielle had structured her curriculum to include the importance of grit and perseverance, showing students how they can benefit from the right amount of struggle with academic pursuits. She also embedded care for the whole student, emphasizing healthy sleep habits and concern for mental health in her teaching. Tom is trying to teach students a way of seeing possibilities in the mathematics field and in the individual learner. He stressed the importance of interdisciplinarity and practical applications of the work and questioning what is known. I value self-care and flexibility by honoring breaks from the standard schedule and asking questions about how the class impacts students' lives and practices. My penchant for feminist pedagogy leads me to engage students in the planning of due dates and defining parameters of assignments.

Care Through Prioritizing Good Teaching

Student participants made it clear that they have had experiences with both great teachers and poor teachers. Caring is not exclusive to great teachers, though: poor teachers can also show care and great teachers might neglect to show care. Institutions can do a better job of assuring that the great teachers are teaching and that excellent teaching is rewarded while poor teaching is modified or eliminated. This means that researchers who do not like teaching or do not do it well should stick to researching. There are already solely research and solely teaching positions

in universities. Faculty who excel at both teaching and researching should be doing both and faculty who prefer or excel at one should be able to choose. Hagenauer and Volet (2014) pointed out that "teaching is just one scholarly activity expected of university educators, with quality research typically receiving greater recognition than quality teaching in the academic community" (p. 374). Investing in teaching that supports students and faculty members will take some shifting in budgeting and policy priorities, but we could ensure that teachers have support and security and aren't overworked to the extent their mental and physical health suffers.

Faculty who are burnt out can lead to students who learn by observation that we should all be working ourselves to the bone. By contrast, faculty who lead by example in valuing mental and physical health set a tone for honoring each individual's well-being within the context of the class. hooks (1994) wrote about "engaged pedagogy" that "emphasizes well-being," meaning "teachers must be actively committed to a process of self-actualization that promotes their own well-being if they are to teach in a manner that empowers students" (p. 15). Ellen told me that their experience with a caring professor made all the difference to their experience in the class and assured them their own health struggles and needs would be respected within that course:

> She was great. I mean, she said, please be patient with me and I'll be patient with you and it was like a reciprocal respect. She said mental health is a priority for me, so if you need a mental health day, it is just like a sick day and we will work out how you can make it up. And she said, I also have health concerns. So if you don't feel good, stay home. There's no reason to risk the health of me or somebody else in the class because you don't feel good. Just tell me.

To some faculty, such a statement to students would seem routine and to others it might break with their understanding of fairness and traditional absence policies that require a "doctor's note," something that is much harder to get for routine mental health challenges or contagious illnesses for which most people do not see a doctor.

Colleges and STEM programs in higher education need to focus on what we have learned from the pandemic, not just about absence policies, but also about how we think about adaptability to and accommodation for individual needs. Hawk and Lyons (2008) suggested that "promoting the well-being of an individual, however, necessarily means understanding the individual's goals and seeing the world as that individual sees it." (p. 323). I am not suggesting that we begin to offer multiple simultaneous modes of instruction because that is what we did during the pandemic. Instead, I suggest we more routinely ask questions about what is effective in our teaching practices and inquire more frequently about individuals' experiences as part of that understanding. We can thrive because we are allowed to be human along the way and are open to learning from each other. Several interviewees mentioned a need for reciprocity of understanding and empathy. Regan told a story of a professor who had been through some health struggles saying, "I think this year we've all learned that we just need to be more empathetic." The need for mutual understanding was a theme we noticed more because of the COVID-19 pandemic as we experienced the shared trauma and the confusion of an unfolding health crisis. The often frightening experience of the pandemic made many people realize we need to open up more and be more supportive of one another. Stress makes work and school that much harder and simply showing up can feel like a chore. This reminds me of Regan's comment that the workload was "supposed to be easier" but "still felt like more," and she recalled thinking "the math isn't adding up." Some people experience this kind of energy depletion every day,

whether we are going through a global pandemic or not. Hardships can occur at any time—a brain injury, a cancer diagnosis, an unexpected financial burden, a sexual assault, a breakup—these things happen to humans and can take faculty and students alike by surprise as they occur. Even positive events can throw off energy levels and the ability to engage, as life ebbs and flows, so accommodation for life circumstances abates these challenges. One benefit Tom noticed about engagement with students post-COVID is that it is easier to ask about difficult, more personal topics than even before. He shared that it is "now a commonplace or more normal thing, getting to the heart of…the more social-emotional aspects of… learning. I feel like that is a positive gain."

Institutional Care Enabling Self-Care

In light of all of these issues, I advocate for an institutional practice of care that allows space for well-being and flourishing for students and faculty. In many times and places in academia currently, I do not think the system itself allows for well-being and care to flow freely among and between all the entities. This section aims to describe how we could begin to shift systems to meet the needs of faculty and students in more robust ways. Mariskind (2014) showed that some faculty suggested they were not properly cared for within the institution and therefore had the potential or the probability to burn out in their capacity to care for students. She noted that "teachers who did talk about institutional support for teaching staff portrayed it as inadequate, suggesting that the care they provide is taken for granted and/or devalued, and raising the question of 'who cares for the carers'" (p. 315). Helping other faculty and students can sometimes help the giver of the care as well, but we need to keep in mind that faculty and students both need to retain enough time and energy for "care for oneself."

The Flow of Caring Model

As I conceptualize institutional care that enables self-care and faculty-student relationships that foster well-being, the model below (see Figure 2) is a visualization that supports my thinking. This graphic emphasizes that there is a greater responsibility to show care in the downflow, from upper levels of the hierarchy to the people below, and for this reason, the arrows are shown as more prominent. However, the graphic also represents a flow of care that runs upward from students to faculty, from faculty to administration, and between students and the institution. I imagine care from administration to faculty and from faculty to students as liquid flowing downstream. As care is received from above, it enables care to flow beyond and below that level. The interlocking cyclical arrows illustrate that once care is given from the layer above, the first thing it allows is support and capacity for self-care. Then, as the segment begins to fill up, it can overflow into the layer below.

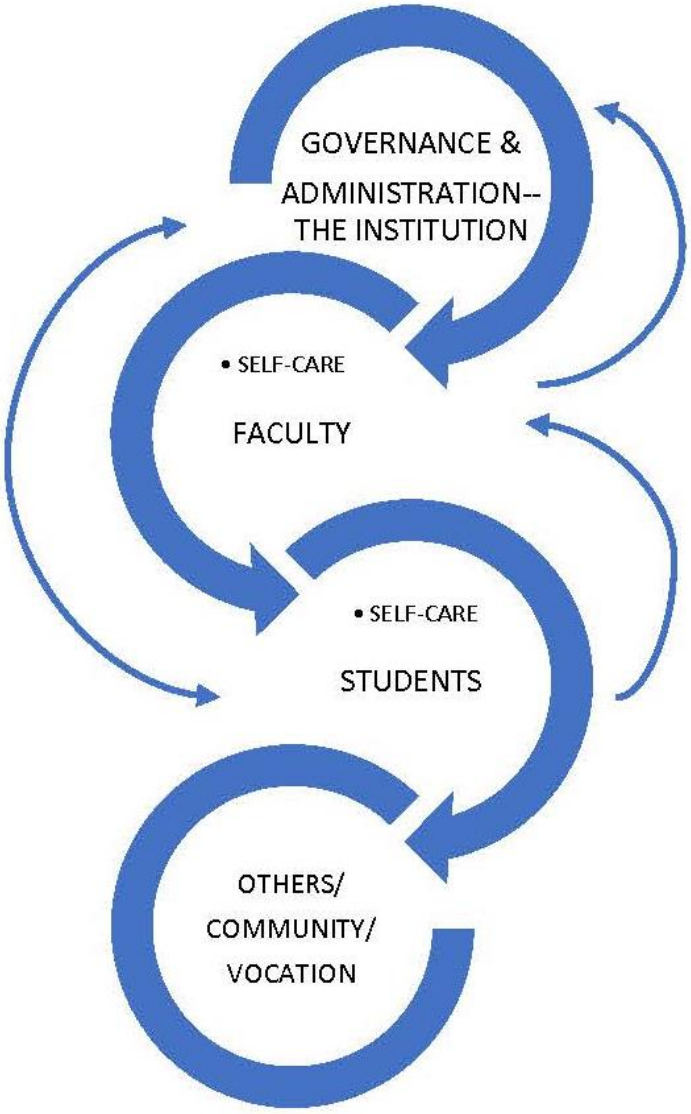

Figure 2. The flow of caring model.

The flow of care visual symbolizes the way in which faculty and students can sometimes be prevented from experiencing care that then impacts their ability to take care of themselves; their well-being can be impacted by the lack of support coming from the layer above. I would argue that it is compulsory or obligatory for governance and faculty to provide care to the layers below them so both students and faculty are supported in their well-being. This kind of a model is also important for conceptualizing the need to care for the external world, our professional

duties, our neighbors, and our environment—all the areas that can be impacted by the members of the institution. Tronto (1994) talked about defining care as "an activity that we do to maintain, continue, and repair our "world" so we can live in it as well as possible. That world includes our bodies, our selves, and our environment, all of which we seek to interweave in a complex, life-sustaining web" (p. 103). We want students to go on to professional positions where they can distribute care and support for their subordinates and also the environment and the citizenry, so we are preparing them for this by modeling the care structure that can exist even within hierarchies and power relationships. Care can flow down from above and can flow out to the external world. hooks (1994) worried about the future of the academy if it cannot resolve its inequities and demands because "students express the concern that they will not succeed in academic professions if they want to be well, if they eschew dysfunctional behavior or participation in coercive hierarchies" (p. 18). In other words, institutions of higher learning must address their members' needs for a sustainable sense of well-being in order to be sustainable themselves.

Finally, as I reflect on visualizing care dynamics in higher education, it is important to consider Noddings' (2005) discussion of the four components of moral education via care ethics: modeling, dialogue, practice, and confirmation. Modeling is important because we can show others how to care by engaging in a caring relationship with them. Dialogue offers opportunities for conversations that seek understanding, not a particular outcome. Practice is included by Noddings here to remind us that we need opportunities to try on perspectives and make mistakes as we learn to embody care. And lastly, confirmation "lifts us toward our vision of a better self" (p. 25). Noddings cited Martin Buber as describing confirmation as "an act of affirming and encouraging the best in others." Rather than setting a universal standard, "we identify something

admirable, or at least acceptable, struggling to emerge in each person we encounter" (p. 25). Striving to implement a care cycle such as the one illustrated in the graphic would bring together the elements of care dynamics and provide a guideline for a stronger implementation of care in higher education.

Defining "Care Modes" in Higher Education

In this final discussion section, I want to imagine how we can begin to apply what we learned from the previous sections. Emphasizing care in all of its manifestations will be a crucial step forward in acknowledging the power of faculty-student interaction to influence well-being. It is not surprising that we have heard more language that expresses care during the COVID-19 pandemic because we have all lived through this shared experience, collectively witnessing and suffering traumas and hardships. We have always had shared experiences in our classrooms and on our campuses and in our culture more broadly, but the pandemic helped us see our interconnectedness anew. The key now is addressing the personal struggles and systemic cracks that were under the surface all along with renewed focus and commitment to caring interaction.

Noddings (2005) reminded us that there is no one-size-fits-all method for caring because "people are not reducible to methods" (p. 8). Since a single approach to care cannot address everyone's needs, I argue that we need to think more deeply about the variety of ways that care is already being shown and being sought in higher education. Then, if we notice that an element is missing or broken, we can work to add or mend it. Blum (1994) coined the concept of "the care virtues," noting that humans express themselves altruistically, not just rationally by exhibiting "the virtues of care, compassion, concern, kindness, thoughtfulness, and generosity" (p. 199). Blum's care virtues shed some light on the variety of ways we express our care toward others but they neglect to explain the dimension of received care in interaction.

My goal here is to define some of the ways that care is shown and care is received, in the same way that Gary Chapman (2015) defined and popularized the concept of "love languages" (p. 1). I want to build on Chapman's concept of love languages, not to equate care with love, but to draw attention to the idea that people tend to give and receive care in different ways, as illustrated by the student and faculty participants in this study. I identified themes and trends in participant responses, but ultimately, there were even opposing ideas, such as preference for a formal versus a casual learning environment, that showed not all people receive care in the same way. Noddings (2005) explained our common need for care as well as our desire for different expressions of care:

> The desire to be cared for is almost certainly a universal human characteristic. Not everyone wants to be cuddled or fussed over. But everyone wants to be received, to elicit a response that is congruent with an underlying need or desire. Cool and formal people want others to respond to them with respect as a touch of deference. Warm, informal people often appreciate smiles and hugs. Everyone appreciates a person who knows when to hug and when to stand apart. (p. 17)

Noddings went on to say that it is in our attention to what others need that true caring takes place. In higher education, we can pay more attention to what might be needed to allow targeted, appropriate care to flow among and between the layers of hierarchy to best support faculty and student well-being. I would argue that faculty can seek to better understand our own methods of caring, how we tend to and prefer to show care to students so that can be articulated. We can also seek more information from students about what they need, in cooperation with student support services and fellow faculty, so we have the opportunity to be more responsive to the care students need to receive.

Students and faculty in this study explained their preferences for a few particular modes of care that I highlight here. This is not meant to be an exhaustive list, but rather an invitation into thinking about care modes in more depth in our own teaching practices and in future studies. Noddings (2005) reminded us that "caring is a way of being in relation, not a specific set of behaviors." (p. 17). Therefore, I do not mean to be reductive in the list I present here but rather to show examples of how these care modes can support positive interaction and increase well-being. One care mode expressed frequently by both faculty and students was *fairness*. Many students felt supported by clear expectations and policies that leveled the playing field for all students, and faculty tended to show care in this way as a means of avoiding preferential treatment to particular students. Somewhat contradictorily, many students also expressed they needed *accommodation* to feel cared for and supported. Accommodation was particularly important for students and faculty who had had mental and physical health challenges or who had to do care work for family or friends. During times of struggle, special circumstances could be a requirement for receiving care. Along these lines, some students or faculty experienced care through *vulnerability* or shared experience, while others explicitly avoided exposure of personal issues, preferring to remain what many participants called *professional,* in this case meaning more formal or detached from the personal realm. Some faculty and students mentioned the support they received from *collegiality*, whether among students, among faculty, or between students and faculty. For these participants, working together was a hallmark of their experience; whereas, for other participants, there was a strong need for *independence* and they needed the time and space to think and work on their own to feel most supported. Finally, specific to pedagogy, some students and faculty worked best through a Socratic, *dialogue-based* approach where there was an open exchange of ideas. Other students and faculty expected and

thrived in a learning environment in which there was a *model-based* approach in which the faculty member gave a model or taught a lesson and the student followed along.

My purpose in presenting these as care modes akin to love languages is to emphasize that there are no "right answers" to how care is given or received in higher education. Rather, these different modes of care allow us to reflect upon our needs and our abilities in giving and receiving care so we can expand our capacity for caring in faculty-student interaction. I believe this is a direct pathway for faculty and students to experience more well-being within institutions of higher learning.

Action Steps and Future Research

Goals for Ongoing Research

This study introduced some themes in how I understand faculty-student interaction and has revealed both gateways and barriers to well-being for faculty and students. My goal is to continue to learn more about these themes as I begin to implement the action steps listed below. It is clear to me that learning more about how college institutions can support frequent and meaningful interaction is beneficial to all parties. One barrier to interaction and well-being is workload for both faculty and students, so I seek to learn more about how we can attain reasonable workload models without relying on excessive counting of tasks and achievements. One element of workload for faculty is class size and this also impacts students' ability to interact with faculty, so I want to continue to learn about the impact of class size. The size of our classes is one of the major connections to budgets and available time of faculty, so understanding these resources better will be crucial. In terms of processes, the evaluation systems for both faculty and students are another important component to understand in order to support any changes in operation. I can also learn more about the policies we implement on missing class or

work, especially in times of crisis and when it comes to mental health absences for faculty and students. Policies that support well-being are a primary gateway to happiness in higher education.

Action Steps for Addressing Findings

My primary action step as the researcher in this study is to continue the conversation with participants and stakeholders at RMT and other institutions. There are several researchers who have conducted similar studies that I plan to connect with in order to share findings and build collaborations. At RMT, I plan to put the stakeholders in conversation with one another, expanding to include additional faculty and students, as well as administrators and student services faculty. I want to foster dialogue and empathy between and among the impacted parties. These conversations might lead to workshops for faculty and student groups that want to collaborate on shared goals. I hope to integrate with student and faculty governance bodies to seek their input and support on expanding the reach of my findings. I will also disseminate my findings to colleagues at other institutions through conference presentations and collaborations between institutions when possible.

In addition to continuing the conversations, I plan to expand access to resources through pursuit of new policies and practices. Building on lessons from the pandemic, I can advocate for relying on resources and accommodating diverse needs. Especially when it comes to mental health, I want to continue to bolster the effort to normalize the use of resources for support in times of struggle. One way to do this is to emphasize reliance on resources even in times of low stress and high well-being. Some students in my study mentioned going to office hours when they were less busy and being unable to attend office hours when they really needed help because their time was stretched so thin. I want to be an advocate for modeling reliance on

support structures and prioritizing my own self-care as a part of my job, not as a secondary element that gets pushed aside when times are stressful. Reducing mental health stigma is an ongoing effort. One piece is normalizing mental health as physical health and normalizing taking breaks to care for physical health. Part of this effort can be integrating mental health curricula and practices into standard coursework, but it can also be accomplished through policy changes. Most significantly, I want to advocate for the integration of policies that support well-being of students and faculty. Trusting students to do what is right for them and not penalizing them for missing a class when they are taking care of themselves is important. As part of this trust, I also want to work to identify and accommodate "care-full" students and faculty so we can distinguish the ways in which their workloads and levels of responsibility are different than those faculty and students who are "care-less" and have more time and energy to give. Currently, those with no care responsibilities set the standard for everyone, making it more difficult for the "care-full" to participate fully. Finally, I want to support the efforts to continue to address the culture of suffering and dissuade people from struggling in silence. A small step toward this is a mental health absence policy that matches the understanding we have that physical health emergencies require one to stay home. Allowing for missed days rather than expecting people to "power through" any illness or hardship is a major shift within certain departments or systems.

Limitations of This Study

There are several important limitations to acknowledge about this study. Five faculty and their students participated in this qualitative study and shared their experiences and perspectives. These experiences and perspectives and the themes I drew from them may relate to some readers, but I cannot presume to represent all faculty and students at all institutions. This study was conducted at a college devoted to primarily STEM degrees which may or may not impact the

experiences of the students and faculty who learn and teach there. RMT may be representative of other institutions of similar academic focus and of larger, broader institutions, but it is also possible that the experiences there are unique to the institution itself. While I was satisfied with the participant pool in many ways, there was a limited scope for the types of classes included and the demographics of the participants. The study was also limited by time frame and the onset of the COVID-19 pandemic. Had the study been conducted in a different semester or over the course of a year or more, the results could have revealed different perspectives and experiences of the participants.

Possibilities for Future Studies

In general, this study raised many more questions for me than I was able to answer, so I hope to have an opportunity to pursue additional research that is born from my thinking here and I invite other researchers to explore these topics as well. One theoretical question that arose in my discussion is the potential connection between the masculine elements of the hidden curriculum in STEM programs and the potential anecdote to that hyper-masculinity as manifest in feminist pedagogy, so this is an area I would like to investigate more deeply.

There are many opportunities for building upon this study and learning more about some of the issues raised by these findings. One major area of concern for both students and faculty is the workload they are carrying. For students in STEM disciplines, this has been an issue over time that is perpetuated because it has always been that way. It is true there is much technical content students must master to become experts in these fields. As a society, we absolutely want our scientists and engineers to be competent. However, curriculum has been slow to evolve and it is time for colleges to look at what is expected of students. Sometimes at the cost of their mental health, they are meeting these often unrealistic requirements. For faculty, workload is

also an important issue because as institutions have had to become more concerned about costs, there is naturally a shift toward putting more expectations on faculty. However, continued increases in workload are not sustainable, and yet, the pandemic did just that. Some fear that the norms established during the pandemic will not abate as we come out of it. It would be interesting to do studies comparing student or faculty workloads between RMT and other institutions or between faculty in different departments. One could compare national trends or uncover issues within a particular institution.

I also learned in this study that students have more complaints about graduate students than their other professors, so it would be interesting to study the impact of graduate student teachers. Also, graduate students themselves are often put in difficult positions as both teachers and students simultaneously. They are getting lots of pressure put on them from above, from their faculty advisors and their departments, yet they also have responsibilities to their own students and their research projects. It would be interesting to investigate the same types of questions on intentions and perceptions with graduate students of all kinds.

Another major issue raised by the study is the problem with cheating in higher education, especially in STEM subjects that are technically difficult and courses that rely on exams for a large portion of the grade. Additional studies on the intentions and perceptions of faculty and students in regard to academic dishonesty might reveal more ways we could continue to improve our practices.

This study revealed some gender disparities in regard to care work and evaluation of teaching to which I devoted some analysis, but which require much more attention in studies specific to these issues. Additionally, I was not able to address any issues regarding students and faculty of color or marginalized populations within the academy and there is much to learn about

interaction among and between these individuals and groups. It will be necessary to know more about the modes of care and needs for care from groups that are underrepresented in higher education in order to make real headway in implementing any of the findings in my narrow study. Studies about faculty-student interaction that focus on marginalized groups are crucial for making progress with the diversity and inclusion efforts many universities and STEM programs are undertaking.

Finally, it is important to acknowledge that this was a narrow study at one institution. There is much opportunity for continuing to look at questions of intention and perception between students and faculty at all sorts of institutions of higher education. It would be interesting to compare liberal arts schools with STEM schools or to compare undergraduates to graduates. There are also many opportunities to control the types of students being included in the study. For example, a more intensive look at freshman students or a more intensive look at seniors right before they graduate could yield interesting results. In addition, several survey instruments have been developed to help better understand the interaction between faculty and students. I had considered using one of them for the study, but I decided to focus on open-ended questions instead. I would be interested to know more about how these instruments could provide additional insight in a mixed methods or purely quantitative study.

Conclusion

As I close this study, it is evident that there is much more to learn about faculty-student interaction and its impact on well-being in higher education. Especially after the COVID-19 pandemic forced changes in course delivery and allowed us to reflect on what we value about in-person interaction, we cannot afford to ignore the negative impacts of low well-being on college students and faculty. We need a language with which to discuss and value care work and the

ways we support one another within the hierarchical university system. Faculty and students alike can suffer from a lack of care and support within the system, but most individuals want to do their best and show each other care. Institutional change in expectations and policies can better support both faculty and students, but there is not one single fix for the bad habits and structural problems that exist, and there is much work to do to make institutions more equitable and supportive for all members. Starting to have conversations between the members of our campuses about care begins the process of learning about each other's needs in order to improve well-being for all.

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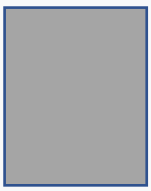
APPENDIX A

QUESTIONNAIRE FOR STUDENT PARTICIPANTS

Survey Questions for Student Participants

Q1 Which instructor(s) do you have a class with this semester?



Q2 How many semesters have you attended [redacted]

This is my first semester	This is my second semester	This is my third semester	This is my fourth semester	I have been at [redacted] 5 or more semesters	This is my final semester
○	○	○	○	○	○

Q3 What is your undergraduate level?

- Freshman
- Sophomore
- Junior
- Senior

Q4 Overall, when you consider your interactions with all the professors so far at [redacted] how would you describe them?

- Excellent: Overall, my interactions with professors at [redacted] are very positive and truly uplifting to my wellbeing
- Good: The majority of my interactions with [redacted] professors are positive and supportive of my wellbeing
- Mixed: My interactions with [redacted] professors are mixed between positive and negative experiences
- Poor: The majority of my interactions with [redacted] professors are negative and detract from my wellbeing
- Terrible: Overall, my interactions with professors at [redacted] are very negative and greatly diminish my wellbeing

Q5 Approximate the percentage of your total interactions with professors that match the following descriptors

Supportive of your well-being; Caring	0
Professional; Emotionally neutral	0
Unsupportive of your well-being; Detached or uncaring	0
Total	0

Q6 Describe an experience of interacting with a professor in which you felt supported, understood, cared for, and/or respected. You can include more than one example if you wish.

Q7 Describe an experience of interacting with a professor in which you felt unsupported, misunderstood, uncared for, and/or disrespected. You can include more than one example if you wish.

Q8 In an average semester, about how many times do you interact with your professors outside of class? (Consider this an approximate total of all interactions for all classes in a semester)

Q9 How do you expect professors to interact with you?

I expect/prefer this | I don't expect/want this

know my name | understand my life outside class | get to know me personally
tell me about their lives outside class | notice when I attend class | act as a mentor
support me beyond classwork | explain problems/concepts clearly | guide me to the correct process/answer
demonstrate the answer | ask me questions to help me discover | challenge me | be aloof
be welcoming | be personable | be funny | be caring | be professional | be friendly | show superiority
show camaraderie | show overcoming struggle | show fallability | show confusion

Q10 What are your intentions for interacting with professors? In other words, how do you try to behave and approach them? What perception would you like them to have of you?

Q15 For the faculty member in this study ([redacted] discuss your perception of their intentions in interacting with you. What does it seem they are trying to achieve in interacting with you? How do you feel about their intentions?

Q13 Tell me about a time when you experienced high stress or low well-being. What was going on with your academic coursework at the time? What interactions with faculty were impactful during this time?

Q14 Tell me about a time when you felt really well and/or experienced very low stress. What was going on with your academic coursework at the time? What interactions with faculty were impactful during this time?

Q16 Recall whether you have ever had a professor who seemed to change their interaction and attentiveness throughout the semester. What was the impact of this change on you? Was the reason for the change explained to you?

Q17 What have you noticed about interaction and care from your professors as COVID-19 changed our habits and processes? How has the shift to remote learning impacted your relationships with and support from professors?

Q18 Is there anything else you'd like to share about faculty-student interaction and well-being at [redacted]? What has been missed in this series of questions? Include any additional comments below.

APPENDIX B

CONSENT FORMS FOR FACULTY AND STUDENT PARTICIPANTS

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO

Project Title: Faculty-Student Interaction and Well-Being in Higher Education
Researcher: Cortney Holles, Department of Educational Studies
e-mail: cholles@RMT.edu
Research Advisor: Christine McConnell, PhD, Department of Educational Studies
E-mail: Christine.mcconnell@unco.edu

Purpose and Description:

For my doctoral research, I am interested in knowing more about the intentions of faculty and students in their interactions with each other within the learning environment and on campus more broadly. I know that my past interactions with my professors and my students have impacted my sense of well-being both positively and negatively at times, so I will be researching and reflecting on my own practices and experiences. I am also curious about the impacts faculty-student interactions have on others at RMT

To learn more about faculty-student interactions, I am framing my study on the following three questions:

1) What are the qualities of faculty-student interactions that support care and well-being?
2) What are the intentions of faculty and how do students perceive those intentions?
3) What are the intentions of students and how do faculty perceive those intentions?

Faculty Participants If you agree to participate in this study, there are three components to your participation.

1) Three 30 minute interviews at the beginning, middle, and end of the semester about your experiences with and responses to the research questions.
2) Three class observations for one course you are teaching. Observations will help me to get a sense of how the classroom runs, noticing what qualities of interactions might be missed by students and faculty participants and will allow me to compare practices and curricula among the faculty in the study. When I attend the class throughout the semester, I will use a recording device to help me review my notes and observations as I analyze the data for the study. These recordings will only be viewed by me unless you also want to review them. Then I will delete them when the study is completed. When the classroom observations are referenced in my analysis, your chosen pseudonym will be used and students will not be identified.
3) Weekly completion of a form tracking your interactions with students and reflecting on them throughout the course. These forms will be used in framing the interview series and can be customized to your goals and needs.

Student Participants I invite your students to participate in this study in two ways:

1) Completing an anonymous survey about their intentions for interacting with faculty, their perceptions of faculty intentions, and their actual experiences of interacting with faculty
2) Attending a focus group discussion with other students to share their perspectives and experiences with faculty interaction. Focus groups will be scheduled for 45 minutes,

twice during the semester, and will be held in a casual setting with snacks. Students will talk with each other in response to prompts related to the research questions above. Focus group sessions will be audio or video recorded for the purposes of transcribing and analyzing the responses. These recordings will be stored on a password-protected computer in my possession, will only be used for transcribing and analyzing data for the study, and will be deleted upon the completion of the study.

Risks and Benefits:

There are no anticipated risks to you in participation in the study, and you may experience a benefit in examining your teaching practices and interactions with students. All information will be handled in a confidential manner. You will choose or be assigned a pseudonym (a false name) that will be used in all recorded data to protect your identity. Interviews will be audio recorded for accuracy in transcribing and understanding the data and you will be invited to review or correct any findings. There is a time commitment of 90 minutes for the interviews, up to 30 minutes per week for interaction tracking.

Participation is entirely voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Sponsored Programs, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-2161

☐ I have read the above and agree to participate in the study.

☐ I do not wish to participate in this study

_____

Printed Name

_____

Signed Name

_____

Preferred Pseudonym

_____

Cortney E. P. Holles, Researcher

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH
UNIVERSITY OF NORTHERN COLORADO

Project Title: Faculty-Student Interaction and Well-Being in Higher Education
Researcher: Cortney Holles, Department of Educational Studies
e-mail: cholles@RMT.edu
Research Advisor: Christine McConnell, PhD, Department of Educational Studies
E-mail: Christine.mcconnell@unco.edu

Purpose and Description:

For my doctoral research, I am interested in knowing more about the intentions of faculty and students in their interactions with each other within the learning environment and on campus more broadly. I know that my past interactions with my professors and my students have impacted my sense of well-being both positively and negatively at times, so I will be researching and reflecting on my own practices and experiences. I am also curious about the impacts faculty-student interactions have on others at RMT.

To learn more about faculty-student interactions, I am framing my study on the following three questions:

4) What are the qualities of faculty-student interactions that support care and well-being?
5) What are the intentions of faculty and how do students perceive those intentions?
6) What are the intentions of students and how do faculty perceive those intentions?

Faculty Participants Your professor has agreed to participate in this study by being interviewed and by tracking and reflecting on interactions with students throughout the course. I will also observe this classroom to compare practices and curricula among the faculty in the study. When I attend the class throughout the semester, I will use a recording device to help me review my notes and observations as I analyze the data for the study. These recordings will only be viewed by me (and perhaps your professor if they choose) and will be deleted when the study is completed. No identifying information about you will be recorded in these analyses. The purpose of the classroom visits is to get a sense of how the classroom runs, noticing what qualities of interactions might be missed by students and faculty participants.

Student Participants I invite your participation in this study in two ways:

3) Completing an anonymous survey about your intentions for interacting with faculty, your perceptions of faculty intentions, and your actual experiences of interacting with faculty
4) Attending a focus group discussion with other students to share your perspectives and experiences with faculty interaction. Focus groups will be scheduled for 45 minutes, twice during the semester, and will be held in a casual setting with snacks. Students will talk with each other in response to prompts related to the research questions above. Focus group sessions will be audio or video recorded for the purposes of transcribing and analyzing the responses. These recordings will be stored on a password-protected computer in my possession, will only be used for transcribing and analyzing data for the study, and will be deleted upon the completion of the study.

Risks and Benefits:

There are no anticipated risks to you in completing the survey or participating in the focus groups. All information will be handled in a strictly confidential manner so that no one will be able to identify you when the results are recorded and reported. Interviews will be audio recorded for accuracy in transcribing and understanding the data. You will choose or be assigned a pseudonym (a false name) that will be used in all recorded data to protect your identity. However, you may experience some discomfort or unease in candidly sharing your experiences about professors or your studies. There is a time commitment of about 20 minutes for the survey and up to 2 hours for the two focus group discussions. You may find some benefit to having your perspective heard and connecting with peers by participating in the study.

Participation is entirely voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Sponsored Programs, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-2161

☐ I have read the above and agree to participate in the survey.

☐ I have read the above and agree to participate in the focus group.

_____

Printed Name

_____

Signed Name

_____

Major FR, SO, JU, SR Preferred Pseudonym

☐ I do not wish to participate in this study

_____

Cortney E. P. Holles, Researcher

APPENDIX C

STUDENT INTERACTION LOG

INSTRUCTIONS FOR USING WEEKLY INTERACTION LOG

Student
For the purposes of the study, student names are not useful, but collation of data on individual students is. For this column, perhaps use initials or number each student you interact with so that future interactions can reference the same number. If you talk to a pair of students or a small group at the same time, write Pair or Group of *x* in this column.

Focus of Interaction
In this column, you can simply write C, P, and/or E to indicate which of the categories below best describe the interaction. You're welcome to write more in the notes section.
CLASS—any interaction that relates to class activities and assignments, intentions or purposes of readings and assignments, questions or comments on the ideas and concepts of the course
PERFORMANCE—any interaction that is focused on feedback or grades, challenging a student to work harder, suggesting they ease up, seek other resources, etc.
EXTRACURRICULAR—interactions connected to campus activities and groups, research projects beyond the scope of the class or program, conversations about personal lives and worldviews, discussions about careers and internships and scholarships

Type of interaction
This column can also be a letter to indicate how and where you interacted. Use **E**mail, **O**ffice, **B**efore, **A**fter, **D**uring class**.** If none of these categories fits, feel free to write in the column or create another category.

Time Spent
Give a rough estimate of the length of the interaction in minutes when possible

Rating of Interaction
This is a space for you to reflect on the quality of the interaction with the student. Key words or numerical ranking are equally welcome. This should simply serve as a reflection on whether it was positive or negative in any noticeable way, whether there are particular qualities of the interaction that are worth note. For example:

- Was the interaction neutral, normal, routine? (perhaps a 0 on the numerical scale)
- Was the interaction exceptional for any of these attributes? CARE = Caring, Authenticity, Respect, Engagement (perhaps a +2 or +3 on the scale)
- Was the interaction frustrating or ineffective in some way, perhaps lacking in CARE? (perhaps a -1 or -2 on the scale)

In considering C.A.R.E. attributes, note that they are each intended to be considered in light of both parties, as a result or part of the interaction. I am interested in whether you display these attributes to students (to be noted in the **F shows S** column), as well as whether students show them to you (to be noted in the **S shows F** column).
CARING exhibiting empathy or care for the other's situation
AUTHENTICITY representing one's ideas and experiences candidly
RESPECT interacting with respectful language, tone, and behaviors
ENGAGEMENT compelling or enthusiastic interaction

Outcome/follow up/comment
This section of the checklist gives extra space for notes or keywords about the interaction and/or its outcome. I am especially interested in whether the interaction requires follow up or further action—this could be a place to list and check off these actions. You can also add general comments here.

Sample Student Interaction Log

STUDENT	**FOCUS of interaction**	**TYPE of interaction**	**TIME SPENT**	**RATING (+,-, neutral)**	**F shows S**	**S shows F**	**OUTCOME/ FOLLOW UP/ COMMENTS**
#, initials, group size	C, P, E (Class, Performance, Extracurricular)	E, O, B, D, A (Email, Office, Before, During, After class	in minutes	Number scale or descriptor	C.A.R.E. terms or other descriptors	C.A.R.E. terms or other descriptors	

APPENDIX D

FOCUS GROUP QUESTIONS FOR STUDENTS

FOCUS GROUP 1

On paper, write about four things:

1) A time when you interacted with a professor and felt supported, cared for
2) A time when you interacted with a professor and felt unsupported, uncared for
3) What are your intentions for interacting with professors?
4) How do you expect professors to interact with you?

Before you go, What was missed in this discussion? Other ideas to add…

During session, ask students to answer the following prompts, speaking to each other and sharing stories rather than talking directly to me.

1) Share stories of feeling supported
2) Share stories of feeling unsupported
3) What are your intentions for interactions?
4) How do you expect professors to interact with you?
5) Talk about how professor X interacts with your class (how do you feel about this interaction? If it doesn't come up naturally)
6) What is most frustrating about interactions with professors?
7) What is most encouraging about interactions with professors?

FOCUS GROUP 2

Have you ever sensed a change in a professor during the course of a class? Something going on outside the classroom? How did this impact the classroom experience?

Specific times professor includes part of personal life or tries to learn about students' personal lives. How do you feel about that?

Differences between college professors and the real world--do internships and job interviewers treat you similarly or different from faculty?

What actions do you take to interact with faculty and how often?

Tell me about a time when you experienced high stress and/or low wellbeing.
    What was going on with your academic coursework at the time?
    What interactions with faculty were impactful during this time?

Tell me about a time when you felt really well and/or were experiencing very low stress.
    What was going on with your academic coursework at the time?
    What interactions with faculty were impactful during this time?

FINAL FOCUS GROUP #3

- What has your experience been like after the shutdown?
    - How did classes go?
    - How did professors react?
    - How did you feel?
- Think about a time when it was clear that a professor was under personal stress.
    - How did this impact their teaching?
    - How did your interactions change?
    - How did this impact your sense of well-being?
- What kind of support do you need or desire from faculty?
    - Tell me about a professor who is getting it right.
    - Tell me about a professor who is getting it wrong.
- How do you reach out to professors for support in your classes?
- How would you define your current state of being?
    - Concerns about classes going forward?
    - Concerns about job going forward?

APPENDIX E

CLASS OBSERVATION CHECKLIST

Class Observation Checklist

Types of behavior	Y/N	Comments
Calling on names		
Smiling and laughing		
Asking about life outside class		
Praising, showing support for effort and struggle		
Mentioning wellbeing or lack thereof		
Personal anecdotes or connection		
Established clear learning goals		
Linked subject to prior learning		
Students appear aware and understand learning goals		
Rubrics or guides provided to highlights/focus on goals		
Closed class with goals/meaning-making		
Pre-assessment helps adjust lesson		
Connected with individual students during class		
Helped develop awareness of one's strengths and contributions		
Involved whole class in sharing/planning/evaluating		
Varied student groupings--individual, groups, pairs		
Multiple modes of instruction, active learning		
Flexible use of space, time, materials		
Gave clear directions for multiple tasks		
Effective rules routines that support individual needs		
Effective classroom leadership/management		
Demonstrated respectful behavior toward students		
Demonstrated sensitivity to different cultures /ethnicities		
acknowledged/celebrated strengths and successes		
Participation by a broad range of students		

Students comfortable asking questions and receiving assistance		
Competition against self, not other students		
Proactive preparation for a variety of student needs		
Attended to students who struggle with learning		
Attended to students with behavioral issues		
Attended to students who are advanced		
Student Behaviors tally		
call out		
Raises hand		
willingly responds		
Student Question		
Professor Behaviors tally		
called on		
correction		
follow-up		
Praise		

APPENDIX F

INTERVIEW QUESTIONS FOR FACULTY

Faculty Interview #1: Beginning of Semester

PURPOSE: get to know you as a teacher and as a student; learn about your intentions for the semester, understand past interactions and expectations for interactions with students

1. Thanks so much for participating in this study. What made you say yes to participation?
2. Tell me about yourself as a college student.
    a. What positive interaction with faculty stands out to you?
    b. What negative interaction with faculty sticks with you?
3. Tell me a bit about your teaching career--why, when, etc.
    a. Have you taught anywhere besides RMT?
    b. Similarities and differences between here and there
4. Tell me about a highlight of your teaching and interaction with students-what is a success story?
5. Tell me about a lowlight of your teaching--what was a particularly difficult moment?
6. What are your intentions for your teaching this semester?
7. What are your intentions for interacting with students this semester? (How would you like to conduct class and interact with students this semester?)
    a. Are these intentions based on past experience--in other words, are you reacting to lessons from previous semesters or trying to replicate positive experiences you've had in the past?
8. What kinds of interactions with students do you value most?
9. What kinds of interactions with students are most difficult for you?
10. What kind of classroom environment do you hope to create?
11. How do you let students know you are here to help them succeed? professionally or personally or both?
12. How do you navigate between showing authority and showing vulnerability?
13. What are your expectations for students in how they interact with you?

Faculty Interview # 2 Mid-semester

NOTE: Only one faculty member was able to meet mid-semester because of the rapid switch to online instruction with Covid-19 shut downs

PURPOSE: Check in with faculty to see how semester is going and dive deeper into their personal well-being now and in the past

1. How is your semester going? Probe on personally and professionally
2. How would you describe your level of well-being now. What contributes to this?
3. Students who are struggling this semester: How do you feel about your interactions with them?
4. Student successes this semester: How do you feel about your interactions with them?
5. How does the recent suicide impact you?
    a. How does it impact your teaching?
6. Tell me about about a time when you experienced low well-being.
    a. How was your professional life impacted?
    b. How was your personal life impacted?
    c. What did you do or what happened to turn the experience around to higher well-being.
7. Tell me about a time when you experienced high well-being.
    a. What was going on with your teaching at the time?
    b. What was going on in your personal life at the time?

Faculty Interview #3 End of Semester

NOTE: These interviews were conducted on Zoom rather than in person due to the Covid-19 pandemic. For three faculty, the final interview included some of the questions from interview #2 as well since those meetings were cancelled for the pandemic. The tone and purpose of the questions for interview #3 shifted to include the impacts of teaching remotely and the differences in interacting with students in that way.

PURPOSE:

1. Tell me how you've adapted to remote learning.
    a. Positive example
    b. Negative example
2. Did this shift impact your hopes for future teaching/plans
3. How did the shift impact your interaction with students?
4. Reflecting back to the first interview, how did your class planning and goals for the semester shift in light of the pandemic?
5. Tell me how you've been handling the Covid-19 pandemic personally
6. Reflecting on interactions with students this semester in general. What have you noticed?
    a. What do you want to increase or continue?
    b. What do you want to change about your practice in light of this semester?
7. How did you let students know you are here to help them succeed post-shut down?
    a. Example of a student who needed support in class/with technical issues/with content
    b. Example of student who struggled personally/mental health/extenuating circumstances
8. What lessons will you take away from this semester about teaching?
9. What lessons will you take away from this semester about interacting with students?
10. Looking forward to fall—how will you interact with students?
    a. What concerns you?
    b. What excites you?

APPENDIX G

INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

UNIVERSITY OF
NORTHERN COLORADO

Institutional Review Board

DATE:	August 30, 2019
TO:	Cortney Holles, M.A.
FROM:	University of Northern Colorado (UNCO) IRB
PROJECT TITLE:	[1468051-2] Faculty-Student Interaction and Well-Being in Higher Education
SUBMISSION TYPE:	Amendment/Modification
ACTION:	APPROVAL/VERIFICATION OF EXEMPT STATUS
DECISION DATE:	August 30, 2019
EXPIRATION DATE:	August 30, 2023

Thank you for your submission of Amendment/Modification materials for this project. The University of Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB regulations.

Hi Cortney,

I am approving your application, however, prior to starting your data collection, please address the following:

1. You need to use the current UNC logo. The one added to your consent forms is the old logo. Please use the one that is on our consent templates in IRBNet. For reference, it is the same logo that is at the top of the modification letter I sent previsously.

2. You can remove the initials at the bottom of page 2 of each of the consent forms. Since this is a signature page, initials are only needed on page 1.

Once you have made the above changes, you are free to begin your data collection. You do not need to resubmit your materials.

Thank you,

Nicole Morse

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Nicole Morse at 970-351-1910 or nicole.morse@unco.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.