2023

ADDRESSING A COHORT DISCREPANCY AMONG NINTH-GRADE STUDENTS AT A RURAL/SUBURBAN HIGH SCHOOL

Bryley Keaton Murphy
University of Kentucky, murphybryley@gmail.com
Digital Object Identifier: https://doi.org/10.13023.etd.2023.058

STUDENT AGREEMENT:

I represent that my thesis or dissertation and abstract are my original work. Proper attribution has been given to all outside sources. I understand that I am solely responsible for obtaining any needed copyright permissions. I have obtained needed written permission statement(s) from the owner(s) of each third-party copyrighted matter to be included in my work, allowing electronic distribution (if such use is not permitted by the fair use doctrine) which will be submitted to UKnowledge as Additional File.

I hereby grant to The University of Kentucky and its agents the irrevocable, non-exclusive, and royalty-free license to archive and make accessible my work in whole or in part in all forms of media, now or hereafter known. I agree that the document mentioned above may be made available immediately for worldwide access unless an embargo applies.

I retain all other ownership rights to the copyright of my work. I also retain the right to use in future works (such as articles or books) all or part of my work. I understand that I am free to register the copyright to my work.

REVIEW, APPROVAL AND ACCEPTANCE

The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Director of Graduate Studies (DGS), on behalf of the program; we verify that this is the final, approved version of the student's thesis including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Bryley Keaton Murphy, Student

Dr. John Nash, Major Professor

Dr. John Nash, Director of Graduate Studies

ADDRESSING A COHORT DISCREPANCY AMONG NINTH-GRADE STUDENTS AT A RURAL/SUBURBAN HIGH SCHOOL

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Education in the
College of Education at the University of Kentucky

By
Bryley Keaton Murphy
Burlington, Kentucky
Director: Dr. John Nash, Professor of Educational Leadership
Lexington, Kentucky
2023

ABSTRACT OF DISSERTATION

ADDRESSING A COHORT DISCREPANCY AMONG NINTH-GRADE STUDENTS AT A RURAL/SUBURBAN HIGH SCHOOL

Ninth grade is a critical period where some children experience academic and social growth, while others struggle to navigate their new context, leading to reduced outcomes at school and worsened physical/mental health (Benner & Graham, 2007; Rice, 2001). This mixed-methods action research (MMAR) study addressed how professional practice changes could better support students during this foundational period. Quantitative data was collected from school databases to compare the rate of student success and identify demographic discrepancies, while qualitative data was used to identify possible causes. These data were then integrated to create insightful meta-inferences into the problem of practice. From these meta-inferences, a professional development was created with faculty input to address the problem of practice. Quantitative and qualitative were collected post-intervention to evaluate the effectiveness of the intervention on the problem of practice.

KEYWORDS: school improvement, social-emotional learning, mentoring, participatory action research, life course theory

Bryley Keaton Murphy
(Name of Student)

04/13/2023
Date

ADDRESSING A COHORT DISCREPANCY AMONG NINTH-GRADE STUDENTS AT A RURAL/SUBURBAN HIGH SCHOOL

By
Bryley Keaton Murphy

Dr. John Nash
Director of Dissertation

Dr. John Nash
Director of Graduate Studies

04/13/2023
Date

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

Introduction

A person's developmental journey is marked by transition; changing schools, birth of a sibling, a friend moving away, all impact a person's life trajectory (Elder, 2003). Ninth grade is a critical period where some children experience academic and social growth, while others struggle to navigate their new context, leading to reduced outcomes at school and worsened physical/mental health (Benner & Graham, 2007; Rice, 2001). This mixed-methods action research (MMAR) study addresses how professional practice changes could better support students during this foundational period. This chapter will provide information on the study and its context, the problem of practice, the general study plan, and ethical considerations.

Study Context

This study occurred at Doc Rowan High School (DRHS), a suburban/rural-adjacent, public high school located in northern Kentucky. DRHS serves several bedroom communities of a greater urban area. DRHS is comprised of faculty which are arranged into academic departments, a four-person administrative team, four guidance counselors, and various non-faculty staff in support roles, e.g., a Youth Services Center coordinator, school nurse, etc. DRHS receives ninth grade students from several in-district and independent area middle schools. Over 90% of students come from Lawrence Middle School (LMS) and Allen Stout Middle School (ASMS).

Stakeholders

Action research studies should involve various stakeholders at every stage of the MMAR process (Ivankova, 2015). For this study, primary stakeholders include the

students, faculty, and administration of DRHS, with students and faculty at LMS and ACMS having a secondary interest in the study.

Students

DRHS serves approximately 1,440 students in grades 9 through 12. Demographically, 87% of students are white (non-Hispanic), with the remaining 13% split among African American students, Asian students, and students of two or more races. 29% of students at DRHS are economically disadvantaged, and 10% have an Individualized Education Plan (IEP). DRHS offers regular and honors versions of most core classes and students can also apply to unique pathways, such as Engineering and Cooper Academy of Math and Science (CAMS) (Kentucky Department of Education, 2019a). DRHS students are supported by a daily advisory period, which offers opportunities for mentoring and academic support, called "Rowers Achievement and Mentoring" (RAM).

LMS, one of DRHS' main feeder schools, serves approximately 650 students in grades 6 to 8. LMS resembles DRHS in demographics, with White students comprising 87% of the enrollment. 17% of LMS students are economically disadvantaged, and 13% have an IEP. In comparison, the 800 sixth-to-eighth graders from the other main feeder school, ACMS, are both more diverse and less affluent. White students comprise 80% of ACMS students, with 6% Hispanic/Latino and another 6% being African American. Almost 50% of ACMS students are economically disadvantaged, a significant departure from LMS and DRHS. Unlike DRHS, the two middle schools use student teams, with four teachers representing the core subjects. Rather than elective courses, students attend

rotating exploratory classes in art, music, and other topics (Kentucky Department of Education, 2019b, 2019c).

Faculty

DRHS. The 82 faculty members at DRHS are organized into departments, ranging from four to ten teachers, each with a department chair and course lead teachers. DRHS has four academic hallways, each affiliated with one of the following core subjects: Mathematics, Social Studies, English, and Science. There are also departments supporting elective programs, such as Fine Arts, and Career/Technical Education. Teachers meet weekly within their respective course teams to plan collaboratively, and departments hold monthly meetings to discuss upcoming school initiatives and announcements.

LMS and ASMS. The 40 faculty members of LMS and 55 faculty at ASMS are organized, as mentioned, into student teams, with one core subject teacher assigned to each. Non-core teachers are "exploratory," meaning they have a rotating class roster and have separate planning meetings.

Researcher Role

I am in my third year with the mathematics department at DRHS, teaching approximately 130 students in my Algebra 1 and Geometry classes. I lead our Algebra 1 instructional leadership team, creating curriculum and instructional plans collaboratively with other Algebra 1 teachers. My role in the study will be to collect relevant data from stakeholders to define a problem of practice, design an MMAR study to arrive at an intervention, and evaluate the success of an intervention, communicating my ultimate

findings to school leadership, the faculty, and staff of DRHS, LMS, and ASMS, and other interested school stakeholders.

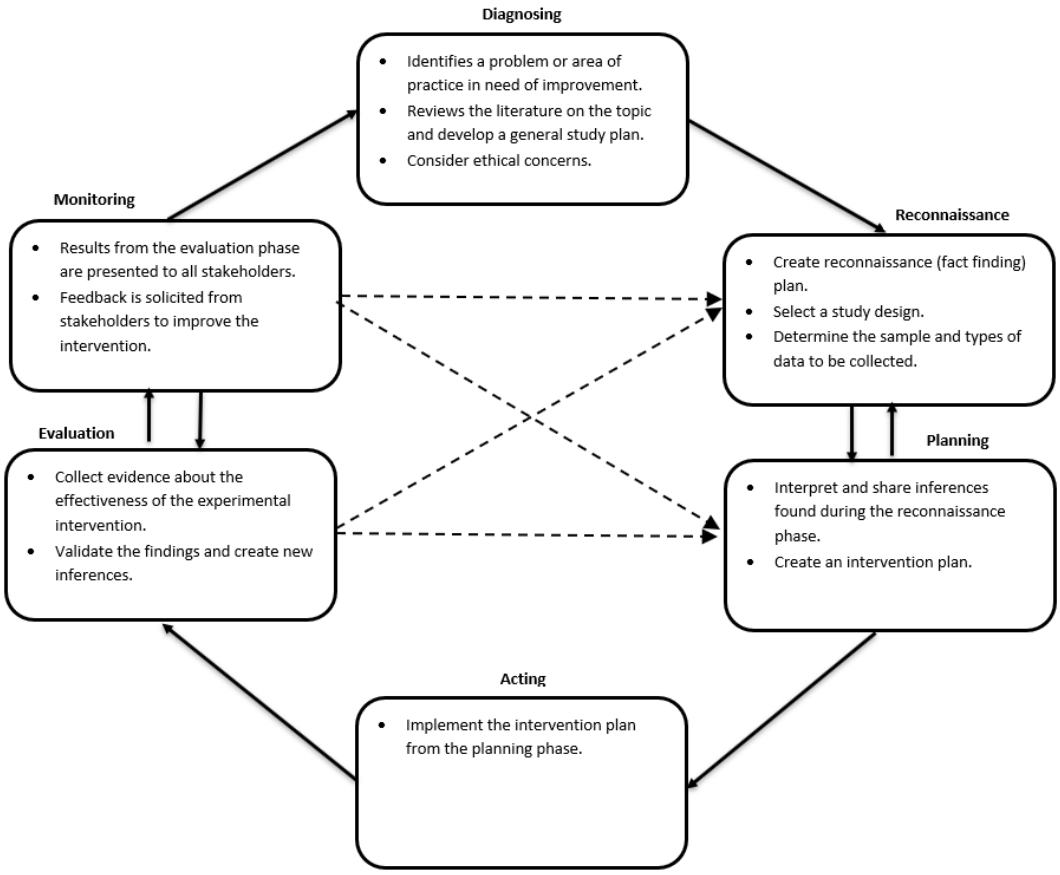
Problem of Practice

As determined through Diagnosis, detailed below, there is a significant difference in the success, as measured by number of courses failed and GPA, between students whose middle school of origin (MSO) is LMS versus those whose MSO is ASMS. The problem represents a leadership concern because success in the first year of high school directly influences many metrics for school success, such as graduation rate and standardized assessment scores.

Mixed Method Action Research Design

This study utilized an MMAR design, addressing the problem of practice with an iterative research cycle, drawing upon qualitative and quantitative data.

Figure 1.1: *Phases of an MMAR Design*



Note: This figure is adapted from *Mixed Methods Applications in Action Research: From Methods to Community Action* (p. 89) by N.V. Ivankova, 2015, Sage. Copyright 2015 by Sage Publications, Inc.

Six phases comprise the MMAR cycle (Ivankova, 2015). While these phases are presented visually in a clockwise progression beginning with Diagnosis, researchers can move through the phases out of order (e.g., returning to the planning phases in response to information gathered during the monitoring phase). The first phase in a new MMAR study is Diagnosis, in which a problem of practice is described, and a review of literature

presented. Matters related to the ethical treatment of human subjects and data are also addressed. The second and third phases are Reconnaissance and Planning. During these phases, researchers design a study and subsequent reconnaissance plan to collect the necessary data. Following these phases, an Intervention is created to address the Reconnaissance study findings. Once the intervention is designed, it is implemented during the Acting phase, then evaluated during the Evaluation phase to determine whether the problem has been addressed. The final stage, Monitoring, is where iterative improvements are established to further the intervention's effectiveness.

Diagnosis Phase

Stakeholder Input

Stakeholders involved in Diagnosis were faculty at DRHS with direct experience in supporting students from LMS and ACMS, and DRHS students. These conversations were conducted informally, either one-on-one or in a focus group setting. Faculty participants were given a summary of the quantitative results found through Diagnosis then asked to give their thoughts as to the cause of the achievement gap. After reading, faculty participants offered their thoughts on how LMS, ACMS, and DRHS differ in policies, procedures, and student expectations, and how those could impact student success. Two groups of student participants, one as part of a class discussion on coming to high school and the other as a focus group of seniors who mentored ninth graders, shared their general thoughts and experiences around their transition to DRHS.

Conversations with DRHS Faculty

Through conversation, faculty members offered perceptions suggesting ACMS had a different culture than LMS, with LMS having greater expectations for student

behavior, more emphasis on students completing assignments, and a faculty more committed to enforcing school rules and policies. Several faculty members pointed to ACMS's adoption of an online curriculum, "Summit," as contributing to the lack of student success when those students came to DRHS. Faculty also suggested that LMS had students with a more advantaged socio-economic background, both pointing out how those students would do better at DRHS in general and how those students would have greater parental involvement than non-advantaged students. Throughout these conversations, faculty shared that DRHS and LMS were more alike than DRHS and ACMS.

Conversations with DRHS Students

The two groups of students involved with Diagnosis were three classes of ninth grade students offering their experiences as part of a classroom discussion on coming to high school, and a group of twelfth graders with whom I spoke about their ninth-grade experiences. From the ninth-grade class discussion, students shared the challenges of returning to an in-person environment after over a year of virtual learning at home. These students mentioned it was difficult to navigate DRHS compared to their middle schools, although the school's orientation program, known as Camp Jag, was lauded as being helpful in learning the layout of DRHS. Other ninth grade students mentioned that having fixed dates for assessments required some adjustment, as they had been allowed to "work at their own pace" in eighth grade. Several students mentioned that their teachers and other students had been incredibly supportive in helping them make the transition to high school.

During my discussions with the twelfth graders who were mentors of ninth graders, the conversation focused on the challenges and successes with joining the wider school community. Students shared that it was difficult to meet people initially, however the Rowers Achievement and Mentoring (RAM) daily period encouraged them to make connections that have since carried through high school. Students also mentioned that certain honors course pathways placed them in classes with students who shared their interests, further supporting their social group. One point which was made, repeatedly, was the need for early identification of struggling students. RAM was praised as supporting most students, but it was not always successful for everyone. During the conversation, a couple seniors who had attended ACMS mentioned the Summit program as making their transition to DRHS more difficult, echoing earlier comments by faculty.

Institutional Data

Published Assessment Data

Achievement data from LMS and ACMS is provided through the Kentucky Department of Education annual school report card. School report cards aggregate various standardized assessments into a single "Academic Performance" score for reading and mathematics. The percentage of economically disadvantaged students scoring “proficient” or “distinguished” within each subject is reported separately from the proportion of non-disadvantaged students scoring at those same levels.

LMS had 51.5% of its economically disadvantaged students score “proficient “or better in reading, and 37.9% of those students score “proficient” in Math. 79.9% and 65.7% of their non-disadvantaged students scored “proficient” or better in Reading and Math, respectively. 48.9% and 29.4% of Camp Ernst's economically disadvantaged

students scored “proficient” or better in Reading and Math, compared to 75.7% and 58.6% of its non-disadvantaged students, respectively. While LMS students perform better on the state math assessment, there appears to be only a minor difference in reading assessment scores (Kentucky Department of Education, 2019b; 2019c). Based on this data, one would not expect there to be a significant achievement gap between students based on MSO once they reach DRHS.

Non-Published Academic Data

I examined internal data available from DRHS to better understand failure rates, achievement on standardized tests, and behavior incidents. In doing so I disaggregated the data by MSO, ethnicity, grade, and free/reduced lunch status. A Mann-Whitney *U* test was used to compare the difference between the mean number of failing courses, behavioral incidents, and standardized tests scores between the MSOs of LMS and Camp Ernst. The Mann-Whitney *U* was chosen as a substitute for Student’s *t*-test because normality could not be assumed for the available data (Mann & Whitney, 1947).

The mean number of behavior incidents per student in the first nine weeks of the school year was significantly lower for ninth graders from LMS (n=133) at 0.630 *(SD = 2.597*), compared to 1.181 for students who had attended Camp Ernst (*n=123, SD=2.586, W=9785, p<.01*). The mean number of failing courses per student in the first nine weeks was significantly lower for LMS students at 0.348 (*SD=0.858*), compared to Camp Ernst students at 1.063 (*SD=1.597, W=10825.500, p<.01*). Significant differences were not found in comparing scores on the state assessments for reading and math. This suggests

the significant difference in means for behavior and course failure is due to factors that lie outside constructs measured by standardized assessments.

Literature Review

The transition to high school from middle school does not occur in isolation, but rather is one point in a trajectory that takes place over years. There are a variety of potential avenues for investigating why some ninth-graders at DRHS would transition better than others, such as: 1) academic preparation in middle school (Reyes et al, 1994; Rice, 2001), 2) school integration (Neid et al., 2008), 3) feelings of agency and positive self-perception (Murdock et al. 2000), or 4) availability of support from their high school (Rice 2001; Smith, 1997). This review of the literature begins with a brief overview of three key considerations for supporting students in beyond academic skills that leadership must consider in ensuring success for all students, i.e., programs supporting the transition to high school from middle school, social-emotional education, and the need to establish student-teacher relationships.

These three considerations, then, are brought together through life course theory (LCT) in order to establish a coherent theoretical framework. LCT holds that the trajectory of a person's life is a web of intertwined trajectories, punctuated by critical transitions (Elder, 2003). It is this merging of academic, societal, and social-emotional that makes LCT uniquely suited for studying this problem of practice. The literature review will support the MMAR study, providing an overview of typical support systems for non-academic skills, a brief history of LCT, key theoretical LCT principles, a review of the literature on the application of LCT to education, the resulting research problem, and the conceptual framework linking LCT to that problem.

Student Support Systems

Transition and Post-Transition Programs

A key element of early success in high school is how well a student navigates the transition from middle school. Schools with programs in place to address that transition have been found to have stronger outcomes for ninth-grade students, both at the end of their first year and later (Benner & Graham, 2007; Rice, 2001). The necessity for effective transition programs is compounded by the fact that adolescents at this stage are navigating significant social and emotional changes (Barber & Olsen, 2004), as well as continued biological development. In addition, high school typically entails attending larger, more impersonal schools overall, taking more challenging classes, and assuming greater procedural responsibility. These increased demands come alongside changing relationships with their parents (Healey & Carter, 2010) and reduced parental supervision (Nield, 2009).

Researchers have confirmed that the implementation of comprehensive transition programs utilizing multiple strategies in schools can have a positive impact on the success of ninth-grade students, such as decreasing the dropout rate and improving ninth-grade retention (Hertzog & Morgan, 1998; Smith, 1997). Furthermore, the research suggests that effective transition programs should be comprehensive and incorporate multiple strategies (Dedmond, 2008; Mizelle, 2005). Specifically, Akos & Galassi (2004), suggest having specific interventions for a student's academic, social, and procedural learning.

Social Emotional Learning

Social emotional learning (SEL), while not itself representing any academic skills, has been well linked to positive outcomes for both student behavior, mental health, and educational success (Qualter et al., 2012; Zins et al., 2007). To enhance students' SEL competencies, numerous school-based interventions have been developed. These interventions include targeting individuals exhibiting high-risk behaviors, teaching skills systematically in the classroom, and using complex whole-school approaches that involve contextual restructuring (Bond et al. 2004; Greenberg et al. 1995; Kendal et al. 2011). Researchers such as Weare and Nind (2011) have demonstrated the effectiveness of interventions in improving SEL competencies through interventions.

Despite the evidence showing the effectiveness of SEL interventions, outcomes are often limited due to incorrect or sporadic implementation (Greenberg, 2010; Spoth et al., 2013). Even when initial implementation is effective, sustaining that implementation is an additional challenge (Elias et al., 2000). Further, SEL interventions often receive limited evaluation and monitoring (Durlak et al., 2011), or fail to adopt the multi-dimensional approach which captures the full web of factors impacting student context (Domitrovich & Greenberg, 2000). Effective SEL interventions must be situated within the setting they are delivered if they are to most effective (Spoth et al., 2013).

Promoting Student-Teacher Relationships

Strong student-teacher relationships have been shown to predict both short-term and long-term academic success (Hamre & Pianta, 2006). These relationships often form by fostering a sense of school belonging, engagement, and improved behavior (Hamre & Pianta, 2006; Hughes et al., 2008; Wang & Holcombe, 2010). During difficult school

transitions, such as the transition to high school, student-teacher relationships become particularly crucial for improving a school's social and emotional climate and promoting positive student outcomes (Longobardi et al., 1988). This transition can be challenging for students, who must adapt to a more complex academic and social environment (Akos & Galassi, 2004). A supportive student-teacher relationship can play a critical role in helping students navigate this challenging transition (Hamre & Pianta, 2006)). Research has shown that high schools with highly supportive teachers can reduce the probability of dropping out by nearly half (Croniger & Lee, 2001). However, starting in ninth grade, students spend less time with their teachers and often feel unsupported by teachers and principals (Barber & Olsen, 2004; Seidman et al., 1996), indicating a critical point for intervention.

Life Course Theory

Context over Abstraction

The central construct at the heart of LCT is that "changing lives alter developmental trajectories" (Elder, 1998, p.1). LCT arose in the latter half of the 20th century as part of the proliferation of longitudinal studies, the most prominent being the Oakland Growth Study (Jones, Bayley, MacFarlane, & Honzik, 1971), the Berkeley Guidance Study (MacFarlane, 1938), and the Stanford-Terman Study (Terman & Oden, 1959). These studies were initially only meant to study children but were extended as they had proved to be rich sources of data. Such temporally broad work eschewed the narrow, surface level investigation of the time (Nisbet, 1969), instead seeking to understand behaviors as resulting from long-term developmental events.

An emphasis on context further led researchers to seek understanding of sociological events on the individual level and across multiple domains (Elder, 1994). These domains included multiple life stages (childhood, adulthood, old age), societal roles (parent, working adult, veteran, etc.), and institutions (school, church, governmental bodies) (Elder, 2003). Advances in research techniques, such as prospective/retrospective data collection and event history analysis, helped to make collecting these rich data sets more feasible (Giele & Elder, 1998; Mayer & Tuma, 1990).

Five Principles

While LTC is a theoretical orientation which supports a wide variety of inquiries, Glen Elder, Jr. establishes five paradigmatic principles over his work (1994; 1998; 2003). These are 1) human development is a lifelong process, 2) individuals construct their life course through choices made within the constraints of their context, 3) individuals are shaped by the times and places they experience, 4) the impact of transitions, events, and behaviors vary with the timing of such events in the life of an individual, and 5) lives are lived interdependently and sociological influences move through this shared network. These principals steer LCT researchers toward a focus on the individual, their experiences, choices, and how the time and place in which they live impacts those choices. This emphasis promotes a more holistic understanding of individuals, over time and in multiple social contexts.

Trajectories & Transitions

Seeking to incorporate a greater understanding of the context of individual lives, many models and concepts were developed. These include *social pathways*, a common potential life path, consisting of education, work, relationships, etc. that individuals and

groups follow. These pathways are influenced by current events, culture, and institutions and lead to normative patterns for these pathways. These pathways can be altered, both intentionally e.g., expansion of funding for post-secondary education, and randomly, such as a pandemic. Central to the idea of social pathways, however, is that individuals *choose* their pathways, yet their choices are constrained by their place and time (Elder et al., 2003).

The specific pathway an individual takes is a *trajectory*, itself comprised of a series of *transitions*, e.g., taking a new job, birth of a child, or graduating high school. The time between transitions is a *duration*. Social/emotional stability is typically greater during long durations. Transitions that are uniquely impactful, representing a changed life trajectory and social pathway, are called *turning points*. While most of the study on turning points is in adults and career changes (Wethington, Pixley, & Kavey, 2003), any significant transition can represent a critical change for an individual's trajectory (Elder et al., 2003).

Life Course Theory in Education

Benner (2017; 2021), in establishing a conceptual framework on identifying the origins of negative behavior in adolescents, builds on LCT to suggest that intuitively disparate domains of child development are related. That is, social, emotional, cognitive, and physical development are interconnected throughout an individual's life. According to LCT, disruptions in one area of development can have a ripple effect and impact other aspects of development (Elder, 1998). For instance, academic struggles can trigger feelings of anxiety or despair, exacerbating the academic difficulties. Therefore, as suggested in complementary literature on the transition to high school, it is essential to

consider multiple aspects of young people's development and well-being when considering support programs and interventions (Dedmond, 2008; Mizelle, 2005).

Further, Benner (2017) establishes the role of the "social convoy" in student success, where students who successfully establish a web of positive relationships show improved well-being compared to those with limited or negative convoys (Rueger et al. 2010; Stewart & Suldo 2011; Wang & Eccles 2012). Any transition which involves physically moving to a new school with different teachers and often new peers, can disrupt existing social convoys and lead to the formation of new linked lives, e.g., new teachers, new friends, or peer group. While school transitions do not physically change adolescents' families, parents must balance facilitating their adolescents' move to high school with their drive for greater autonomy (Benner 2011).

While there is a distinct body of work showing the application of LCT in educational contexts, there is a dearth of literature from the perspective of a practitioner-researcher seeking to address a problem of practice within the population of students they serve. Much of the existing work in this intersection focuses on establishing an origin for behavior issues among adolescents or establishes a link between experiences early in high school to later post-secondary trajectories. Literature showing the use of LCT to identify factors beyond poor behavior is limited, a gap this study seeks to fill.

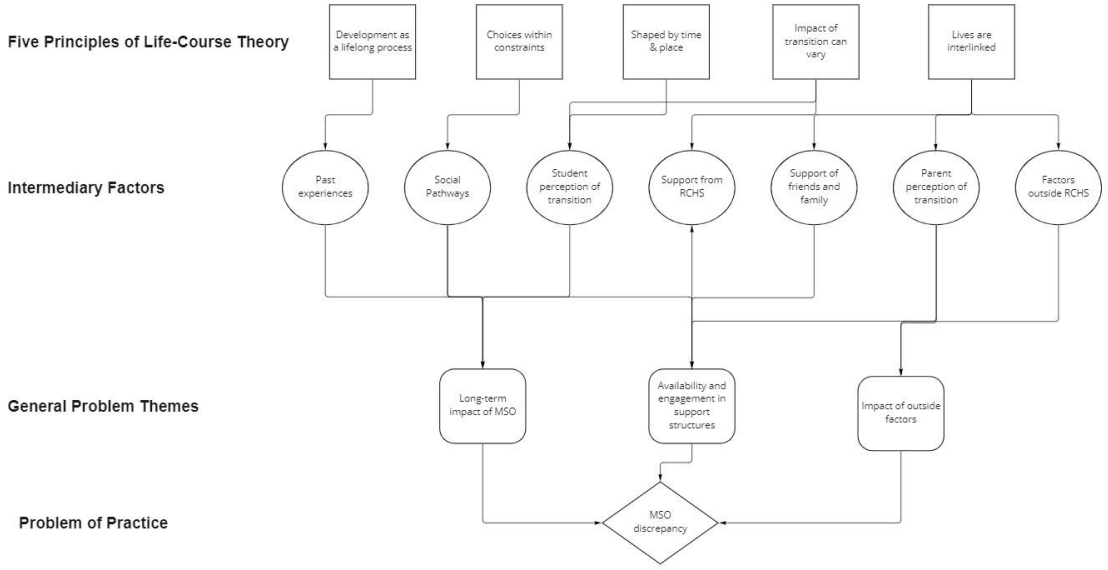
Research Problem Statement

From Diagnosis, it was apparent that there was a troubling discrepancy in success among ninth-grade students at DRHS based on their MSO. While DRHS had programs in place to address these discrepancies, the differing outcomes persisted. Specifically, this study addressed the following three aims:

1. Determine factors that contribute to the cohort discrepancy among ninth graders.
2. Capture the context experienced by individual students as they navigate their ninth-grade year at DRHS.
3. Suggesting changes to DRHS policy and procedures to address systemic factors.

The conceptual framework supporting these research goals is outlined in figure 1.2.

Figure 1.2: *Conceptual Framework*



General Study Plan

The purpose of this MMAR study was to identify, conduct, and evaluate changes to school policy and professional practice which can help eliminate the cohort discrepancy among ninth-grade students at DRHS. This investigation sought to improve student academic achievement by better understanding the wider social context students exist in at DRHS. I selected a mixed-methods concurrent design for Reconnaissance, due to the wealth of data available about student success and the need for a timely addressing of the problem of practice using well-validated conclusions.

The rationale for applying mixed methods in the study is the availability of both quantitative and qualitative data, and the need to ensure triangulation of study conclusions for supporting Planning and Acting. Critical inputs to this study include participants (students, faculty, and staff), the time and effort of researchers at DRHS and the University of Kentucky (UKy), institutional data, interviews, and time for evaluation and analysis. This information is summarized in Table 1.1.

Table 0.1: *Logic Model for MMAR Study*

Model Component	Result
Inputs and Resources	• Perceptions and experiences of faculty • Institutional data • Evaluation time
Activities	• Institutional data collection and evaluation • Distribution and completion of stakeholder surveys
Output	• Critical factors which contribute to the diagnosed MSO discrepancy.
Short/Long-Term Outcomes	• Stronger knowledge of the experiences of students at DRHS • Better academic outcomes for students at DRHS (short) • More responsive systems of support at DRHS (long)
Impact	• Improved outcomes for all students at DRHS

Researcher Skills & Resources

The study had sufficient resources to reach completion. A research committee was established to provide the relevant expertise to produce a beneficial solution in preparation for this study. This expertise included knowledge of middle school and high school pedagogy, middle and high school student psychology, backgrounds in quantitative and qualitative research methods, and expertise in engaging stakeholders. In

addition to the research committee, feedback was continually sought from faculty and administrative stakeholders at DRHS during study design and analysis of data.

Research Ethics

Conducting research ethically is important. In a study's design, ethical research practices should not be relegated to afterthought but should be a central element of an MMAR study (Ivankova, 2015). Ethical research practices include informing participants upfront about their involvement in the study, requiring researchers to ensure equity with what is asked of participants, and asking that research benefit both participants and society.

In conducting this study, researchers were mindful of the burden data collection places on students, faculty, and staff, seeking only critical information when needed. The collected data was anonymized and stored securely in a password-protected cloud storage service and shared with only necessary researchers. Stakeholders were given opportunities to access and ask questions about the research findings through informal conversations during and after the research process. In conducting this research, it is crucial that the usual goal and processes of school are not disrupted (Herr & Anderson, 2005).

Researcher Bias

Given my position at DRHS, it is essential to acknowledge potential biases I hold which may have influenced the study. As a teacher whose duties include ensuring equitable learning outcomes for all students, it is possible that my personal beliefs and attitudes will color how results are interpreted. Herr and Anderson (2005) suggest that, while bias is natural and subjectivity is allowable in action research, researchers must

examine those biases and ensure they do not impact the study's conclusion. Therefore, I must own my personal biases and ensure that my findings represent the attitudes and perspectives of stakeholders at DRHS.

This authenticity will be achieved through Ivankova's (2015) suggested strategies. Specifically:

- Spending extended time at the research site to establish strong understanding with participants.
- Triangulation of meta-inferences through a mixed-methods study design.
- Including negative cases offered by stakeholders.
- Use of the "thick" description to capture as much of stakeholders' experiences as possible.
- Use of an external auditor for study procedures, provided by my doctoral committee.
- Regular reflection on my personal bias and how it might influence my interpretation of the study results.

Summary

This chapter presented the context of the study, the problem of practice identified at DRHS, the general MMAR design, Diagnosis, and the review of the literature. After stakeholder interviews and analysis of institutional data in Diagnosis, it was found that students from ACMS did not show the same level of academic success as their peers from LMS. The chapter offered a review of Life Course Theory, and how life pathways can limit create lasting challenges to learning. The chapter then described a general study plan and overarching logic model, connecting study inputs to the desired outcomes. The

chapter concluded with researcher resources, ethical considerations, and acknowledges the researcher's personal bias in conducting the study. Using an MMAR design, the practitioner-researcher intends to collaborate with faculty and staff to design and implement an effective process for addressing the MSO discrepancy.

CHAPTER 2

Introduction

Diagnosis identified a discrepancy in academic success between students whose MSO was LMS versus ACMS during the first months of their ninth-grade year. In this chapter, I describe the Reconnaissance phase of the study, beginning with the MMAR framework and the general study design, followed by sampling, data collection, and analysis plans, before concluding with description of the planning phase and chapter summary.

Overall Study Design

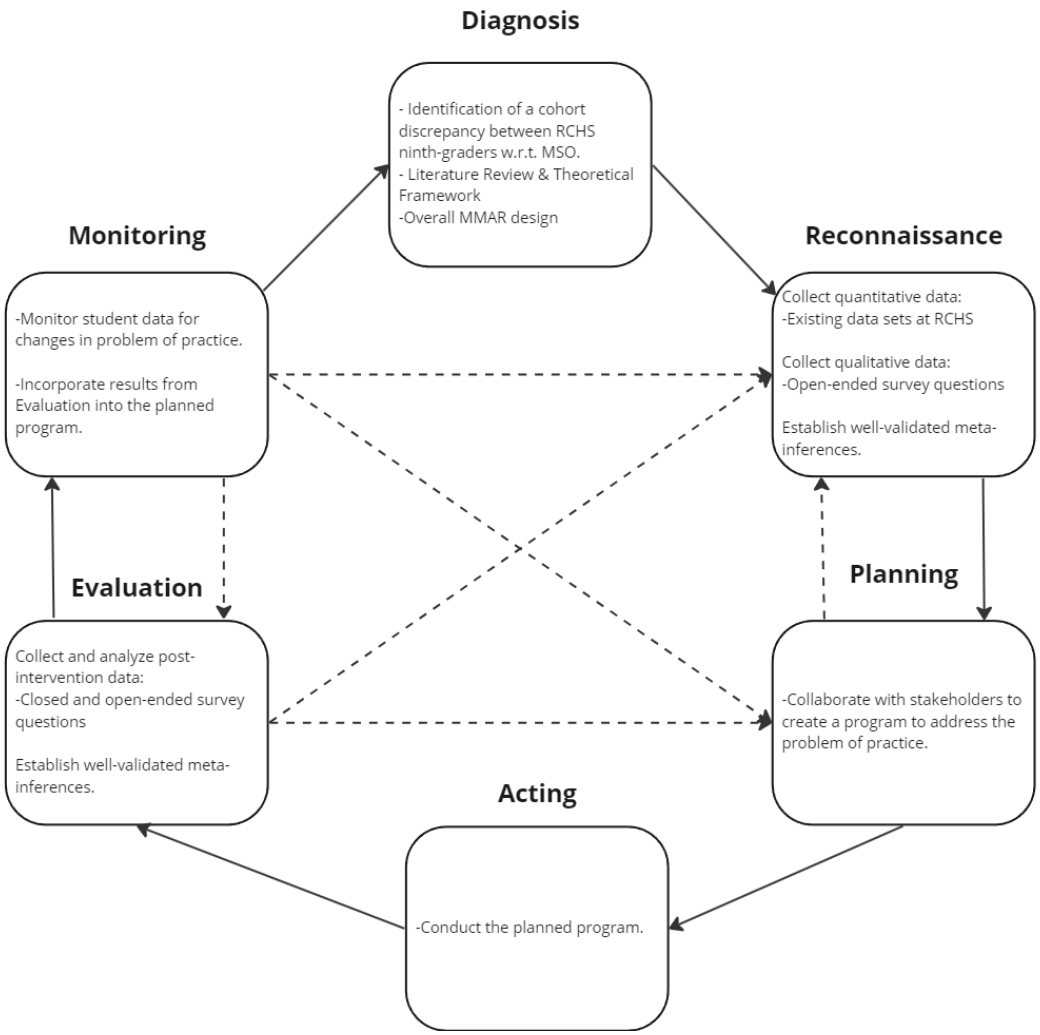
Mixed Methods Action Research

Chapter 1 detailed the design and findings of Diagnosis. I discovered significant differences in the number of courses failed and GPA, key measures of student success, dependent on a student's MSO. Additional data on the perceptions and experiences of students and faculty at DRHS is necessary to understand this discrepancy more fully. This data was collected and analyzed in Reconnaissance.

MMAR is an iterative process where both qualitative and quantitative data are collected and analyzed to create highly valid meta-inferences. This process has six phases: Diagnosis, Reconnaissance, Planning, Acting, Evaluation, and Monitoring, at which point the cycle begins anew. The study outlined here involves Reconnaissance,

where the specific problem of practice is further explored, gathering more specific sources of data to inform a solution to the problem of practice (Ivankova, 2015). The phases of this study are shown in Figure 2.

Figure 2.1: *DRHS Study MMAR Phases*



Research Setting

DRHS is one of four high schools in its district, serving approximately 1500 students. The vast majority of DRHS ninth graders attended either LMS or ACMS. DRHS maintains a variety of programs to support struggling students, including a Positive Behavior Intervention and Supports (PBIS) program, a Multi-Tiered System of

Support program (MTSS), and Youth Service Center (YSC). In addition to these services, there is an advisory period, Rowan Achievement and Mentoring (RAM), built into the school day. Likewise, teachers are paid out of Extended-School-Services (ESS) money to stay after school and tutor. The study population were offered the opportunity to attend a one-day orientation event, called Camp Jag, where older DRHS students introduce teachers and show new students where support services are located. For LMS and ACMS students, this is in addition to going to DRHS during the school day as part of the course scheduling process at the end of their eighth-grade year.

Reconnaissance Phase

The purpose of Reconnaissance is to expand upon the data collection performed in Diagnosis, identifying key areas for growth, and informing the design of the corrective action plan (Ivankova, 2015). This section describes how this phase will be conducted for this study.

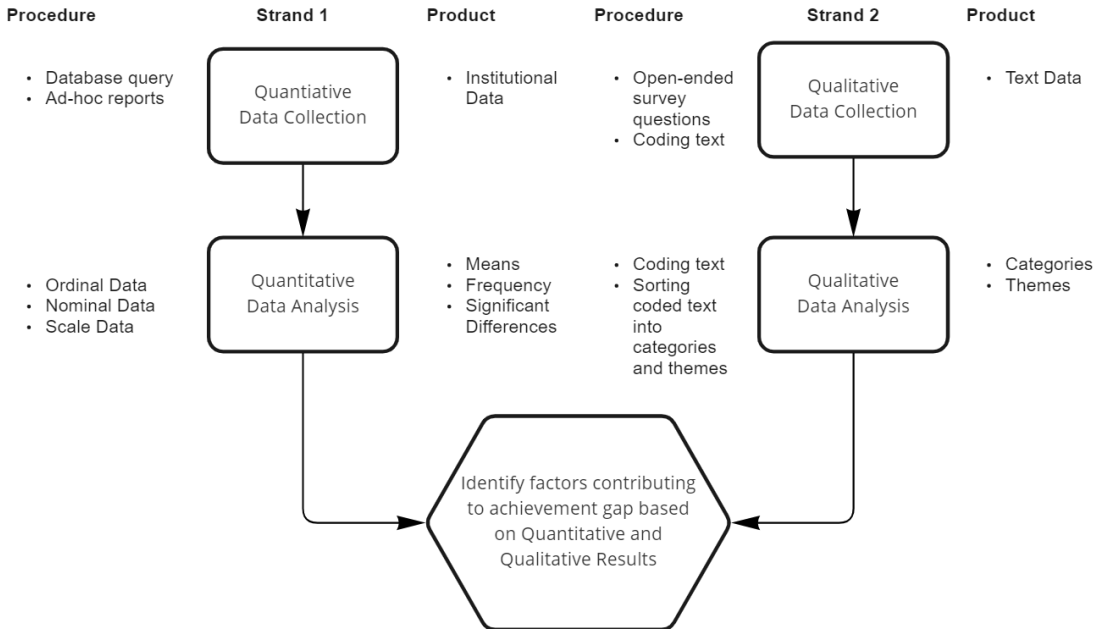
Phase Design and Research Questions

Integrated Research Question & Study Design

Reconnaissance will seek to address the integrated MMAR question, what additional student success metrics are impacted by MSO, and what are the perceptions of faculty around ninth-grade student success? A concurrent study design was selected to address this question, focusing on a quantitative strand examining student data already available from DRHS and a qualitative strand capturing the perceptions asnd experiences of DRHS faculty toward ninth-grade students via open-ended survey. The results from the two data sources were then analyzed and integrated to find well-validated evidence for meta-inferences (see Figure 3). These inferences were used to inform an action plan to address

the study problem of practice, i.e., the cohort discrepancy between students from ACMS and LMS during their ninth-grade year.

Figure 2.2: *Reconnaissance Phase Concurrent Study Design*



Rationale for the Selected Design

As suggested by Ivankova (2015), a concurrent design is appropriate for the problem of practice given the broad range of available data and the lack of pre-existing insight into the specific factors contributing to the problem. Matthews (2018) used a mixed-methods concurrent design to capture a variety of data around cognitive flexibility among urban adolescents, taking advantage of assessment data, survey data, and student interviews. These data were analyzed and then integrated to establish a thematic framework which could then inform an effective student intervention. A similarly data-rich, multi-factor problem of practice was addressed by Ashraf et al. (2018) in investigating vicarious trauma among American Muslims. Researchers used survey data to establish a statistical relationship between religious identity, trauma, and ethnicity,

while simultaneously using interview data to capture the experiences of religious individuals. Both studies have parallels with the present study's problem of practice, in that DRHS represents a data-rich context where collection of quantitative and qualitative data can occur together.

Pros and Cons of the Selected Design

Ivankova (2015) points out the value in selecting a concurrent design, in that it allows researchers to collect a wide variety of evidence quickly, lowering the associated costs and impact of data collection on communities. The fact that action research studies are usually undertaken to correct some existing problem of practice further makes the speed of the concurrent design attractive to researchers. This design also avoids many of the challenges in receiving IRB approval which can affect sequential designs, as all elements of the study are established at the outset.

The same elements that make concurrent designs attractive can also make them challenging. Given that the quantitative and qualitative strands are conducted simultaneously, it can be difficult for a sole researcher to collect, analyze, and interpret the multiple sources of data. Establishing a research team can help ameliorate this disadvantage, serving to spread out the work and inviting community participation in the research process. A second disadvantage is that the concurrent design can fail to produce integrated meta-inferences if the strands do not produce complementary evidence. Careful, thorough Diagnosis and selection of data sources help prevent this outcome.

Quantitative Strand Design

Quantitative Research Questions. The goal of the quantitative strand was to understand the boundaries of the MSO discrepancy and whether that discrepancy persists among students at each grade level. Specifically, this strand sought to answer:

- For each of the four grade levels at DRHS, how does MSO impact:
    - GPA & Course Failure
    - Math and English course requests
    - Behavior incidents
    - Standardized assessment scores
    - Absenteeism

Sample. The sample for this strand was intended to be the full population of students at DRHS (n=*1449*). A full capture was achieved for ninth grade (*n=319)* and tenth-grade students (*n=255*), however only a sample of data was available for eleventh grade (*n=93)* and twelfth-grade students *(n=49)* due to challenges with the DRHS database.

Instruments. Data was collected via requests submitted to the office staff at DRHS. The two databases queried were the College Equipped Readiness Tool (CERT), a standardized assessment meant to predict success on the ACT in eleventh grade, and Infinite Campus, a general-purpose database for storing student data, e.g. attendance, course grades, behavior incidents, and other information.

Data Collection Procedures. DRHS maintains extensive sets of student data in a handful of dedicated systems. Data was queried via ad-hoc reports before being anonymized by school staff. Researchers linked student data by random number assigned

by staff prior to release to study personnel. Study data was maintained in a password-protected cloud storage service. Table 2.1 outlines how the different available databases supported the quantitative strand.

Table 2.1: *Strand Questions and Associated Database*

Research Questions	Database
• How does MSO influence: o GPA/Course Failure o Behavior incidents o Absenteeism o Math and English course requests	DRHS Infinite Campus
• How does MSO influence: o Standardized assessment scores	CERT

Data Analysis

Data was analyzed to create nominal and scale datasets. Two-way tables were created to identify relationships between MSO and course requests (nominal - nominal). Independence was checked using the Chi-Squared Test for Independence. The Mann-Whitney U-test was to identify significant differences between demographic groups, as the scale data did not meet the requirements for Student's t-test.

Quantitative Inferences

Data produced by the quantitative strand confirmed that an MSO discrepancy persisted among DRHS students beyond ninth grade. These results served as a motivating

factor for change and showed that the cause was not unique to ninth grade, a fact incorporated into Planning/Acting.

Qualitative Strand Design

Qualitative Research Questions. The qualitative strand sought to capture the experiences and perceptions of faculty about ninth-grade students at DRHS. The guiding questions were:

- How do ninth-grade students engage with support structures available through DRHS?
- What factors beyond instructional activities at DRHS during the school day impact ninth-grade student success and what is the nature of that impact?

Sample. All DRHS faculty *(n=82)* were invited to participate.

Instrument. The qualitative survey consisted of two demographic questions and four open-ended questions. The survey questions are listed in Table 2.2. The questions focus on capturing the experiences, thoughts, and feelings of DRHS faculty using a mixture of simulation questions, "grand tour" questions, and free recall questions to elicit a broad range of responses from participants (Shaw & Gould, 2012).

Table 2.2: *DRHS Faculty Survey*

Question Type	Survey Questions
Demographic	• How many years have you been a teacher at DRHS? • How many ninth grader students do you have this year?
Open-Ended	• In your opinion, what are the most essential elements for students to be successful in their ninth-grade year? • What are the most common obstacles for ninth-grade students? • DRHS has a variety of student support services, such as PBIS/MTSS intervention, our YSC, and tutoring. For the ninth-grade students you have had that have struggled, were there any school-based services you feel made a difference? Which services, and why/why not? • Are there common ninth-grade challenges that DRHS currently struggles to address as a school?

Data Collection Procedures. The survey was sent electronically to all participants through Qualtrics, an online survey platform. Participants had access to complete the survey for two weeks, with a reminder sent to participants after one week. Consent was obtained via a survey cover letter.

Data Analysis

Data from the open-ended questions were downloaded into a spreadsheet. These data were summarized and categorized according to common themes, which were then arranged into a table using a codebook (Ivankova, 2015). Categories were created

through in vivo coding, based on responses given to the open-ended questions in the survey.

Qualitative Inferences

The qualitative data provided insight into the perceptions of faculty in and adjacent to the ninth-grade experience at DRHS. These insights served to inform researchers on the barriers causing the cohort discrepancy identified in Diagnosis and the Reconnaissance quantitative strand, serving as the core inferences to be addressed in Planning and Acting. These qualitative inferences were merged with quantitative findings to create well-validated meta-inferences (Ivankova, 2015).

Data Integration and Quality

Data Integration. Ivankova (2015) describes one of the critical elements of the MMAR process as the integration of qualitative and quantitative data into well-validated meta-inferences. In this study, data were first analyzed and summarized to identify key statistical results and qualitative themes. Following this individual analysis, data were placed in complementary representations, i.e., summarized tables showing key results, for ease of comparison. For Reconnaissance, this was a table of statistical results and a table of qualitative themes as related quotes from participants. Finally, results from the quantitative and qualitative strands were combined and synthesized to establish conclusions grounded in both strands of data. This synthesis included identifying areas where the two sets of data diverged and where the data agreed (Ivankova, 2015).

Quality Issues. Given the investment by the DRHS community, ethical research practices mandate that the study be designed and conducted in a manner which would result in quality insights. Ivankova (2015) offers five quality assessment criteria for

Reconnaissance: 1) How well do the study purpose and research questions address the problem of practice? 2) How well does the study design address the study purpose? 3) How well does the sample and collected data address the study purpose? 4) Do the data collection and analysis procedures follow the best scientific practice? 5) Does the study establish sufficient rigor to justify its meta-inferences?

During the study design phase, I conducted a review of key literature on mixed-methods design, such as "Designing and Conducting Mixed Methods Research" (Creswell and Plano Clark, 2017). This review enabled us to adopt a methodological approach that combines the strengths of quantitative and qualitative research methods, ensuring a thorough understanding of the problem of practice. Further, the study design was evaluated by a group of external experts with experience in educational research and practice. This panel provided valuable feedback, which I used to refine the research questions, data collection methods, and analysis procedures. Incorporating their insights contributed significantly to enhancing the rigor and relevance of the study.

To ensure that the perspectives of the DRHS community were reflected in the study design, I solicited feedback from faculty and administration through informal conversation, incorporating their suggestions into the research questions, data collection methods, and interpretation of results. This process allowed us to tailor the study to the unique needs and context of the DRHS community.

Findings

Quantitative Findings. The mean number of course failures among DRHS students who had attended ACMS was found to be significantly higher than those who had attended LMS across all grade levels, shown in Table 2.3.

Table 2.3: *DRHS Mean Course Failures*

Grade	Mean (LMS/ACMS)	n (LMS/ACMS)	SD (LMS/ACMS)	W	P
9th	0.534 / 0.929	178 / 140	1.031 / 1.267	14658.500	<.001
10th	0.362 / 0.831	138 / 118	0.801 / 1.193	10024.000	<.001
11th	0.298 / 0.638	47 / 47	0.657 / 0.965	1324.000	0.021
12th	0.179 / 0.636	28 / 22	0.612 / 1.255	374.000	0.033

While GPA is not calculated for ninth-grade students, a complementary trend was found among older students, where the LMS cohort had a higher GPA, as shown in Table 2.4.

Table 2.4: *DRHS Mean GPA*

Grade	Mean (LMS/ACMS)	n (LMS/ACMS)	SD (LMS/ACMS)	W	P
10th	3.346 / 3.138	138 / 118	0.727 / 0.799	6921.500	0.019
11th	3.538 / 3.094	47 / 47	0.709 / 0.727	736.000	0.003
12th	3.831 / 3.447	28 / 22	0.805 / 0.754	221.000	0.045

The mean number of behavior incidents per student in the first nine weeks of the school year was, as seen in Diagnosis, significantly lower for ninth graders from LMS (*n*=178) at 0.034 *(SD = 0.181*), compared to 0.221 for ninth-grade students who had attended ACMS (*n=140, SD=0.914, W=13396.000, p=0.004*). A similar difference was found among tenth-grade students, with LMS students having a mean of 0.094 (*n=138, SD=0.380, W9792.000, p=0.021*) and ACMS students having a mean of 0.229 (*n=118, SD=0.778*). A significant difference in behavior incidents was not found among eleventh or twelfth-grade students.

The mean scores on a standardized assessment given during the first nine weeks of the school year (CERT) were compared. Among ninth-grade students, a significant

difference was found, with LMS students having a mean of 16.074 (*n=163, SD=4.277, W=8552.500, p=0.013*) and ACMS students having a mean of 14.887 (*n=124, SD=3.807*). There was not a significant difference between tenth and eleventh-grade students, and twelfth-grade students did not take this assessment.

Course requests for Math and English courses were compared between LMS and ACMS students. Course requests in both subjects for ninth and twelfth-grade students were independent of MSO. Among tenth-grade students, Math requests were found to be dependent ($X^2(1, 256) = 5.374, p = 0.02$), while English requests had no relationship. Among eleventh-grade students, English requests were found to be dependent ($X^2(1, 94) = 7.244, p = 0.007$), while Math requests had no relationship to MSO.

Rates of unexcused absences were compared between MSO cohorts in all four grade levels. No significant differences were found.

Qualitative Findings. Two research questions guided the qualitative strand of Reconnaissance:

- How do ninth-grade students engage with support structures available through DRHS?
- What factors beyond instructional activities at DRHS during the school day impact ninth-grade student success and what is the nature of that impact?

Faculty identified tutoring as an effective way for students to remediate lacking skills and an opportunity to build a relationship with teachers. The PBIS/MTSS program was praised too, with respondents mentioning how it helped students struggling with challenges outside school. One respondent mentioned the feeling PBIS/MTSS was only

marginally effective, as most interventions focus on students with major challenges and gaps.

Faculty perception of non-instructional challenges for students fell into three broad categories: 1) personal qualities of the students, 2) connection to the school, and 3) preparedness for high school. Many responses identified a lack of asking for help, or general apathy toward academic success, as well as a weakness in organization and time management skills. The increased need for students to self-advocate and seek out their own support was likewise identified. Select quotes of faculty perceptions related to these questions are summarized in Table 2.5 and 2.6.

These findings suggest there are distinct non-academic skills which contribute to reduced student success, however it is important to acknowledge these findings may be mediated by faculty attitudes and perceptions around the elements required for student success. Likewise, it is possible "preparedness" in the third theme relates to a variety of capacities related to student success, some which are not at all related to MSO.

Table 2.5: *Reconnaissance Qualitative Findings pt. 1*

Research Question	Theme	Response (*n=26*)
How do ninth-grade students engage with support structures available through DRHS?	*Tutoring*	• "I have seen after school tutoring have a significant positive difference… especially if the student is able to stay after with their specific teacher." • "Tutoring only work [*sic*] when the student wants to work." • "I also think more would stay for tutoring, but transportation is an issue for this age group."
	PBIS/MTSS	• "I have not personally seen [a] huge impact from PBIS/MTSS. It is really challenging to see a huge change in these students through these programs because of how infrequently they meet in comparison to how large/numerous the issues tend to be. • "PBIS seemed to help the ones that had to deal with outside issues before having space to work on school." • "PBIS and MTSS made a difference because they offered students one on one help and check ins to prevent the students from 'slipping through the cracks. I think this holds students accountable."
	Counseling	• "[M]eeting with a student and a counselor at the same time."
	Discipline	• "Consistent consequences and holding them to expectations."

Table 2.6: *Reconnaissance Qualitative Findings pt. 2*

Research Question	Theme	Response (*n=26*)
What factors beyond instructional activities at DRHS during the school day impact ninth-grade student success and what is the nature of that impact?	*Personal Qualities*	• "[Students struggle with] Work ethic/motivation and self-advocacy" • "[Students struggle with] Wanting to feel included, attention, distractions, behavior, maturity." • "[Students have a] lack of motivation/work ethic, not knowing how to get help/self-advocate • "[Ss need] academic support, ability to focus, ability to follow instructions"
	Connection to School	• "Students must feel connected in the classroom, and that they are an essential part of the group. They must know that their teacher believes they can succeed. "
	Preparedness for High School	• "Those coming from the project-based environment at LMS seem to really struggle with the classwork expectations." • "Lack of skills needed to succeed in a new location." • "We don't help them adjust in how to handle freedom. They come from environments that don't allow cell phones and are structured to a lot of freedom in class and they don't know how to handle that freedom." • "Middle schools aren't big on homework so study skills like keeping track of assignments and learning to study for tests are vital." • "I think they need to beware of what is expected of them for each class. For example, homework is just that work to be completed at home." • "[Students struggle with] distractions, failure to follow through on turning in and completing assignments."

Reconnaissance Meta-Inferences

Meta-inferences were formed through integration of findings as described above. Results were shared with members of the DRHS faculty, and their impressions were incorporated into Reconnaissance inferences. That said, Reconnaissance did not identify a clear, single cause of the gap in success between MSO cohorts in course failures and GPA. Rather, data suggest the problem to be multi-faceted, occurring along a variety of avenues, impacting different students at various levels.

Several faculty members inferred that LMS is more closely aligned to the process, procedures, and culture of DRHS than ACMS. Suggested pain-points for ACMS students included navigating a standards-based grading system coming from a traditional one, where LMS is also standards-based, and LMS behavior expectations better aligning to DRHS. Faculty also suggested ACMS feeding multiple high schools while most LMS students feed into DRHS could lead to great disruption of social support for ACMS students compared to LMS students.

The impact of course failure and academic support was another common inference. While the gap in achievement based on MSO is statistically significant, the difference in mean GPA is approximately 0.4 points. This suggested that, while ACMS students fail more courses than their LMS peers, it is not at a vastly higher rate, and many ACMS students may either not be identified as struggling or are seen to be struggling but do not receive support due to a lack of perceived severity. Compounding course failure early in high school is DRHS's traditional approach to course failure, in that a student who fails a course in one year typically retakes the identical course the following year, sometimes with the same teacher. Finally, some support may be undervalued or

ineffective, such as the Peer-Mentoring Program (PM) at DRHS, as it went unmentioned in the faculty survey asking about ninth-grade support.

Planning

Following Reconnaissance, I shared the findings and meta-inferences with select faculty and administrators ($n=5$). These stakeholders were selected due to having ninth-grade RAM courses or being my supervising administrator, with additional consideration given to availability for extended conversation, e.g. shared a planning period or were often free after school, as well as focusing on faculty with a positive attitude toward the effectiveness of advising and mentoring. After a series of informal discussions where I asked these stakeholders to offer their personal thoughts and insights on the Reconnaissance findings, I decided to focus on supporting ninth-grade students in their ability to navigate the academic-adjacent systems at DRHS. Specifically, my focus centered on mentoring ninth grade "bubble students," or students at risk of failing a course (i.e., within two points of failure) or who are failing by less than five points.

These students will be targeted for additional mentoring and academic support through the advisory period at DRHS. This focus was chosen as my conversations with faculty stakeholders suggested it was these students being underserved by the existing systems at DRHS, leading to the problem of practice. Further, Weare and Nind (2011), in their meta-analysis of SEL interventions, found small-to-moderate effect sizes for a wide-variety of beneficial effects for children, supporting the decision to address the problem of practice through a student mentoring program.

Summary

Chapter 2 covers two important phases of the MMAR process - reconnaissance and planning. Reconnaissance is crucial as it lays the foundation for the study by providing an in-depth understanding of the problem of practice. In this phase, the research setting, phase design, research questions, strand components, and literature sources are identified, and research ethics are emphasized to ensure the privacy, confidentiality, and ethical approval processes are followed throughout the study.

This chapter goes on to describe Planning, which focuses on designing an action or intervention based on the information gathered during the reconnaissance phase. Stakeholders are involved in this phase, and an action plan is developed. This chapter discusses the problem of practice, stakeholder involvement, actions or interventions considered, and the timeframe of the planning phase. These factors contribute to the overall direction of the study and ensure a comprehensive understanding of the practice problem and its potential solutions.

CHAPTER 3

Introduction

Based on findings from Reconnaissance and faculty feedback, I created a plan to address the cohort discrepancy between ninth graders from ACMS versus their peers from LMS. The action plan involved improving mentoring and academic support for bubble students during the RAM period. This chapter details the chosen intervention, establishes the research questions and study design for Evaluation, and the findings and meta-inferences arising from that phase. This chapter ends with an outline of Monitoring, and offers implications based on the overall MMAR study.

Intervention/Acting Phase

Reconnaissance identified a significant difference in the course passage rate and GPA between students based on their MSO at all grade levels. Identified causes ranged from gaps in student learning from earlier grades to discrepancies in behavior or academic expectations between MSO and DRHS. After informal conversation with DRHS faculty, the best avenue for intervention was determined to be DRHS's advisory period (RAM), and to begin with a focus on ninth-grade students, as 1) there was a strong possibility that the GPA difference between later grades was students repeatedly failing ninth-grade courses, and 2) ninth-grade RAM classes already had dedicated peer-mentors (PMs) to support any mentoring or tutoring effort.

Ninth-Grade RAM Mentoring/Tutoring

RAM periods already had mentoring and tutoring as part of their focus, however little guidance was provided to teachers on the best way to structure this aim among the other stated goals of RAM, such as school community building, individual learning plan (ILP) completion, and social-emotional (SEL) instruction. RAM classes follow a school-wide suggested schedule, with Tuesday and Thursdays recommended as academic focused "study days." However, often these days conflicted with ILP completion, likewise typically scheduled for Thursdays, and SEL lessons, which teachers could conduct any day of the week.

Informal conversations with faculty suggest that, on days which did focus on studying, students were often allowed to choose which course to focus on and worked independently. While some teachers were intentional in working with struggling students, either themselves or through the class peer-mentors, there had been little guidance school

wide. This independent, student-initiated lacked face-validity in being well-suited to addressing the gaps identified in Reconnaissance.

Intervention

Mini-Pilot

Considering these challenges, I piloted an intentional mentoring effort in my RAM period for a week in January. This was a short period of time for a pilot, encompassing only two days of targeted mentoring activities and three days of other activities besides mentoring. Three constraints drove the design decision-making:

1) Given the variation in capacities, student disposition, and teaching style between RAM classes, a pilot of one was going to offer very limited data and thus did not warrant a large commitment of time,

2) The problem of practice necessitated rapid intervention to allow time for student grades to improve before the end of the school year, and

3) Ivankova (2015) describes action research as an iterative process, thus making an extensive pilot unnecessary considering the program would need to evolve anyway.

Ahead of the pilot, I prepared a list of "bubble students" to in my RAM class to focus on. These were ninth-grade students who were failing no more than two courses, and those failing grades were no more than five points away from passing. My rationale was that 1) informal stakeholder conversation speculated that DRHS underserved students failing only one or two courses, and 2) these criteria resulted in a list of six students which I felt to be a reasonable population for focused mentoring given myself and my three PMs.

During the two mentoring days of the mini-pilot, I asked my PMs to each choose two of the six students. Wanting to respect student privacy, I did not specify why those students were specifically chosen for mentoring, only saying they could use some help with their classes and encouraging PMs to chat with those students. In addition, I met briefly with three of the six students on Tuesday and the remaining three on Thursday to discuss their failing classes more directly and brainstorm strategies to begin passing. I and my PMs continued to check in with these six students as time allowed even after the end of the pilot period. On the non-mentoring days (Monday, Wednesday, and Friday), I still encouraged my PMs to offer intentional support and encouragement to our six bubble students as opportunity allowed.

At the end of the mini-pilot, the program directors and I sent a memo summarizing my Reconnaissance findings and my experiences with the mini-pilot to the ninth-grade faculty (see Appendix B), in line with Ivankova's (2015) suggestion to disseminate research findings to stakeholders.

Scaling the Intervention

After further reflection and discussion with the RAM coordinators, we determined further implementation should focus on informing faculty of the problem and support them to create their own processes within some suggested best practices, as we agreed that there would not be a single process that would fit every RAM class. This initial draft of guidelines included 1) encouraging teachers to not ignore bubble students and offering a suggestion for which students fell in that group, 2) use peer-mentors as encouragers and mentors, not just tutors, and 3) be mindful to not violate FERPA (Family Educational Rights and Privacy Act) guidelines in collaborating with peer-mentors.

With that said, a single memo would not be appropriate to support an ongoing change process. Ivankova (2015) suggests regularly revisiting the original study purpose and results from previous phases during Acting. To that, I developed a theory of change to ensure the problem of practice and associated meta-inferences were incorporated into the Acting phase, to better support faculty stakeholders in understanding the goals and logic of the ongoing intervention, and to support the Evaluation planning.

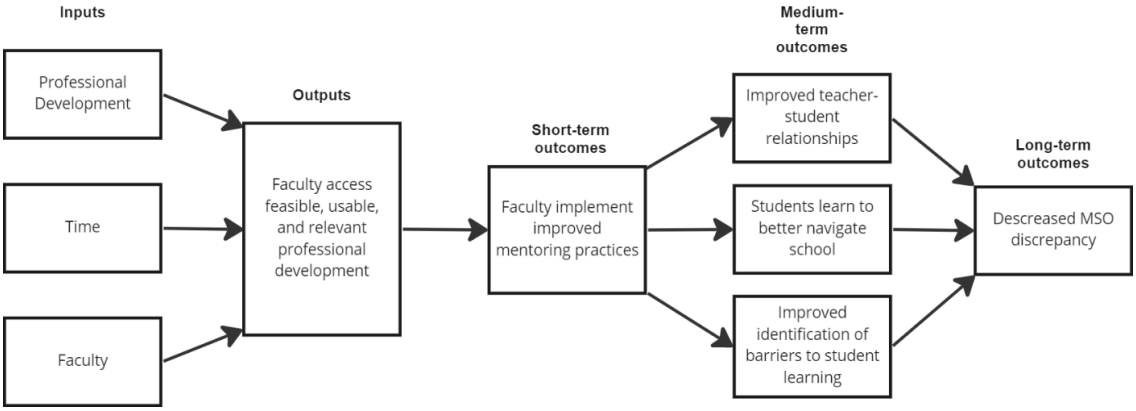
Intervention Theory of Change

This intervention focused on the development of a professional learning module to support faculty in improving the mentoring provided in their RAM classes. During Reconnaissance, I identified a gap in student success (e.g., GPA, course failure) based on a student's MSO. Qualitative data and feedback on meta-inferences from faculty identified a lack of preparedness for high school as one contributing factor. DRHS has an advisory period, "RAM," which includes supporting students in navigating DRHS as a goal. That said, teachers receive no support or training in having effective mentoring conversations.

If teachers were to be provided with feasible, usable professional development resources and a clear explanation of the need for effective mentoring, they could incorporate that new knowledge into their routines during their RAM advisory period. This could allow teachers to incorporate more effective mentoring strategies into their practice, thereby helping students receive support in navigating the systems at DRHS, e.g., meeting deadlines or retaking assessments. Thus, teachers provided more effective mentoring, students would also have a stronger connection with their RAM teacher. In turn, if students have improved academic skills and more fulfilling student-teacher

relationships, they are more capable of accessing the educational opportunities at DRHS. This model is represented graphically in Figure 3.1.

Figure 3.1: *Intervention Logic Model*



Professional Learning Module Design

Rogers (2003) defines the diffusion of innovation as the process by which an innovative technology passes through specific channels of an organization over time. The rate of adoption of any innovation is determined by 1) its relative advantage to what it supersedes, 2) its compatibility with existing organizational culture, 3) its perceived complexity, 4) availability of experimentation, aka *trialability*, and 5) how visible the results are to others.

The module design incorporated elements of Rogers's model where possible. Figure 3.2 shows the overall list of pages within the module. The first three pages, titled "Something to Try", focused on trialability and reduced complexity, providing an easily implemented suggestion to support mentoring for each week of February. An example of a "Something to Try" page is shown in Figure 3.3. Figure 3.4 shows the "Mentoring Background" page which offered some basic theory around effective mentoring, i.e., the "Five C's" of Positive Youth Development (DuBois & Karcher, 2014).

Figure 3.2: *Canvas Professional Learning Module – Final Version Main Menu*

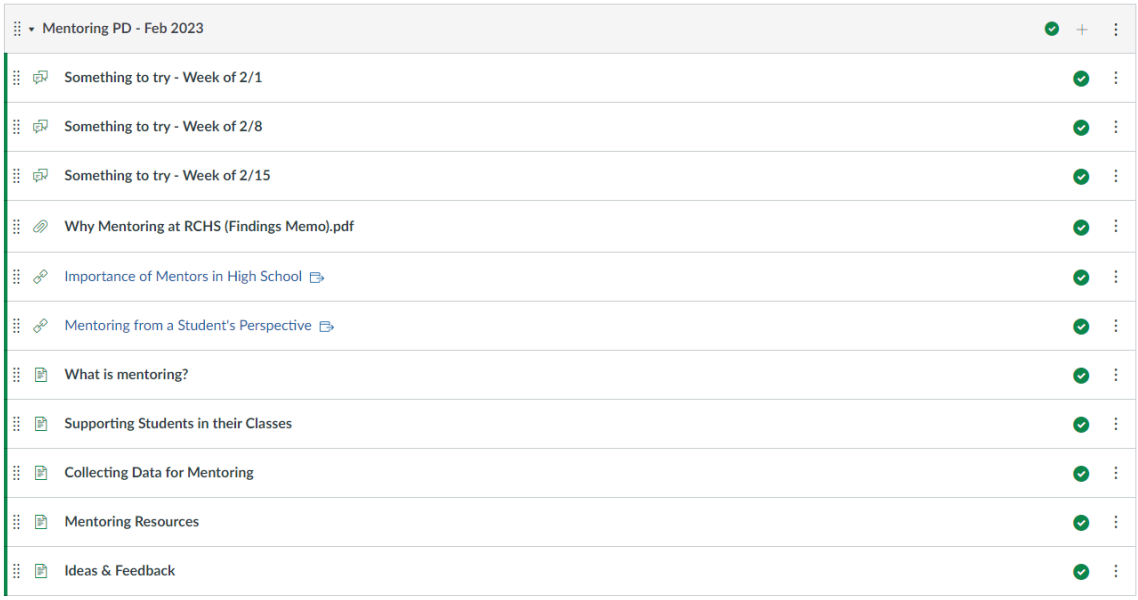


Figure 3.3: *PL Module - "Something to Try"*

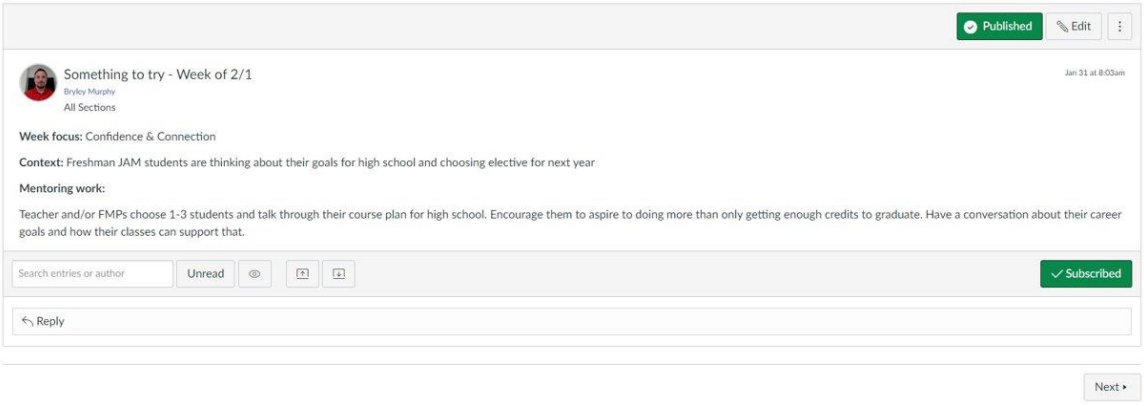
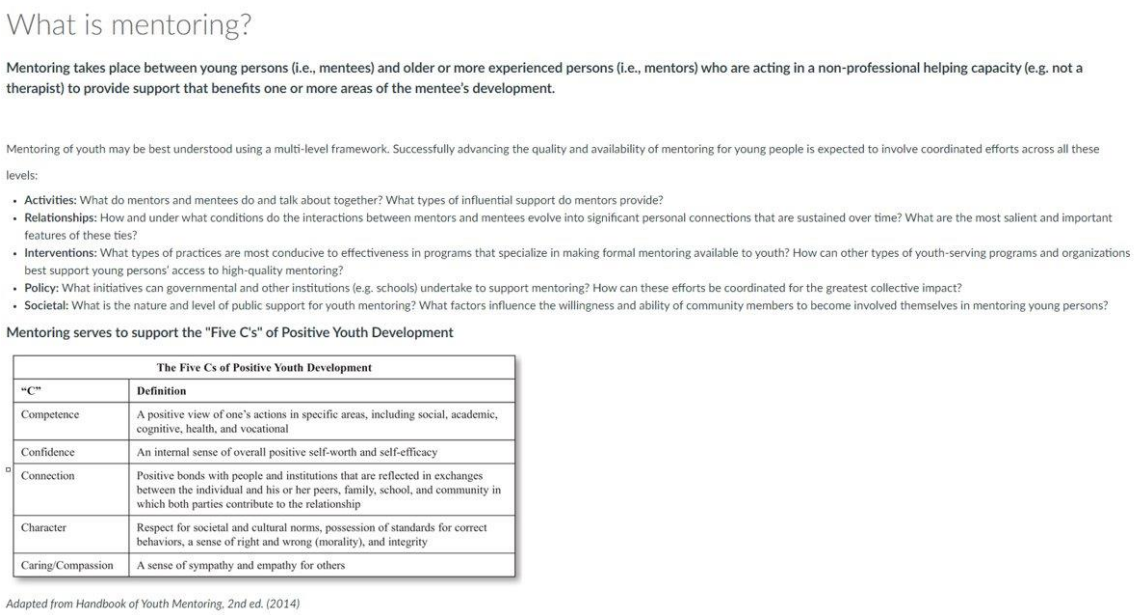


Figure 3.4: *Mentoring Background*



What is mentoring?

Mentoring takes place between young persons (i.e., mentees) and older or more experienced persons (i.e., mentors) who are acting in a non-professional helping capacity (e.g. not a therapist) to provide support that benefits one or more areas of the mentee's development.

Mentoring of youth may be best understood using a multi-level framework. Successfully advancing the quality and availability of mentoring for young people is expected to involve coordinated efforts across all these levels:

- **Activities:** What do mentors and mentees do and talk about together? What types of influential support do mentors provide?
- **Relationships:** How and under what conditions do the interactions between mentors and mentees evolve into significant personal connections that are sustained over time? What are the most salient and important features of these ties?
- **Interventions:** What types of practices are most conducive to effectiveness in programs that specialize in making formal mentoring available to youth? How can other types of youth-serving programs and organizations best support young persons' access to high-quality mentoring?
- **Policy:** What initiatives can governmental and other institutions (e.g. schools) undertake to support mentoring? How can these efforts be coordinated for the greatest collective impact?
- **Societal:** What is the nature and level of public support for youth mentoring? What factors influence the willingness and ability of community members to become involved themselves in mentoring young persons?

Mentoring serves to support the "Five C's" of Positive Youth Development

The Five Cs of Positive Youth Development	
"C"	**Definition**
Competence	A positive view of one's actions in specific areas, including social, academic, cognitive, health, and vocational
Confidence	An internal sense of overall positive self-worth and self-efficacy
Connection	Positive bonds with people and institutions that are reflected in exchanges between the individual and his or her peers, family, school, and community in which both parties contribute to the relationship
Character	Respect for societal and cultural norms, possession of standards for correct behaviors, a sense of right and wrong (morality), and integrity
Caring/Compassion	A sense of sympathy and empathy for others

Adapted from Handbook of Youth Mentoring, 2nd ed. (2014)

Included in the module was also the earlier findings memo and its alignment with the RAM period's goals, which was included to make clear the innovation's compatibility with the existing RAM culture. Finally, the module included some specific resources for supporting different functions of mentoring. Two examples are Figures 3.5 and 3.6, showing additional resources for specific mentoring activities and a protocol for having students reflect on their course grades, respectively.

Figure 3.5: *Resources for Teachers*

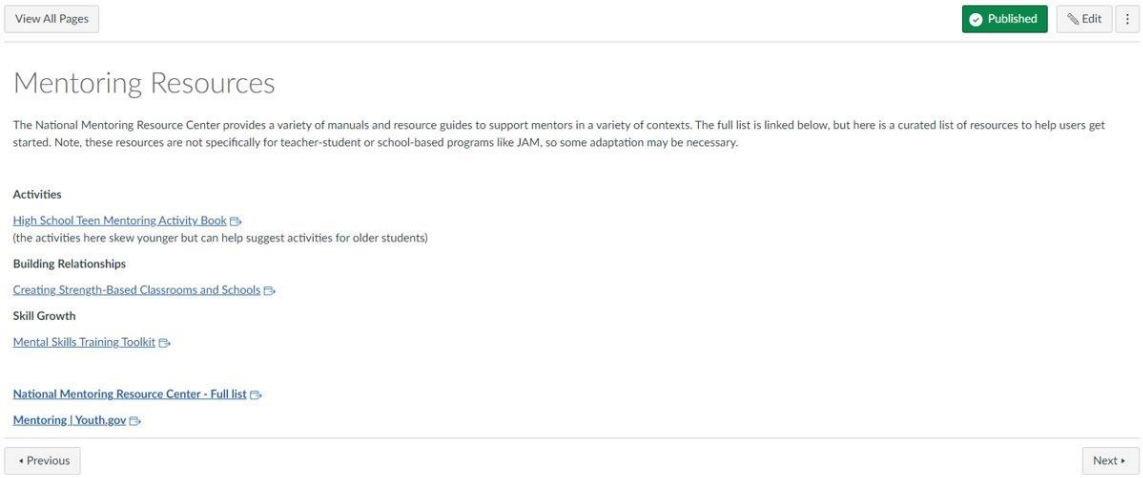
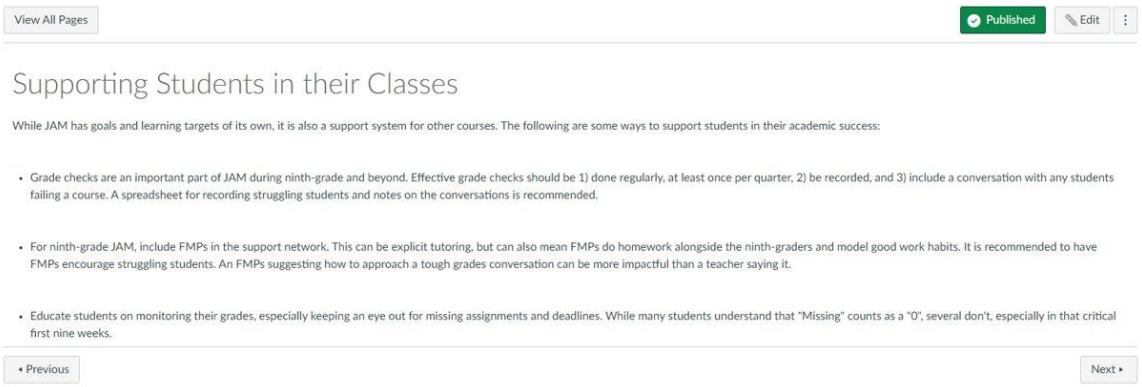


Figure 3.6: *"Grade Check" protocol*



Implementation Steps

Creation of the professional learning module began with a pre-publishing prototype for initial feedback. After that initial feedback, a revised module was placed in the general DRHS professional development Canvas course. While the module was available to all faculty, ninth-grade faculty were specifically invited to review the resources. Informal feedback was solicited through a form linked in the module and through additional informal conversations with select faculty. Informal conversation feedback was recorded in handwritten notes. The second round of revisions were

published to the DRHS professional learning shell course the following Wednesday. These two rounds of revision took place over three weeks in February, leading into Evaluation on the fourth week. Prototype iterations are available in Appendix C.

Evaluation Phase

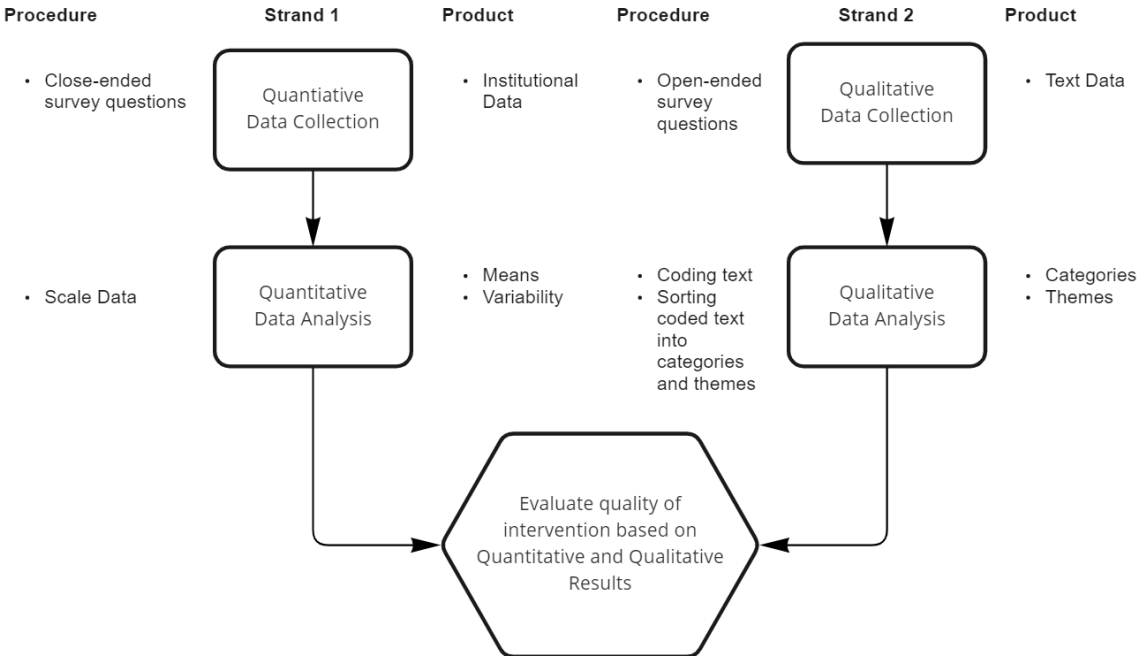
Evaluation determines the success of the interventions undertaken during Action (Ivankova, 2015). For this study, Evaluation sought to assess whether the mentoring professional learning resources had been successful in improving student support in RAM classes, with the long-term goal of decreasing the failure rate and supporting these ninth-grade students in better accessing their high school educational opportunities.

Phase Design and Research Questions

Study Design

Based on this model, a concurrent study design was selected for Evaluation. The quantitative strand investigated faculty fidelity of implementation and perception of usefulness, and the qualitative strand captured more open-ended thoughts on the resources offered and additional challenges facing effective mentoring. The results from the two data sources will then be analyzed and integrated to find corroborating evidence for meta-inferences, as shown in Figure 3.7.

Figure 3.7: *Evaluation Phase Study Design*



Rationale for Selected Design

As with Reconnaissance, a concurrent design is appropriate for the problem of practice given the broad range of available data and the necessity in determining intervention effectiveness quickly (Ivankova, 2015). A concurrent design allows researchers to collect a wide variety of evidence quickly, enabling a tighter iterative action research cycle and allowing practitioners to better respond to an intervention which is ineffective. As with Reconnaissance, this design also avoids many of the issues in receiving IRB (Institutional Review Board) approval that affect sequential designs, as all elements of the study can be established at the outset.

The same elements that make concurrent designs attractive can also make them challenging, as seen previously. Given that the quantitative and qualitative strands are conducted simultaneously, it can be difficult for a sole researcher to collect, analyze, and interpret the multiple sources of data. A second disadvantage is that the concurrent design

can fail to produce integrated meta-inferences if the strands do not produce complementary evidence. Researchers must have a clear, well-reasoned study design and goal at the outset to make the best use of this design.

Strand Design

Quantitative Research Questions. The goal of the quantitative strand is to measure the usability and feasibility of the professional learning resources provided during Acting. The strand will operate using the following research questions:

1. What is the usability of the information and resources in the professional learning module?
2. How relevant was the mentoring information and resources in addressing challenges during the RAM advisory period?
3. What is the feasibility of implementing more effective mentoring based on the provided professional learning?

Qualitative Research Questions. The qualitative strand will seek to capture the perceptions of DRHS faculty about the professional learning provided during Acting. The guiding questions are:

1. What are the challenges faculty face in implementing mentoring based on the guidelines and information in the professional learning module?
2. What are the advantages faculty found in implementing mentoring based on the guidelines and information in the professional learning module?

Sample. The study used a purposeful sample of DRHS ninth-grade faculty (*n=16).* This sample was chosen as the MSO discrepancy among DRHS ninth-grade students is the primary focus for this study.

Instruments. Data were collected through an online survey. The survey consisted of three close-ended questions and two open-ended questions. The complete survey is in Appendix B. For the close-ended questions, a Likert scale was used (1-4). Survey questions are listed in Table 8.

Table 3.1: *DRHS Faculty Survey*

Question Type	Survey Questions
Close-Ended	• How usable were the information and resources in the mentoring module in supporting mentoring in your RAM class? • How feasible would it be to implement a mentoring structure using the information in mentoring module? • How relevant were the mentoring resources to your RAM class?
Open-Ended	• What are the challenges you faced in implementing mentoring based on the information provided through the mentoring module? • What support is present in implementing mentoring based on the information provided through the mentoring module?

Data Analysis

Data from the closed-ended questions was downloaded into a spreadsheet program. Means were calculated to summarize the findings. Data from the open-ended questions were downloaded onto a spreadsheet as well. These data were summarized and categorized according to common themes, which were then arranged into a table using a codebook (Ivankova, 2015). Categories were created through in vivo coding, based on responses given to the open-ended questions in the survey.

Data Integration and Quality

Data Integration. Ivankova (2015) recommends that data integration for concurrent study design focus on combination or comparison of individual strand results to create well-validated inferences. In this study phase, strand results were combined and compared to expand on single-strand findings and explain discrepancies. Quantitative strand data spoke to precise levels of usability, feasibility, and relevance around the intervention conducted in Acting. Qualitative strand data expanded on these quantitative results, suggesting their cause and revealing unexplored avenues for improvement and unforeseen challenges.

Quality Issues. Ethical research practices mandate that the study be designed and conducted in a manner which will result in quality insights. To ensure quality, Evaluation was conducted in line with Ivankova's (2015) recommendations, specifically: 1) Does the study purpose and research questions aim at evaluating the intervention and informing further action? 2) Is the study design appropriate for addressing the study aims? 3) Does the study sample match the study aims? 4) Does the study data collection follow the scientific standards for that approach? and 5) Are the rigor and legitimacy of the study

conclusions well established? Each of these criteria was considered in the process of designing this study, through review of the relevant literature of mixed-method designs and review by an external panel of university experts.

Findings

Quantitative Findings. The quantitative results are detailed in Tables 3.2, 3.3, and 3.4. The materials were found to be usable and relevant to most users, with 77.8% of respondents rating the materials as a 3 or higher, out of a possible 4, in usability and 80% of respondents rating a 3 or higher, out of 4, in relevance to their RAM classes. All participants found the materials at least somewhat usable and relevant, although two respondents did rate them less than the mean. Likewise, most users felt that improving the mentoring in their RAM classes to be a feasible goal, with 80% of participants responding with a 3 or higher and no participants responding that improving mentoring was "not feasible".

Table 3.2: *Usability of Mentoring Resources (n=9)*

Mean	SD	1 (Not usable) % / N	2 % / N	3 % / N	4 (Very usable) % / N
3.0	0.7	0% / 0	22.2% / 2	55.6% / 5	22.2% / 2

Table 3.3: *Feasibility of Implementation (n=10)*

Mean	SD	1 (Not feasible) % / N	2 % / N	3 % / N	4 (Very feasible) % / N
3.2	0.8	0% / 0	20% / 2	40% / 4	40% / 4

Table 3.4: *Relevance of Mentoring Resources (n=10)*

Mean	SD	1 (Not relevant) % / N	2 % / N	3 % / N	4 (Very relevant) % / N
3.1	0.7	0% / 0	20% / 2	50% / 5	30% / 3

Qualitative Findings. Themes and example responses drawn from the open-ended survey questions are provided in Table 10. Participants chiefly identified the myriad goals of the thirty-minute RAM period as the primary barrier to building relationships with students and providing effective mentoring. In many ways RAM can become an additional "lesson" to plan, adding to an already full workload. Other barriers identified were challenges in attaining student buy-in, especially if the RAM period lacked effective peer-mentors, and a limited time for the extended conversations necessary for effective mentoring.

Further, participants said they found the provided mentoring resources valuable, specifically praising the actionable nature of the "Things to try" posts and the grade check template. Faculty, likewise, praised the other ready-to-implement resources provided by DRHS, such as the monthly social emotional learning (SEL) lessons. The peer-mentors in each ninth-grade RAM, called "PMs," were another strength faculty identified toward providing effective mentoring.

Making Mentoring a Priority. Speaking to the first of the two research questions, "What challenges do faculty face?", the most common challenge faced by faculty in attempting to improve student mentoring was finding time during the limited window. RAM is a daily, thirty-minute period, with a regular rotation of activities that do not support student-teacher relationships or mentoring, such as state survey completion,

community building games, and working on district programs, e.g., career planning. Respondent five shared "[There are] other priorities on the RAM calendar- SEL, PBIS/ students leaving class to work with teachers or remediate assessments". Of the ten responses, eight mentioned a lack of time or split priorities as being a barrier to effective mentoring.

Limited Student Buy-in. While most respondents identified time, in some capacity, as the chief barrier to effective mentoring, several participants mentioned that students did not want to receive mentoring, or that personalities would make mentoring ineffective. Respondent eight shared "Implementing mentoring is always tough to get student buy in; sometimes personalities will clash so I think it's important to try and fit kids to specific mentors that can relate to have more success." This quote points to a related challenge of mentoring, which is pairing students with adults or peer mentors with the capacity for a strong connection. Currently, students are assigned to their RAM class by name and graduation year, leaving that critical mentoring connection unsupported. With that said, this study did not capture the feelings of students, so it can be difficult to conclude what, exactly, prevents students from forming supportive relationships in their RAM classes.

Professional Learning Resources. While it was beyond the scope of Acting to extend the RAM period or remove the activities assigned to the period, participants did identify that the resources and templates shared through the professional learning module did help faculty make the most of the thirty-minute period. Three respondents specifically mentioned that the resources would help them better engage the peer-mentors, "PMs", assigned to the RAM class. Respondent six offered, "[The resources offer] support in

how to get students to discuss topics with PM's and how to start those conversations." Using time efficiently was a common goal for respondents, with Respondent praising the pre-made social-emotional learning (SEL) lessons, "SEL lessons are provided with notes so that teachers just have to implement them." Making the most of the short period is an excellent opportunity for ongoing improvement in RAM mentoring, as it does not require schedule adjustments like other, more structured, approaches to change.

Table 3.5: *Evaluation Survey Qualitative Results*

Research Question	Theme	Response *(n=10)*
What are the challenges faculty face in implementing mentoring based on the guidelines and information in the professional learning module?	*Making mentoring a priority among other requirements*	"Making it a priority. Working it into an already busy daily RAM schedule."
		"We have so much thrown at us during RAM and so many other goals we want to accomplish during RAM, it's hard to implement this completely..."
	Lack of student buy-in	"[Students] can be resistant of doing self-improvement activities or group 'work'".
		"Implementing mentoring is always tough to get student buy in; sometimes personalities will clash..."
	Lack of time for meeting with all students	"There are a lot of things happening throughout the week during RAM."
		"Simple answer is time. We have so much thrown at us during RAM..."
What are the advantages faculty found in implementing mentoring based on the guidelines and information in the professional learning module?	*Professional learning resources are available*	"Mr. Murphy has provided multiple resources for teachers to navigate in addition to own ideas on how mentoring can be implemented in our RAM classes."
		"I think the 'Something to Try' is helpful especially for PMs who may not know what to discuss with students in their small groups."
	Ninth-grade RAM classes have peer-mentors.	"My PMs are excellent mentors and role-models for my RAM."
		"The mentoring program is already in place with staff support"

Evaluation Phase Findings

Overall, participants found the mentoring resources provided during Acting to be useful (M=3.0, SD=0.7) and relevant (M=3.1, SD=0.7) to their professional practice in mentoring students. This is seen in the qualitative responses, with participants stating that the resources provided valuable insight into the science behind mentoring and actionable ideas to take to their classrooms. That said, 20% of participants only found limited relevance and usability for the resources, indicating that improvements can still be made. One avenue for improvement, described by several qualitative responses, is additional resources specifically designed for peer-mentors to implement, rather than expecting faculty to communicate all professional learning.

Likewise, participants found the goal of improved mentoring feasible (M=3.2, SD=0.8), however 20% of participants felt that effective mentoring was not possible to implement in their RAM class. These reservations stem from the challenges identified by the qualitative strand, specifically the diverse and time-consuming goals that take place in RAM, leaching time from mentoring activities. This crowded field is made even more of a challenge given the difficulty in working a powerful conversation into a single thirty-minute period. This data suggests the need for structural changes to the RAM period, such as lengthening the period on certain days or weeks or moving activities to other parts of the daily schedule.

Overall Findings

The goal of this study, as established in Diagnosis, was to investigate and address the discrepancy in success among ninth-grade students at DRHS based on their MSO. Specifically, the aims of this study were:

1. Determine factors that contribute to the cohort discrepancy among ninth graders.
2. Capture the context experienced by individual students as they navigate their ninth-grade year at DRHS.
3. Suggest or conduct an intervention and/or changes to DRHS policy and procedures to address systemic factors.

This section addresses what was learned through the MMAR study process, offering an integrated summary of Reconnaissance and Evaluation findings.

Factors Contributing to Cohort Discrepancy

Results from Reconnaissance eliminated as many potential contributing factors as were confirmed. While a significant relationship between MSO and student success was identified in the quantitative strand, no relationship was mirrored in factors which may contribute to that difference, such as attendance, behavior, or performance on standardized tests. The qualitative strand, in asking faculty about challenges ninth-grade students face in achieving academic success, identified non-academic factors, mostly compliance focused, such as turning in homework on time and following school policies. Evaluation suggested a need among ninth-grade students for mentoring, with 80% of participants finding the mentoring resources from Acting relevant and usable for their RAM courses through the quantitative strand. These Evaluation results were triangulated by the qualitative strand, with respondents sharing how the resources helped to address a need for improved mentoring in RAM.

Ninth-Grade Student Context

The qualitative results from Reconnaissance suggest an incongruity between middle and high school that ninth-grade students must navigate to be successful. One teacher explained,

> We don't help them adjust in how to handle freedom. They come from environments that don't allow cell phones and are structured to a lot of freedom in class and they don't know how to handle that freedom.

This was a common sentiment, with other faculty identifying students as struggling with classroom expectations and not appreciating that one can fail a course in high school. Students not understanding high school expectations is corroborated partially by the increased behavior incidence rate seen among ninth-grade students by MSO, however this difference is no longer significant by tenth grade.

Fortunately, students do have access to a daily advisory period, RAM, meant to support students in acclimating to the expectations of high school. Unfortunately, the Evaluation qualitative strand suggests that RAM is stretched in a variety of directions, leaving limited time for activities like mentoring. This packed schedule could explain why the Evaluation quantitative strand showed 20% of respondents felt improving mentoring was not feasible in their RAM class.

Implementation of Intervention

Acting focused on the implementation of a professional learning module, distributed to faculty through the DRHS professional development Canvas course, with the goal of bolstering the effectiveness of mentoring in ninth-grade RAM classes. The

quantitative strand in Evaluation showed faculty found the mentoring useful and relevant, a result triangulated by the Evaluation qualitative strand responses. Likewise, some faculty respondents to the Reconnaissance evaluation strand suggested that RAM, particularly the peer-mentors, were valuable role models for ninth-grade students, something the mentoring module could expand on in the future.

Research Ethics

In conducting this study, ethics was a primary consideration, as was the focus on not disrupting usual goal and processes of school (Herr & Anderson, 2005; Ivankova, 2015). This study was fully reviewed by the UKY Institutional Review Board and by DRHS administration, first during study design and consulted before each subsequent research activity. The process supported the inclusion of ethical research practices, including informing participants upfront about their involvement in the study, requiring researchers to ensure equity with what is asked of participants, and asking that research benefit both participants and society. I was mindful of the burden data collection places on communities, seeking only critical information as needed. The collected data was anonymized and stored securely in a password-protected cloud storage service and shared with only necessary researchers.

Monitoring Phase

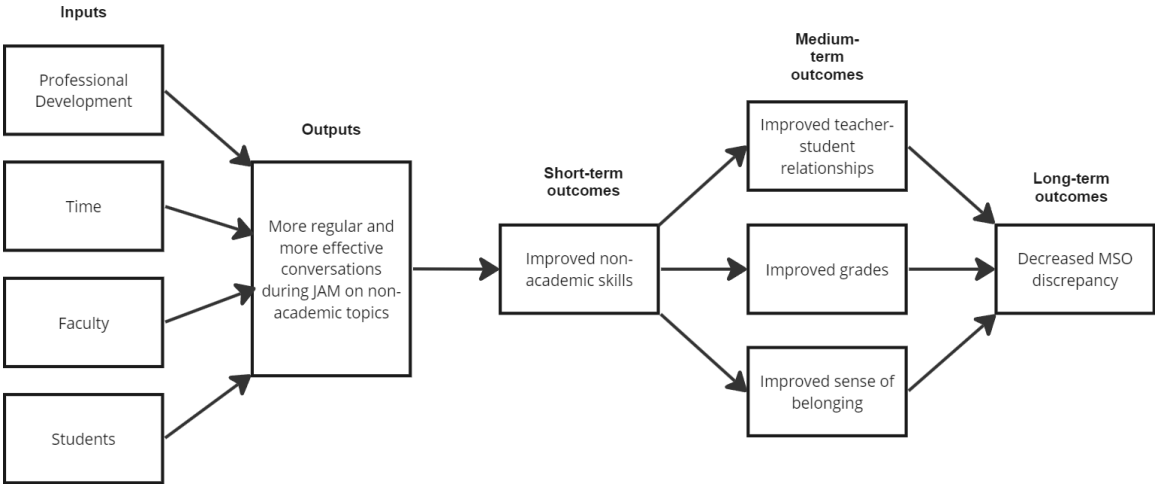
Moving forward, DRHS should continue to evaluate how intervention systems such as RAM are working, ensuring that these programs are meeting their stated goals. This will allow DRHS to ensure no students are “falling through the cracks” due to receiving supports that are incorrect or too infrequent to be effective. While the focus of

Evaluation was specifically ninth grade RAM classes, other programs such as PBIS/MTSS and after-school tutoring would benefit from regular evaluation.

Logic Model – Ongoing Improvement

As suggested in the model for Acting, Reconnaissance identified a lack of non-academic skills as a contributing factor to the MSO discrepancy. Over a longer period, if teachers continue to incorporate strong mentoring practices, students would be better prepared to engage with the academic supports and opportunities DRHS provides. Over time, these conversations would result in improved non-academic skills and stronger student-teacher relationships. By improving these relationships and non-academic skills among students, DRHS can address the issues resulting in the existing problem of practice. This model is represented graphically in Figure 3.4.

Figure 3.8: *Proposed Monitoring Logic Model*



Monitoring Research Questions and Instruments

Long-term evaluation should take advantage of this increased timescale, with suggested metrics being 1) Is there improvement in students' non-academic skills? 2) Do stakeholders report feelings of strong relationships between students and older peers or

adults at DRHS? and 3) Is there any improvement in grades or school connection among students? Suggested instruments would be existing school climate data, student and faculty focus groups or interviews, and existing GPA and course failure data.

Reflection on Intervention

Based on the results from Evaluation the intervention appears to have been a success, in that most respondents found the materials usable, the program feasible, and the ideas presented relevant. This is corroborated by qualitative results and informal conversations with stakeholders, suggesting that most users would like to see RAM offer better support for students navigating their educational opportunities at DRHS. With that said, it remains to be seen whether the intervention will reduce the problem of practice given the scope of this study. Further, while development of the professional learning resources might have slowed, the work of encouraging faculty to use those resources, and of addressing the structural challenges serving as a barrier to improved mentoring has only really begun.

Alongside the work of support the integration of mentoring into the culture of DRHS, there also persists the challenge of limited activities and resources for mentoring with older adolescents. During development of the PL module, I found that many mentoring resources, even ones described as “for high school”, often only included materials for students in ninth grade or younger. It would be beneficial then, if DRHS faculty and students could collaborate in creating structured experiences to support further mentoring.

Discussion and Implications

This section discusses the implications for practice and directions for future research that arose from this project. Discrepancies in student success are found in every school, and they can be challenging to address, even in well-managed and student-centered schools such as DRHS. Too often the existing systems fail to address the actual problem, or the systems only address the problem on paper and lack ongoing evaluation and monitoring to ensure effectiveness.

This study focused on addressing a specific cohort discrepancy, found between ninth-grade students based on their MSO. The investigation found that, despite systems existing to address gaps in student success, a gap in GPA and course failure persisted through ninth grade and beyond. Professional learning showed some success in better support faculty in addressing this gap, however it remains to be seen whether this intervention will truly "move the needle" on student success.

Interpretation of Findings

Factors Impacting the Cohort Discrepancy & Student Context

Elder (2003) establishes the concept of a *social pathway*, a common potential track made up of all the elements that can impact the life of an individual. People within these pathways are viewed as rational actors, however their options are constrained by their place and time. Data from the Reconnaissance quantitative showed students with ACMS as their MSO consistently failing more courses and having a lower GPA than their LMS peers yet showed limited discrepancy in related indicators. When faculty were asked about challenges ninth-grade students face through the Reconnaissance qualitative strand, one respondent replied, "The most common obstacles are managing time and

being able to advocate for themselves to their teachers." This sentiment appeared in some form in nine other responses, with other responses naming organization, self-advocacy, and time management as a pre-requisite to student success.

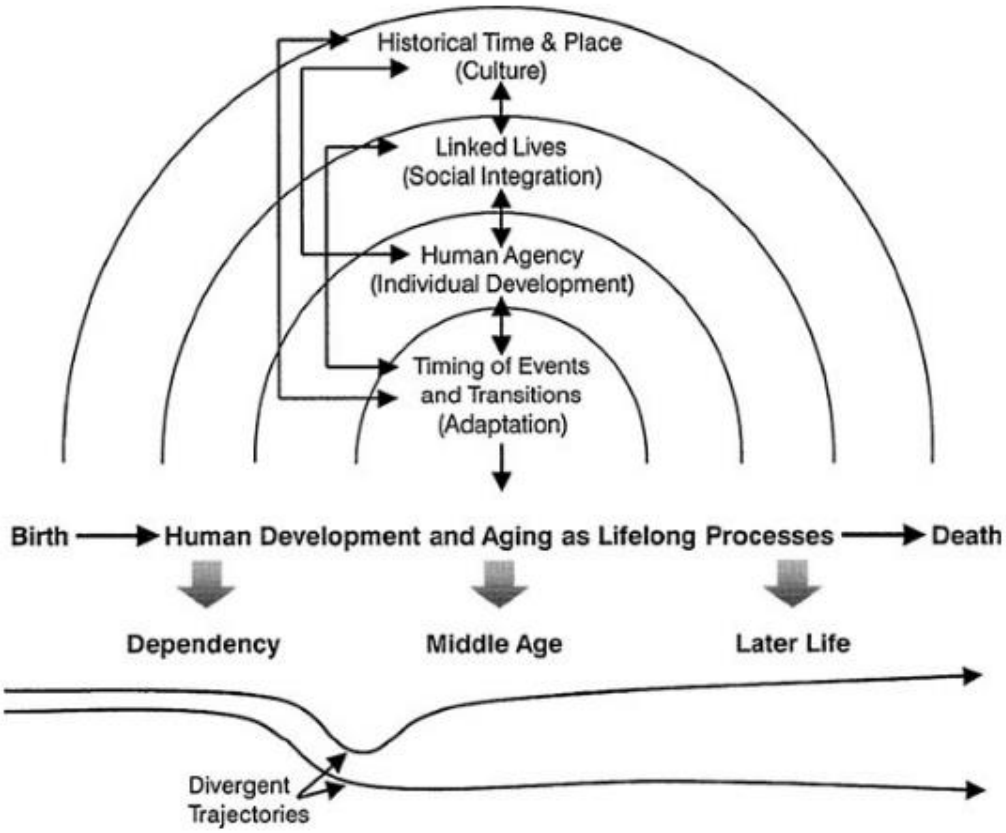
Conceptualizing the two MSOs as separate social pathways would explain the differing capacity to manage classroom expectations and navigate support structures at DRHS. Individuals are formed by their time and place, suggesting that, even if ACMS and LMS both prepare students well academically for high school, differences in expectations, norms, and support systems can result in one group of students have a more effective "tool kit" for addressing problems than other students (Benner, 2021; Elder, 2003). The transition to high school being commonly considered a potentially disruptive turning point can further distress students, leading to maladaptive behaviors (Almeida and Wong, 2009; Benner, 2021).

The idea that the cohort discrepancy has its roots in a need for support based on social pathways arising from MSO, with non-academic skills being the potential point of difference, is partially corroborated by results from Evaluation. When asked whether the mentoring resources provided in Acting, resources focused on showing faculty ways to support students in non-academic skills through mentoring, 80% of respondents found the resources at relevant or very relevant, replying with at least a 3 out of 4. Likewise, several respondents mentioned wanting to better engage their PMs in mentoring, or wanting specific resources to implement, showing that faculty do see a need in addressing student relationships and non-academic skills in their RAM classes.

Altering a Life Course

Elder suggests a key paradigm of LCT is that individuals are shaped by the time and place in which they live. Figure 3.5 shows one model of this impact, as conceived by Elder and Giele (2009). It is this network of transitions, linked lives, and culture that any sort of intervention must contend with. That said, DRHS has many elements within its culture that support help place students on fulfilling trajectories. The quantitative strand of Evaluation suggested that faculty found an expanded mentoring program to be a feasible goal, with 80% of respondents replying with a rating of 3 or higher out of 4. One respondent specifically shared, “I think the ‘Something to Try’ is helpful especially for PMs who may not know what to discuss with students in their small groups. It's important for RAM teachers though to encourage these conversations...” Qualitative responses from Reconnaissance further suggest strong faculty support for mentoring, with one participant sharing, “PBIS and MTSS [two programs with faculty mentoring of students] made a difference because they offered students one on one help and check ins to prevent the students from ‘slipping through the cracks’…"

Figure 3.9: *"The craft of life course research."*



With that said, this study does support the idea of LCT that a person's trajectory, post-turning point, is stable (Elder, 2003). Despite the widespread appreciation of mentoring and student support, the discrepancy identified in Reconnaissance persists, and has persisted despite many years of mentoring and more targeted student interventions. While Evaluation focused solely on a particular set of professional learning resources provided during a narrow window of RAM classes, qualitative responses speak to the structural challenges which may limit the effectiveness of the advisory period. One participant replied,

> I only see these students for a short time every day and sometimes the attitude of seniors is the time is meant for study hall. They can be resistant of doing self-improvement activities or group 'work'. Also, it's difficult to

> implement behavioral material when I'm trained to be a math teacher. I don't feel as confident getting students to buy into these tasks.

Of the eleven respondents to Evaluation, eight mentioned time and a diverse set of goals for the advisory period as being significant challenges to mentoring. Given the need for extended, shared activities to build the trust necessary for effective mentoring, and the weight of each student's personal place and time giving their current personal trajectory a sense of incredible inertia, it stands to reason a thirty-minute period might lead to limited effectiveness.

Implications For Leadership Practice

This study's chief contribution was providing field data on addressing a discrepancy in student success, and the resulting iteration of the improvement process. This contribution encompasses several critical areas for effective leaders which can be expanded upon, including data integration and analysis, embracing the MMAR process, the need for a participatory approach to school improvement, and the need and challenges of professional development.

Data Integration & Analysis

One of the critical components of this process was the need for quality data integration and analysis in order to support school improvement. In this study, data was fragmented across a variety of databases and contexts and needed significant processing by school staff to become usable. Mandinach and Gummer (2016) describe the need for both school faculty and leadership to be data literate, including integrating multiple data sources in reaching conclusions. This study showed that leadership must be willing to look at more than just the "standard reports" easily generated by their tools, as those reports did not capture the MSO discrepancy faculty claimed to encounter.

Similar data integration and analysis was critical to Acting, as it required both qualitative and quantitative data to design the final version of the intervention. Likewise, a mixed-methods design for Evaluation led to both a measurement of the intervention's effectiveness and a broader description of the RAM advisory period's effectiveness at DRHS. School leadership must prioritize the integration of multiple data sources, both quantitative and qualitative, to identify hidden trends and develop effective solutions. This involves investing in data management systems, training staff in data analysis techniques, and fostering a data-driven culture within the school (Mandinach & Gummer, 2016).

Despite the need articulated by authors like Mandinach and Gummer or offered in the *Professional Standards for Educational Leaders* (2015) brief, which states leaders must prepare effective systems of data analysis for school improvement, there is limited literature on effective methods for data *integration* targeted at school leaders or oriented toward school improvement. This study hopes to address this gap by demonstrating ways to intentionally and rigorous integrate disparate strands of data, such that the result is more than the sum of its parts, resulting in stronger conclusions and deeper understandings.

MMAR in School Improvement

This study demonstrated the usefulness of the MMAR framework in supporting school improvement, especially when combined with elements of community or participatory action research. School leaders should consider adopting such approaches to engage stakeholders in collaborative problem-solving and decision-making (Ivankova, 2015). Through this participatory model, leaders elicit buy-in, thus promoting a sense of

ownership and commitment to the improvement process. As shown through stakeholder feedback on Reconnaissance findings, and input in Acting, the contributions of stakeholders to this study went well beyond merely serving as data sources. Instead, faculty were instrumental in better understanding the results and forming well-reasoned meta-inferences.

This study also contributes to the understanding of how the MMAR process can specifically support school leaders in program evaluation. Stuart et al. (2021) offers a "toolkit" for practitioners engaged in program evaluation, listing nine critical components, including the need for a logic model, evaluation study design, and data analysis. This study demonstrates the effectiveness of these elements in helping leaders determine program effectiveness, as well as offering suggestions for evaluation "best practice".

Effective Professional Development

This study confirmed the need and challenges related to effective professional learning in schools. Through incorporating Rogers' (2003) Theory of Diffusion of Innovations, professional learning incorporated specific elements to allow for trialability, to show alignment between the learning and existing school and RAM culture, and to demonstrate the comparative advantage of effective mentoring. Research more specific to professional learning, such as Darling-Hammond's (2017) work, suggests that effective professional learning is focused on content, offers best practices, and encourages feedback and reflection. Adoption of these models was later supported by Evaluation, showing a modest-to-high degree of perceived usability and relevance from faculty in the

quantitative strand. Likewise, faculty praised the learning materials in the Evaluation qualitative strand.

Implications For Further Research

The findings of this study suggest exciting avenues for further research. One interesting result was in the role that meta-cognitive skills may play in contributing to the problem of practice. Whether described as "knowing how to school," meeting deadlines, or understanding how grading works differently in high school versus middle school, Reconnaissance highlighted how there is more to supporting student success than quality subject instruction. Life course theory suggests that people address present problems based upon past experiences, suggesting a link between these meta-cognitive skills and middle school of origin (Elder, 2003). A future study could aim to better understand the connection between meta-cognition and previous experiences and implement an effective system to grow meta-cognitive skills among adolescents.

From a methodological perspective, to enhance the effectiveness of future MMAR studies, it would be beneficial to incorporate more participatory action research (PAR) elements (Ivankova, 2015). Involving stakeholders, such as students, parents, and teachers, in the development and implementation of the action plan can provide valuable insights and ensure that the interventions implemented are relevant to the needs of those affected. Furthermore, future studies could benefit from using a more targeted sample, such as students with specific learning needs or those in a particular subject area, allowing for more targeted interventions than the broad category of "bubble student".

To build on the findings of this study, future research could investigate the impact of specific interventions on student success. For instance, researchers could test the

effectiveness of targeted academic support programs or mentoring programs in improving student outcomes. This would provide a clearer understanding of which interventions are most effective and could inform future interventions aimed at improving student success, such as was conducted with Weare and Nind (2011) or Durlack et al. (2011).

While this study identified several factors that may contribute to the problem of practice, it did not explore all of them in depth. Future studies could investigate other potential factors, such as school culture or teacher expectations, and their impact on student success. By taking a more comprehensive approach, researchers can gain a better understanding of the complex factors that contribute to student success and develop interventions that address all the relevant issues.

Limitations

Sampling & Data Collection

A limitation for this study was being unable to collect data directly from DRHS students about their experiences during their ninth-grade year. Elder (2003) suggests that people make decisions within their life trajectory based on the life and culture within which they grew up. While this study attempted to address symptoms of a trajectory which made accessing high school a challenge, being unable to collect data on this trajectory directly limited the study's internal validity. Related to the lack of data directly from students, most data were from faculty choosing to complete an online survey which invites selection bias.

Differing Time Horizons

A second limitation was the disconnect between the timeline necessary for evaluating the quality of the PL materials and the length of time after which one would

expect to see student growth from improved mentoring. Ivankova (2015) recommends a short-term, iterative prototyping cycle, a paradigm which was ultimately adopted in Evaluation. This contrasts studies evaluating mentoring programs, which find most beneficial effects not appearing in relationships lasting less than a year (Rhodes, 2002).

Conclusion

Chapter 3 describes Acting, Evaluation, Monitoring, discussing the study findings and implications for practice, theory, and future research. During Acting, the proposed intervention is conducted, necessitating a thorough outline of goals, tasks, activities, timeline, resources, and reflection. Evaluation is critical, as it entails assessing the effectiveness of the intervention by collecting data to determine whether the desired impact on the problem of practice was accomplished. Monitoring involves tracking the intervention's progress, making necessary adjustments, monitoring the effects of the action taken, and reporting on the extent to which the intended outcomes were achieved.

In the Discussion and Implications section, the researcher scrutinizes the study findings and elucidates their significance. The section examines the implications of the study for leaders, for researchers using a similar theoretical framework, and on directions for future research. Furthermore, the section acknowledges the limitations of the study, especially any limitations in the study design, sample size, data collection methods, and generalizability of the findings. The chapter underscores the importance of being selective and pertinent when incorporating literature into the Discussion and Implications section and ends with a comprehensive summary of the study.

APPENDICES

Appendix A: Reconnaissance Faculty Survey

Please review the study information, then select the appropriate option below. A copy of this information may be downloaded at the provided link.

KEY INFORMATION FOR A RESEARCH STUDY ON RCHS NINTH-GRADE STUDENT SUCCESS

We are asking you to choose whether or not to volunteer for a research study about factors impacting the success of ninth-grade students at RCHS. This page is to give you key information to help you decide whether to participate. We have included detailed information after this page. Ask the research team questions. If you have questions later, the contact information for the research investigator in charge of the study is below.

WHAT IS THE STUDY ABOUT AND HOW LONG WILL IT LAST?
You are invited to join this study because you are a faculty member at RCHS. By doing this study, we are trying to identify ways to better support ninth-grade students academically and emotionally. If you enroll in the study, you will be asked to complete an online survey. This survey will take no more than an hour and will ask open-ended questions about your perceptions and experiences with ninth-grade students at RCHS. These questions are listed at the end of this document.

WHAT ARE THE KEY REASONS YOU MIGHT CHOOSE TO VOLUNTEER FOR THIS STUDY?

Your participation in this study may not directly benefit you. However, by participating, you will be helping us better understand the challenges new RCHS students face and how RCHS can support them. For a complete description of benefits and/or rewards, refer to the Detailed Consent.

WHAT ARE THE KEY REASONS YOU MIGHT CHOOSE NOT TO VOLUNTEER FOR THIS STUDY?

To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life. However, if answering the survey causes you to feel emotional distress, you may stop participating at any time. For a complete description of risks, refer to the Detailed Consent.

DO YOU HAVE TO TAKE PART IN THE STUDY?

If you decide to take part in the study, it should be because you want to volunteer. You will not lose any services, benefits, or rights you would normally have if you choose not to volunteer.

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, OR CONCERNS?

This research is conducted as part of degree requirements through the University of Kentucky. If you have questions, suggestions, or concerns regarding this study or you want to withdraw from the study contact Bryley Murphy of the University of Kentucky, Department of Educational Leadership Studies, and the RCHS Math Department at bryley.murphy@boone.kyschools.us. If you have any concerns or questions about your rights as a volunteer in this research, contact staff in the University of Kentucky (UK) Office of Research Integrity (ORI) between the business hours of 8 am and 5 pm EST, Monday-Friday at 859-257-9428 or toll-free at 1-866-400-9428.

RCHS Faculty Survey Information

Yes, I wish to participate and complete the survey.

No, I do not wish to participate.

→

How many years have you been a teacher at RCHS?

- I am new to RCHS this year.
- 1 - 3 years
- 3 - 5 years
- 5+ years

How many ninth-grade students do you have this year?

- I do not have any ninth-grade students this year.
- 1 - 30
- 31 - 90
- 90+

In your opinion, what are the most essential elements for students to be successful in their ninth-grade year?

What are the most common obstacles for ninth-grade students?

RCHS has a variety of student support services, such as PBIS/MTSS intervention, our YSC, and tutoring. For the ninth-grade students you have, or have had in the past, that have struggled, were there any school-based services you feel made a difference? Which services, and why/why not?

Are there common ninth-grade challenges that RCHS currently struggles to address as a school?

→

Appendix B: Memo to Ninth-Grade RAM Teachers

Email. Sent 1/20/2023.

"Peer-Mentor Teachers,

We are ready to start the exciting scheduling process and we wanted to send out some reminders regarding PMs as well as a note on helping freshmen with incompletes.

Freshmen with incompletes - Bryley Murphy has been doing some research on our freshmen as part of his doctoral dissertation. I have attached some of his research findings (note - don't share these with the PMs, just for staff viewing). Below, you will find a program he is piloting with his RAM class, trying to help freshmen who are struggling with grades. This is something we have tried in the past with PM but hadn't implemented yet as we moved back to five days this year. We would like RAM teachers to take the occasional glance at grades to see how your freshmen are doing, talk to those who are failing multiple classes and have the PMs have some one-on-one conversations. Of course, due to privacy issues, be careful that you don't give specifics on grades, that should be left to you and the freshmen, but have the PMs sit down on study days and talk to the freshmen. Below are some specifics that Bryley has done in his RAM.

I chose to focus on "bubble students", i.e., students failing fewer than three classes by fewer than ten points. I did not specify they were failing out of a concern for student privacy. I asked my PMs to focus on mentoring and encouraging these students, only resorting to formal tutoring if they felt it necessary. While my PMs chatted with struggling students one-on-one and in small groups, I had more direct, private conversations with students about course failure and how that would impact their coming years at DRHS.

Through Tuesday and Thursday, I found:

4. *I had a lot of success in having my PMs check in on struggling students. These students responded well to an PM pep-talk, and I did not feel they had been met with as much as students failing most classes.*
5. *A common response when asked students why they were failing was they felt their teacher didn't like them, so they had stopped trying. Talking through what course*

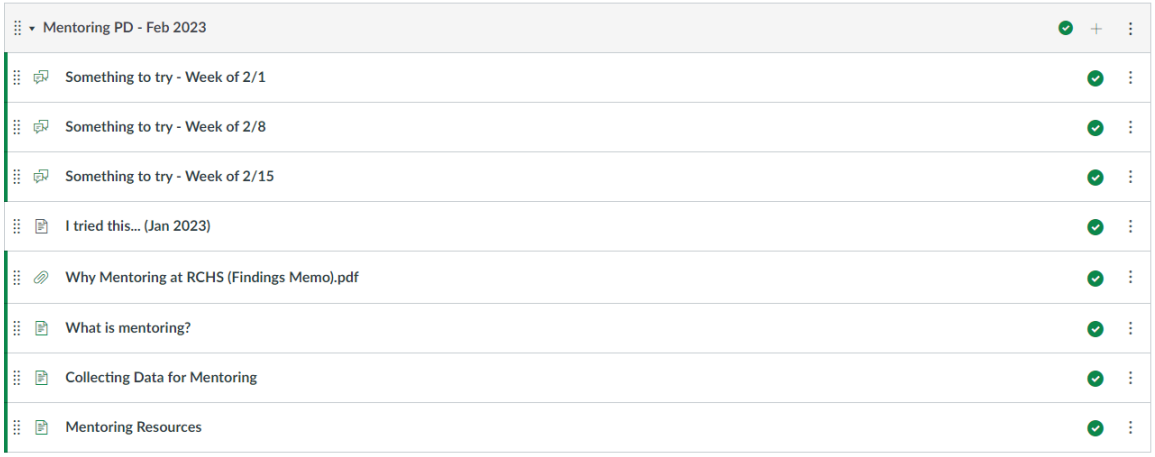
failure meant for them and reminding them that they needed to apply themselves in classes regardless of how they felt proved productive.

6. *Helping students strategize around missing assignments and retakes was helpful. Many failing students did not appreciate the impact multiple missing assignments could have and were shocked when I explained how much a single "M" could affect their overall grade.*
7. *Overall, while obviously these students have gaps in their learning, there were also clear gaps and wrong conclusions when it came to knowing "how to school" that I was able to begin to address.*

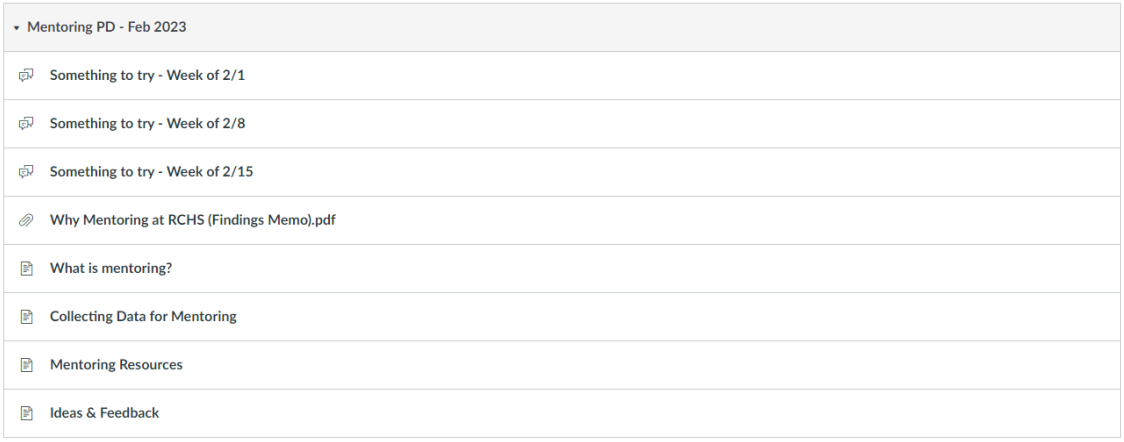
As always, let us know if you have any questions."

Appendix C: Intervention Prototypes

Pre-Published Version:



Initial Live Version:



Appendix D: Evaluation Faculty Survey

Please review the study information, then select the appropriate option below. A copy of this information may be downloaded at the provided link.

KEY INFORMATION FOR A RESEARCH STUDY ON RCHS NINTH-GRADE STUDENT SUCCESS

We are asking you to choose whether or not to volunteer for a research study about factors impacting the success of ninth-grade students at RCHS. This page is to give you key information to help you decide whether to participate. We have included detailed information after this page. Ask the research team questions. If you have questions later, the contact information for the research investigator in charge of the study is below.

WHAT IS THE STUDY ABOUT AND HOW LONG WILL IT LAST?

You are invited to join this study because you are a ninth-grade faculty member at RCHS. By doing this study, we are trying to identify ways to better support ninth-grade students academically and emotionally. If you enroll in the study, you will be asked to complete an online survey. This survey will take no more than an hour and will ask close-ended and open-ended questions about the usefulness of professional learning resources meant to support student mentoring.. These questions are listed at the end of this document.

WHAT ARE THE KEY REASONS YOU MIGHT CHOOSE TO VOLUNTEER FOR THIS STUDY?

Your participation in this study may not directly benefit you. However, by participating, you will be helping us better understand the challenges new RCHS students face and how RCHS can support them. For a complete description of benefits and/or rewards, refer to the Detailed Consent.

WHAT ARE THE KEY REASONS YOU MIGHT CHOOSE NOT TO VOLUNTEER FOR THIS STUDY?

To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life. However, if answering the survey causes you to feel emotional distress, you may stop participating at any time. For a complete description of risks, refer to the Detailed Consent.

DO YOU HAVE TO TAKE PART IN THE STUDY?

If you decide to take part in the study, it should be because you want to volunteer. You will not lose any services, benefits, or rights you would normally have if you choose not to volunteer.

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, OR CONCERNS? This research is conducted as part of degree requirements through the University of Kentucky. If you have questions, suggestions, or concerns regarding this study or you want to withdraw from the study contact Bryley Murphy of the University of Kentucky, Department of Educational Leadership Studies, and the RCHS Math Department at bryley.murphy@boone.kyschools.us. If you have any concerns or questions about your rights as a volunteer in this research, contact staff in the University of Kentucky (UK) Office of Research Integrity (ORI) between the business hours of 8 am and 5 pm EST, Monday-Friday at 859-257-9428 or toll-free at 1-866-400-9428.

RCHS Evaluation Survey Information

Yes, I wish to participate and complete the survey.

No, I do not wish to participate.

→

The following questions refer to the information and resources provided in the "Mentoring PD - Feb 2023" module in the RCHS Professional Development course.

How usable were the information and resources in the mentoring module in supporting mentoring in your JAM class?

1 2 3 4

1 = Not usable, 4 = Very usable

How feasible would it be to provide mentoring in line with the information in the mentoring module?

1 2 3 4

1 = Not feasible, 4 = Very feasible

How relevant were the mentoring resources to your JAM class?

1 2 3 4

1 = Not relevant, 4 = Very relevant

What are the challenges you face in implementing mentoring based on the information provided through the mentoring module?

What support is present in implementing mentoring based on the information provided through the mentoring module?

→

Appendix E: IRB Approval Letter

University of Kentucky | Office of Research Integrity
IRB, RDRC

Modification Review

Approval Ends:	IRB Number:
8/4/2023	79138

TO: Bryley Murphy
Educational Leadership Studies
PI phone #: 8034655993

PI email: bryley.murphy@uky.edu

FROM: Chairperson/Vice Chairperson
Nonmedical Institutional Review Board (IRB)

SUBJECT: Approval of Modification Request

DATE: 2/14/2023

On 2/14/2023, the Nonmedical Institutional Review Board approved your request for modifications in your protocol entitled:

Closing cohort discrepancy among ninth-grade students

If your modification request necessitated a change in your approved informed consent/assent form(s), the new IRB approved consent/assent form(s) to be used when enrolling subjects can be found on the approved application's landing page in E-IRB. [Note, subjects can only be enrolled using consent/assent forms which have a valid "IRB Approval" stamp unless special waiver has been obtained from the IRB.]

Note that at Continuation Review, you will be asked to submit a brief summary of any modifications approved by the IRB since initial review or the last continuation review, which may impact subject safety or welfare. Please take this approved modification into consideration when preparing your summary.

For information describing investigator responsibilities after obtaining IRB approval, download and read the document "PI Guidance to Responsibilities, Qualifications, Records and Documentation of Human Subjects Research" available in the online Office of Research Integrity's IRB Survival Handbook. Additional information regarding IRB review, federal regulations, and institutional policies may be found through ORI's web site. If you have questions, need additional information, or would like a paper copy of the above mentioned document, contact the Office of Research Integrity at 859-257-9428.

seeblue.
405 Kinkead Hall | Lexington, KY 40506-0057 | P: 859-257-9428 | F: 859-257-8995 | www.research.uky.edu/ori/
An Equal Opportunity University

References

Akos, P., & Galassi, J.P. (2004). Middle and high school transitions as viewed by students, parents, and teachers. *Professional School Counseling. 7(*4), 212-221.

Almeida, D. M., & Wong, J. D. (2009). Life transitions and daily stress processes. In G. H. Elder Jr. & J. Z. Giele (Eds.), *The craft of life course research* (pp. 141–162). New York: Guilford.

Ashraf, & Nassar, S. (2018). American Muslims and Vicarious Trauma: An Explanatory Concurrent Mixed-Methods Study. *American Journal of Orthopsychiatry, 88(5),* 516–528. https://doi.org/10.1037/ort0000354

Barber B., Olsen J. (2004). Assessing the transitions to middle and high school. *Journal of Adolescent Research, 19(1),* 3-30. doi:10.1177/0743558403258113

Barone, C., Aguirre-Deandreis, A.I. & Trickett, E.J. (1991). Means—ends problem-solving skills, life stress, and social support as mediators of adjustment in the normative transition to high school. *American Journal of Community Psychology 19,* 207–225. https://doi.org/10.1007/BF00937928

Benner, A. D., Chen, S., Mistry, R. S., & Shen, Y. (2021). Life Course Transitions and Educational Trajectories: Examining Adolescents who Fall off Track Academically. *Journal of Youth and Adolescence, 50(6),* 1068–1080. https://doi.org/10.1007/s10964-020-01376-x

Benner, A. D., Boyle, A. E., & Bakhtiari, F. (2017). Understanding Students' Transition to High School: Demographic Variation and the Role of Supportive Relationships. *Journal of Youth and Adolescence, 46(10),* 2129–2142. https://doi.org/10.1007/s10964-017-0716-2

Benner, A. D. (2011). The Transition to High School: Current Knowledge, Future Directions. *Educational Psychology Review, 23*(3), 299–328.

Benner, A. D., & Graham, S. (2007). Navigating the Transition to Multi-Ethnic Urban High Schools: Changing Ethnic Congruence and Adolescents' School-Related Affect. *Journal of Research on Adolescence, 17(1),* 207–220.

Bogdan, Robert & Biklen, Sari. (2007). *Qualitative research for education: An introduction to theories and methods.*

Bond, L., Patton, G., Glover, S., Carlin, J., Butler, H., Thomas, L., & Bowes, G. (2004). The gatehouse project: Can a multilevel school intervention affect emotional wellbeing and health risk behaviours? *Journal of Epidemiological Community Health, 58,* 997–1003. doi: 10.1136/jech.2003.009449.

Croniger R. G, Lee V. E. (2001). Social capital and dropping out of high school: benefits to at-risk students of teachers' support and guidance. *Teachers College Record. 103(4),* 548-581.

Darling-Hammond, L., Hyler, M. E., & Gardner, M. (2017). Effective teacher professional development. *Learning Policy Institute.*

Dedmond, R., Brown, R., & LaFauci, J. (2006). Freshman transition programs: Long-term and comprehensive. *Principal's Research Review, 1(4),* 1-8.

Domitrovich, C., & Greenberg, M. T. (2000). The study of implementation: Current findings from effective programs that prevent mental disorders in school-aged children. *Journal of Educational and Psychological Consultation, 11,* 193–221. doi:10.1207/ d1532768XJEPC1102_04.

DuBois, D. L., & Karcher, M. J. (2014). *Handbook of youth mentoring.* SAGE Publications, Inc., https://dx.doi.org/10.4135/9781412996907

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. *Child Development, 82*, 405–432. doi:10.1111/j. 1467-8624.2010.01564.x.

Elder Jr, G. H., & Giele, J. Z. (2009). Life course studies: An evolving field. In G. H. Elder Jr & J. Z. Giele (Eds.), *The craft of life course research (pp. 1–24).* New York: Guilford Press.

Elias, M. J., Bruene-Butler, L., Blum, L., & Schuyler, T. (2000). Voices from the field: Identifying and overcoming roadblocks to carrying out programs in social and emotional learning/emotional intelligence. *Journal of Educational and Psychological Consultation, 11*, 253–272. doi:10.1207/S1532768XJEPC1102_06.

Flick, U. (2018). *The sage handbook of qualitative data collection*. SAGE Publications Ltd, https://www-doi-org.ezproxy.uky.edu/10.4135/9781526416070

Hennink, M. M., Kaiser, B. N., & Weber, M. B. (2019). What influences saturation? Estimating sample sizes in focus group research. *Qualitative health research, 29(10),* 1483–1496. https://doi.org/10.1177/1049732318821692

Herr, K., & Anderson, G. L. (2005). *The action research dissertation: A guide for students and faculty.* Thousand Oaks, CA: Sage.

Greenberg, M. T. (2010). School-based prevention: Current status and future challenges. *Effective Education, 2*,27–52. doi:10.1080/ 19415531003616862.

Greenberg, M. T., Kusche, C., Cook, E., & Quamma, J. (1995). Promoting emotional competence in school-aged children: The effects of the PATHS curriculum. *Development and Psychopathology, 7* ,117–136. doi:10.1017/S0954579400006374.

Hamre, B. K., & Pianta, R. C. (2006). Student-teacher relationships. In G. G. Bear & K. M. Minke (Eds.), *Children's needs III: Development, prevention, and intervention* (pp. 59-71). National Association of School Psychologists.

Healey, T. & Carter, A. (2010). *The insider's guide to high school: A parent's handbook for the ninth grade year*. St. Petersburg, FL. Vandamere Press.

Hertzog, C., & Morgan, P. (1998). Breaking the barriers between middle school and high school: Developing a transition team for student success. *NASSP Bulletin, 82*(597), 94-98.

Hughes J, Luo W, Kwok O. M., Loyd L. (2008). Teacher-student support, effortful engagement, and achievement: a 3-year longitudinal study. *Journal of Educational Psychology, 100*(1):1-14.

Kendal, S., Callery, P., & Keeley, P. (2011). The feasibility and acceptability of an approach to emotional wellbeing support for high school students. C*hild and Adolescent Mental Health, 16*, 193– 200. doi:10.1111/j.1475-3588.2011.00602.x.

Kentucky Department of Education. (2019a). Randall K. Cooper high school state report card: 2018-19 school year. https://www.kyschoolreportcard.com/organization/54002?year=2020

Kentucky Department of Education. (2019b). LMS middle school state report card: 2018-19 school year. https://www.kyschoolreportcard.com/organization/155415?year=2019

Kentucky Department of Education. (2019c). Camp Ernst school state report card: 2018-19 school year. https://www.kyschoolreportcard.com/organization/53057?year=2019

Longobardi C, Prino L. E., Marengo D, Settanni M. (1988). Student- teacher relationships as a protective factor for school adjustment during the transition from middle to high school. *Frontiers in Psychology, 7.*

Mandinach, E. B., & Gummer, E. S. (2016). *Data literacy for educators: Making it count in teacher preparation and practice.* Teachers College Press.

Mann, H.B. & Whitney, D.R. (1947). On a test of whether one of two random variables is stochastically larger than the other. *Annals of Mathematical Statistics, 18 (1),* 50 – 60. doi:10.1214/aoms/1177730491.

Matthews, J. S. (2018). When am I ever going to use this in the real world? Cognitive flexibility and urban adolescents' negotiation of the value of mathematics. *Journal of Educational Psychology, 110(5),* 726–746. https://doi.org/10.1037/edu0000242

Methods, Survey. (2008). In W. A. Darity, Jr. (Ed.), International Encyclopedia of the Social Sciences (2nd ed., Vol. 5, pp. 116-118). *Macmillan Reference USA.* https://link.gale.com/apps/doc/CX3045301535/GVRL?u=uky_main&sid=bookmark-GVRL&xid=a05b4a11

Mizelle, N. B. (2005). Moving out of middle school. *Educational Leadership, 12*(7), 56-60.

Murdock, T. B., Anderman, L. H., & Hodge, S. A. (2000). Middle-grade predictors of students' motivation and behavior in high school. *Journal of Adolescent Research, 15(3),* 327–351. https://doi.org/10.1177/0743558400153002

Neild, R. C. (2009). Falling off track during the transition to high school: What we know and what can be done. *The Future of Children, 19(1)*, 53-76.

Qualter, P., Gardner, K. J., Pope, D. J., Hutchinson, J. M., &Whiteley, H. E. (2012). Ability emotional intelligence, trait emotional intelligence, and academic success in British secondary schools: A 5 year longitudinal study. *Learning and Individual Differences, 22,* 83–91. doi:10.1016/j.lindif.2011.11.007.

Rhodes, J. E. (Ed.). (2002). *A critical view of youth mentoring.* Jossey-Bass.

Rice, J. K. (2001). Explaining the negative impact of the transition from middle to high school on student performance in mathematics and science. *Educational Administration Quarterly, 37(3)*, 372–400.

Rueger, S. Y., Malecki, C. K., & Demaray, M. K. (2010). Relationship between multiple sources of perceived social support and psychological and academic adjustment in early adolescence: Comparisons across gender. Journal of Youth and Adolescence, 39,47–61. doi:10.1007/s10964-008-9368-6.

Roderick, M. (2003). What's happening to the boys? Early high school experiences and school outcomes among African American male adolescents in Chicago. *Urban Education, 38(5),* 538–607.

Rogers, E. M. (2003). *Diffusion of innovations (5th ed.)*. New York: The Free Press.

Scott, B. (2001, March). *Coming of age.* IDRA Newsletter. Retrieved from http://www.idra.org/ Newslttr/2001/Mar/Bradley.htm

Scott, S., McGowan, V. J., & Visram, S. (2021). 'I'm gonna tell you about how mrs rona has affected me'. Exploring young people's experiences of the COVID-19 pandemic in north east England: A qualitative diary-based study. *International Journal of Environmental Research and Public Health, 18(7),* 3837. https://doi.org/10.3390/ijerph18073837

Seidman E, Aber J, Allen L, French S. (1996). The impact of the transition to high school on the self-system and perceived social context of poor urban youth. *American Journal Community Psychology, 24(4),* 489-515.

Shaw, I., & Gould, N. (2012). *Qualitative research in social work.* https://doi.org/10.4135/9781849209694

Skrla, L., Scheurich, J. J., Garcia, J., & Nolly, G. (2004). Equity Audits: A Practical Leadership Tool for Developing Equitable and Excellent Schools. *Educational Administration Quarterly, 40(1),* pp. 135–163. https://doi.org/10.1177/0013161x03259148

Silverthorn, N., DuBois, D., & Crombie, G. (2005). Self-perceptions of ability and achievement across the high school transition: Investigation of a state-trait model. *The Journal of Experimental Education, 73*(3), 191- 218.

Smith, J. B. (1997). Effects of eighth-grade transition programs on high school retention and experiences. *The Journal of Educational Research, 90 (3),* 144-152

Spoth, R., Rohrbach, L., Greenberg, M., Leaf, P., Hendricks Brown, C., Fagan, A., & Society for Prevention Research Type 2 Translational Task Force Members and

Contributing Authors. (2013). Addressing core challenges for the next generation of type 2 translation research and systems: The translation science to population impact (TSci Impact) framework. *Prevention Science, 14*,319–351. doi:10. 1007/s11121-012-0362-6.

Stewart, J ., Joyce, J ., Haines, M ., Yanoski, D ., Gagnon, D ., Luke, K ., Rhoads, C ., & Germeroth, C . (2021) . Program Evaluation Toolkit: Quick Start Guide (REL 2022–112) . U .S . Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Central . http://ies .ed .gov/ncee/edlabs

Stewart, T., & Suldo, S. (2011). Relationships between social support sources and early adolescents' mental health: The moderating effect of student achievement level. *Psychology in the Schools, 48*, 1016–1033. doi:10.1002/pits.20607

Survey. (2008). In P. J. Lavrakas (Ed.), *Encyclopedia of Survey Research Methods* (Vol. 2, pp. 860-861). SAGE Publications. https://link.gale.com/apps/doc/CX3073300577/GVRL?u=uky_main&sid=bookmark-GVRL&xid=faad3221

Wang, M. T., & Eccles, J. S. (2012). Social support matters: Longitudinal effects of social support on three dimensions of school engagement from middle to high school. *Child Development, 83*, 877–895. doi:10.1111/j.1467-8624.2012.01745.x.

Wang M. T., Holcombe R. (2010). Adolescents' perceptions of school environment, engagement, and academic achievement in middle school. *American Education Research Journal., 47*(3):633-662.

Weare, K., & Nind, M. (2011). Mental health promotion and problem prevention in schools: What does the evidence say? *Health Promotion International, 26*, doi:10.1093/heapro/dar075.

Wellington, J., & Szczerbinski, M. (2007). *Research Methods for the Social Sciences*.

Williams, E., & Richman, S. (2007). The first year of high school: A quick stats fact sheet. In L. Kennelly & M. Monrad (Eds.), *Easing the transition to high school: Research and best practices designed to support high school learning (pp.1-4).*

Zins, J., Bloodworth, M. R., Weissberg, R. P., & Walberg, H. J. (2007). The scientific base linking social and emotional learning to school success. *Journal of Educational and Psychological Consultation, 17,* 191–210. doi:10.1080/1047441070141314

Vita

Bryley Keaton Murphy

Educational Institutions Attended

University of South Carolina – Columbia, SC
M.Ed. Education Administration, 2017

University of Kentucky – Lexington, KY
B.S. STEM Education & Mathematics, 2014

Professional Positions Held

Boone County Schools
Secondary Math Teacher, 2020 to Present

Lexington District Four
Secondary Math Teacher, 2015 to 2020

Lincoln County Schools
Secondary Math Teacher, 2014 to 2015