6-2023

An Action Research Study on Visible Learning Feedback and Motivational Interviewing Concerning Underserved Advanced Placement Students

Lori A. Vaughn

An Action Research Study on Visible Learning Feedback and Motivational Interviewing Concerning Underserved Advanced Placement Students

by

Lori A. Vaughn

A Dissertation submitted to the Education Faculty of Lindenwood University

in partial fulfillment of the requirements for the

degree of

Doctor of Education

School of Education

An Action Research Study on Visible Learning Feedback and Motivational Interviewing Concerning Underserved Advanced Placement Students

by

Lori A. Vaughn

This dissertation has been approved in partial fulfillment of the requirements for the degree of

Doctor of Education

at Lindenwood University by the School of Education

Lynda Leavitt, EdD — June 30, 2023

Dr. Lynda Leavitt, Dissertation Chair — Date

Jackie D. Ramey — 06/30/2023

Dr. Jackie Ramey, Committee Member — Date

Dr Wendy Freebersyser — 6/30/23

Dr. Wendy Freebersyser, Committee Member — Date

Declaration of Originality

I do hereby declare and attest to the fact that this is an original study based solely upon my own scholarly work here at Lindenwood University and that I have not submitted it for any other college or university course or degree here or elsewhere.

Full Legal Name: Lori Anne Vaughn

Signature: Lori Anne Vaughn Date: 6/30/23

Acknowledgements

First, I would like to thank my family for serving as my biggest support system. Ryan, thank you for reading my drafts and allowing me to vent frustrations. Dad, thank you for being an example of what hard work and determination looks like. Mom, thank you for the persistent prayers, editing my drafts, and sticky-noting the crap out of my references and in-text citations. Second, I would like to thank my friends for listening to me talk about this for the past four and a half years, understanding when I had to postpone or cancel outings, and providing me with constant encouragement. Special thanks to Erica Pegues for editing my references and Dr. Ebner for the expert input on drafts.

Third, I would like to thank all my former teachers and professors who fostered my love of learning; your influence helped me navigate the difficult and crazy path that is the doctorate in education. Specific shout outs to Mrs. Tinucci, Señora Merritt, Mr. Jenkins, Mrs. Noel, Mr. Krull, Mrs. Carr, Dr. Franklin, Dr. Tita Baumlin, Casey Daugherty, Dr. Duffey, and Dr. Rapoff, Dr. Nasser, and Dr. Elder – thank you for reading my drafts and providing me with invaluable feedback despite not serving on my committee. Speaking of the committee, thank you Dr. Ramey for aiding me in the discovery of an intervention to pursue and Dr. Freebersyser for advising me on theory and design and guiding me through the dreaded process of statistics. Thanks also to my partner in crime, Sky Toland – couldn't have made it through the required courses without my cohort buddy. The most crucial person to my success, however, is my dissertation chair, Dr. Lynda Leavitt. In my very first class at Lindenwood, you challenged my opinions, forced me to think critically, and demanded I provide research-

based evidence. Instead of going home crying like I wanted, I asked you to be my dissertation chair (the tears would eventually come). Thank you for battling with me through the countless zoom meetings and the occasional breakdowns, providing reassurance when I thought I could do no more, and praise when eventually deserved. The final and most paramount thank you is lifted up to my Father in Heaven – all of this is for Your glory.

Abstract

Underserved minority students participating in Advanced Placement (AP) courses encountered increased academic pressures, in addition to inequitable conditions in education. The following study addressed inequity, as well as self-motivation, self-regulation, feedback practices, and student autonomy. The researcher implemented Visible Learning Feedback, an academic intervention, focused on bridging the gap in knowledge (Brooks et al., 2019; Hattie & Yates, 2014). Furthermore, the researcher designed a Motivational Interviewing (MI) pilot program, a client-centered approach concentrated on participant social-emotional well-being (Miller & Rollnick, 2013). The study's purpose involved improving AP exam scores, increasing post-test essay grades, and raising self-motivation and self-regulation measurements through the Motivated Student Learning Questionnaire (MSLQ). Additionally, the study examined student perceptions of the interventions, self-motivation and self-regulation relating to the programs, and racial bias in feedback through feedback forms, interviews, MI conversations, and a feedback perceptions survey (Rowe & Wood, 2008. Quantitative results indicated little to no statistically significant increase in AP exam scores or self-motivation and self-regulation measurements; however, increased post-test essay scores demonstrated a large positive statistical difference and a high effect size for VLF. Qualitative results showed students perceived VLF as helpful and aiding in academic growth, and conclusively reported zero racial bias in feedback received in the APELC classroom. Furthermore, students articulated struggles, such as apathy, and successes, such as utilizing strategies for growth, with self-motivation and self-regulation regarding VLF. Participants viewed MI as also contributing to personal growth and as a

personalized activity. Concerning self-motivation and self-regulation relating to MI, students perceived the intervention as an autonomy-building and identity-forging endeavor.

Table of Contents

List of Tables

List of Figures

Chapter One: Introduction

Background of the Study

In 2021, almost 1.2 million American students participated in at least one AP exam, and according to the College Board, the program's access to minorities broadened significantly in the past 10 years (2021b, para. 3). However, the College Board discontinued releasing data concerning the number of students of color taking and passing exams and deleted previous information from archive accounts (Bauer-Wolf, 2022; Najarro & Pendharkar, 2022). Additionally, the College Board claimed many states increased access for underrepresented students but provided no supporting research (2021b). While the College Board worked to expand access to AP classes for underserved students, little research existed about the cause or solution to the racial gap in AP scores between White and minority students.

In the researched district, three high schools offered a selection of Advanced Placement courses, as well as equity and anti-racist alliances with Equal Opportunity Schools (EOS) and Approved Achievement Network (ANet), although, at the time of the study, the district dissolved the affiliation with EOS for unknown reasons. In the 2021 school year, 1,224 students attended the researched high school; 88.1% identified as Black, 5.2% as Hispanic, and 2.7% as White (MO DESE, 2021, Table 1). According to 2021 census data, 36% of people under 18 lived in poverty in the researched district, compared to 12.7% of people in Missouri (Census Reporter, 2021, Table 4; U.S. Census Bureau, 2021, Table 1). Students living in poverty experienced elevated levels of stress, exposure to violence, and familial instability, scoring four to seven points lower on standardized exams; 15% to 20% of lower scores culminated from hampered child brain

development resulting from constrained family resources (Hair et al., 2015, p. 2). Additional, significant demographical data regarding the contrast between the district and the state of Missouri concerned free and reduced-price lunch and homelessness. Whereas only half of the state's students qualified for free and reduced-price lunch, 100% of the researched district's students participated in the program (MO DESE, 2021, Table 5). According to County Health Rankings (2021), "food insecurity and hunger are known to impair child development and increase risk of poor health outcomes" (para. 1). From the most recent census data respecting homelessness, 6,527 people in the state of Missouri experienced homelessness (see Appendix A), whereas 2,815 students in the researched district reported homelessness in the 2019-2020 school year (see Appendix B; Henry et al., 2021; MO DESE, n.d., Table 1). While the previous data portrayed some inaccuracies, a review of the literature on the relationship between homelessness and academic achievement found young people who experienced homelessness performed lower on achievement measures than the general population, although self-regulation and effort control served as protective factors allowing homeless students to improve performance (Manfra, 2018).

Statement of Problem

The urban mid-sized high school in St. Louis County, Missouri, started offering AP classes beginning in the 1990-2000 school year and added Advanced Placement English Language and Composition (APELC) to the course list in the 2017-2018 school year; the researcher acted as the first and only instructor (Krisch, personal communication, September 24, 2021). Of the participants in the study, 88% identified as Black, 6% as Hispanic, and 6% as White, closely corresponding to the disbursement of

race throughout the school (MO DESE, 2021, Table 1). Between 2018 and 2021, 108 students participated in the APELC exam, and six passed with a score of three, as seen in Table 1 (College Board, 2018a; College Board, 2019a; College Board, 2020b; College Board, 2021c)[1]. The study originated with the researcher's concerns shortly after teaching the course; students failed to pass the exam and, in the researcher's experience, reported feeling overwhelmed, stressed, mentally exhausted, and deprived of motivation. The researcher also observed students displaying difficulty persevering through challenging assignments, exhibiting a shortage of improvement on timed writing tasks, and expressing doubts about academic abilities at the first sign of failure. The researcher sought data and student perceptions on feedback and self-regulation, exploring why, despite access and opportunity, students of color in the district underperformed on AP exams.

Table 1

2018-2021 AP Exam Scores

Year of Exam	Score of 1	Score of 2	Score of 3	Score of 4	Score of 5
2018	10	2	0	0	0
2019	33	10	0	0	0
2020	9	7	5	0	0
2021	24	7	1	0	0
Total	76	26	6	0	0

Purpose of the Study

The study promoted the cultivation of equity, self-regulation, feedback proficiency, and learner autonomy for the purpose of improving student AP exam scores. The interventions addressed feedback, self-regulation, and self-motivation; consequently, the study analyzed the difference between underserved AP students participating in

[1] Only instructors with a College Board login possessed access to yearly score reports.

Visible Learning Feedback (VLF) coupled with Motivational Interviewing (MI) and learners only engaging in VLF. The researcher determined whether the interventions increased self-motivated and self-regulated learning on the Motivated Student Learning Questionnaire (MSLQ), resulting in higher academic achievement via practice essay scores and the AP Exam.

To implement the interventions, the researcher developed a feedback model based on John Hattie's (2012) research on feedback and Visible Learning, including Hattie's collaborations with Timperley (2007) and Clarke (2019), John Pintrich's (1999) research on self-regulation, and Zaretta Hammond's (2015) insight into culturally responsive teaching, along with other contributors including Rodgers (2006), Brookhart (2008), Yeager et al. (2014), and Brock and Hundley (2017). The researcher also devised a Motivational Interviewing program designed to represent the demographic of the researched school based on the groundwork laid by Miller and Rollnick (2013). Students wrote a pre-test essay in September 2021 and a post-test essay in May 2022, after which the teacher scored the timed activity and recorded the results. The material consisted of a previously released AP exam question found on the College Board website, and the teacher scored the essays with the College Board's updated (19-20) rubric (see Appendix C). The teacher participated in two week-long AP scoring events in June 2020 and June 2021, received training on using the rubric, and scored over 500 essays written by students each year, increasing grading efficacy.

Every student in the instructor's APELC courses received feedback via the VLF intervention. The researcher's model addressed providing students with the optimal mode of feedback related to the learners' position in the learning cycle using prior knowledge,

learning intentions, and success criteria, reducing the gap between the student's current knowledge and the learning goals (Hattie & Clarke, 2019). The framework also addressed the elements for powerful feedback on a list the researcher developed based on the current literature. Elements for powerful feedback included the following factors (see Table 2).

Table 2

Elements for Powerful Feedback

Feedback Factor	Source(s)
Descriptive	Rodgers, 2006
Conversational	Brookhart, 2008
Visible	Hattie & Clarke, 2019; Hattie & Timperley, 2007
The appropriate mode of delivery	Brookhart, 2008
Conveyed with relevant timing	Brookhart, 2008
Cognizant of student voice	Rodgers, 2006
A facilitator of trusting student-teacher relationships	Hattie & Clarke, 2019; Rodgers, 2006; Yeager et al., 2014
Self-regulated	Hattie & Clarke, 2019; Hattie & Timperley, 2007; Pintrich et al., 1991
Wise	Yeager et al., 2014
Promoting a Growth Mindset	Brock & Hundley, 2017; Dweck 2006

The VLF model placed responsibility on students for evaluating self-performance and learning behaviors throughout the assessment and feedback process; learners recorded self-assessments, self-evaluations, and information for the teacher on Google feedback forms and engaged in one-on-one conversations with the instructor. Research showed feedback possessed powerful, but variable outcomes; higher academic results concluded when students maintained confidence and trust in the instructor and the feedback process (Hattie & Clarke, 2019). The researcher hypothesized the VLF model increased student self-efficacy and self-regulation and compared pre- and post-test essay scores with a two-tailed, paired *t*-test and Cohen's D. Students also engaged in a quantitative feedback perception survey offering insight into student thoughts on

feedback before and after participating in the intervention. The researcher added specialized, open-ended questions to the survey post-intervention, analyzing student conceptions of the VLF model specifically.

Students completed a Motivated Student Learning Questionnaire (MSLQ) examining non-cognitive personal qualities, such as self-efficacy, intrinsic value, test anxiety, self-regulation, and use of learning strategies (Pintrich et al., 1991). For the study, the researcher referred to non-cognitive personal qualities as self-motivated and self-regulated learning. On the questionnaire, students rated themselves using a seven-point Likert scale ranging from "not at all true of me" to "very true of me" (Pintrich et al., 1991). After evaluating the results, a small number of students scoring the lowest on the MSLQ participated in the MI pilot program. Research demonstrated learners, participating in a single MI session, improved mathematics scores, and students partaking in two MI sessions achieved higher grades in math, science, and history, suggesting multiple MI conversations related positively to academics (Snape & Atkinson, 2016). The researcher attempted three to five sessions per student over the course of the school year, ultimately leaving the frequency of meetings up to the individual student, where the final session after the AP exam consisted of an end-of-program interview. Students also completed the post-MSLQ after the AP exam, and the researcher scrutinized the scores for differences from the pre-MSLQ using independent and dependent two-tailed *t*-tests. The College Board website posted the official exam results in July of 2022, and the researcher compared the recent data to student scores from the past, determining differences using a two-tailed independent *t*-test. The researcher utilized a mixed-

methods approach, triangulating the data and strengthening the relationship between outcomes.

After completion of the quantitative and qualitative analyses of the comparisons, the researcher provided teachers with professional development on implementing VLF in the classroom and supportive data on student achievement. Additionally, the researcher advocated further use of MI at the researched high school, improving students' self-regulation and resulting in greater academic performance. The completion of the study added to the literature concentrating on the advancement of academic achievement of minority and underserved students in Advanced Placement classes. Additionally, the results of the study contributed information on adding a self-regulation program to an academic intervention changing a student's performance on a variety of academic tasks. Future implications of the study included adopting VLF district-wide and adding an MI intervention hour, extending the pilot program's benefits to more students. VLF and MI presented equitable programs serving various students, addressed academic deficiencies, and targeted learners refining self-regulation and self-motivation.

Rationale

The current literature lacked research on the linking of academic feedback and the self-regulation intervention of motivational coaching, especially for underserved students, making the study unique. The demographic of minority students in a school district consisting largely of students of color and the focus on the APELC course created an even more singular study. The body of literature behind the study contained several central texts laying the foundation for the theoretical framework. The researcher embraced the social cognitive viewpoint as the main theoretical background of the study

and utilized *Self-Regulated Learning and Academic Achievement: Theoretical Perspectives,* by Zimmerman and Schunk (2001), as the base text supporting the framework. Bandura's (1986) social cognitive theory identified students as unique individuals possessing autonomy, influencing self-regulation and self-development, and generating experiences through actions (Pajares, 2008).

The researcher used Hattie and Clarke's (2019) *Visible Learning Feedback* as the basis of the research on feedback. Information on general feedback and Visible Learning feedback subsisted extensively in the literature; in addition to Hattie and Clarke (2019), other researchers, including Brookhart (2008), Hattie and Timperley (2007), and Rodgers (2006), contributed diagrams or matrices as models for classroom feedback. However, a framework for feedback focused specifically on APLEC performance tasks applied to underserved minority students did not exist. The researcher used the current literature and available models to establish the checklist for powerful feedback models and subsequently formulated the VLF cycle.

For the development of the MI pilot program, the researcher utilized Miller and Rollnick's (2013) third edition of *Motivational Interviewing*. Texts by Atkinson (2006) and Rosengren (2018) supported the framework and provided activities for MI sessions. According to Miller and Rollnick (2013), MI consisted of a cooperative conversation-style therapeutic approach focused on investigating ambivalence and invigorating a person's motivation to change. The medical and clinical settings consisted of the most proficient employers of the counseling approach helping clients change individual behavior regarding drug and alcohol abuse, gambling, diet and exercise, and safe sex (Snape & Atkinson, 2016). However, MI's practice in education remained in the infancy

stage in the literature. Most MI studies conducted in schools focused on teen obesity prevention and teen smoking cessation. Furthermore, other studies focused on administrators or instructional coaches working with teachers creating change in how educators handled classroom management (Reinke et. al., 2011). Only a small number of studies existed throughout the literature connecting Motivational Interviewing to student academic achievement, and O'Brennan et al. (2020) stated, "currently, there are no selective interventions aimed specifically at AP/International Baccalaureate (IB) students that address their unique curricular and social-emotional needs" (p. 20). The researcher's study filled the void.

In the teacher's experience, students enrolled in APELC confronted extremely challenging material, ideas, and concepts never previously encountered. Many students indicated no hope of understanding, quit after the first mistake or error, and expressed a "fixed mindset." Other students reported feeling overwhelmed and mentally exhausted by the depth and scope of the workload. The study purposefully constructed student self-motivation combating negative perceptions, fostered a growth mindset, and addressed the curricular and self-regulation needs of AP minority students, intending to increase academic achievement and close the equity gap in the process. Smith et al. (2017) argued, "it is essential for the school to intentionally create systems that support the social-emotional engagement of its members and help them to feel understood and valued" (p. 33). Aligning an academic and a self-regulation intervention offered students motivational support and increased equity within the APELC classroom.

Hypotheses

Hypothesis 1: There is a difference in Advanced Placement exam scores of students who participated in both Visible Learning Feedback and Motivational Interviewing compared to those who only participated in Visible Learning Feedback.

Hypothesis 2: There a no difference between the Advanced Placement exam scores of students who participated in Visible Learning Feedback in 2021-2022 and scores of those who did not participate in Visible Learning Feedback in the years 2017-2018, 2018-2019, 2019-2020, 2020-2021.

Hypothesis 3: There is a difference between students' pre- and post-practice essay scores after participating in the Visible Learning Feedback intervention.

Hypothesis 4: There is a difference between the effect size growth in the pre- and post-essay scores between students who participated in Visible Learning Feedback and those who participated in both Visible Learning Feedback and Motivational Interviewing.

Hypothesis 5: There is a difference between students' pre- and post-Motivated Student Learning Questionnaire scores after participating in the Visible Learning Feedback intervention.

Hypothesis 6: There is a difference in the percentage increase in Motivated Student Learning Questionnaire scores between students who completed both Visible Learning Feedback and Motivational Interviewing and those who only received the Visible Learning Feedback intervention.

Research Questions

Research Question 1: How do students perceive Visible Learning Feedback?

Research Question 2: How do students perceive self-motivation and self-regulation during and after participating in Visible Learning Feedback?

Research Question 3: How do students perceive racial bias in feedback before and after participating in Visible Learning Feedback?

Research Question 4: How do students perceive Motivational Interviewing?

Research Question 5: How do students perceive self-regulation and self-motivation during and after participating in Motivational Interviewing?

Limitations

Multiple potential risks pertained to the study, including the following influences. The Hawthorne effect threatened the validity of the survey results, due to the researcher acting as the instructor possessing authority in the relationship between teacher and student. Participants possibly answered questions more positively on behalf of the instructor or carried concerns of participation or non-participation increasing/decreasing grades in the class or the relationship with the instructor. Another major threat included extraneous factors playing a role in the resulting AP exam scores, muddying the accuracy of the fidelity of the interventions. For example, the College Board implemented a new rubric in the 2019-2020 school year and reduced the number of multiple-choice questions included on the test, potentially increasing student success on exams. Additionally, the unpredictability of school-day interruptions conceivably caused interference in the implementation of the interventions and the collection of data.

A limitation concerning Research Question 1 occurred due to the researcher's poor development and phrasing of the ranking helpful forms of feedback question on the feedback survey. The researcher assigned a Citi-certified colleague to administer the

questionnaire to participants and therefore lacked the opportunity to explain how to answer the question properly and failed to provide adequate directions on the survey, resulting in several students answering improperly, concluding in deficient data. Another limitation to answering Research Question 1 emanated from some students declining or being unavailable for the feedback interview, consequently producing an inadequate number of responses, limiting the scope and depth of analysis. Furthermore, limitations also existed for the analysis of Research Question 2. The phrasing of the feedback forms conceivably led students to focus on certain aspects of feedback more than others, possibly resulting in skewed data. Additionally, some students did not submit each feedback form, concluding in incomplete results. Despite some potentially biased or insufficient qualitative data, the researcher believed the overwhelming quantity of overall data produced adequate and valid results.

Definition of Terms

Advanced Placement (AP): "…the College Board's AP courses are college-level classes in a wide variety of subjects that you can take while still in high school. They offer you challenging coursework and a taste of what college classes are like" (College Board, 2020c, para. 1).

Advanced Placement English Language and Composition (APELC): "AP English Language and Composition is an introductory college-level composition course. Students cultivate understanding of writing and rhetorical arguments through reading, analyzing, and writing texts while exploring topics like rhetorical situation, claims and evidence, reasoning and organization, and style" (College Board, 2006, para. 3).

College Board:

> The College Board is a dynamic, member-led, mission-driven not-for-profit organization governed by an elected Board of Trustees with guidance from three national assemblies and six regional assemblies. More than 6,000 two- and four-year colleges, universities, secondary schools and districts, higher education systems, and other nonprofit organizations compose the College Board. (College Board, 2018d, paras. 1-2)

Critical Race Theory (CRT 1): According to Ladson-Billings and Tate (1995), "race and racism continue to be muted and marginalized," (p. 47) so Critical Race Theory is a matter of "cultural representation" (p. 48) and can be used as "an analytic tool for understanding school inequity" (p. 50) and may also help to "explain all of the difference (or variance) in school experience and performance" (p. 51). Tate (1997) went on to say that CRT can "provide a more cogent analysis of 'raced' people and move discussions of race and racism from the margins of scholarly activity to the fore of educational discourse" (p. 196).

Culturally Responsive Teaching (CRT 2): "an educator's ability to recognize students' cultural displays of learning and respond positively and constructively with teaching moves that use cultural knowledge as a scaffold connecting what the student knows to new concepts and content promoting effective information processing" (Hammond, 2015, p. 15).

Educational Equity: "creating and/or eliminating policies, systems, and practices in schools that impact the experiences, outcomes, and access to resources for students from previously excluded groups" (Fields, 2021, p. 5).

Equity: “each person gets what he or she needs to succeed” (Smith et al., 2017, p. 2).

Feedback: “information allowing a learner to reduce the gap between what is evident currently and what could or should be the case” (Hattie & Yates, 2015, para. 2).

Motivational Interviewing: “a collaborative, goal-oriented style of communication with particular attention to the language of change, designed to strengthen personal motivation and commitment to goals by eliciting and exploring the person’s reasons for change within an atmosphere of acceptance and compassion” (Miller et al., 2013, p. 410).

Non-cognitive Personal Qualities: “diverse qualities that collectively facilitate goal-directed effort (e.g., grit, self-control, growth mindset), healthy social relationships (e.g., gratitude, emotional intelligence, social belonging), and sound judgment and decision-making (e.g., curiosity, open-mindedness)” (Duckworth & Yeager, 2015, p. 237).

Self-Regulated Learning (SRL): “describes how learners control their thoughts, feelings, and actions to achieve academically and refers to the self-directive process through which learners transform their mental abilities into task-related academic skills” (Zimmerman, 2001, pp. vii-1).

Underserved Students:

> Describes students with a lack of access to high-quality educational and career planning opportunities and resources. Specifically, students have at least one of the following characteristics: Minority: race/ethnicity is African American, American Indian/Alaska Native, Hispanic/Latino, or Native Hawaiian/other Pacific Islander. Low income: combined parental income is less than or equal to

> $36,000. First generation in college: highest parental education level is a high school diploma or less. (ACT, 2014, p. 3)

Visible Learning: Referred to making student learning visible to teachers, clearly identifying the factors making a visible difference to student improvement, and to making teaching visible to the student, encouraging self-regulation, lifelong learning, and love of learning (Hattie, 2012).

Phrasing Note

The author acted as the researcher in the study, the teacher in the classroom, and the practitioner of the motivational interviews. The author referred to herself as the researcher when conducting surveys and interviews, analyzing data, and implicating anything outside the realm of normal classroom practices. The author alluded to herself as the teacher or instructor when conducting usual class business, such as implementing the feedback model, overseeing students writing practice essays, and scoring practice essays. While discussing the process of Motivational Interviewing, the author characterized herself as the interviewer, practitioner, guide, or coach.

Summary

The study analyzed the relationship between the academic intervention, Visible Learning Feedback, and the self-regulation intervention, Motivational Interviewing. The researcher measured student perceptions of feedback and self-regulation and calculated the difference in outcomes in essay scores, exam scores, and self-regulation measurements. Consequently, the study evaluated students' capabilities of developing into "masters of their own learning processes" (Zimmerman, 2001, p. 1). The next

chapter addresses the topics of AP equity, self-regulation, feedback, and Motivational Interviewing through a review of the current literature.

Chapter Two: Review of Literature

In Chapter One, the researcher addressed background information and key elements of understanding the challenges faced by underserved AP students. In Chapter Two, the researcher discussed AP equity, self-regulation in adolescent students, feedback, and Motivational Interviewing, offering a comprehensive view of the research supporting the individual concepts. The purposes of promoting learner achievement and autonomy united the following sections.

Advanced Placement

Elite universities in the 1950s raised alarms over freshmen arriving unprepared for advanced-level college courses after graduating high school (Bauer-Wolf, 2022). Following a pilot program from 1952 to 1954 involving 27 high schools and covering nine different subject areas, the College Board absorbed responsibility for the advanced classes and commenced the AP program in 1955 (Finn & Scanlan, 2021; Schneider, 2009). The College Board further developed the program into a college-level curriculum for high school students taking a standardized exam and possibly earning college credit for passing scores (Warne, 2017). Originally, the College Board intended the program to close the gap in learning between secondary education and college courses (Warne et al., 2015). Despite initial approval, access to the program spread slowly around the country, and by 1969, only 14% of schools offered AP courses (Finn & Scanlan, 2021; Schneider, 2009). Additionally, only gifted students seeking challenging curricula participated in the program, branding AP as a status symbol; the director of AP in 1958 stated explicitly, “the basic philosophy of the Advanced Placement Program is simply that all students are not created equal” (Dudley, 1958, as cited in Schneider, 2009).

However, AP course developers adopted a standardized curriculum, creating an opportunity for universities collecting information about *all* students' abilities (Klopfenstein, 2004). As America transitioned out of a Cold War mindset, where educators encouraged the best and brightest young people to excel, educational reformers observed the lack of equity in the AP program and struggled to secure higher distinctions for non-White students (Schneider, 2009). While AP participation expanded across the country following the program's inception, from 1,229 students in 1956 to 2,642,630 in 2020 (College Board, 2020, pp. 1-2), researchers and educators criticized the curriculum for several reasons, in addition to inequity (Finn & Scanlan, 2021; Schneider, 2009). For instance, researchers suggested the explosion of AP resulted in students unprepared for advanced classes enrolling in the program, supported by the drop in learners passing exams (College Board, 2012; Warne et al., 2015). Additionally, educators observed the College Board's emphasis on breadth over depth and the institution's failing adaptability to changes in education (Schneider, 2009). Researchers also recognized merely enrolling in AP classes improved ACT scores by less than a point, suggesting taking the exam and passing the exam reaped increased benefits (Warne et al., 2015). Despite criticisms of the AP program, many advantages existed for students.

Major benefits of the program consisted of the College Board's status as a privately operated and financed institution with no oversight from the government, AP's evolving high-rigor curriculum, and the program's distinction as voluntary for schools, teachers, and learners (Finn & Scanlan, 2021). Students not only earned high school credit, but AP provided the opportunity of acquiring college credit for passing exams, resulting in money saved and possibly earlier graduation dates (Warne et al., 2015). The

AP program granted more educational choices for students, provided more challenging curricula, afforded deeper insights into personally interesting subjects, and concluded in increased academic achievement (Finn & Scanlan, 2021; Warne, 2017). Furthermore, AP courses furnished students with college preparation and enhanced college retention rates (Klopfenstein, 2004). Finn and Scanlan (2021) also examined AP's function in equity reformation, possibly broadening educational opportunities for disadvantaged youth.

Educational Equity

Despite louder voices calling for reform, injustices in education remained; equal educational opportunities eluded all students, due to abundant social and structural obstacles (Barth, 2016). Through the Critical Race perspective, Ladson-Billings and Tate (1995) posited inequalities resulting from the muting of dialogues concerning race and experiences of minorities, leading to a racialized society. Solutions for rectifying inequity included offering race a prominent role in discussions, examining various forms of discrimination, challenging traditional paradigms of race, gender, and class, and emphasizing the personal experiences of persons from previously excluded groups (Solórzano & Ornelas, 2002).

Discerning the distinction between equality and equity also played a role in unjust educational practices (Smith et al., 2017); defined equality as treating all people in the same manner, whereas equity characterized individuals receiving the services each person needed for success. Equity practices recognized certain people and groups who required additional support in reaching for prosperity (Barth, 2016; Fields, 2021). Researchers further described equity as action based, where authorities created or eliminated policies in deference to inequities and facilitated social reconstruction within

the educational environment (Fields, 2021; Ndura et al., 2003; Reyes, 2010). Schools achieved educational equity when all students inherited the resources individually needed for achievement after graduation regardless of race, ethnicity, sexual orientation, socio-economic status, disability, or immigration distinction (Barth, 2016; Fields, 2021). Researchers noted minority students often lived under the consequences of the double segregation of race and poverty and populated minority-majority schools, resulting in lower educational performance (Barth, 2016; Smith et. al., 2017). Additionally, learners necessitated social-emotional resources working to bridge the educational equity gap.

Researchers acknowledged underserved students often lacked safety and support at home, and learners disengaged from educational work when the school environment ignored social-emotional needs (Becker & Luthar, 2002; Smith et al., 2017). Furthermore, Fields (2021) addressed schools regularly attributing inequities to individual students, instead of the systems in place prohibiting learner progress. Researchers suggested implementing a comprehensive framework assisting the academic and social-emotional needs of students, intentionally emphasizing building relationships, respecting learners' perspectives, and valuing individuals' emotional capacities (Becker & Luthar, 2002; Smith et al., 2017). In addition to social-emotional structures, access to advanced curriculum proved necessary for closing the achievement gap for underserved minority students.

AP Equity

Criticism in the 1960s surfaced from educational reformers regarding the AP program's inequities; the College Board's increased rigor for the elite created a second-class education for underserved and underrepresented students (Schneider, 2009).

Historically, the most prominent obstacle barring minority students from AP enrollment consisted of the parent's socioeconomic status, where districts with higher socioeconomic status offered more advanced curricular options (Klopfenstein, 2004; Ndura et al., 2003). Efforts at increasing minority enrollment in AP during the 1980s and 1990s produced rapid expansion, and 26.3% of test-takers in 1994 consisted of minority students (Schneider, 2009, p. 821). Despite magnified AP participation, Black and Hispanic learners performed poorly on exams, leading researchers to question whether the program achieved equity with wider access, but lower rates of success (Finn & Scanlan, 2021).

Experts advocated equity for all students; learners deserved a challenging curriculum, access to high-level courses, and opportunities for a college degree, and researchers maintained, society benefitted from minority enrollments in rigorous classes (Barth, 2016; Ndura et al., 2003; Schneider, 2009). Researchers suggested the following improvements for increasing equity for minority students in the AP program: allocating academic support resources, subsiding exam fees, retaining well-trained instructors, and providing early preparation for high-level courses (Barth, 2016; Fields, 2021; Ndura et al., 2003). Additionally, teachers increased equity and success in the classroom by implementing culturally responsive practices, cultivating faith in students' capacity for success, promoting high expectations for quality work, and fostering an educational atmosphere of social justice (Ndura et al., 2003). An unintended consequence of AP's rapid maturation possibly represented the desertion of minority students and schools with fewer resources previously gaining ground on the achievement gap; elite schools and students no longer considered the readily available AP program as a prestigious

distinction and now pursued a newer standard of status, marooning underserved students (Schneider, 2009).

Researchers maintained conflicting views on the benefits of AP Exam scores, provided college admission boards with solid intel on the information students learned in high school, and the program highlighted learners already confronting challenging, college-level material (Finn & Scanlan, 2021). The College Board (2021) claimed in recent research, "students who earn a score of 1 or 2 . . . [on] their AP Exams in high school, have better college outcomes than academically similar college students who did not take an AP course and exam" (p. 1). Studies outside the College Board research also found students participating in AP related to higher academic achievement, however with weaker effect sizes (Warne, 2017). Nonetheless, Warne et al. (2015) emphasized empirical evidence concluded merely enrolling in AP courses provided no benefits for students; learners received some academic profits from taking the exam, but the most advantages resulted from taking and passing the exam. Despite increased enrollment, minority students continued earning lower than passing AP exam scores (College Board, 2012; Warne et al., 2015). Closing the achievement gap required addressing current inequities in school districts, such as discrepancies in funding, scarcity of powerful instructors, shortage of resources for underserved students, and unjust policies and practices (Barth, 2016; Fields, 2021). Educational equity remained essential as districts, especially serving minority students, continued offering AP courses, and schools sustained the role of helping maintain democracy across the nation (Smith et. al., 2017).

Equity Summary

While equity in AP progressed intermittently since the program's inception, a substantial racial gap in scores remained, and educational reformers suggested multiple restorative practices required for correcting iniquities in schools. Districts and the College Board required considerable improvements for the purpose of assisting underserved minority students in bridging the achievement gap. Researchers also examined student self-regulation, addressed in the next section, as a vital contributor to successful academic performance.

Self-Regulated Learning in Adolescents

Essential pieces of adolescence included a young person's changing and developing body, mind, and experiences. Significant shifts occurred for students in adolescence, the second decade of existence, a time ranging from puberty to a person's early 20s (McClelland et al., 2018; Schunk & Meece, 2006). Researchers confirmed adolescence as a time for physical, cognitive, emotional, social, emotional, environmental psychological, and behavioral developments (Gestsdottir & Lerner, 2008; McClelland et al., 2018; Schunk & Meece, 2006). Transitioning from childhood to adolescence increased the possibility of stress, revealed a relationship between learning and motivation, and obligated adjustment and adaptation of students (Gestsdottir & Lerner, 2008; Schunk & Meece, 2006). The maturation process of adolescents generated new beliefs about success in and out of the school environment and diversified how students viewed personal values, attributes, and competencies (Schunk & Meece, 2006).

As students moved through the transition process, cognitive changes, family life, and social experiences helped in formulating a young person's identity. Due largely to

prefrontal cortex development, teens evolved cognitively and socially, fostering reflective abilities, and leading to higher-order thinking, self-regulation, and intentional self-development (Brandstädter, 2006; Gestsdottir & Lerner, 2008; McClelland et al., 2018; Moilanen, 2007). Students forged identity by setting personal goals, seeking independence, and establishing autonomy (Brandstädter, 2006). Additionally, researchers argued, adolescents initiated planning personal futures and commenced long-term decision-making, resulting in further stabilization of identity (Brandstädter, 2006; Gestsdottir & Lerner, 2008; McClelland et al., 2018). Social experiences also played an important role in the development of adolescents. According to Schunk and Meece (2006), students' familial experiences with academics and achievement partially shaped adolescent motivation, self-efficacy, and attitudes toward school, in addition to how well young people coped with challenges. Furthermore, Gestsdottir and Lerner (2008) noted along with progressing relationships with family, peer influences also instigated changes in adolescents. As the process of formulating identity unfolded, teenagers sought comparisons with other peers and attempted to find belonging, resulting in new cultural and behavioral considerations and expectations (Schunk & Meece, 2006).

Another integral part of adolescence involved the continual growth of self-regulation. Gestsdottir and Lerner (2008), characterized the aforementioned changes and developments as contributors to the advancement of an adolescent's self-regulation. Furthermore, researchers clarified strategic behavior as developing with experience, not automatically with age or maturation, and not obtained passively through the environment (Meusen-Beekman et al., 2015; Schunk, 2001); thereby, placing the expectation of responsibility on the student's shoulders. However, McClelland et al.

(2018) described the evolution of self-regulation as malleable and explained the probability of many turning points and transitions for the intricate and adult-like self-regulatory processes growing and building in adolescents. Researchers agreed, a major purpose of education involved instilling lifelong-learning competencies in students and self-regulation skills as vital ingredients for success at all developmental stages (McClelland et al., 2018; Zimmerman, 2002). Thus, researchers embarked on a journey studying self-regulation with the goal of explaining student mastery of learning processes (Zimmerman, 2008).

Defining Self-Regulated Learning

Educators grappled with students' different backgrounds and ways of learning, starting with the origin of public schooling in the United States, but new research in the 1970s and 1980s on metacognition and social cognition changed the narrative (Zimmerman, 2002). Researchers defined learning in general as a complex operation involving emotional, motivational, and cognitive processes where experiences intervened in a person's life, potentially changing behavior (Lens & Vansteenkiste, 2008; Schunk, 2001). Defining self-regulated learning (SRL), and disentangling the term from many other related concepts, proved a more complicated task. The idea earned solidification at the 1986 annual symposium at the American Educational Research Association, where researchers determined SRL consisted of students participating behaviorally, motivationally, and metacognitively in the learning process and "focused on students' proactive use of specific processes or responses to improve their academic achievement" (Zimmerman, 1986a, as cited in Zimmerman, 2008, p. 167). Additionally, researchers characterized the process of SRL as a learner flexibly controlling, activating, monitoring,

and/or adapting the person's behavior, feelings, thoughts, actions, and cognitive strategies, and responding to internal intuition, environmental cues, and feedback with the purpose of furthering academic achievement (Moilanen, 2007; Schunk, 2001; Zimmerman, 2001; Zimmerman & Schunk, 2008). The "self" in SRL comprised of a person's controlling agent, intentionally activated with the purpose of influencing thoughts, behaviors, and emotions (Lens & Vansteenkiste, 2008). Researchers also clarified the nature of SRL, not just as a mental ability or a performance skill, but as the *process* where students proactively translated mental capabilities into task-related academic proficiencies (Zamora et al., 2016; Zimmerman, 2001). According to Zimmerman (2002), SRL constituted more than just skill knowledge and required self-awareness, motivation, and behavioral intelligence in implementing the knowledge accurately.

Researchers also emphasized the importance of process and intent to SRL. Zimmerman (2002) explained SRL as a compilation of integrated skills and processes, not as a solitary trait students either maintained or lacked. The complex series of actions commenced with self-monitoring where a student assessed the current situation and level of understanding, compared to the set goal; the individual then evaluated the strategies used, considered improvements, self-modified or self-corrected, fixing the discrepancy between the present state and the set goal, and possibly reorganizing the physical, social, and context of the learning climate, creating a more efficient environment (Gestsdottir & Lerner, 2008; Hattie & Timperley, 2007; Zimmerman, 2002). Considering intent, Gestsdottir and Lerner (2008) surmised student self-regulation in general, might or might not be conscious; learners possibly used strategies unconsciously or automatically.

However, researchers agreed *intentional* self-regulation indicated consciously aware students learned a wide range of strategies and skills and used the techniques independently in and out of the classroom (McClelland et al., 2018; Paris et al., 2001). Furthermore, researchers explained intentional SRL as students purposely aiming towards goal attainment and enhancing self-improvement, instead of passively receiving information (Gestsdottir & Lerner, 2008; Schunk, 2001). Intentional self-regulation also involved long-term SRL, acquired throughout the process of adolescence, leading to direct effort, impulse control, and substantial planning over longer stretches of time (Gestsdottir & Lerner, 2008; Moilanen, 2007).

Researchers determined students' inabilities to compensate for deficiencies in metacognitive awareness attributed to academic shortcomings (Zimmerman, 2002). Livingston (2003) explained researchers often used the terminology of metacognition and self-regulation synonymously, and while connected, the terms possessed distinct properties. Flavell (1979) defined metacognition as "one's ability to regulate cognitive processes" (as cited in Meusen-Beekman et al., 2015, p. 5). Later, researchers also characterized metacognition as a person's awareness and knowledge of the individual's thinking, actively controlling cognition (Livingston, 2003; Zimmerman 2002). While most referred to the term as "thinking about thinking" (Livingston, 2003, p. 2; Meusen-Beekman et al., 2015, p. 5), metacognition's more in-depth qualities included students using self-regulation, understanding, and evaluating the results of behavior and actions, and taking the conclusions and planning alternative avenues for academic success (Pajares, 2008). Comparatively, SRL centered on a person's learning behavior and self-initiated communication with the environment (Zimmerman & Schunk, 2011, as cited in

Meusen-Beekman et al., 2015). Researchers argued both metacognitive awareness and application of self-regulatory skills, or lack thereof, explained the academic differences between students; learners cognizant of personal cognition used self-regulation addressing internal standards and evaluative feedback, focused on self-knowledge of learning, managed limitations during the learning process, and worked towards improving academic achievement (Pajares, 2008; Schunk & Zimmerman, 2008; Zimmerman, 2002).

Additional aspects of SRL included the components of self-control, emotional control, and socialization. Pintrich and de Groot (1990) argued self-control of effort in the classroom designated an important piece of SRL. Once again, however, using the terms self-regulation and self-control as equivalent created confusion among researchers, because although related, the terms represented separate processes (McClelland et al., 2018). According to Kopp (1982), self-control illustrated a shift in the internal monitoring system of a person, causing a self-initiated adjustment in behavior resulting from remembered information. A student with self-control exhibited limited flexibility and capacity for adapting to new situations or experiences requiring waiting, whereas a young person with self-regulation displayed more versatility in both areas. Therefore, self-regulation worked as a more mature outgrowth of self-discipline and denoted a more mature type of self-control granting, the person malleability when working with real-life challenges (Kopp, 1982; McClelland et al., 2018).

Emotional control also factored in as a necessary facet of SRL. Zamora et al. (2016) claimed students developed academic competence by acknowledging goals and detecting and learning from mistakes, contributing to the progression of emotional skills.

Working towards goals and failing often created emotional stress for students; regulating emotions meant modulating strong reactions with pertinent and useful strategies (Bridges et al., 2004, as cited in McClelland et al., 2018). Moilanen (2007) cited using a combination of strategies for students, while regulating emotion. For example, when a parent told a student to stay home and study instead of going out with friends, the student employed interrelated strategies simultaneously, keeping emotions in check; the young person stayed calm during raised tensions with the parent, controlled attention on test preparation, and avoided environmental temptations, regulating behavior (Moilanen, 2007). While responsibility for self-regulating remained with the student, parties other than the "self" often appertained to specific situations.

While the word "self" seemingly portrayed self-regulation as a solitary practice, researchers highlighted the social aspects of the process, as illustrated in the previous example. Researchers asserted students not only observed personal functioning, but scrutinized others as well, drawing inferences, cultivating self-regulatory skills, and improving goal expectations (Gestsdottir & Lerner, 2008; Hattie & Timperley, 2007). Students also used self-regulation in internalizing socially accepted behaviors, such as complying with requests, initiating, or ceasing activities depending on the situation, modulating motor acts in social settings, and generating socially approved conduct without external supervision (Gestsdottir & Lerner, 2008; Kopp, 1982). Zamora et al. (2016) emphasized students deploying intellectual and regulatory techniques in collective circumstances resulted in conscious and rewarding learning participation.

In summary, researchers defined self-regulation as the process where students actively participated in meta-cognitive, motivational, and behavioral learning operations

in a goal-oriented fashion with the purpose of improving academic achievement (Farrington et al., 2012; Zimmerman, 2001). Process, intent, control, and social interactions also contributed to students successfully utilizing SRL. Theoretical perspectives of SRL, examined in the next section, started developing in the 1970s and 1980s when theories evolved, explaining the strength and significance of the practice (Zimmerman & Schunk, 2001). The phenomenological, volitional, and social-cognitive theories contributed to a comprehensive view of self-regulation in education and provided a framework for the Motivated Strategies for Learning Questionnaire (MSLQ), discussed later in the chapter.

Theoretical Perspectives

The phenomenological, volitional, and social cognitive theoretical perspectives of SRL focused on bridging the areas of academic behaviors, cognitive spheres of learning, metacognition, and self-regulated processes (Farrington et al., 2012).[2] Each of the following perspectives conveyed a profile of the self-regulated learner and shared the view of students using self-initiated self-regulatory learning processes as an essential piece to analyzing academic achievement (Zimmerman, 2001; Zimmerman & Schunk, 2001).

Phenomenological

The authors of the phenomenological perspective focused on study of the "self" in SRL. McCombs (2001) defined phenomenology as the study of "the self as a primary phenomenon, an experience of the experiencing self - that permeates and directs human

[2] Because the foundational research on self-regulation occurred in the 1970s and 1980s, many sources in the literature review originated from that time period; up until the early 2000s and 2010s.

behavior" (p. 67). Additionally, researchers sought to analyze how different people understood and conceptualized distinct experiences, including views of self and perceptions of others (Richardson, 1999, as cited in McCombs, 2001). Phenomenological researchers provided validity to subjective, first-hand accounts, studying a person's authentic agency, where an individual self-selected external influences and in turn nurtured the internal self (McCombs, 2001; McCombs & Marzano, 1990). Concerning self-regulation, phenomenology afforded self-phenomena a primary role in managing learning behaviors, favoring a person-centered narrative over a performance-centered approach (McCombs, 2001). McCombs and Marzano (1990) concluded a necessary element for education consisted of the student focusing on the self as the producer of will and motivation when participating in self-regulated processes and activities. Furthermore, Zimmerman (2001) supported the strength of the phenomenological perspective in promoting self-awareness, self-monitoring, and self-evaluation processes resulting in the formation of autonomous identity and supplementary self-regulatory skills, such as planning and goal setting. The theory included a student's affective reactions in the realm of motivation; negative self-perceptions instilled anxiety, diminished motivation, and promoted helplessness and avoidance, whereas positive self-perceptions culminated in confidence, persistence, and higher levels of intrinsic motivation (Zimmerman, 2001). While phenomenology centered on the "self," the volitional perspective concentrated on action control.

Volitional

Much like the confusion between previous terms in self-regulation, researchers often equalized volition and motivation (Corno, 2001). However, according to Ach

(1910), motivation provoked a person's intention to act, whereas volition-controlled impulses, ensuring action occurred, implying the related concepts occurred at different times of intervention (as cited in Corno, 2001). In other words, motivation referred to pre-decisional processes, whereas volition concerned post-decisional applications of self-regulatory strategies (Zimmerman & Schunk, 2008). Motivational processes, discussed more in-depth later in the chapter, promoted intentions concerned with learning or completing tasks and included components, such as goals, commitments, acknowledgments of past performances, and perceptions of efficacy, either fueling or halting task engagement (Corno, 2001). Comparatively, students activated volitional processes *after* deciding to learn or accomplish a task; learners then protected choices from distractions or other competing attentions through action control (Corno, 2001). According to Zimmerman (2001), the volitional approach involved three different types of control strategies: attention control, such as tuning out external noises; emotional control, such as instructions to self to relax in stressful situations; and motivational control, such as imagining positive successes, promoting intent to learn. The underlying psychological operations guiding purposeful actions carrying out intentions during self-regulatory learning exemplified volition and resulted in avoiding state orientations interfering with behavior control (Corno, 2001; Zimmerman, 2001). Zimmerman (2001) labeled the interferences as extrinsic focus, ruminating, and vacillating. Extrinsic focus involved a preoccupation with future consequences instead of immediate results, while ruminating concerned a hyper-focus on thinking about previous failures, and vacillating implicated an inability to decide on a path of action (Zimmerman, 2001). Successful control of volition culminated in proper evasion of interferences. Corno (2001) explained

the importance of volition in SRL, citing the fragility of students' intentions and wavering of commitments; volitional control transformed motivations into actions, allowing students to maintain academic priorities. Compared to the phenomenological and volitional viewpoints addressing the "self" and action control, the social cognitive theory targeted the relationship between a person's cognitive domain and social experience, focusing heavily on self-efficacy.

Social Cognitivism

In the social cognitive theory (Bandura, 1986), researchers studied bidirectional exchanges between social and cognitive experiences where environmental, personal, and behavioral components worked interdependently (Zimmerman, 2001). Furthermore, the perspective perceived humans as individuals with autonomy and agency, participating in self-development and causing events through individual actions (Pajares, 2008). Within the framework, the environment influenced students, but young people also produced quality social systems where students focused on directing learning and fostering self-regulatory skills (Pajares, 2008; Schunk, 2001; Zimmerman & Schunk, 2008). Schunk (2001) also explained within Bandura's (1986) theory, students selected the cognitive activities assisting separate learning tasks, using different strategies in different situations, and not necessarily engaging in the same SRL in all spheres. Self-efficacy played a significant role within the social cognitive perspective.

Self-Efficacy. Bandura (1977) coined the term self-efficacy, defining the concept "as the perceived ability to implement actions necessary to attain designated performance levels" (as cited in Zimmerman, 2001, p. 20). More generally defined, self-efficacy involved a student's beliefs about personal academic capabilities within a specific

domain and an individual's confidence in cognitive skills while learning or completing course work (Pintrich, 1999). Incorporating self-efficacy into the social cognitive framework, Bandura (1986, 1997) added a person's behaviors and environment influenced self-efficacy and the concept represented a key cognitive operation necessary for a human's healthy functioning and well-being (Pajares, 2008; Schunk, 2001; Schunk & Meece, 2006). Researchers argued students with strong self-efficacy possessed positive beliefs about the ability to learn, owned feelings of tranquility in stressful moments, maintained confidence in approaching challenging tasks, and enhanced resiliency in the face of adversity; little incentive or perseverance existed unless individuals believed personal behaviors and actions produced desired outcomes (Bandura, 2001; Pajares, 2008; Pintrich, 1999; Schunk & Meece, 2006). High self-efficacy positively related to self-regulation and heavily influenced levels of academic achievement; students accurately gauging self-efficacy assessed personal self-regulation skills and translated capabilities into actions (Pajares, 2008; Pintrich, 1999; Schunk & Meece, 2006).

Self-efficacy also played a role in adolescent development. Researchers noted the importance of self-regulation and self-efficacy for adolescent students in a rapidly changing world, both socially and technologically accentuating students' academic beliefs, shaping school experiences, and guiding friendships and future career choices (Bandura, 2001; Schunk & Meece, 2006). Furthermore, Bandura (2001) affirmed research on adolescence, demonstrating developing a powerful sense of self-efficacy contributed to identity formation resulting in more autonomy and agency for the student. In academic contexts, self-efficacy influenced academic attainments, enhanced domain knowledge and skills, and augmented motivation and self-belief resiliency, positioning

students on a successful learning path into adulthood (Pajares, 2008; Schunk & Meece, 2006). Researchers commonly distinguished learners with high self-efficacy from students with low self-efficacy. Comparatively, students with more confidence in academic skills worked harder, exhibited more persistence, produced superior quality work, and accomplished higher achievement than students expressing more doubt about academic capabilities (Schunk & Meece, 2006; Schunk & Zimmerman, 2007). Additionally, researchers explained individuals displaying high self-efficacy worked to expand knowledge and expected benefits from producing excellent work, whereas students with low self-efficacy lagged and envisioned a poor outcome before even starting a task (Bandura, 2001; Pajares, 2008).

Several misconceptions concerning self-efficacy also existed within the literature. Schunk and Meece (2006) clarified self-efficacy's dependence on a learner's intelligence and content knowledge; a high-ability student often believed in the positive outcome of a task or performance more than a low-ability student, establishing the feeling of self-efficacy did not necessarily directly reflect the student's intelligence or knowledge. Researchers illustrated no automatic association existed between a student's outcome beliefs and the actual results; self-efficacy held no responsibility for the grade on an assignment, despite a student's confidence or expectation of a favorable grade, and high self-efficacy alone did not guarantee advanced achievement, especially with the absence of required skills and knowledge (Schunk & Meece, 2006; Schunk & Zimmerman, 2007). The benefits and limitations of modeling self-efficacy also appeared in the literature. Students often gleaned positive self-belief information from other children, believing if peers succeeded at a task the individual possessed the ability to succeed as well (Schunk

& Meece, 2006; Schunk & Zimmerman, 2007). However, vicariously induced self-efficacy possibly resulted in failure, causing a weaker outcome than a student's personal performance-based self-efficacy (Schunk & Meece, 2006). Furthermore, a realistic awareness of a person's self-efficacy resembled a reasonable and logical notion. Nonetheless, Bandura (1986) contended a person's overestimation of actual abilities, resulted in increased motivation and achievement, creating a more practical and useful sense of self-efficacy (Schunk & Meece, 2006). Despite the complexity of the issue, self-efficacy remained a powerful construct of the social cognitive theory.

Within Bandura's framework (1986), self-efficacious students exhibited agency when choosing tasks to complete, monitored time and environmental contexts, managed expenditures of effort, and persevered when confronted with academic difficulties regardless of either motivating or demoralizing failures (Bandura, 2001; Pajares, 2008). Schunk and Meece (2006) suggested a relationship between self-efficacy, motivation, and academic achievement, offering self-belief judgments as predictors of consequential motivational, learning, and performative behaviors. According to Pajares (2008), researchers believed self-efficacy played a role throughout the three phases of self-regulation, explored in the next section.

Phases of SRL

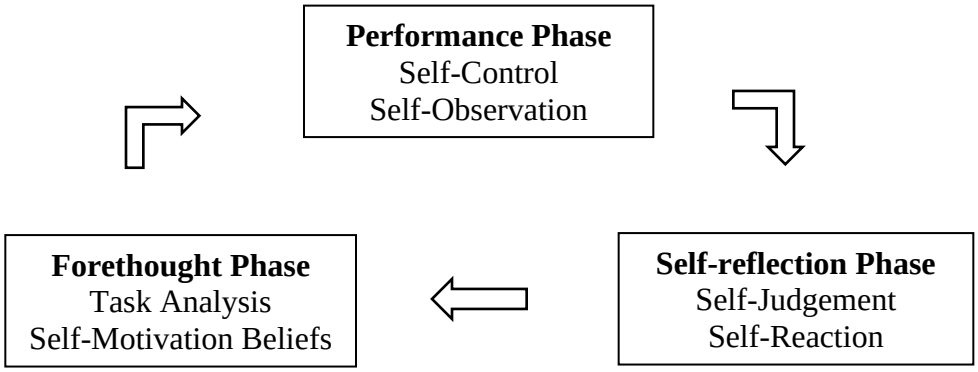
Along with theoretical perspectives, Zimmerman's (2000)[3] phases and subprocesses of self-regulation helped to support aspects of the MSLQ. Researchers accepted self-regulatory processes interacted in a cyclical nature resulting from feedback from students' previous performance attempts for the purpose of improving future efforts

[3] Zimmerman created and composed the foremost literature on the phases and subprocesses of self-regulation, consequently, many sources in the section cite the researcher.

(Zimmerman, 2001; Zimmerman & Campillo, 2003). The three-phase cyclical framework included the forethought phase, the performance phase, and the self-reflection phase depicted in Figure 1 (Zimmerman, 2001). The forethought stage involved processes preceding the completion of a task, such as goal setting, the performance stage concerned processes occurring throughout the task that produced feedback, and the self-reflection stage concentrated on processes transpiring after learning, including evaluating feedback, analyzing performance, and interpreting outcomes for significance (Meusen-Beekman et al., 2015; Zamora et al., 2016; Zimmerman, 2001).

Figure 1

Phases of Self-Regulation



Note. Adapted from B. J. Zimmerman and M. Campillo (2003), "Motivating Self-Regulated Problem Solvers." In J.E. Davidson and R. Sternberg (eds), *The Psychology of Problem Solving*. New York: Cambridge University Press.

Zimmerman (2001, 2008) explained the cycle possessed direct correlations to motivational self-regulatory processes discussed in the next section, such as self-efficacy, task value, goal orientation, and metacognition. Researchers argued the phases and subprocesses of self-regulation stemmed from the social-cognitive theory (Bandura, 1986) where a learner's skill and strategy development originated from social sources and shifted to self-sources throughout the stages (Schunk, 2001; Zimmerman, 2001). The

phases examined below supported an explanation of the structure and framework of non-cognitive self-regulatory processes, explored in the subsequent section of the literature review.

Forethought

The forethought stage in Zimmerman's (2000) phases of SRL referred to beliefs and processes transpiring before learning and included two subprocesses: task analysis and self-motivation beliefs (Zimmerman, 2002). The underlying processes of goal setting and strategic planning in task analysis provided crucial support to the self-motivation beliefs of self-efficacy, outcome expectations, task value, and goal orientation, emphasizing the insufficiency of learning strategies without motivating aspects (Zimmerman & Campillo, 2003). Additionally, Zimmerman and Campillo (2003) explained integrating metacognitive processes with self-regulation skills within a social cognitive context promoted problem-solving. Furthermore, Schunk (2001) suggested difficult, self-set goals promoted the highest motivation and levels of self-efficacy during the self-regulatory process. While goal orientation referred to valuing the merit of the learning process, intrinsic task value related to appreciating the benefit of the task skill (Zimmerman, 2002). Later sections of the literature review discuss more specific information concerning goal orientations, outcome expectations, and task value. After planning an approach to completing a task, students engage in the performance of the task.

Performance

The performance step in Zimmerman's (2000) cyclical phases of SRL involved processes occurring during behavioral application and consisted of two subprocesses:

self-control and self-observation (2002). Self-control referred to deploying the strategies or methods chosen in the forethought phase and included such processes as self-instruction, imagery, attention focusing, and task strategies for the purpose of focusing the learner's attention on the task and optimizing problem-solving (Zimmerman, 2002; Zimmerman & Campillo, 2003). Zimmerman and Campillo (2003) explained the volitional strategy of attention focusing helped students in improving concentration and sifting out external distractions, while task strategies scaled a task down into the essential pieces, helping students reorganize the separated components. The second subprocess, self-observation, involved recording and monitoring academic experiences or self-experiments with the purpose of locating the cause of events and tracking personal cognitive functioning (Zimmerman, 2002). Researchers agreed on the necessity of accurate self-observation resulting in a student's judgment of conclusions, either positively or negatively against standards providing the learner with information on self-regulating in future experiences and guidance in setting more successful goals (Schunk, 2001; Zimmerman, 2001). The last stage provided students the opportunity to reflect on previous self-regulatory steps.

Self-Reflection

Zimmerman's (2000) self-reflection phase composed the last stage of the cycle and concerned the processes taking place after individual efforts at learning and included two subprocesses: self-judgment and self-reaction (Zimmerman, 2002). According to researchers, a student self-judged by evaluating prior performance by comparing outcomes to a set standard and attributing the results to one's internal efforts and/or external factors (Zimmerman, 2002; Zimmerman & Campillo, 2003). Students with high

self-regulation created success criteria from past performances as a measure for mastery in addition to attributing errors to controllable variables (Zimmerman & Campillo, 2003). By self-judging, students explored thought operations and evaluated action results, paving the way for alternative pathways for achievement (Pajares, 2008).

The second subprocess of self-reflection, self-reaction, included the concepts of self-satisfaction and adaptive or defensive reactions (Zimmerman, 2000). Bandura (1991) suggested after performance events, students reflected on emotions, gauging satisfaction, then pursued further assignments resulting in satisfaction and avoided tasks producing negative reactions, such as anxiety (Zimmerman, 2002; Zimmerman & Campillo, 2003). Students also reacted by either adapting problem-solving approaches based on performance resulting in better solutions or slipped into defensive reactions, such as helplessness, task avoidance, and/or procrastination (Zimmerman, 2002; Zimmerman & Campillo, 2003; Zimmerman et al., 1992). Schunk (2001) explained students in the third stage adapted skills and strategies, then incorporated and applied learning processes across situations. According to Bandura (1986), through the act of self-administered changes in behavior as a result of self-reacting to self-observations and self-judgment, students' motivation and self-efficacy increased (Schunk, 2001).

Zimmerman's (2000) phases and subprocesses of self-regulation fit within social-cognitive theory where students initially created goals, planned strategies, and self-motivated in forethought, controlled skills and self-observed during learning performance, and self-judged and self-reacted in self-reflection with the purpose of goal attainment and the reduction of performance task discrepancies (McCombs, 2001; Schunk, 2001; Zimmerman, 2002). Researchers concluded the continually changing

nature of personal, behavioral, and environmental factors required a cyclical process where each phase influenced the next (Schunk, 2001; Zimmerman & Campillo, 2003). Additionally, researchers compared novice and expert self-regulators; novices acquired skills and strategies through modeling, but failed in employing high-quality forethought, setting specific goals, and self-correcting actions, whereas experts possessed high motivation, used powerful strategies, and evaluated personal performance (Pajares, 2008; Schunk, 2001; Zimmerman, 2002). Schunk (2001) noted Zimmerman's (2000) phases did not represent a stage model and learners progressed in individual patterns and phases of the self-regulating process. Researchers agreed self-regulation played an important role in sustaining motivation, increasing outcome expectations, improving performance goals, and developing high self-efficacy throughout all phases of the model (Pajares, 2008; Schunk, 2001). The phases and subprocesses of self-regulation (Zimmerman, 2000) illustrated a framework for the personalized student progression through SRL and the non-cognitive strategies and processes characterized in the next section.

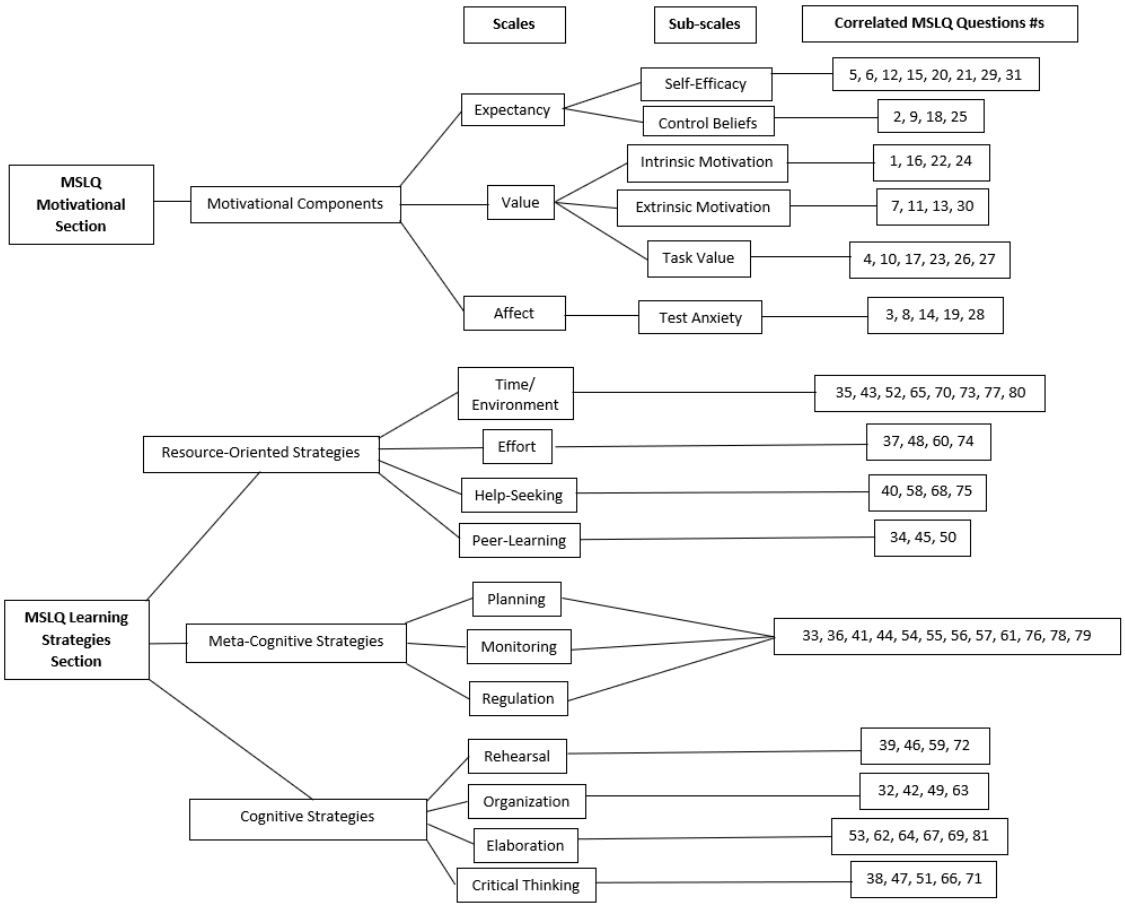
Non-Cognitive Self-Regulation

Zimmerman's (2000) phases and subprocesses represented a model outlining the flow of non-cognitive self-regulation and the associated categories and subcategories referenced in Figure 2. Non-cognitive self-regulation included the areas of motivational components, meta-cognitive strategies, resource-oriented strategies, and cognitive strategies addressed in the MSLQ (see Appendix D). Researchers distinguished between the terms cognitive and non-cognitive; cognitive elements referred to the "what" learned in school, for instance, content knowledge, writing skills, and other areas reliably measured by assessments, such as standardized tests, academic exams, and IQ tests

(Farrington et al., 2012; Messick, 1979, as cited in West et al., 2015). Comparatively, the umbrella term "non-cognitive" constituted both cognitive and metacognitive knowledge, skills, and processes *not* measured by cognitive achievement assessments (Farrington et al., 2012; West et al., 2015). Researchers conceded to the problematic nature of the term non-cognitive since, in the cognitive sense, every psychological operation relied on information processing; however, "non-cognitive" represented the most useful term encapsulating the categories of motivation, metacognition, and resource and cognitive strategies (Farrington et al., 2012; West et al., 2015).

Figure 2

Non-cognitive Self-Regulation with MSLQ Numbers



The cognitive processes from the MSLQ listed in Figure 2 referred to learning strategies, study skills, thoughts, and behaviors students engaged in during learning and represented techniques promoting improved academic performance (Farrington et al., 2012; Weinstein & Mayer, 1986). Farrington et al. (2012) emphasized the interaction between cognitive and noncognitive factors working within the social-cognitive framework reciprocally reinforcing one another in the environment and socio-cultural setting. Researchers reinforced the importance of students using self-regulatory skills across different tasks, activities, and academic areas resulting in more productive behaviors, stronger achievement, higher self-efficacy, and increased school success (Farrington et al., 2012; Pajares, 2008). An important advancement in the research and measurement of SRL and non-cognitive qualities included the development of self-report tools including the MSLQ.

MSLQ

Researchers produced the MSLQ out of necessity to measure the interaction between motivational and cognitive aspects of academic performance (Duncan & McKeachie, 2005; Garcia & Pintrich, 1996; Pintrich & De Groot, 1990; Tabatabaei et al., 2017). Initial unofficial development of the instrument started in 1982 and the formal creation began in 1986; researchers collected three waves of data from 1986, 1987, and 1988 analyzing and revising items based on statistical and psychometric analyses creating a final version in 1993 (Duncan & McKeachie, 2005; Garcia & Pintrich, 1996; Pintrich et al., 1991; Pintrich et al., 1993). Researchers formulated the self-report tool assessing a student's motivation and strategy use in a particular course, opposed to a learner's overall

use, considering motivation and strategies differed in the nature of tasks in various classes (Duncan & McKeachie, 2005; Garcia & Pintrich, 1996; Pintrich et al., 1991).

The MSLQ operated within the social-cognitive framework of SRL where learners acted as active processors of information and researchers assumed learning strategies and motivation served not as traits of the student, but as contextually bound factors learned under the control of the student (Duncan & McKeachie, 2005; Garcia & Pintrich, 1996; Pintrich et al., 1993). Zimmerman (2008) described the MSLQ as an aptitude measure of self-regulation characterizing SRL as an enduring attribute of a student predicting the learner's future behavior. Another widely used tool developed in the late 1980s consisted of the Learning and Study Strategies Inventory (LASSI); however, researchers asserted the MSLQ assessed motivational qualities of self-regulation in a more detailed fashion and perceived self-efficacy more broadly (Farrington et al., 2012; Garcia & Pintrich, 1996). While the MSLQ originally tested college students, the developers argued for the instrument's accessibility to younger students, but also argued against using the tool for grades lower than fifth grade, due to children's lack of ability in understanding the questions or lack of metacognitive awareness in self-reporting behavior (Garcia & Pintrich, 1996; Pintrich et al., 1991).

Questionnaire Elements

The implementation of the MSLQ occurred within the classroom environment where students finished the tool in 20 to 30 minutes and answered items on a seven-point Likert scale ranging from 1 "not at all true of me" to 7 "very true of me" (Pintrich et al., 1991; Pintrich et al., 1993; Zimmerman, 2008). The MSLQ consisted of a motivation section containing 31 questions and a learning strategies section containing 50 questions,

including scale and subscale categories correlated to question numbers reflected in Figure 2 (Duncan & McKeachie, 2005; Pintrich et al., 1993; Pintrich et al., 1991; Zimmerman, 2008). The various scales used by proctors worked modularly, either together as a whole or singularly fitting the needs of the instructor or researcher (Pintrich et al., 1991; Pintrich et al., 1993). Students completing the entirety of the MSLQ encountered the motivational section first.

Motivational Components. The MSLQ's motivational section contained three primary components and six sub-components assessing students' goals, values, skill beliefs, and anxiety in a particular course (Duncan & McKeachie, 2005; Pintrich et al., 1993; Pintrich et al., 1991). The MSLQ creators incorporated motivation into the tool, showing a strong endorsement of SRL, as student motivation and the use of motivational resources propelled the self-regulation process and a student's path towards distinct goals (Lens & Vansteenkiste, 2008; Tabatabaei et al., 2017). According to researchers, using meta-cognitive strategies alone did not result in successful self-regulation; students needed motivation identified as a determining factor in student academic achievement, to employ strategies favorably (Al Khatib, 2010; Tabatabaei et al., 2017). Researchers explained the section on motivation included scales focused on the elements of expectancy, value, and affect, each supported by theories and frameworks detailed below (Duncan & McKeachie, 2005; Pintrich, 1999; Zimmerman, 2008). Motivational models based on social-cognitive theory (Bandura, 1986), including Zimmerman's phases and subphases of SRL (2000) and Pintrich's MSLQ (1991, 1993), focused on the activation and direction of behavior, cognitive and regulatory constructs, and social interactions with others (Pintrich, 2003). Ryan and Deci's self-determination theory (SDT) (2000)

and Eccles' expectancy-value model (1983) also played a role in defining motivational aspects of SRL.

Researchers defined SDT as an extensive motivational framework assuming students actively engaged in learning, maintained growth mindsets, and possessed the basic psychological needs of autonomy, relatedness, and competence (Garn & Jolly, 2014; Lens & Vansteenkiste, 2008; Ryan & Deci, 2000). Ryan and Deci (2000) described SDT as the investigation of self-motivation, identity formation, and the processes fostering the attainment of innate psychological needs. The fulfillment of autonomy, relatedness, and competence resulted in greater persistence, higher achievement, enhanced motivation, and increased well-being for students (Lens & Vansteenkiste, 2008; Ryan & Deci, 2000). Pintrich (2003) highlighted the needs as innate for humans of all cultures and experiences, arguing cognitive, emotional, and behavioral functions suffered when basic psychological needs remained unfulfilled. Additionally, since motivation differed in high-ability learners and underachievers, authority figures promoting positive behaviors and mobilizing others to action viewed motivation as a valuable resource, due to subsequent positive consequences of students' educational products (McCoach & Siegle, 2003, as cited in Garn & Jolly, 2014; Ryan & Deci, 2000). In later sections of the literature review, the researcher discussed more specific realms of motivation including intrinsic and extrinsic motivation.

The expectancy-value model (Eccles, 1983) provided the framework for the motivational components addressed in the MSLQ: expectancy, value, and affect (Pintrich & de Groot, 1990). The expectancy component included student beliefs about the ability to perform tasks, the value aspect involved student beliefs and goals about the interest

and importance of a task, and the affective element encompassed student emotions related to a task (Pintrich & de Groot, 1990). Researchers declared the components worked independently and interactively influencing student interpretations of academic performance, expectancies, values, and behaviors, but not necessarily reflecting the reality of the experiences (Eccles, 1983; Pintrich & de Groot, 1990). However, students successfully utilizing the motivational components achieved greater self-regulated learning and higher learning outcomes (Lens & Vansteenkiste, 2008).

Expectancy. The expectancy scale of the MSLQ referred to student beliefs about accomplishing a task and contained two subscales: self-efficacy and control beliefs for learning (Duncan & McKeachie, 2005; Pintrich et al., 1991). Self-efficacy, discussed earlier as an important component of the social-cognitive theory (Bandura, 1986), concerned a student's belief in the competency of applying knowledge and skills in new situations and a learner's beliefs of capabilities and confidences in completing tasks, subsequently honing other cognitive techniques (Linnenbrink & Pintrich, 2002; Pintrich et al., 1991; Schunk, 1989, as cited in Al Khatib, 2010). Duncan and McKeachie (2005) clarified the MSLQ collapsed the two aspects of self-efficacy, a student's expectancy for success and a leaner's judgment of the ability and confidence to perform a task, under the singular term "self-efficacy," for the purposes of a more consolidated questionnaire.

According to Farrington et al. (2012), students' chances of meeting academic requirements increased in likelihood when belief in success existed as a prerequisite to putting forth effort, even in the face of challenging work. Researchers also found students exhibiting high levels of self-belief and expectations of lofty achievement demonstrated more effort, exuded more perseverance, possessed lower levels of anxiety, and performed

better than students not expecting to achieve (Al Khatib, 2010; Pintrich & de Groot, 1990; Pintrich & Schunk, 2002, as cited in Pintrich, 2003). Students displaying high self-efficacy believed, "I can succeed at this," (Farrington et al., 2012, p. 10) and engaged in metacognitive and self-regulatory strategies, whereas students modeling low expectations placed less value on work and demonstrated less success in self-regulating and using metacognitive skills (Farrington et al., 2012). Contrasted with task value and affect, motivational concepts examined later, self-efficacy beliefs showed a higher value of learning and predicted greater achievement outcomes (Pajares & Valiente, 1999, as cited in Al Khatib, 2010).

The second subcategory of expectancy included control of learning beliefs. Compared to self-efficacy, or beliefs in the capability to learn, *control* of learning beliefs referred to a student viewing positive outcomes as resulting from personal efforts, rather than external circumstances like, for instance, luck or the teacher (Al Khatib, 2010; Duncan & McKeachie, 2005; Pintrich et al., 1991). Students believing improvement in academic performance culminated from greater effort expressed more self-motivation, perseverance, strategic studying, and higher academic achievement behaviors (Al Khatib, 2010; Dweck & Leggett, 1988; Farrington et al., 2012; Pintrich et al., 1991). Furthermore, students illustrating sufficient control of learning beliefs used strategies when guiding and enhancing learning and harnessed motivation and cognitive skills when facing challenges and overcoming obstacles (Dweck & Master, 2008). Control of learning beliefs also involved the interweaving concepts of the theory of intelligence (Leggett, 1985) and growth mindset (Dweck, 2006).

Leggett's implicit theories of intelligence (1985), including entity and incremental theory, and Dweck's work on fixed and growth mindset (2006) expanded on general theories of self in the academic sense. While not stated explicitly in the literature, the entity theory of intelligence coincided with a fixed mindset and the incremental theory complemented a growth mindset. Students possessing an entity theory, or fixed mindset, perceived intelligence as fixed, unchanging, uncontrollable, and pursued performance events resulting in positive judgments, discouraging students from taking active control over learning (Brock & Hundley, 2017; Dweck & Leggett, 1988; Dweck & Master, 2008; Schunk & Zimmerman, 2007). On the other hand, students demonstrating an incremental theory, or growth mindset, recognized intelligence as malleable, changeable, controllable, increasable, and believed ability, and competence advanced, due to effort over time, attributed academic performance and achievement to effort rather than innate intelligence, luck, or factors beyond control, and pursued goals of increasing competence (Dweck & Leggett, 1988; Dweck & Master, 2008; Farrington et al., 2012). Furthermore, students using an incremental theory of intelligence, or growth mindset, showed more adaptive motivational methods and increased academic performance and achievement even more than academic ability measured by cognitive assessments (Dweck & Leggett, 1988; Farrington et al., 2012). Comparatively, students sporting an incremental theory of intelligence, or growth mindset, displayed a challenge-seeking mentality and motivated and regulated personal learning processes, whereas students featuring an entity theory, or fixed mindset, avoided challenges and struggled in motivating and regulating learning processes (Dweck & Leggett, 1988; Dweck & Master, 2008).

According to Dweck and Master (2008), theories of self and intelligence shaped students' values, adjusted the meaning of success and failure, guided reactions to difficulties, and adapted how students created goals. Researchers also linked theories of self to the process of goal setting discussed more in relation to intrinsic and extrinsic motivation in the next section (Dweck & Leggett, 1988; Pintrich, 2003; Schunk, 2001). A student's theory of intelligence predicted a young person's goal orientation; students believing effort achieved expected outcomes possessed more incentive to act on positive academic behaviors and exhibited more accuracy in setting achievable goals (Dweck & Leggett, 1988; Gestsdottir & Lerner, 2008). Along with expectancy, self-efficacy, and control beliefs, another motivational component of non-cognitive self-regulation included value.

Value. The motivational component of value involved three sub-elements comprising intrinsic motivation, extrinsic motivation, and task value. According to Duncan and McKeachie (2005), the value component of the MSLQ centered on students' reasons for engaging in academic performance tasks. Researchers argued an aspect of motivation evolved from whether students believed in the importance of a task, the goals set for a task, and reasons for doing a task, and claimed students expressing high levels of value modeled more motivation (Pintrich, 2003; Pintrich & de Groot, 1990). Intrinsic motivation reflected behavior acted on for inherent enjoyment, satisfaction, and for the sake of learning without the purpose of obtaining an outcome separate from the task (Lens & Vansteenkiste, 2008; Pintrich, 2003; Ryan & Deci, 2000). Students intrinsically motivated approached learning as the reward; learner motivation originated from within and external factors regulating behavior proved unnecessary (Garn & Jolly, 2014).

Students engaged and interested in the process of learning facilitated cognitive, social, and emotional progress resulting in increased learning and higher achievement (Al Khatib, 2010; Ryan & Deci, 2000). Researchers agreed intrinsic motivation represented the highest form of SDT and promoted volitional academic behaviors (Garn & Jolly, 2014; Ryan & Deci, 2000). Additionally, researchers connected intrinsic and extrinsic motivation to goal orientation (Dweck & Leggett, 1988; Pintrich, 2003; Schunk, 2001).

According to Pintrich (2003), goal orientations illustrated the purpose for engaging in performance tasks. Goal orientation on the MSLQ referred to a student's perception of the reasons for engaging in a task for a single course (Pintrich et al., 1991). Dweck and Leggett (1988) proposed two major classes of goals: learning goals represented a mastery orientation, and performance goals represented a performance orientation. Learning goals and mastery orientation correlated to intrinsic motivation, and meant individuals focused on increasing academic competencies, whereas performance goals and orientation, corresponded to extrinsic motivation and meant students fixated on achieving favorable conclusions of competence (Dweck & Leggett, 1988). Mastery-oriented learning goals supported intrinsic motivation because students sought challenging tasks, enjoyed tasks, and sustained engagement in the face of difficulty resulting in more confident individuals indicating increased self-efficacy (Dweck & Leggett, 1988; Schunk, 2001). Intrinsic goal orientation concerned a student's perception of participating in a task for curiosity, challenge, and mastery; learners engaged in the task for the educational merit instead of, as a means to an end (Pintrich et al., 1991). Ames (1992) explained students featuring a mastery or performance goal orientation

demonstrated a high level of effort and perseverance, yet cognitions, motivation, and affect may differ greatly between the two learners (as cited in Garcia & Pintrich, 1996).

Pintrich (1999) also offered a connection from goal orientation to SRL; students compared a goal, standard, or success criteria to the progression of self-regulated learning, behavior, and performance; and thereby students adopted different orientations and strategies for a variety of performance tasks. According to Dweck and Leggett (1988), learning goals created a context where students interpreted outcomes and input, such as failure and effort, as information concerning a person's mastery strategies and learning; students construed failure, not as a devastating, learning-ending event, but as an insufficient strategy requiring revision, often creating a more enjoyable, satisfying experience. Furthermore, setting mastery learning goals positively related to students successfully using cognitive skills, self-regulatory strategies, and higher achievement on classroom assignments (Pintrich, 1999). Researchers illustrated the intrinsically-motivated nature of learning goals and the connection to self-efficacy; mastery-orientated students augmented growth in ability, took pleasure in task mastery, and believed in personal progress towards improved behavioral outcomes and increased academic success, based on self-set goal attainment (Dweck & Leggett, 1988; Pintrich, 2003; Schunk, 2001). Just as intrinsic motivation correlated to a mastery goal orientation, extrinsic motivation corresponded to a performance goal orientation.

In contrast to intrinsically motivated students learning for the sake of learning, extrinsically motivated students performed due to rewards, punishments, grades, evaluation by others, competition, and/or coercions external to the task (Al Khatib, 2010; Lens & Vansteenkiste, 2008; Pintrich, 2003; Pintrich et al., 1991; Ryan & Deci, 2000).

Ryan and Deci (2000) hypothesized four different levels of extrinsic motivation, each a different level of integration and internalization. The least integrated form of extrinsic motivation, external regulation, represented the definition above and the most internalized extrinsic motivation, integrated regulation, occurred when students identified and evaluated regulations assimilating strategies to personal needs and values (Ryan & Deci, 2000). While similar to intrinsic motivation, integrated regulation still fell within extrinsic motivation because actions and behaviors carried out attained separate outcomes, rather than the fulfillment of inherent satisfaction (Ryan & Deci, 2000). Lens and Vansteenkiste (2008) claimed successful self-regulation required an intrinsically motivated and/or internally regulating student in control of the reasons and motivations for performing academically.

Students externally motivated usually set performance goals instead of learning for mastery goals; self-worth stemmed from level of performance, learning, as a means to an end; and superior feelings from low effort on achieving tasks (Zimmerman & Campillo, 2003). Performance-orientated students interpreted outcomes, like success or failures, and input, such as effort and time, in terms of pride in ability and adequacy, not for learning or mastery (Dweck & Leggett, 1988). Furthermore, performance-oriented individuals seeking self-esteem from external sources and attempting challenging tasks with an uncertain outcome experienced degraded mental health, high anxiety, helplessness, and loss of confidence (Dweck & Leggett, 1988; Garn & Jolly, 2014). Maladaptive responses, including helplessness, discouraged individuals from pursuing challenging tasks and confronting obstacles, preventing proper regulation, and functioning and limiting academic achievement and performance (Dweck & Leggett,

1988). Sheldon and Kasser (1998) concluded student success from extrinsic performance goals provided little benefit, decreased well-being, and left psychological needs unfulfilled (as cited in Ryan & Deci, 2000).

Researchers claimed the mastery goal orientation as the most adaptive goal-setting approach for self-regulated learners, improving cognition, metacognition, and comprehension, resulting in a sense of pride for learners (Dweck & Leggett, 1988; Pintrich, 1999). Even when performances produced negative feedback, students believed progression on the goal resulted from working harder or exerting more effort concluding in improvement and maintenance of motivation and self-efficacy (Schunk, 2001). While intrinsic goals and motivation represented the best choice for students to enhance learning, the reality of student situations did not necessarily reflect the ideal; adaptive and self-regulated students discerned appropriate situations for choosing learning or performance goals (Dweck & Leggett, 1988; Lens & Vansteenkiste, 2008). For instance, for any learning event or task, conditions or interpretations changed, depending on whether a student decided on a learning or performance goal, possibly leading to an evolving goal orientation shaping future behaviors and actions (Dweck & Leggett, 1988; Gestsdottir & Lerner, 2008; Paris et al., 2001). Students displaying a flexible goal orientation explored different questions, investigated various sources of information, and adapted to distinct situations resulting in successful self-regulation (Dweck & Leggett, 1988). Ryan and Deci (2000) addressed the necessity for a more complex interpretation of goal orientation through the continuum of extrinsic goal integration. Researchers also broached the simplistic dichotomy of "good vs. bad" goals, considering students' autonomous or controlled reasons for setting goals, as well as learners' approach or

avoidance perspectives on goal settings as important factors (Lens & Vansteenkiste, 2008; Pintrich, 2003). Pintrich (2003) acknowledged goal complexity and proposed allowing students flexibility in paving a path to learning and achievement. Researchers suggested intrinsic motivation, extrinsic motivation, and goal orientation helped students in setting and attaining goals, supported improvement and mastery, assisted in gaining new cognitive abilities, and promoted using appropriate strategies, self-evaluating, and monitoring performance (Gestsdottir & Lerner, 2008; McClelland et al., 2018; Schunk & Meese, 2005). Researchers also concluded the quality in addition to the type of goal and motivation students pursued mattered and sustaining valued goals through challenges maximized achievement long-term (Dweck & Leggett, 1988; Lens & Vansteenkiste, 2008, p. 154).

In addition to intrinsic and extrinsic motivation, task value also played a role in the motivational component of value. According to researchers, task value referred to a student's interest in an assignment based on the appeal or interest value of the task, the importance or attainment value of the activity, and the usefulness or utility value of the academic event in accordance with future goals (Al Khatib, 2010; Eccles, 1983; Pintrich, 1999; Pintrich, 2003; Pintrich et al., 1991). Furthermore, task value involved a student's enduring position on the attraction, enjoyment, and engagement of a specific topic or activity (Pintrich, 2003). Students demonstrating interest in a task or subject and recognizing the connection between goals and academic performance expended more effort and exhibited more positive academic behaviors supporting success in school (Farrington et al., 2012). Additionally, students believing in the interest, value, significance, and usefulness of coursework used more self-regulatory strategies

benefiting academic performance (Pintrich, 1999). In summary, concerning the motivational elements of value, researchers concluded higher task interest and increased levels of intrinsic motivation resulted in more motivated, involved students (Farrington et al., 2012; Pintrich et al., 1991; Pintrich, 2003).

Affect. The third primary component of motivational non-cognitive regulation comprised of affect including the single sub-element of anxiety. The MSLQ operationalized, affect as anxiety relating to students' concerns and worries over taking exams (Duncan & McKeachie, 2005). Pintrich et al. (1991) explained the two aspects of learner anxiety; students displayed the cognitive element through worrying and negative thoughts disrupting performance, whereas learners exhibited physiological arousal factors when experiencing the emotionality facet. Cognitively, stress originated from student assumptions or perceptions and not from outside environmental factors (Al Khatib, 2010; Winne, 1980, as cited in Weinstein & Mayer, 1986). Researchers explained the affective, or emotional, responses elicited from achievement tasks often involved a wide range of feelings influencing future responses, and the most imposing emotion consisted of student anxiety (Eccles, 1983; Pintrich & de Groot, 1990). Additionally, students expressing negative emotions concerning academics focused on self-criticism, exhibited feelings of ineptitude, and expected failing grades resulting in decreased concentration on schoolwork, leading to poorer performances, concluding in the confirmation of students' feelings of inadequacy and anxiety (Weinstein & Mayer, 1986). In fact, increased levels of anxiety positively correlated to extrinsic motivation, showing how students overly concerned with grades expressed more anxiety, leading to reduced levels of achievement on exams (Al Khatib, 2010; Garcia & Pintrich, 1996). Students experiencing negative

academic effects often expressed sentiments, such as, “There is no way I will pass this test. Boy am I stupid!” but coping self-statements like, “O.K. It's more likely I will not fail since I did study, but even if I did fail, it does not mean that I am stupid," reduced anxiety and frustration (Weinstein & Mayer, 1986, p. 324). Affect comprised the only negative feature of the motivational section.

In conclusion, the motivational components of non-cognitive self-regulation included expectancy, value, and affect stemming from Bandura’s theory on self-efficacy (1986), Ryan and Deci’s SDT (2000), Eccles’ expectancy-value model (1983), Leggett’s theories of intelligence (1985), Dweck and Leggett’s (1988) work on goal orientation, and Dweck’s (2006) subsequent endeavors into growth mindset. Students demonstrating positive motivational beliefs, self-efficacy, intrinsic goal orientation, high levels of task value, and low levels of performance anxiety engaged in higher metacognitive regulation and persevered through challenging academic tasks despite challenges and obstacles (Duncan & McKeachie, 2005; Farrington et al., 2012). According to researchers, self-efficacy, intrinsic motivation, and value played different roles in motivating learners; but the motivational elements associated with using self-regulatory strategies increased academic performance (Farrington et al., 2012; Pajares, 2008; Pintrich, 2003; Pintrich & de Groot, 1990). While the motivational section revealed complex connections with theoretical perspectives and theories, the learning strategies sections achieved a more straightforward explanation.

Learning Strategies. The learning strategies section referenced Weinstein and Mayer’s (1986) cognitive framework for learning and processing information and concentrated on three main categories of strategies students used: cognitive strategies,

metacognitive strategies, and management of learning resources (Pintrich, 1999; Pintrich et al., 1991; Pintrich et al., 1993). According to Cantor (1990), cognitive strategies referred to behavioral, affective, and cognitive processes students applied in achieving goals and appraising outcomes of actions (as cited in Heikkilä & Lonka, 2006). In other words, cognitive strategies served the purpose of helping students regulate and control cognition and involved using basic and complex skills for processing information in a course, such as assigned texts and lectures (Duncan & McKeachie, 2005; Pintrich et al., 1993).

The most basic strategy included the sub-component of rehearsal strategies, while the more complex skills involved the sub-scales of elaboration and organization strategies, as well as an additional sub-scale, critical thinking, where learners addressed the application of prior knowledge to new experiences and critically evaluated ideas (Duncan & McKeachie, 2005; Pintrich et al., 1993; Zimmerman, 2008). Rehearsal strategies for basic tasks included repeating aloud names of elements in a list and actively clustering or grouping the organizable items, whereas skills for more complex rehearsal tasks involved copying, underlining, or highlighting material from class (Pintrich, 1999; Pressley et al., 1987; Weinstein & Mayer, 1986). The basic rehearsal strategies served students by activating information in working memory and influencing encoding processes, whereas complex strategies helped in acquiring long-term memory or integrating learned information into previous knowledge (Pintrich et al., 1991). Researchers established two goals for rehearsal strategies; the first cognitive goal helped the learner in paying attention to and selecting important material lectured on or read, and the second purpose helped students in transferring the information into memory for future

reference, albeit not necessarily at a profound level of processing (Pintrich, 1999; Pressley et al., 1987; Weinstein & Mayer, 1986).

Students also used elaboration strategies including basic skills, such as forming mental images or paired word associations and more complex tasks involving paraphrasing, summarizing, relating new information to previous knowledge, asking, and answering questions, generative notetaking, creating analogies, and making connections (Pintrich, 1999; Pintrich et al., 1991; Pressley et al., 1987; Weinstein & Mayer, 1986). The major cognitive goal of elaboration strategies concerned the construction of knowledge and transference into long-term memory by building associations between two or more items (Pintrich et al., 1991; Weinstein & Mayer, 1986). Another subscale of cognitive strategies in the MSLQ included organizational strategies where students selected important information and formulated connections between different sets of knowledge (Pintrich et al., 1991). Organizational strategies for basic tasks included grouping or ordering information and material or supply management, whereas more complex organizational learning tasks concerned strategies, such as outlining text, creating a hierarchy, note-taking, or organizing ideas from the to-be-learned material (Hatcher & Pond, 1998; Pintrich, 1999; Pintrich et al., 1991; Weinstein & Mayer, 1986). Cognitive goals of organizational strategies included helping students in selecting information and constructing relationships between ideas then transmitting knowledge into working memory (Weinstein & Mayer, 1986). Additionally, researchers contended organizing engaged students closely with a task, promoted academic success, imbued self-confidence, created independent, critical thinkers, and implanted learners with a lifelong learning mindset (Hatcher & Pond, 1998; Pintrich et al., 1991).

Another lifelong learning skill consisted of critical thinking, thought of as essential, researchers added the concept to the MSLQ's cognitive strategy category as an additional sub-scale (Pintrich et al., 1993). According to researchers, critical thinking required students to strategically choose the best cognitive skills for a situation; rigorous control of thinking processes helped learners in understanding ideas and phenomena, solving problems, reaching decisions, and making critical evaluations while using prior knowledge as the standard criteria (Gurcay & Ferah, 2018; Ku & Ho, 2010; Pintrich et al., 1991). Critical thinking, an important decision-making skill required for students, included strategies, such as predicting, induction, deduction, reasoning, and making analytic evaluations of ideas (Gurcay & Ferah, 2018; Pintrich et al., 1993). Researchers explained the literature agreed critical thinking involved both cognitive and metacognitive components, each representing different goals (Ennis, 1987; Ku & Ho, 2010). On one hand, a student embodied a critical thinker when using metacognitive strategies to control thinking processes and reasonably reflecting on beliefs and behaviors (Ennis, 1987; Gurcay & Ferah, 2018; Ku & Ho, 2010). On the other hand, the cognitive aspect of critical thinking referred to students' capabilities in comprehending problems and applying cognitive skills in making conclusions (Ennis, 1987; Ku & Ho, 2010). The difference between the cognitive and metacognitive aspects of critical thinking depended on the goal of the task; metacognitive elements allowed for the regulation and governance of task performance, whereas cognitive components promoted retaining and transferring knowledge for the activity's performance (Ku & Ho, 2010). While critical thinking contained both cognitive and metacognitive components, the MSLQ developers situated the subscale in cognitive strategies placing greater emphasis on retaining and

transferring knowledge over regulation covered in other metacognitive strategies (Duncan & McKeachie, 2005).

The second type of strategy covered in the MSLQ included metacognitive skills students used in regulating and controlling cognition (Duncan & McKeachie, 2005; Ku & Ho, 2010; Pintrich, 1999; Pintrich et al., 1991). The MSLQ concentrated on three general metacognitive strategies: planning and setting goals, monitoring comprehension, and regulating and evaluating behaviors (Duncan & McKeachie, 2005; Pintrich et al., 1991; Young & Fry, 2008). The creators of the MSLQ considered metacognitive strategies as one large category and did not split the questions into smaller scales, such as in the other categories of the tool (Duncan & McKeachie, 2005).

Planning involved students setting goals and selecting cognitive strategies and resources activating prior knowledge and easing the organization and comprehension of material (Pintrich et al., 1991; Schraw & Graham, 1997; Young & Fry, 2008). Examples of planning strategies included making predictions, sequencing strategies, and designating time and attention before completing a task (Schraw & Graham, 1997). Another metacognitive strategy included monitoring, where a learner's awareness of the progress of comprehension throughout a cognitive task determined the level of performance (Schraw & Graham, 1997; Young & Fry, 2008). Examples of monitoring included students tracking attention while reading and self-testing or self-questioning the acquired learning (Pintrich et al., 1991; Schraw & Graham, 1997). Monitoring assisted students in comprehending the material and integrating the information with previous knowledge (Pintrich et al., 1991). Regulating, or evaluating, the last subscale of meta-cognitive strategies, referred to the continuous appraising, adjusting, and fine-tuning of

the outcomes of students' cognitive learning activities (Pintrich et al., 1991; Schraw & Graham, 1997). Learners determined whether the products of learning and performance matched previously set goals and success criteria, correcting behavior, and improving performance as necessary (Pintrich et al., 1991; Pintrich, 1999; Schraw & Graham, 1997; Weinstein & Mayer, 1986; Young & Fry, 2008). Furthermore, Pintrich (1999) argued metacognitive skills helped students improve learning by correcting studying behaviors and repairing deficits in comprehension.

The final scale on the MSLQ addressed resource-oriented strategies, characterized as skills controlling resources other than cognition, and included the subscales of managing time and study environment, effort, help-seeking, and peer-learning (Duncan & McKeachie, 2005; Pintrich, 1999; Pintrich et al., 1993; Zimmerman, 2008). Students managing academic time and study environment involved scheduling and planning blocks of time to study, setting efficient goals, and overseeing a quiet, organized, and distraction-free workspace (Duncan & McKeachie, 2005; Pintrich et al., 1991). Concerning effort regulation, the MSLQ addressed a student's ability in controlling effort and attention regardless of distractions and boring tasks showing a learner's commitment to using learning strategies, accomplishing goals, and achieving academic success (Duncan & McKeachie, 2005; Pintrich et al., 1991). Despite representation on the MSLQ, peer learning and help-seeking showed the least amount of correlation to students self-regulating and receiving higher grades (Duncan & McKeachie, 2005; Pintrich et al., 1991). Peer learning represented a student's collaboration with peers leading to insights and clarification of materials not attained initially by the learner (Duncan & McKeachie, 2005; Pintrich et al., 1991). Functioning self-regulated students understood when

comprehension lacked, identified someone to help, and asked for assistance aiding in student achievement (Duncan & McKeachie, 2005; Pintrich et al., 1991). Garcia and Pintrich (1996) hypothesized peer learning and help-seeking produced low correlations, due to students experiencing fewer opportunities to collaborate with peers and a reluctance to seek help in college courses. In summary, Pintrich (1999) explained students using cognitive and self-regulatory strategies engaged in higher time and effort management than students at a normal level of academic engagement, illustrating the importance of using resource-oriented strategies.

Scoring. After students completed the MSLQ, the researcher or instructor scored the results by taking the mean or average of the items on the scale (Duncan & McKeachie, 2005; Pintrich et al., 1991). Several items designated as negatively worded needed reversed scoring (Duncan & McKeachie, 2005; Pintrich et al., 1991). Researchers also suggested providing feedback to students, including individual scores on each item compared with the class mean, as well as the bottom 25%, the middle 50%, and the top 25% (Duncan & McKeachie, 2005; Pintrich et al., 1991). After feedback, learners comprehended the status of personal self-regulation and the cognitive aspects needing growth.

Reliability and Validity. The developers of the MSLQ stated self-report measures, such as questionnaires included questions about concrete behaviors instead of abstract operations concerning cognition; the tool represented a practical and easily administered instrument in classroom settings used for large and diverse samples increasing the generalization of findings (Garcia & Pintrich, 1996). Researchers conducted a reliability and validity study consisting of 380 midwestern college students

from a range of subject domains but designated very little diversity among the population; students' races included "5% African American, 3.2% Asian American, 90.3% Caucasian, 1.5% Hispanic or Spanish-speaking" (Pintrich et al., 1993, p. 805). Concerning validity, subscales correlated to final course grades measuring performance, and all motivational subscales, save extrinsic motivation and test anxiety, showed a significant positive correlation with grades (Garcia & Pintrich, 1996; Pintrich et al., 1993). Students engaged in intrinsic learning who exhibited high self-efficacy and increased levels of task value correlated with greater cognitive participation and better course grades (Garcia & Pintrich, 1996; Pintrich et al., 1993). Self-efficacy also strongly correlated to planning, monitoring, and regulating/evaluating, while contributing to superior academic performance on exams, papers, and projects (Pintrich, 1999). Test anxiety and extrinsic motivation negatively correlated to cognitive engagement and the more desirable positive motivational beliefs, for example, students trending in anxiety and extrinsic motivation performed poorly in the course (Garcia & Pintrich, 1996; Pintrich et al., 1993). Despite the initial findings of the factor analysis and alphas of the motivational section, all scores appeared to move in the correct direction (Pintrich et al., 1993). Hamilton and Akhter (2009) suggested revisions to the self-efficacy and test anxiety scales, due to a certain level of error correlations. Despite the errors cited in one study, results from the learning strategies section seemingly moved in a similar direction as the motivational section.

Pintrich et al. (1993) also found the learning strategies scales exhibited expected correlations to final performance grades. Students engaging in complex strategies, such as elaboration, organization, time and study environment management, critical thinking,

and monitoring received higher grades, whereas students relying on surface-level processing strategies like rehearsal did not achieve increased levels of academic performance (Pintrich et al., 1993). A later meta-analytic study (Taylor, 2012) on the generalized reliability of the MSLQ also showed moderate but adequate reliability for the nine learning strategies scales. Additionally, researchers discovered positive links between motivation and cognition; self-efficacy, task value, and intrinsic motivation highly correlated to complex higher-order skills, such as elaboration, organization, time and study environment management, critical thinking, and regulating/evaluating (Garcia & Pintrich, 1996; Pintrich et al., 1993). However, a weaker relationship existed between motivational practices and lower-order strategies, such as rehearsal, peer learning, and help-seeking (Garcia & Pintrich, 1996; Pintrich et al., 1993). Overall, researchers established conclusively good reliability for internal consistency and empirical links between motivation, learning strategies, and academic performance on the MSLQ (Duncan & McKeachie, 2005; Farrington et al., 2012; Garcia & Pintrich, 1996; Pintrich et al., 1993).

Researchers concluded the MSLQ represented a coherent, validated, and reliable tool for assessing college students' use of motivation and learning strategies, due to the instrument's solid psychometric properties, adaptability, flexibility, ease of administration, and generally reliable student scores (Duncan & McKeachie, 2005; Garcia & Pintrich, 1996; Pintrich et al., 1993; Taylor, 2012). Taylor (2012) noted while reliability wavered in different countries of study and in the translation of the instrument, score reliabilities for younger populations in elementary and secondary school compared to reliabilities for college students.

Duncan and McKeachie (2005) cited the genuine need for a tool, such as the MSLQ assessing student motivation and learning strategies and an instrument focused on helping students and faculty in enhancing learning. As discussed earlier, the regulation piece of SRL consisted of students using cognitive, metacognitive, and resource-oriented management strategies in regulating cognition (Pintrich, 1999). Researchers explained the MSLQ supported SRL by emphasizing the connection between motivation and cognition and contributing toward educational advancement (Duncan & McKeachie, 2005; Tabatabaei et al., 2017). The MSLQ also supported motivation, metacognition, and behavior, the three elements in the definition of SRL (Zimmerman, 2008) signaling the MSLQ "as a learning facilitator," (Tabatabaei et al., 2017, p. 239) and establishing the important role of non-cognitive aspects in education. Furthermore, Hammond (2015) argued for SRL and cognitive development as essential elements in the advancement of culturally diverse students, allowing proper fulfillment of potential.

Self-Regulation Summary

Self-regulated learning consisted of students engaging in the utilization of behavioral, motivational, and metacognitive processes for the purpose of improved academic achievement (Moilanen, 2007; Schunk, 2001; Zimmerman, 1986a, as cited in Zimmerman, 2008; Zimmerman, 2001; Zimmerman & Schunk, 2008). The phenomenological, volitional, and social-cognitive theoretical perspectives supported the "self," student action, and learner self-efficacy in SRL. Furthermore, non-cognitive self-regulation and the MSLQ provided detailed descriptions and measurements for the elements of SRL. In addition to self-regulation, feedback offered significant contributions to the academic life of students.

Feedback

Feedback served as an essential factor and potent intervention for both students and teachers composing a common feature of success and learning (Hattie, 2012; Lipsch-Wijnen & Dirkx, 2022). The feedback process involved information provided by an agent, such as a teacher, concerning a person's understanding or performance; learners and instructors acknowledged errors leading to opportunities for improvement, thus assisting the learning process (Gamlem & Smith, 2013; Hattie, 2012; Hattie & Yates, 2014; Perrenoud, 1998; Wisniewski et al., 2020). Additionally, the goal of feedback aimed at reducing a gap in learning between the knowledge a learner understood, and the information not yet understood; teachers provided information and assisted the student in realizing the desired outcome (Gamlem & Smith, 2013; Hattie & Timperley, 2007; Lipsch-Wijnen & Dirkx, 2022; Peterson & Irving, 2008). However, as noted by Hattie and Clarke (2019), "feedback given but not heard is of little use" (p. 5). Therefore, instructors presented students with the feedback process involving the necessary next steps in the learning cycle (Hattie & Yates, 2014). Brookhart (2008) succinctly described feedback as "just-in-time, just-for-me information delivered when and where it can do the most good" (p. 1).

Researchers explained feedback occurred when embedded within instruction, not in isolation, conveying attainable outcomes to the student from the instructor (Gamlem & Smith, 2013; Hattie & Yates, 2014). Additionally, more challenging academic tasks predicted a greater need for instructor feedback necessitating a teacher dedicated to ensuring students continued a successful path (Hattie, 2012, p. 18). Feedback focused on the quality of student work, specific information for correction and improvement, and

comparisons to the learner's previous work, and should not focus on other students' work (Hattie & Clarke, 2019). In the classroom, students encountered difficult tasks and situations where the learner lacked information, creating the space and need for feedback bridging the knowledge gap (Hattie & Yates, 2014). Instructors planned for student misconceptions, linked prior experiences with new information, and provided opportunities for improvement, offering feedback in the appropriate modality according to the situation, whether written, orally, or through demonstrations (Brookhart, 2008; Hattie & Clarke, 2019). Necessary elements for student reception of feedback included a classroom environment valuing improvement, a learner's belief in a growth mindset, and a student's perception of effort positively correlated to achievement (Brock & Hundley, 2017; Brookhart, 2008; Hattie & Yates, 2014). After collecting feedback, students either replaced misconceptions with correct knowledge from feedback, or ignored the information, rejected the feedback, or judged the instruction as irrelevant; the influence of feedback depended on how the message proceeded through the learner's existing beliefs (Butler & Winne, 1995). Hattie and Timperley's (2007) model claimed feedback reduced the discrepancy between a student's current knowledge and the achievement goal.

Feedback Model

Hattie and Timperley (2007) developed a model of feedback including three types (feed-up, feed-back, feed-forward) and four levels (task, process, self-regulatory, self) where each feedback type worked within the four levels. The model aimed at improving student achievement outcomes and uniting research on feedback to instructional practice (Brooks et al., 2019). Teachers provided the appropriate classroom climate when implementing the model; instructors understood the most advantageous form of feedback

for learners based on the learning cycle, helped students access prior knowledge, encouraged self-regulation, timed feedback appropriately, and aided in reducing a student's learning gap (Hattie & Clarke, 2019; Hattie & Timperley, 2007). Researchers emphasized the role of the feedback model as showing a student the information needed, taking the learner to the next level, and closing the divide between the student's current place in the educational cycle to the required level (Brookhart, 2008; Hattie & Timperley, 2007).

Table 3

Hattie and Timperley's Model of Feedback

Three Types of Feedback	Four Levels of Feedback
Feed-up	Task
Feed-back	Process
Feed-forward	Self-regulatory
	Self

Note: (Hattie & Timperley, 2007)

Feedback Types

The three types of feedback outlined in the model also corresponded to questions for students to answer: feed-up referred to "where am I going?" and "what are the goals?," feed-back considered "how am I going?" and "what progress is being made towards the goal?," and feed-forward corresponded to "where to next?" and "what activities need to be undertaken to make better progress?" (Brooks et al., 2019, p. 18; Hattie & Timperley, 2007, p. 86). An optimal learning environment occurred when teachers and students sought answers to the feedback questions, focused on task performance, and understood regulatory and metacognitive processes (Hattie & Timperley, 2007; Harks et al., 2013). Brooks et al. (2019) explained the feedback questions provided students with a clear view of learning intentions and success criteria,

laying the foundation for self-regulation and positive learning habits. Researchers described the questions in the model as process-oriented and directive, meaning the framework used success criterion as reference standards, referred to specific tasks, and provided the learner with explicit information about changes and revisions on student work (Gamlem & Smith, 2013; Harks et al., 2013). Students answering the model's questions enhanced learning, increased effort, and exuded motivation in reducing the discrepancy in learning (Hattie & Timperley, 2007). However, researchers warned the feedback questions deviated from boxes checked off in a linear fashion. Rather, the questions interacted with one another in the evolution of the student's place in the learning cycle (Brooks et al., 2019; Hattie & Timperley, 2007). Feed-up characterized the first type of feedback.

Feed-Up. Feed-up asked the student to individually question "where am I going?" and "what are the goals?" (Brooks et al., 2019, p. 18; Hattie & Timperley, 2007, p. 86; Lipsch-Wijnen & Dirkx, 2022, p. 2). Learning needed a starting point; therefore, an objective, standard, or goal preceded assignments and feedback (Hattie & Yates, 2014). Hattie and Timperley (2007) labeled learning goals, or levels of achievement, for students respecting the task or performance as success criteria. Feed-up represented a pre-requisite for feedback as teachers invested time ensuring students gained knowledge of the success criteria and understood how the performance standards pertained to future goals (Hattie & Yates, 2014). Teachers constructed learning intentions around the content for learning, explained how students articulated the learning, and detailed the outcomes of finished products as exemplars for students (Hattie & Clarke, 2019). Setting appropriately challenging goals for students established the optimal circumstances for further learning

(Hattie & Timperley, 2007). Students understanding the success criteria performed the task, reflected on progress, and clarified strategies for improvement (Hattie & Clarke, 2019). According to Lipsch-Wijnen and Dirkx (2022), students working with success criteria benefitted from feed-up resulting from knowing the expectations and receiving directions for consequent action steps in the learning cycle. The second type detailed in the model characterized the most common definitions concerning feedback, aptly designated feed-back.

Feed-Back. Students in the feed-back portion of the learning cycle asked, "how am I going?" or "what progress have I made?" (Brooks et al., 2019, p. 18; Hattie & Timperley, 2007, p. 86; Lipsch-Wijnen & Dirkx, 2022, p. 2). In the feed-back type of the model, teachers or students measured the level of progress with information regarding either success or failure and strengths or weaknesses, based on the success criteria established in feed-up (Hattie & Timperley, 2007; Hattie & Yates, 2014). According to Brookhart (2008), students needed feedback while still cognizant of the assignment or performance and required time working closer toward the learning goal. Researchers explained teachers provided comments for students in the feedback portion of the learning cycle relating to how far the learner progressed, as well as suggestions on correcting mistakes, information on the content, and strategies the student understood and still needed improvement upon (Harks et al., 2013; Hattie & Timperley, 2007; Hattie & Yates, 2014; Nicol & Macfarlane-Dick, 2006). While beginners preferred the transmission of knowledge from teacher to student, the simplicity failed to account for motivation and self-regulation where learners viewed feedback as a cognitive operation and actively engaged in the feedback process (Hattie & Yates, 2014; Nicol &

Macfarlane-Dick, 2006). For more advanced students, feedback comprised not only the transfer of knowledge, but also the monitoring and controlling of motivational beliefs, leading to greater opportunities for learning and achievement (Hattie & Timperley, 2007; Nicol & Macfarlane-Dick, 2006). Feed-forward, discussed next, completed the triad of types in the model of feedback.

Feed-Forward. The last type of feedback consisted of feed-forward and asked students the questions, "where to next?" and "what is the next step?" (Brooks et al., 2019, p. 18; Hattie & Timperley, 2007, p. 86; Lipsch-Wijnen & Dirkx, 2022, p. 2). Feed-forward built on the previous questions, focused on progress and growth, and addressed action steps for students pursuing future directions (Hattie & Yates, 2014; Lipsch-Wijnen & Dirkx, 2022). Instructors moved forward objectively providing learners resubmission opportunities after completing self-assessments and receiving teacher feedback, furnishing direction and motivation for the student (Brooks et al., 2019; Hattie & Yates, 2014; Lipsch-Wijnen & Dirkx, 2022; Nicol & Macfarlane-Dick, 2006, as cited in Sadler (2010), feed-forward closed the feedback loop, where students acted upon previous feedback and improved performance (Brooks et al., 2019). Aspects of the model worked together, showing the learner the steps or actions necessary in moving from the current level to the aspired level (Lipsch-Wijnen & Dirkx, 2022). Hattie and Timperley's (2007) types of feedback also correlated to Zimmerman's (2008) model of self-regulation; feed-up corresponded to the forethought phase where students activated motivation, analyzed the task, and asked "where am I going?," feed-back coincided with the performance phase where learners practiced self-observation, engaged in self-control, and asked "how am I going?," and feed-forward concurred with the self-reflection phase where students

self-evaluated task performance and asked “where to next?” (Harris et al., 2014, p. 2). In addition to the three types of feedback, Hattie, and Timperley (2007) also outlined four levels of feedback.

Feedback Levels

The levels of feedback included task, process, self-regulatory, and self; each question asked by the types of feedback previously discussed worked within each level of feedback in the model (Brooks et al., 2019; Hattie & Timperley, 2007). Researchers and practitioners determined the type first and then altered the level fitting the learning goal and the student’s place in the learning cycle (Hattie & Clarke, 20019; Hattie & Timperley, 2007; Lipsch-Wijnen & Dirkx, 2022). The descriptive nature of the feedback involved in the task, process, and self-regulatory levels created the most difference in learning for students, whereas feedback on the self, lacked in student work performance growth (Harris et al., 2014; Hattie & Timperley, 2007). Researchers addressed feedback about the task first when discussing the model.

Task. Instructors used feedback on the task by focusing the student’s attention on the learning goals and the performance requirements incorporating information about the correctness and quality of the learner’s work (Brookhart, 2008; Brooks et al., 2019; Harris et al., 2014). Task feedback often necessitated reteaching and/or comprised of directions for the student on acquiring different or more information, improving the product, and explanations of how and why the student satisfied the success criteria (Hattie & Clarke, 2019; Hattie & Timperley, 2007; Lipsch-Wijnen & Dirkx, 2022). Researchers concluded the power of task feedback involved providing learners with information about flawed interpretations and guidance on strategizing a more correct path

to achievement (Brookhart, 2008; Hattie & Timperley, 2007). In addition to task-level feedback, instructors also administered feedback at the process level.

Process. Researchers agreed the process level of feedback aimed at the operations involved in processing information and completing tasks; instructors provided strategies for students in detecting errors, reevaluating learning, and looking for new or different solutions (Hattie & Clarke, 2019; Hattie & Timperley, 2007; Lipsch-Wijnen & Dirkx, 2022; Wisniewski et al., 2020). Learners motivated by process feedback engaged in investing effort in error correction and reducing the gap between current knowledge and the success criteria goals (Hattie & Timperley, 2007). Informational feedback related to learning processes supplied student beliefs for the connection between improved achievement and strategies/effort; the learner controlled and held responsibility for enhanced academic achievement (Brookhart, 2008). The next level of feedback consisted of self-regulation, in which students evaluated personal learning choices (Lipsch-Wijnen & Dirkx, 2022).

Self-regulation. Self-regulation, as discussed earlier in the literature review, consisted of a person controlling thought processes and creating meaning (Brookhart, 2008). Additionally, researchers explained students self-regulated by managing resources and monitoring learning, leading to seeking, welcoming, and acting on feedback from instructors (Brookhart, 2008; Hattie & Clarke, 2019; Nicol & Macfarlane-Dick, 2006; Wisniewski et al., 2020). Students monitored processes and learning, generating internal feedback, and improving knowledge, task performance, and production quality (Butler & Winne, 1995). Feedback at the self-regulation level also contributed to a learner's self-efficacy, or in other words, a student's ability in self-guiding the next course of action on

the educational path and confidence in engaging with additional tasks (Hattie & Clarke, 2019; Hattie & Timperley, 2007; Wisniewski et al., 2020, p. 2).

Researchers affirmed self-regulation in relation to feedback applied to motivational beliefs and behaviors in addition to cognition; teacher feedback, along with a student's internal feedback, helped learners in setting future goals, constructing strategies, and performing successfully on work (Brookhart, 2008; Butler & Winne, 1995). Teachers played an important role in self-regulated feedback regarding self-efficacy, successfully addressing student concerns and understanding student motivation and effort by assessing the type of feedback required for the learner (Hattie & Clarke, 2019). Furthermore, instructors offered feedback on student self-regulation, such as on a learner's commitment, control, direction, and discipline toward a learning goal, thus improving a student's confidence and self-efficacy, granting students more autonomy over learning (Brookhart, 2008; Hattie & Timperley, 2007; Nicol & Macfarlane-Dick, 2006). Students responded to feedback by changing behavior, altering the goal, disregarding the goal, or dismissing the feedback (Hattie & Clarke, 2019; Kluger & DeNisis, 1996). The last level of feedback involved comments about the student and yielded fewer benefits than the previous three levels.

Self. Feedback directed towards the "self" focused on personal aspects of the student, including praise, such as "well done," and often contained information unrelated to task performance (Hattie & Timperley, 2007; Lipsch-Wijnen & Dirkx, 2022; Wisniewski et al., 2020). Hattie and Timperley (2007) concluded little to no benefits emerged from personal feedback resulting in rarely engaged, committed, or confident participants because the feedback carried insufficient information for improving student

learning and achievement. Other disadvantages stemming from self-feedback included learned helplessness, self-handicapping, and the idea of fixed intelligence, implying achievement lay beyond the learner's control (Brookhart, 2008; Hattie & Timperley, 2007). Despite the negative characteristics of personal feedback, researchers argued feedback on the self, worked in cases where instructors highlighted students achieving results by engaging in self-regulation and expending effort, for example, "You're really great because you have diligently completed this task by applying this concept" (Brookhart, 2008; Hattie & Timperley, 2007). Despite one mention of positive self-feedback, feedback moving students from the task level to process and then process to self-regulation level proved most influential on student achievement (Hattie & Timperley, 2007).

Other concepts related to Hattie and Timperley's (2007) feedback model included the direction of feedback and individual conferencing. Bi-directional feedback referred to teacher-to-student feedback and student-to-teacher feedback (Nicol & Macfarlane-Dick, 2006). Feedback moving from student-to-teacher often afforded the most significance, where instructors adjusted future feedback and tailored instruction for better learning progress (Brooks et al., 2019; Hattie, 2012; Hattie & Clarke, 2019). Teachers engaged in bi-directional feedback collecting and reflecting on data respecting student progress and supported student self-regulation by taking progressive action on the amassed information and feedback from learners (Nicol & Macfarlane-Dick, 2006). Additionally, bi-directional feedback supported students and teachers in fulfilling the most important element of feedback, reducing the gap in knowledge; students increased effort, error detection skills, and learning strategies, while teachers offered challenging and specific

goals, clarified learning intentions, and created a thriving self-regulated learning environment (Hattie & Timperley, 2007). Individual conferencing supported the bi-directional process in the classroom as well, where students received information in a one-on-one setting directly from the instructor clarifying the next steps in the learning journey (Brookhart, 2008; Brooks et al., 2019; Hattie & Timperley, 2007). Private conferencing with students concerning feedback focused on tasks and processes particular to the individual learner and provided positive, specific, and clear remarks; the practice furnished maximum productivity and avoided ego protection since the conversation lacked an audience of peers (Brookhart, 2008).

Hattie and Timperley's (2007) model of feedback included three types (feed-up, feed-back, and feed-forward), as well as four levels of feedback (task, process, self-regulatory, and self). The model involved identifying learning goals and success criteria where students actively engaged in the learning process and closed the gap from known knowledge to unknown material (Brooks et al., 2019). Researchers agreed the types and levels of feedback worked in combination and feed-forward feedback embodied the most important information for students underscoring the necessity of understanding the next steps towards achievement (Hattie & Timperley, 2007; Lipsch-Wijnen & Dirkx, 2022). Feedback progressing from task to process to regulation resulted in higher self-efficacy, fluency, and mastery of content (Hattie & Timperley, 2007). While a significant amount of literature existed concerning the model, Lipsch-Wijnen & Dirkx (2022) pointed out a limited number of studies where the model authentically applied to feedback, reducing the verifiability of how instructors implemented the model in practice; the lack of

knowledge regarding the model's optimization suggested the necessity for further research.

Overall, Hattie and Clarke (2019) emphasized feedback's role as a diagnostic tool for instructors identifying challenges and misconceptions facing students. Additionally, the structure and phrasing of feedback functioned as the construction of the educational world for learners, focusing on participant perceptions of academic identity (self-efficacy), management strategies, and actions for future performance tasks (self-regulation) (Brookhart, 2008). In the literature, current feedback practices and practitioners widely neglected the process and self-regulation feedback levels, focusing mostly on task feedback; however, researchers determined the most compelling feedback moved students from one level to the next (Hattie and Timperley, 2007; Lipsch-Wijnen & Dirkx, 2022). Additionally, researchers established the following conditions for powerful feedback practices: instructors clarified expectations and goals for students, provided continuous and periodic feedback, offered descriptive feedback individualized to the learner, cultivated self-regulatory practices, and furnished feed-forward opportunities for students completing the feedback cycle (Brooks et al., 2019; Lipnevich & Smith, 2009). Rodgers (2006) described descriptive feedback as a reflective discussion between students and teachers where students describe the learning experience, establishing trust and consistent communication practices, embracing the power of student voice. Researchers stressed feedback's power emanated, not from a model alone, but from instructors providing information and guidance focused on improving performance and equipping students with feedback application opportunities, as well as students' accurate interpretation of feedback and effort in employing received comments (Butler & Winne

1995; Gamlem & Smith, 2013; Hattie & Timperley 2007). Formative assessment, considered in the following section of the literature review, involved instructors implementing Hattie and Timperley's model, guiding the appropriate type and level with the learning goals and success criteria (Lipsch-Wijnen & Dirkx, 2022).

Formative Assessment

Despite the distinction of feedback as a bi-directional activity between teacher and student, creating and implementing formative assessments involved the expert practice of the instructor. Formative assessment referred to teachers presenting students with information on the learner's progress toward achieving the learning goals and successfully completing the success criteria with a purposeful intention of improving and accelerating learning and closing the gap in knowledge (Brookhart, 2008; Peterson & Irving, 2008; Sadler, 1998, as cited in Nicol & Macfarlane-Dick, 2006). For students, formative assessment provided knowledge on adjusting strategies, clearing up misconceptions, fixing mistakes, and raising motivation (Lipnevich & Smith, 2009). Conversely, for instructors, formative assessment served as a checkpoint for tracking student progress on performance tasks, comparing current knowledge to learning intentions and success criteria, focusing instructor attention on students closing the feedback loop, and bridging the gap in learning (Brooks et al., 2019). Additionally, teachers crafted clear learning targets, developed coherent lessons and assignments, furnished descriptive feedback, taught students the creation of new learning goals, and encouraged action steps with the purpose of achieving goals (Brookhart, 2008).

According to Hattie and Timperley (2007), formative assessment activities contributed information relating to one or more of the feedback questions and one or

more of the feedback levels. Feedback worked when students received clarity on pursuing consequent actions and teachers contributed support and guidance for improvement (Brooks et al., 2019). Researchers affirmed the power of formative assessment and feedback as a process helping students control personal learning and regulation, as well as strengthen both cognition and motivation (Brookhart, 2008; Nicol & Macfarlane-Dick, 2006). Since the purpose of formative assessment arranged for the opportunity for improvement, instructors equipped learners with time and space in the classroom using feedback, extending learning, and improving performance (Brookhart, 2008; Farrington et al., 2012; Gamlem & Smith, 2013). Students perceived assessment as informative for teachers and beneficial in leading to feedback information, thus, sustaining the learning cycle, resulting in the instructor's greater understanding of student progress (Nicol & Macfarlane-Dick, 2006: Peterson & Irving, 2008). However, students realized the futility of formative assessment without feedback; learners rarely improved upon poor performance alone, developing anger and blaming the teacher, therefore emphasizing the importance of feedback and time for reflection and action on feedback (Peterson & Irving, 2008). In addition to formative assessments, the following aspects of visible learning feedback added to the merit and success of Hattie and Timperley's model: success criteria, self-assessment, and reflection.

Success Criteria

Specific and understandable success criteria for performance tasks provided the student with goals and standards comparable to the learner's performance, clarifying the gap in knowledge and action steps needed for closing the discrepancy, essential elements for the success of the Visible Learning Feedback cycle (Clarke, Timperley, & Hattie,

2003, as cited in Peterson & Irving, 2008). According to Hattie and Clarke (2019), success criteria characterized a breakdown of the learning intentions and allowed for enhanced understanding and application of knowledge helping students answer the question "What do you have to do to achieve this?" (p. 53). Success criteria helped teachers' supplying feedback and assisted students at the process and self-regulation level (Lipsch-Wijnen & Dirkx, 2022). Teachers created learning intentions and success criteria asking the following questions: "What do I want them to learn?, How do I articulate that?, What would be a good way of learning it?, What do I think a range of excellent finished products would look like?" (Hattie & Clarke, 2019, p. 53). Furthermore, teachers matched success criteria to the learning targets, wrote the items in understandable, student-friendly language, fashioned the criteria where students demonstrated learning of the content or skills defined in the objective, and stipulated students showed cognitive processes cited in the criteria (Brookhart, 2008; Nicol & Macfarlane-Dick, 2006). Utilizing success criteria in the classroom afforded academic benefits, especially when students revised, resubmitted, or completed a similar assignment for future lessons (Brookhart, 2008).

Success criteria for formative assessments equipped students with a framework for understanding the learning goal, knowing the action steps for the achievement of the goal, identifying successes, determining help needed, developing strategies for improvement, seeking feedback from an outside source, monitoring engagement, and reflecting on progress (Brooks et al., 2019; Butler & Winne, 1995; Hattie & Clarke, 2019; Hattie & Timperley, 2007). Successful feedback entailed comparing student work to the success criteria, for example, "All your details support your thesis that sharks are

misunderstood except this one. I don't see what it has to do with sharks," helping students in deciding appropriate subsequent actions (Brookhart, 2008, p. 21). Instructors presenting low-level feedback unrelated to success criteria inhibited students from improving on the performance task in a substantive manner, moreover, the more complex a learning goal, the deeper the feedback necessary (Harris et al., 2014). Feedback also embodied a positive nature, showing current strengths that matched the criteria but also identified room for growth where work did not parallel learning goals, as well as action steps for higher achievement on the task (Brookhart, 2008). Gamlem and Smith (2013) explained without objective criteria, students construed critical feedback as personal criticism; however, unbiased success criteria created an impression of critical feedback as valid and constructive. Success criteria, whether in the form of rubrics, checklists, or cover sheets, proved valuable when students showed advancements, demonstrated higher motivation, possessed control of learning, and learners welcomed, respected, and viewed feedback in the classroom as constructive and productive (Brookhart, 2008). When success criteria focused on mastering skills, content, and goals, students monitored learning progress and exhibited self-regulation (Brooks et al., 2019; Hattie, 2012).

Teachers included an example or sample of previous work exemplifying the learning targets after discussing success criteria with students; exemplars defined the requirements of the task and highlighted the specific standards for students comparing individual work (Brooks et al., 2019; Nicol & Macfarlane-Dick, 2006). Harris et al., (2014), identified the importance of students using models in evaluating personal performance, and the current level of feedback. Other integral pieces of the Visible Learning Feedback cycle aiding in the implementation of the model consisted of self-

assessment and reflection. Brooks et al. (2019) argued a precondition for successful self-assessment and reflection involved the student's clear understanding of the success criteria.

Self-Assessment and Reflection

Self-assessment and reflection played a prominent role in both Zimmerman's (2008) model of self-regulation and Hattie and Timperley's (2007) feedback model. According to Brookhart (2008), utilizing self-assessment increased students' internal feedback helping students control learning, and leading to less necessary feedback from the instructor as students learned more strategies. Researchers agreed learners participating in assessment and evaluation engaged in an essential process in the self-reflection phase of Zimmerman's (2008) cycle of self-regulated learning including reflecting on the progression of goals, monitoring the capacity for self-regulation, indicating how the success criteria applied to the task, and articulating judgements on how the completed work related to the set standards (Harris et al., 2014; Nicol & Macfarlane-Dick, 2006). Similarly, students reflected when questioning learning approaches, mentally processing critical thoughts on the learning experience, and practicing transferring knowledge (Quinton & Smallbone, 2010).

Students used feedback on work as a vehicle for self-assessment and reflection, but researchers suggested instructors committed class time teaching students the process of self-assessment and supervising reflection skills promoting the feed-forward operation (Nicol & Macfarlane-Dick, 2006; Quinton & Smallbone, 2010). Practicing self-assessment and reflection created indispensable learning opportunities for students (Quinton & Smallbone, 2010, p. 132). Self-assessment specifically increased student

interest in and engagement with feedback; students monitored, evaluated, and made plans about personal performance correlated to the success criteria resulting in more student responsibility and autonomy (Brookhart, 2008). Students used reflection in the feed-forward practice, recorded learning by doing and critical thinking, and engaged directly in the feedback, resulting in deeper learning (Quinton & Smallbone, 2010).

Nonetheless, researchers expressed concerns about the consistency and quality of novice self-assessment and reflection and worried about the lack of studies examining the actual content of written student self-assessment and reflection compared to expert feedback given from instructors and questioned whether learning improvement occurred (Harris et al., 2014; Quinton & Smallbone, 2010). However, researchers contended students used help from teachers in making connections between feedback and aspects of task performance; a successful feedback practice facilitated learners in developing self-assessment and reflection skills, and proficient students evolved into active engagers in and seekers of feedback (Brooks et al., 2019; Nicol & Macfarlane-Dick, 2006; Quinton & Smallbone, 2010). Additionally, bi-directional formative feedback in relation to success criteria promoted student self-reflection and enhanced teaching, learning, and performance achievement (Quinton & Smallbone, 2010). Success criteria, self-assessment, and reflection conclusively aided teachers and students in the feedback process and the learning cycle, as well as in the maturation of self-regulation. In the next section of the literature review, the researcher addressed practitioners' concerns about the computability of feedback by evaluating Hattie's (2012) work on effect size.

Effect Size

According to Hattie (2012), effect size pertained to a scale measuring strategy implementation making a difference in or having an influence on student learning and achievement. Hattie (2012) set a hinge point at d = 0.40 for determining elements of education classified as making a difference in learning, considering the 95% positivity rate for *all* factor effect sizes in education. The current effect size of feedback on Hattie's Visible Learning scale represented 0.70 (Hattie, 2018). Despite ranking highly on Hattie's (2018) list of 256 educational factors, researchers conceded although powerful, feedback possessed variability in the consequences on learning, depending on a variety of circumstances (Brookhart, 2008; Hattie & Clarke, 2019). For instance, a number of studies produced differing results on the effect size of feedback, including a meta-analysis revealing an overall d = 0.48 effect of various forms of feedback on student learning (Wisniewski et al., 2020). Furthermore, researchers established the average significance of feedback on education constituted some of the highest results; but emphasized the variability of the conclusions (Hattie & Yates, 2014; Hattie & Timperley, 2007; Kluger & DeNisi, 1996). For example, the learner's pre-existing beliefs, knowledge, and ways of thinking mediated the outcomes of feedback from an outside source (Butler & Winne, 1995). Hattie and Yates (2014) explained the research covered the most powerful ingredients of feedback; however, harnessing the potential and ensuring the positive consequences of feedback remained elusive. A variety of conditions contributed to the limitations of feedback.

Feedback considered controlling or irrelevant when related to rewards, praise, and punishments negatively impacted motivational aspects, such as intrinsic motivation, self-

efficacy, and perseverance, reducing student responsibility, autonomy, self-regulation, and academic confidence (Gamlem & Smith, 2013; Hattie & Timperley, 2007; Ryan and Deci, 2000; Wisniewski et al., 2020). The type of feedback described above provided less information on the task, process, and the student's self-regulation resulting in decreased achievement (Wisniewski et al., 2020). Additionally, feedback's significance decreased as the focus shifted further away from the task and closer to the self (Gamlem & Smith, 2013). Despite feedback variability, researchers outlined the beneficial factors.

Feedback, according to researchers, showed the most influence on student learning when concentrated on information about the task and improvements for the learner (Gamlem & Smith, 2013; Hattie & Timperley, 2007; Kluger & DeNisi, 1996). High-information feedback contained corrective knowledge about the skill and the level of success of the performance and messages about self-regulation, motivation, and controlling emotions and attention (Wisniewski et al., 2020). Students prospered from high-information feedback concerned with the task, process, and self-regulation; students rejected performance inaccuracies and replaced misconceptions with new skills and strategies (Hattie & Timperley, 2007; Wisniewski et al., 2020). Additionally, feedback involving specific and challenging learning goals, low-complexity tasks, and low-threat situations concentrated students' attention on the feedback (Hattie & Timperley, 2007).

According to Hattie and Yates (2014), feedback doubled the rate of learning and endured in the top 10 educational aspects influential for achievement. However, as stated earlier, variability and inconsistencies in implementation existed in the current feedback practice (Wisniewski et al., 2020). Researchers suggested future studies focus on seeking

the optimal controlling factors of feedback and teaching students the process of receiving, deciphering, and using feedback (Hattie & Clarke, 2019; Wisniewski et al., 2020).

Student Perceptions of Feedback

Researchers realized feedback filtered through students' previous experiences, knowledge, behavior, and motivation, and then learners interpreted given feedback into messages received, prompting researchers to question what learners perceived about feedback in the classroom (Brookhart, 2008; Gamlem & Smith, 2013). Student opinions of feedback often varied depending on the study and sometimes even between the test groups within the same study, but learners frequently discussed the following common themes: the mode or format of feedback, the timing of feedback, high-information feedback, grades and praise, feedback tied to assessment, and feedback related to self-regulated learning and motivation (Brookhart, 2008; Gamlem & Smith, 2013; Harks et al., 2013; Hattie & Yates, 2014; Lipnevich & Smith, 2009; Peterson & Irving, 2008; Rowe & Wood, 2008). Researchers explored learners' thoughts on the perceived influence of feedback as previous literature lacked information about student conceptions on the topic (Peterson & Irving, 2008).

Some students expressed holding instructor comments in high value and others articulated preferences for a variety of feedback including written and verbal remarks, general and specific comments, as well as individual and group feedback evidencing a necessary balanced approach to providing feedback (Lipnevich & Smith, 2009; Rowe & Wood, 2008). Learners indicated dialogic feedback, or verbal interaction between instructor and student, as useful and enhancing learning, because of the immediacy, but suggested instructors rarely practiced the technique (Gamlem & Smith, 2013). In a

feedback perceptions survey, Rowe and Wood (2008) discovered verbal feedback also benefited students when the audience included a group and the feedback proved more generic, however, learners preferred written remarks when addressing the individual or specific assignment. Although some students conveyed group verbal feedback as beneficial, other learners ignored group comments, due to previously achieving the learning goal or, conversely, due to boredom or other life factors taking precedence (Hattie & Yates, 2014). Researchers found students yearned for more feedback from teachers and articulated the need for genuine, corrective feedback helping students close the learning gap; teachers walked the fine line of providing enough information, but not overwhelming students resulting in ignored information (Peterson & Irving, 2008; Rowe & Wood, 2008). Nonetheless, Brookhart (2008) suggested conversations with students often culminated in optimal feedback results.

Researchers found students appreciated detailed remarks and straightforward guidelines explaining successful revisions, with one student commenting, “Tell me, like, specifically what you want, because if you tell me what you want, I can give it to you” (Lipnevich & Smith, 2009, p. 356). Some learners thought of feedback as unhelpful when ambiguous, ill-timed, or lacking enough content, thus necessitating genuine, constructive observations (Peterson & Irving, 2008; Rowe & Wood, 2008). Students also expressed teachers often pinpointed sections for improvement yet, did not provide information on the *how* of improving, emphasizing quality of feedback over quantity (Peterson & Irving, 2008). While students overwhelmingly appreciated high-information feedback, perceptions of grades and praise remained inconsistent.

Contradictory information about student thoughts on feedback appeared in research about grades and praise. According to Lipnevich and Smith (2009), grades produced a convenient summarization of student achievement, notifying all interested stakeholders of student performance. Rowe and Wood (2008) found, in contrast to a test group preferring high-information feedback, a similar test group desired grades, positive feedback, and information providing the answers, disliking class questions and discussion; researchers categorized the group as dependent on the teacher, surface learners, and expending minimum effort in passing the course. Notwithstanding, much of the research contributed to the negative consequences of grades and praise. Students receiving grades as feedback resulted in thinking of work as completed and developing ego-focused mindsets about performance instead of task-related mindsets (Hattie & Clarke, 2019). Grades decreased the weight of corrective feedback and inhibited students' cognitive development, slowed learning, and reduced self-efficacy around the performance task (Lipnevich & Smith, 2009). While some students saw value in grades, others commented grades detracted from learning progress; learners recognized the potential for low grades concluding in a negative consequence on emotions and high grades resulting in a negative influence on effort, and for both low and high grades developing a negative burden on motivation for future performances (Lipnevich & Smith, 2009). Ultimately, students recommended instructors provided precisely written comments for greater positive feedback results than grades (Wisniewski et al., 2020).

Likewise, praise focused attention on the student's self, not the student's learning, thus, appropriating cognitive resources meant for the assignment (Brookhart, 2008; Gamlem & Smith, 2013; Lipnevich & Smith, 2009). According to researchers, praise in

the classroom furnished benefits only when discussing students' process, motivation, and/or self-regulation (Gamlem & Smith, 2013; Lipnevich & Smith, 2009; Nicol & Macfarlane-Dick, 2006). Instructors praised student effort, strategies, and commitment to goals over ability and intelligence, boosting learners' self-esteem and motivation for future performances resulting in higher achievement (Lipnevich & Smith, 2009; Nicol & Macfarlane-Dick, 2006). Gamlem and Smith (2013) suggested praising high effort not resulting in success over praising low effort resulting in success, as the high effort anticipated future success; students learned effort and process held higher value above brilliance and natural ability. While students observed praise as benefitting attitude toward the task, learners also recognized the irrelevance of compliments for academic improvement (Lipnevich & Smith, 2009). Hattie and Yates (2014) concluded praise conveyed little legitimate feedback information for students about the task, establishing the problematic nature of the practice. While Wisniewski et al. (2020) found corrective feedback, in addition to rewards, punishment, and praise resulted in low or low-to-medium effect sizes, corrective feedback, produced high results for enhancing new skills and learning of tasks. Students ultimately grasped the importance of feedback as an evaluation of the performance in the context of the task, not an evaluation of the person (Nicol & Macfarlane-Dick, 2006). While grades and praise curtailed learning progress, a factor critical for successful feedback included accurate timing.

Students conveyed strong impressions concerning the timing of feedback. Researchers found feedback resulted in the most academic achievement when supplied soon after a task or performance and prompted learners to devoting more effort and time to improvement; otherwise, students developed frustration with delayed feedback (Hattie

& Timperley, 2007; Hattie & Yates, 2014; Nicol & Macfarlane-Dick, 2006; Rowe & Wood, 2008). For instance, a student commented on not receiving timely feedback, "*The Sound of Silence* is not a happy song" (Rowe & Wood, 2008, p. 83). Furthermore, poorly timed feedback withheld students from personally using self-corrective feedback (Hattie & Yates, 2014). Researchers suggested instructors dedicated class time for students after receiving feedback for processing, as well as application, especially for improvement on the current assignment, otherwise, students struggled in remembering feedback for future tasks occurring in new contexts where the feedback no longer applied (Gamlem & Smith, 2013; Hattie & Clarke, 2019). However, some research supported the idea of delayed remarks increasing student response, while processing more complex feedback, whereas easier comments needed no delay (Clariana et al., 2000, as cited in Hattie & Timperley, 2007).

In addition to timing, students also commented on self-regulation and motivation in relation to conceptions of feedback. Receiving feedback provided students with motivation and reassurance, contributing to feelings of competence and self-efficacy, thus reducing anxiety about a class (Harks et al., 2013; Rowe & Wood, 2008; Ryan & Deci, 2000). Contrary to the study group preferring grades and praise, another group in the same study, labeled as self-regulated deep learners, desired feedback enhancing understanding of the content and viewed the instructor as a motivator providing encouragement and guidance for students working out problems individually (Rowe & Wood, 2008). Students engaged in feedback acquired a self-regulated and motivated approach to the learning process, strengthening the management of success criteria and

consequently improving self-evaluation and overall achievement (Harks et al., 2013; Peterson & Irving, 2008).

One misconception about feedback regarded students interpreting the feedback as the instructor designed, but as discussed in the section on effect sizes, feedback's outcomes depended on related variables (Brookhart, 2008; Hattie & Clarke, 2019; Harks et al., 2013). Arranging feedback according to the accurate type and level, according to Hattie and Timperley's (2007) model, dispelled the variability of feedback and misinterpretation from students (Wisniewski et al., 2020). Researchers concurred feedback proved useful and enhanced achievement when integrated with learning, provided suggestions for improvement, and contained honest and authentic remarks; students viewed teachers providing feedback, as dedicated to student progress (Gamlem & Smith, 2013; Hattie & Yates, 2014; Lipnevich & Smith, 2009). Wise feedback, an intervention discussed in the next section of the literature review, combined the concepts of high expectations, growth mindset, self-efficacy, and trusting relationships between teachers and students.

Wise Feedback

Another element of feedback generating attention in the literature involved equity. Hammond (2015) characterized equity as a nonbiased transaction between people, and consequently, inequity posed a possible threat to people experiencing a disadvantage compared with others securing unearned advantages. Non-minority, non-stereotyped students often attributed critical feedback from instructors to belief in potential and high classroom standards (Yeager et al., 2014). Conversely, minority, stereotyped students commonly faced a different, discriminatory reality. Biased feedback occurred in the

classroom when instructors interpreted students' comments and behaviors exclusively through individual cultural frameworks (Hammond, 2015). For example, Harber (1998) established the concept of positive feedback bias; White instructors provided lenient feedback for minorities compared to White students completing work of equal quality. Researchers considered positive feedback bias as a stereotype threat creating mistrust in stigmatized students about an instructor's feedback, resulting in learners feeling discriminated against, disengaging in tasks, or even losing interest in school altogether (Croft & Schmader, 2012; Farrington et al., 2012; Mendoza-Denton et al., 2010; Yeager et al., 2014). Minority students expressed uncertainty about investing effort and personal integrity in feedback when faced with possible bias, as opposed to a previous assumption of lacking motivation in the classroom (Yeager et al., 2014). Criticism or performance frustration triggered self-efficacy doubt and beliefs associated with inherent detriments in minority students not necessarily prone to such thinking, concluding in a fragile academic identity susceptible to racial bias (Cohen et al., 1999).

White evaluators concerned with perceptions of prejudice and a lack of trust about the judgment of others regarding candid feedback for minorities resulted in teachers providing equal amounts of feedback to all students but offering less negative feedback to minority learners (Croft & Schmader, 2012; Harber et al., 2018). Suggesting open-ended feedback to minorities, while simultaneously featuring anxiety over self-image intensified the positive feedback bias for White instructors (Harber et al., 2018). Croft and Schmader (2012) observed overpraising, the feedback withholding bias, and under-representation of constructive criticism stemmed from White instructors' concerns over protecting self-interest and fears of appearing prejudiced. Teachers withheld critical feedback as the

remarks seemed unfair, unsympathetic, or overly harsh when offered to students of color, and instructors felt safer awarding a simple letter grade instead of a comment, such as, "You neglect salient facts, your tone is too informal, and you are careless about grammar. This is not senior-level writing" (Harber et al., 2018, p. 2). Minority students accustomed to positive and accommodating feedback considered critical feedback severe, causing a vicious cycle of instructors withholding authentic and unbiased comments needed for motivation and improvement (Crocker & Major, 1989, as cited in Harber et al., 2018; Croft & Schmader, 2012). Consequently, teachers reinforced students' beliefs in biased and discriminatory practices in feedback (Harber et al., 2018).

Researchers recognized self-esteem and motivation played important roles in learning, where minority students interpreted feedback through emotions like acceptance, respect, and fairness (Mendoza-Denton et al., 2010; Nicol & Macfarlane-Dick, 2006). Students of color often believed instructors viewed completed work through a biased lens, instead of based on the learner's actual merits and achievement level, propagating the cycle of mistrust (Cohen et al., 1999). The language of feedback also sustained the potential lack of trust between White instructors and minority students; Harber et al. (2018) found learners received mixed messages where positive comments over-estimated work and an over accommodating, less sophisticated language style denigrated and undervalued students. Researchers discovered minority students received inaccurate feedback concerning work in the form of praise about abilities and prospects, but delivered in language mimicking the student's flawed syntax, misinforming learners about the quality of learning and the correct processes and strategies for completing work successfully (Croft & Schmader, 2012; Harber et al., 2018). In addition to

overemphasizing positive elements of minority work, White instructors also participated in the feedback withholding bias where teachers avoided addressing errors in student work (Croft & Schmader, 2012). Teachers conforming to perceived societal pressures withholding candid, critical feedback hampered students from determining the regulation of academic energy, properly evaluating performance, and accurately appraising goals (Croft & Schmader, 2012; Harber et al., 2018; Hattie & Timperley, 2007). Researchers questioned how non-minority teachers mitigated the mistrust of minority students and sought a solution to the fear experienced by White instructors, and discriminatory feedback practices, such as stereotype threat, the feedback withholding bias, and the positive feedback bias (Cohen et al., 1999; Harber et al., 2018; Yeager et al., 2014).

Instructors faced the challenge of providing critical feedback while opposing biases of limitations and stereotypes, answering the obstacle with "wise feedback" (Cohen et al., 1999; Yeager et al., 2014). Goffman (1963) described "wise" in relation to social stigma as "the act of seeing stigmatized individuals in their full humanity, which enables an openness and honesty when one interacts with them" (as cited in Yeager et al., 2014, pp. 2-3). Instructors delivered criticism in partnership with high expectations for performance achievement, resulting in higher student motivation (Cohen et al., 1999; Croft & Schmader, 2012). The wise feedback classroom environment welcomed errors and moved students from the path of failure to the path toward successful completion of the success criteria and learning intentions (Hattie & Yates, 2014).

Researchers concluded wise feedback consisted of relationships where teachers provided authentic, constructive criticism linked to high standards and assertions learners possessed the capacity of meeting the expectations in a secure learning environment

devoid of over-praising, withholdings, or a softer tone (Cohen et al., 1999; Farrington et al., 2012; Mendoza-Denton et al., 2010; Yeager et al., 2014). Students perceived high standards as the reflection of an instructor's genuine dedication to student progress, not through the lens of personal failure or lack of ability, eradicating the racial distinction in learner response to feedback (Cohen et al., 1999; Yeager et al., 2014). Wise feedback allowed teachers to be racially sensitive, while retaining accuracy by affirming student capabilities and disseminating high expectations, increasing student acknowledgment (Harber et al., 2018). Research mentioned earlier in the literature review, including Bandura's (1977, 1986) theory of self-efficacy and Dweck and Leggett's (1988) work on learned helplessness supported the concept of asserting student capacities for achievement; learners receiving wise feedback increased academic confidence and strived for higher effort and motivation to change instead of attributing errors to external factors, such as bias from the instructor or internal factors like lack of intelligence (Cohen et al., 1999). One element not included in the definition of wise feedback, but equally important in the relationship between teacher and student involved trust.

Mistrust arose from the meaning of race insinuated from society, not necessarily from the temperament of the teacher or student and resulted in students viewing critical feedback as the teacher's personal bias, indifference, or antagonism concluding in a student's dismissal of feedback, rather than a receptiveness towards instructor comments (Cohen et al., 1999; Yeager et al., 2014). Caring and trusting relationships helped high achieving minority students experience less stress and perform at increased capacities (Hammond, 2015). In the wise feedback classroom, teachers exhibited a positive and respectful demeanor toward student efforts and communicated the normal place of errors

in the educational journey, combatting mistrust (Hattie & Yates, 2014). Additionally, teachers fostered trust by liberating students from the relevance of prejudice in feedback, constructing motivation and self-confidence, while conveying criticism, and providing straightforward information unmuddied by the possibility of bias (Yeager et al., 2014). Another avenue for eliminating discrimination in the wise feedback classroom involved Culturally Responsive Teaching (CRT2). Educators utilized cultural knowledge of the student body, connecting with individuals, and promoting efficient information processing (Hammond, 2015). Furthermore, Brock and Hundley (2017) suggested teachers who perceived students as whole, unique persons developed safe and welcoming learning environments. Cultivating trust also supported a growth mindset (Dweck & Leggett, 1988) where teachers demonstrated failure as a growth challenge and an obstacle to overcome, rejecting the position of errors indicating low ability or intelligence (Brock & Hundley, 2017; Nicol & Macfarlane-Dick, 2006). Yeager et al. (2014) characterized wise feedback as a trust-building intervention particularly beneficial for low-trust minority learners. Students who trusted instructors engaged in a greater number of learning opportunities and received critical feedback successfully (Cohen et al., 1999; Harber et al., 2018; Yeager et al., 2014).

Croft and Schmader (2012) reported minority students experienced suppression of critical feedback information and a surplus of praise regarding positive aspects of performance. Instructors introducing high expectations only dispelled racial bias, but failed in raising minority students' motivation and confidence, hence the necessity for a cohesive intervention (Cohen et al., 1999). While clearly-communicated feedback should work for all racial groups, wise feedback addressed the vulnerabilities of minorities and

achieved harmonious, genuine, academically progressive outcomes (Harber et al., 2018; Rowe & Wood, 2008). For the implementation of wise feedback, researchers suggested structural changes to the classroom in the form of high standards, trust, and assurances promoting safety and equality (Cohen et al., 1999; Mendoza-Denton et al., 2010). Additionally, researchers proposed wise feedback increased the rigor and accuracy of feedback, helped students reaching for high standards, justified the confidence boost of assurance, and showed learners instructors viewed student effort and work seriously (Cohen et al., 1999; Croft & Schmader, 2012).

Feedback Summary

The goal of feedback consisted of teachers and students working together to bridge the learning gap. The process of feedback involved engaging with the types and levels of feedback, utilizing formative assessment tools, and creating a wise and culturally responsive classroom environment. While not necessarily academic in nature, another intervention embodying trusting relationships and emphasizing personal autonomy included Motivational Interviewing (MI).

Motivational Interviewing

Miller and Rollnick (2013) most recently defined MI as "a collaborative conversation style for strengthening a person's own motivation and commitment to change" (p. 410). Additionally, the creators of MI added a clinical aspect, citing the process addressed the problem of ambivalence in a client and explained the counselor's job as helping someone discover if, why, how, and when change should happen (Miller & Rollnick, 2013), not assuming upon entry to counseling that the client immediately aspires to change (Kittles & Atkinson, 2009). On applying MI, Rosengren (2018),

conveyed the process as a partnership where both the counselor and client contributed expertise to the discussion; the counselor provided coaching and guidance, while the client's role was of self-expert and the one responsible for personal change. The final technical definition supplemented the previous descriptions, adding MI occurred in an accepting and compassionate environment (Miller & Rollnick, 2013). While MI began as a counseling style exclusively for people abusing alcohol, the practice evolved and a host of other professionals discussed later in the chapter utilized the approach (Marsden et al., 2006; Miller & Rose, 2009; Rosengren, 2018). MI applied and adapted to a variety of situations in addition to those deemed clinical as "the common denominators are people struggling with the possibility of change and helpers engaged with these people in that struggle" (Rosengren, 2018, p. 4), and in light of the various circumstances, the literature review referred to the role of counselor as a practitioner, coach, guide, facilitator, and interviewer, as well (Atkinson & Amesu, 2007; Miller & Rollnick, 2013; O'Brennan et al., 2020; Rosengren, 2018; Snape & Atkinson, 2016; Strait et al., 2012b).

Theory and Theoretical Perspectives

Miller and Rollnick published the first book on MI in 1991, influenced by Rogers, Festinger, and Bem, among others. Rogers' (1959) phenomenological client-centered approach emphasizing empathy, understanding, acceptance, warmth, and authenticity helped formulate the spirit of MI (Enea & Dafinoiu, 2009; Hettema et al., 2005; Rosengren, 2018). Miller and Rose (2009) described Rogers' client/counselor relationship as an atmosphere where a person freely explored ambivalence and arguments for change. Furthermore, Miller and Rollnick (2013) quoted Rogers' belief in the essentially positive and trustworthy nature of humanity and the freedom to choose and be

an individual during therapy as contributing to MI's emphasis on autonomy and acceptance. Although Miller and Rollnick (2013) attributed the influence of Rogers to the development of MI, the authors also clarified MI's evolution from client-centered counseling. Whereas the client-centered approach was non-directive, elements of MI included focusing, evoking, and planning; clearly directive with designed movement towards goals and settling ambivalence (Frey et al., 2011; Marcus et al., 2011; Miller & Moyers, 2006; Miller & Rollnick, 2013).

Festinger's original theory of cognitive dissonance (1957) and Bem's self-perception theory (1972) also guided aspects of the formulation of MI (Hettema et al., 2005; Miller & Rose, 2009). Festinger (1957, as cited in Harmon-Jones & Mills, 2019) proposed dissonance in a person created psychological discomfort leading to the desire to reduce opposition between the two conflicting cognitions. Harmon-Jones and Mills (2019) further explained resistance to change depended on the benefits or costs associated with the change, as well as how sufficiently the change coordinated with other cognitions. Festinger's theory (1957) contributed to MI's practice of a client approaching and dealing with ambivalence. Bem (1972) theorized when clients observed individualized actions, words, and thoughts, people could change personal perceptions and commit to new positive words and thoughts, increasing self-motivation (Bem, 1972, as cited in Frey et al., 2011; Hettema et al., 2005; Rutschman, 2018). The self-perception theory (Bem, 1972) reinforced MI's conversation style and the importance of the client's responsibility for producing change talk.

Rutschman (2018) also argued MI contributed to the general constructivist movement providing scaffolding to help people construct knowledge and learn to learn,

essential aspects of the MI practice. The ideas of Rogers (1959), Festinger (1957), Bem (1972), and the constructivist movement shaped a theory of MI composed of two definitive factors; a relational component and a technical component (as cited in Miller & Rose, 2009). The relational element, stemming from Rogers (1959), centered on empathy, compassion, and autonomy, while the technical element, deriving from Festinger (1957), Bem (1972), and constructivism, involved evoking change talk and resolving ambivalence (as cited in Miller & Rose, 2009). The theory of MI also translated to the practical application of two phases: phase one worked to build a client's motivation to change and phase two concentrated on intensifying the client's commitment to change (Hall et al., 2021). The goal of MI emerging from the theoretical perspectives intended for a client to talk about positive change and transform the person's own life under the compassionate guidance of a counselor. Beyond the theory and theoretical perspectives of MI, the literature review outlined the three central tenets of the practice: the spirit, the process, and the skills (Atkinson & Woods, 2018; Rosengren, 2018).

The Spirit of Motivational Interviewing

Miller and Rollnick (2013) deemed an emotional core necessary to counseling and outlined the elements of collaboration, acceptance, compassion, and evocation as composing the uniquely coined spirit of MI. The authors called the spirit of MI the heart and mind of the practice and highlighted the sentiment "MI is done for and with a person" (Miller & Rollnick, 2013, p. 15). Suldo et al. (2021) expanded on the spirit of MI, adding the aspects of encouraging change talk, reducing sustain talk, encouraging partnership and autonomy, accepting the person's worldview, and voicing empathy, as underlying the practice. Furthermore, counselors assumed clients possessed the personal

wisdom and expertise for individual positive development under supportive and encouraging conditions (Miller & Moyers, 2006, p. 5). Miller and Rollnick (2013) also emphasized MI as not just a technique or strategy, but instead a way of communicating, a conversation; essentially, without the spirit, MI acted more like a sardonic manipulation, tricking people into unwanted action or behavior. A later study by Rollnick et al. (2016) articulated that the phrase, the spirit of MI, originated to communicate the nature of guiding clients effectively, supporting Rosengren's (2018) assertion that the spirit of MI ensured an individual's right to choose and create enduring internal change. Collaboration between counselor and client functioned as the cornerstone of the spirit of MI.

Collaboration

The relationship between the counselor and the client in MI manifested as a partnership, as an alternative to classic therapy where a practitioner played the role of expert and the client received help. The collaboration formed a base for the spirit of MI, after which nothing followed unless the practitioner established a trusting relationship with the client. Miller and Rollnick (2013) confirmed no answers for the client existed without the person's participation and expertise. Moreover, the practitioner's purpose involved understanding the client's world vision, without forcing the coach's own perspectives on the individual (Miller & Rollnick, 2013, p. 16). Research illustrated the leadership role the client performed and explained collaboration transpired when the client's ideas shaped the conversation, joint decision making occurred, the client acted as the self-expert, and the counselor operated as the MI process expert (Atkinson & Woods, 2018; Frey et al., 2011; Hall et al., 2021). Additionally, Rosengren (2018) expanded the

metaphor of leading a horse to water describing the interviewer's role: "we can lead a person to water, we can't make the person drink… but we can help the person become aware of his or her thirst so that he or she might choose to drink" (p. 15). The goal of creating a partnership with the client came to fruition when the counselor elicited a process for change already existent within the client through a spirit of fellowship. To start, the counselor developed a harmonious collaboration by accepting the client completely.

Acceptance

Miller and Rollnick (2013) promoted acceptance as a vital element to the spirit of MI and expanded the idea and definition of acceptance into four components: worth, affirmation, empathy, and autonomy and summarized:

> One honors each person's *absolute worth* and potential as a human being, recognizes and supports the person's irrevocable *autonomy* to choose his or her own way, seeks through *accurate empathy* to understand the other's perspective, and *affirms* the person's strengths and efforts. (p. 19)

Counselors afforded absolute worth to a client believing the person possessed inherent value and importance and carried the potential to be more than the client believed possible (Miller & Rollnick, 2013; Rosengren, 2018). Counselors promoted autonomy, where a person must make the choices determining the individual's course of life, by encouraging agency, self-efficacy, and even the freedom to retain the status quo and the decision not to change (Frey et al., 2011; Hall et al., 2021; Hettema et al., 2005; Rosengren, 2018; Terry et al., 2013). Demonstrating empathy for the client necessitated the counselor to see the world with the client's eyes while not losing oneself in the

process (Rosengren, 2018). Interviewers exhibited empathy and affirmation by listening to and reflecting on the client's experience to clarify, bolster, amplify, and cultivate change talk (Enea & Dafinoiu, 2009; Frey et al., 2011). Presenting accurate affirmation required the counselor to look for strengths in the client and call attention to the individual's assets (Rosengren, 2018).

Fulfilling the role of acceptance meant the counselor provided a safe and supportive environment without threat, judgment, criticism, or blame (Enea & Dafinoiu, 2009; Miller & Rollnick, 2013). The meeting between counselor and client offered a space where the person reflected on attitudes and behaviors; the practitioner respectfully listened to and accepted the client's feelings, perspectives, and worldview (Enea & Dafinoiu, 2009; O'Brennan et al., 2020; Miller & Rollnick, 2013). MI embodied the vehicle for the change conversation to take place where coaches displayed respect and appreciation for an individual's strength and potential in moving on a more positive path (Rollnick et al., 2016). Accepted clients avoided defensive barriers and opened to the possibility of change more often, thus creating the time and space for meaningful change talk (Rosengren, 2018). In addition to the elements of collaboration and acceptance, counselors displayed compassion.

Compassion

The counselor's compassion for the client played an essential role in MI. According to Gilbert (2014), "Compassion is a sensitivity to suffering in self and others, with a commitment to try to alleviate and prevent it" (p. 19). Miller and Rollnick (2013) included compassion in the spirit of MI, underscoring the importance of a counselor's perception of clients as fellow human beings. A trusting relationship started with

compassion; the practitioner promoted the participant's welfare and gave priority to the person's needs and desires (Miller, 2018; Miller & Rollnick, 2013). Experts on the application of MI contended the counselor's compassion extended beyond sympathy for a client into the realm of empathy, where the practitioner saw distress and acknowledged suffering; compassion consisted of an actionable element where a counselor actively worked on behalf of the client's well-being (Miller, 2018; Rosengren, 2018). A practitioner's grasp on collaboration, acceptance, and compassion laid the foundation for the final piece of the underlying spirit of MI: evocation.

Evocation

The final component, evocation, completed Miller and Rollnick's (2013) vision of the spirit of MI. Researchers affirmed the process of evocation consisted of the counselor's active extraction of the client's ideas and solutions, as well as the person's reasons and motivations for change (Frey et al., 2011; Hall et al., 2021; Rosengren, 2018). Miller and Rollnick (2013) explained evocation with the metaphor of drawing water from a well; within the client resided a profound well of wisdom and insight, and the counselor called forth the person's strengths, resources, and desires for change already present in the person. Miller and Rollnick (2013) also emphasized avoiding probing clients for deficits and suggested concentrating on positive attributes when evoking. Additionally, researchers stressed evocation did not involve persuasion or coercion (Atkinson & Woods, 2018; Snape & Atkinson, 2016). Evocation served as one of the primary goals of MI, helping clients articulate and increase change talk and strengthen the individual's intention and motivation to change (Rosengren, 2018). Hettema et al. (2005) contended the practitioner's use of evocation did not work from a

deficiency standpoint seeking to fill the client with knowledge, correct thinking, or motivation, but instead worked to draw out the client's own will to move in a positive direction. While evocation acted as a central tenet contributing to the spirit of MI, the exercise also served as one of the processes of MI, discussed later in the literature review.

When overlapped and used in tandem, the components of collaboration, acceptance, compassion, and evocation created the overall spirit, establishing a core piece of the process and practice of MI (Rosengren, 2018). Miller and Rollnick (2013) accentuated the fundamental necessity of the heart of MI, articulating, "The practice of MI without understanding and manifesting this spirit is like the words without the music of a song. It is missing something essential" (p. 131). Furthermore, Rollnick et al., (2016) indicated the spirit of MI functioned as a matter of counselor style and the process and skills of MI provided the technical steps necessary to navigate discussions with clients. In essence, one element of MI without the implementation of the other aspects (Rollnick et al., 2016).

The Process of Motivational Interviewing

Miller and Rollnick (2013) not only developed an underlying spirit for the counselor/client coaching style of MI, but also a specific method and process for carrying out the practice consisting of four elements: engaging, focusing, evoking, and planning. Researchers described the process with two metaphors (Miller & Rollnick, 2013; Rollnick et al., 2016; Rosengren, 2018). Firstly, the processes worked as a map providing a route to travel through change conversations, providing interviewers with guidance on what, when, and why to enact a skill or discussion (Rollnick et al., 2016; Rosengren, 2018). Secondly, Miller and Rollnick (2013) explained the technique as dancing up and

down a staircase and the coach returned to previous stages requiring more consideration, if necessary. The bottom steps served as a solid foundation for the counselor, revisiting the stages as obligated by circumstances (Rosengren, 2018). The counselor used the four processes in describing the client's location in the sequence of change, as well as a guide in determining how to utilize the core skills discussed in the next portion of the literature review (Rosengren, 2018). Researchers clarified the processes of MI stating Miller and Rollnick (2013) specifically designed the structure and flow of the conversation reinforcing a person's motivation to change (O'Brennan et al., 2020; Rollnick et al., 2016). Engaging designated the first necessary step in the MI process.

Engaging

Engaging provided the first crucial element of an MI conversation. Researchers defined the process of engaging as establishing a safe place between counselor and client; counselors built a working relationship with trust and respect where a person felt safe probing difficulties and challenges (Miller & Rollnick, 2013; Rosengren, 2018). O'Brennan et al. (2020) also described engaging as creating a positive alliance with the client fostered through discussing the session's goals, exploring the person's strengths and values, and considering the individual's initial reasons for change. Furthermore, the practitioner skillfully listened, developing a connection, and improving the relationship with the client (Rollnick et al., 2016). Romano and Peters (2014) found when client engagement increased, the involvement and level of disclosure within the session also intensified. Later research confirmed clients expressed more open and honest sensibilities when comfortable and engaged with a counselor in a session (Rollnick et al., 2016). Rollnick et al. (2016) certified the improbability of a perfect conversation and suggested

engaging before moving on to anything else when trouble, confusion, or anger arose from a client. Finally, the practitioner intertwined engaging during meetings with clients building rapport with the person throughout (O'Brennan et al., 2020). Engaging the client equipped the counselor to move on to the next step of the process of MI, focusing.

Focusing

The second step in the process of MI, focusing, only occurred between the counselor and client after proper engagement took place. Researchers defined the focusing technique as developing and maintaining a specific direction in a change conversation. (Miller & Rollnick, 2013; Rollnick et al., 2016). The goal of focusing centered on funneling the range of negative behaviors down to a few concerns of the client and directing the conversation onto a useful route, supporting the individual's battle with challenges (O'Brennan et al., 2020; Rollnick et al., 2016). Rosengren (2018) reinforced the counselor's role in focusing; understanding what matters most to the person and using the individual's values to move forward with a defined agenda. Rollnick et al. (2016) clarified while a counselor focused on a client's strengths, at the same time, the interviewer did not ignore problems and weaknesses, but made the aspects clear to the individual within a positively charged conversation, thus increasing the likelihood of promoting change. The practitioner and client prepared for the next step in the process, evoking, by prioritizing a target behavior to discuss more specifically (O'Brennan et al., 2022). Rollnick et al. (2016) described the stages of engaging and focusing as necessary stepping-stones for the next stage, evoking, to demonstrate clarity and vigor.

Evoking

Evoking, as stated previously, operated both within the spirit *and* the process of MI. As a component of the spirit of MI, evoking served to affirm the client's own valid and valued thoughts and ideas further enforcing the client's role as expert in the conversation. Additionally, as a process used by the practitioner, evoking worked to draw out the ideas and feelings about motivation already contained within the person; the counselor then harnessed the thoughts and pinpointed how the individual might go about activating change (Miller & Rollnick, 2013; Rosengren, 2018). The counselor evoked and encouraged change talk by presuming the underlying thoughts of a client's words or actions and reflecting change talk or asking open questions, skills examined in more depth later in the literature review (Rollnick et al., 2016; Rosengren, 2018).

The counselor listened to important clues from the client and consequently held the observations up for the person to see as if looking in a mirror; the coach responded to the appropriate client opinions and dismissed irrelevant comments (Rosengren, 2018). During the evoking exercise, the counselor noticed change talk and encouraged the language so the individual, not the interviewer, expressed the person's true wants and desires, as well as the rationale for change (O'Brennan et al., 2020; Rollnick et al., 2016). The counselor directed the conversation to planning once appropriate engaging, focusing, and evoking transpired, knowing planning rested on the foundation of the three other steps in the process (Rollnick et al., 2016).

Planning

In the conversation including engaging, focusing, and evoking, the counselor omitted judgment and persuasion of the client and encouraged the person in bravely

moving towards change. Once the individual communicated the desire and commitment to change, the coach invited the client in taking the next step, asking the individual, "What might you do?" (Rollnick et al., 2016, p. 53) or "What next?" (Miller & Moyers, 2006, p. 10). Planning focused on the formulation of and commitment to a client's change plan (Miller & Rollnick, 2013). The counselor collaboratively helped the person in developing an action plan; the client decided how and when change occurred, and subsequently, chose the actions carried out to reach the voiced goal (Miller & Moyers, 2006; O'Brennan et al., 2020; Rollnick et al., 2016).

Planning, the action of the client's commitment occurred after the determination of elements requiring change (Rosengren, 2018). Researchers discussed avoiding two pitfalls for the practitioner in the planning process; one involved attempting the transition to planning too quickly, resulting in client resistance (Miller & Moyers, 2006), and a second concerned the counselor's impulse in controlling the planning process leading to the disempowerment of the person (Rollnick et al., 2016). As mentioned previously, the counselor returned to the preceding steps solving the first trap and made a concentrated effort in restoring the client's autonomy resolving the second dilemma. Rollnick et al. (2016) provided additional advice on planning, explaining strong change plans consisting of concrete and specific details, allowing the client's aptitude for success to grow. The practitioner, at any time deemed imperative; such as, if planning veered off track or the client regressed in change talk and exhibited more sustain talk, returned to the prerequisite phases.

Researchers cautioned jumping too quickly from step to step or even missing a step, citing a general order to the processes (Rollnick et al., 2016; Rosengren, 2018).

Handling the process of MI smoothly required adeptness on the part of the counselor (Rollnick et al., 2016), thus Miller and Rollnick (2013) outlined four specific core skills of MI (open questions, affirmations, reflections, and summaries), described in the next segment of the literature review. The skills assisted the counselor in constructing rapport, developing a trusting relationship with the client, collaborating with the processes, and remaining compatible with the spirit of MI (Hall et al., 2021).

The Skills of MI

Miller and Rollnick (2013) developed the core interviewing skills of MI, OARS: Open questions, Affirming, Reflecting, and Summarizing, in concert with the spirit and process of the therapeutic style, elemental to person-centered counseling (Atkinson & Woods, 2018). The skills outlined avoided attitudes and behaviors inducing disengagement and confrontation (Snape & Atkinson, 2016) and strengthened a person's inclination to change, increasing motivation (O'Brennan et al., 2020), further supporting the spirit of MI. Rollnick et al. (2016) characterized using the skills of MI as coming alongside a person, not pushing, or pulling the individual towards change, but gently guiding the client's focus to change and helping the person envision the way ahead. Despite the collaborative, come alongside approach, counselors used OARS intentionally and strategically with clients, intervening in sessions demonstrating the directional aspect of MI (Rosengren, 2018). Counselors rectified using the techniques by remaining within the spirit of MI, explaining, "listening with skill is at the heart of creating empathy," (Rollnick et al., 2016, p. 34) signifying the necessity of a counselor's unconditional expression of empathy for a client while maneuvering through MI, in addition to accurately utilizing the skills of the practice. The absence or inadequacy of a counselor's

active listening also meant the corruption of authentically executing the skills of asking open questions, affirming, reflecting, and summarizing. Unlike the processes of MI which built upon one another, researchers described the skills as working in harmony together, almost as if creating a rhythm, or playing the notes to a song (Miller & Rollnick, 2013; Rollnick et al., 2016). The first note of the rhythm of MI consisted of asking open questions.

Open Questions

Counselors utilized open questions throughout a session with clients. Rosengren described the skill as the backbone of the practice and interviewers used open questions in evoking the client's current feelings and thoughts. More specifically, researchers emphasized open questions promoted communication and invited clients into the process of reflecting and elaborating, while helping the coach in understanding the person's internal framework (Gabbay et al., 2011; Miller & Rollnick, 2013). Open questions also embodied the spirit of MI, setting a nonjudgmental tone to the conversation, and giving clients permission to embrace imperfections (Gabbay et al., 2011; Rosengren, 2018). Counselors who asked open questions provided the client with space to do most of the talking, giving the practitioner the occasion to learn more about the person's cares, values, and goals (Hall et al., 2021; Rosengren, 2018). Rollnick et al. (2016) identified the benefit of open questions pointing out the result of a wide variety of possible answers granting the counselor a chance to sway the conversation in a positive and productive direction. Open questions encouraged dialogue and furnished richer answers from clients (Gabbay et al., 2011). Comparatively, closed questions restricted answers to returns of "yes" or "no," leaving the counselor little to work with (Gabbay et al., 2011; Rollnick et

al., 2016; Rosengren, 2018). The questions, “What might you do?” (Rollnick et al., 2016, p. 53) or “What next?” (Miller & Moyers, 2006, p. 10), mentioned earlier in *planning* specifically referred to a special type of open question called the “key question” (Rosengren, 2018, p. 108). Rosengren (2018) explained, the key question asked about the client’s readiness to change and solidified commitment to action, and further declared the repetitive nature of the specialized question where coaches asked the question multiple times in a conversation or over a series of sessions.

Regardless of the good intentions of counselors, not all open questions promoted the therapeutic alliance MI strived to achieve, as potential complications emerged. Counselors demonstrated wariness of open questions, such as, “Why haven’t you changed?” (Miller & Moyers, 2006, p. 8), possibly resulting in resistance. Instead, for example, an open question prompting change talk sounded more like, “In what ways might this change be a good thing?” (Miller & Moyers, 2006, p. 8). Further exemplifying the directing character of MI, Miller and Moyers (2006) indicated the practitioners demonstrated skill when appropriately selecting how and when to ask open questions ensuring change talk materialized from the client. Asking open questions, however, did not guarantee an elucidated response, displaying the necessity of strong engagement with the client. Clients often denied a full reply for a range of reasons; perhaps the person demonstrated confusion or doubted the counselor’s genuine interest in the true answer (Rollnick et al., 2016). In conversations lacking client feedback, the counselor clarified or rephrased the question or returned to the engaging step (Rosengren, 2018). Counselors also often fell into the question-and-answer trap, leading to investigative questioning instead of the desired collaborative conversation (Rosengren, 2018). Researchers offered

a solution to insufficient client return and the question-answer feedback loop: using supplementary core skills (Lee et al., 2014; Rollnick et al., 2016; Rosengren, 2018).

Rollnick et al. (2016) proposed a useful metaphor highlighting the transition from open questions to the other core skills of MI: “If open questions are like knocking on a door, the other skills help you walk inside with greater ease” (p. 9). Utilizing the diverse skills of MI encouraged more discussion and elaboration from the client and researchers designated that one or more of the additional skills typically followed a counselor's open question (Lee et al., 2014; Rollnick et al., 2016; Rosengren, 2018). Affirming represented one such option counselors applied after open-ended questioning.

Affirming

Despite landing second in the OARS acronym, counselors used affirmations often throughout a session, not always in a strict order. Miller and Rollnick (2013) described affirmations as a way of thinking; the counselor anticipated a client’s strengths, positive steps forward, and good intentions. Additionally, researchers asserted affirmations took the form of genuine compliments, statements of understanding, and acknowledgments or congratulations on a client’s achievements (Gabbay et al., 2011; Hall et al., 2021; Rosengren, 2018). Furthermore, the practice of affirming also consisted of ratifying an individual’s strengths, skills, efforts, values, and other positive qualities (Lee et al., 2014; Rollnick et al., 2016; Rosengren, 2018; Rutschman, 2018). Counselors who displayed honesty showed deep knowledge of and appreciation for the client, manifesting hope, pride, and positive emotions within the individual (Miller & Rollnick, 2013; Rosengren, 2018). Equally important, researchers maintained that affirmations provided powerful

feedback for building a client's capacity and self-efficacy, determining the person's likeliness to change behavior (Gabbay et al., 2011; Rosengren, 2018; Rutschman; 2018).

Counselors also worked at inviting clients into the practice of self-affirming, resulting in individuals asserting a personal perspective of the self as attentive, capable, and adaptive; such clients moved away from sustain talk and towards change talk (Ehret et al., 2013). The counselor instilled belief in the client's ability to change, acknowledging and asserting change talk in harmony with the spirit of MI (Hall et al., 2021; Lee et al., 2014; Rosengren, 2018). Additionally, affirmations from the interviewer increased the likelihood of clients exhibiting change talk and decreased the likelihood of subsequent sustain talk (Rosengren, 2018). Erhat et al. (2013) substantiated that affirmations, particularly self-affirmations, increased a client's self-investigation leading to credible change talk motivating positive behavior and attitude.

Furthermore, Miller and Rollnick (2013) underscored the importance of beginning affirmations with the word "you" instead of "I," so the discussion centered more on the client than the coach, indicating the client's role in making change. Rosengren (2018) suggested focusing distinct behaviors instead of attitudes and decisions, concentrating on characterizations in lieu of analysis, attending to agreeable areas and affirmations rather than problems, and nurturing an abundant worldview instead of a deficient perspective. The change in pronouns reduced the likelihood of clients feeling judged, patronized, or belittled and focused the affirmation on an internal attribute opposed to an external perspective, communicating appreciation, and prizing the person for the individual's unique personhood (Rollnick et al., 2016; Rosengren, 2018). Additionally, counselors lessened the chance of a client reacting negatively drawing a solid line between

affirmations and praise (Rollnick et al., 2016). While an example of praise resembled "Well done. I'm impressed with your work today," (Rollnick et al., 2016, p. 178) an affirmation sounded more like, "You've been determined to get the job done today" (Rollnick et al., 2016, p. 178). Miller and Rollnick (2013) indicated praising a client raised a roadblock, implying the counselor resided higher in position relative to the individual. A practitioner *bestowed* praise on a client but conversely affirmed a person highlighting an enduring quality *within* the client, leading to ownership of personal progress (Rollnick et al., 2016).

Erhet et al. (2013) proposed affirmations acted as catalysts in reducing resistance to change talk and created a pathway for counselors to use other skills, enhancing empathy. A practitioner showed interest and concern using affirmations recognizing and encouraging positive client attitudes and behaviors boosting the person's morale, confidence, and empowerment (Sheldon, 2010). While a coach's employment of affirmations exhibited consideration, the practice involved more than "just being nice" (Rollnick et al., 2016, p. 178) to a client; the counselor's willingness to observe positive things in a person proved paramount. "Affirming is less of a judgment and more like shining a light on something positive inside the [person]" (Rollnick et al., 2016, p. 36), a small gesture often meaning more to a client than the practitioner realized. Affirmations, clearly distinguished statements from praise, focused on the pronoun "you," and geared clients towards change. While researchers agreed affirmations deserved wider use, the practice required a natural flow, and more importantly, used in accordance with other skills in a counselor's genuine attempt at engaging and helping the client (Rollnick et al.,

2016; Rosengren, 2018). Counselors often utilized the next core skill, reflecting, in conjunction with affirmations echoing back to a client the person's revelation.

Reflecting

Reflecting in MI represented one of the most essential core skills and included the critical element of active listening, also referred to as a "primary skill" (Rosengren, 2018, p. 70), and the "lifeblood of the skillful practice" (Rollnick et al., 2016, p. 37). The counselor listened to what the person had to offer, formulated a reasonable guess as to what the person meant, and then provided the guess to the person in the form of a statement (Miller & Rollnick, 2013). Researchers explained the practice of reflecting desired to capture the meaning and feeling of a person's statements, enhancing a counselor's ability in expressing empathy, communicating recognition, encouraging exploration, and magnifying the desire for change (Hall et al., 2021; Miller & Moyers, 2006; Rosengren, 2018). Practitioners reflectively listened to a client's feelings, attitudes, beliefs, choices, and behaviors, accepting the person, yet challenging negative positions, creating momentum in a productive forward direction; counselors often observed things about a client the person did not see and mirrored the information back to the individual, generating empathy (Gabbay et al., 2011; Rollnick et al., 2016; Rosengren, 2018). Researchers demonstrated the difference between reflecting and asking a question, explaining, responding with a statement had a different delivery and outcome, and open questions evoked continued investigation and elicited more change talk countering defensiveness (Lee et al., 2014; Miller & Rollnick, 2013; Rosengren, 2018).

The practice of reflective listening and offering a statement to the client comprised of forming a hypothesis or guess assembled from the counselor's

understanding of the client's articulation of feelings, ideas, and/or meanings (Gabbay et al., 2011; Rollnick et al., 2016). Rosengren (2018) submitted the metaphor of an iceberg elucidating the practice of guessing or hypothesizing; deeper reflections addressed issues existing below the surface within reason of the client's voiced words. If a time occurred when the counselor's statement landed off-target, the client utilized the opportunity of confirming, clarifying, or denying the counselor's guess creating movement in the conversation (Rosengren, 2018). Researchers affirmed a client's reaction to an inaccurate guess could be positive, showed the person's dedication in helping the counselor understand, and aided the individual in processing thoughts and coming to a better understanding of individual needs and behaviors (Gabbay et al., 2011; Rollnick et al., 2016; Rosengren, 2018). Additionally, as more intense situations and client experiences surfaced, a counselor produced more profound reflections, diving well beyond a client's words, inferring greater significance, and possibly cognitively refashioning information (Rosengren, 2018).

Researchers indicated reflections worked particularly well after open questions, especially when centered on change talk, as reflections promoted additional movement and demonstrated a counselor's inclination for mutual understanding (Gabbay et al., 2011; Lee et al., 2014; Rosengren, 2018). Rosengren (2018) revealed, as standard practice, interviewers generally employed a 2:1 ratio of reflections to questions. Once counselors mastered the 2:1 rhythm, the interviewer increased the number of reflections, avoiding a stale pattern in the conversation (Rosengren, 2018). Reflections added to client self-understanding and reaped the benefits of continued conversation, heightened engagement, and increased empathy between client and counselor (Rollnick et al., 2016;

Rosengren, 2018). Whereas reflections usually centered on one element of a client's experience, the next skill, summarizing, pulled together several different components into a larger picture (Miller & Rollnick, 2013).

Summarizing

Summaries concluded the list of core skills necessary for conducting MI sessions. According to Miller and Rollnick (2013), summaries consisted of extended reflections where a counselor pulled together everything a client said in the session. Coaches provided accurate summaries by noticing and listening to a client's key points and remembering and valuing what the person disclosed (Gabbay et al., 2011; Rollnick et al., 2016). In general, practitioners employed summaries linking separate discussions with clients, ensuring both parties' understanding of the conversation, and pointed out possible discrepancies between the individual's status and future goals (Hall et al., 2021). More specifically, counselors used different types of summaries in different situations: *collecting* summaries compiled interrelated sentiments, *linking* summaries connected current and prior statements, and *transitional* summaries wrapped up a stage or conversation signaling a shift to a fresh topic (Lee et al., 2014; Miller & Rollnick, 2013). Researchers agreed on the counselor's role of choosing the key information to highlight and excluded the unnecessary or negative aspects, keeping summaries brief and succinct (Miller & Rollnick, 2013; Rosengren, 2018).

Summaries prepared the client to continue the conversation, showed empathy from the counselor, and emphasized the importance of change talk in the conversation. Researchers indicated practitioners reflected the person's own words, as much as possible, referring to the individual's positive motivations and encouraging the client to

pursue exploring (Miller & Rollnick, 2013; Rollnick et al., 2016). Summarizing allowed the counselor to alter the flow of the session, showing attentiveness, highlighting the affirmative words of the client, resolving ambivalence, strengthening commitment, and capturing change talk (Gabbay et al., 2011; Lee et al., 2014; Rollnick et al., 2016; Rosengren, 2018). Researchers clarified with a note on ambivalence; counselors offered summaries to clients like a bouquet of flowers, eliminating most of the weeds, aka ambivalence, approaching the topic, but not dwelling on unresolved feelings (Rollnick et al., 2016; Rosengren, 2018). Presenting a person's motivations and strengths to the individual in the form of a summary demonstrated listening, understanding, and empathy on the part of the counselor (Hall et al., 2021; Rollnick et al., 2016). Miller and Rollnick (2013) described summarizing in a final image, as a single piece of fabric, containing all the appropriate colors woven together, forming one picture.

Summaries held dual goals: providing a larger amount of content in brief and organizing the client's feelings and experiences (Rosengren, 2018). Counselors offered a summary combining separate pieces all coming from the client, creating a full scope outlook (Miller & Rollnick, 2013) that could begin like, "let me make sure I'm getting this. . ." (Gabbay et al., 2011, p. 82). Counselors achieved successful summarization when the interviewer reflected back a client's words and augmented the person's understanding by raising to the surface less evidently articulated thoughts or implicit themes within the conversation (Rosengren, 2018). Miller and Rollnick (2013) simplified summarizing with a metaphor: when proposed with a summary, a stuck client could "see the whole picture of the forest in a way that wasn't clear from examining one tree at a time" (Miller & Rollnick, 2013, p. 69). Summaries, along with reflections, also often

qualified as affirming when the client received the counselor's implied message of, "I remember what you tell me and want to understand how it fits together" (Miller & Rollnick, 2013, p. 66). As mentioned earlier in the chapter, practitioners of MI alternated between the elements of OARS to create a natural flow of conversation. The 2:1 formula, with additional supporting affirmations, repeated until a summary assembled the elements into a conclusion.

Clinical Origins of MI

Miller (1983) first developed the characteristics of MI in hopes of reducing harmful drinking attitudes and behaviors in alcohol abusers (Marsden et al., 2006; Rollnick et al., 1992). Since the origin of MI, clinicians applied the practice to several behaviors and situations, in addition to alcohol misuse, including but not limited to drug use, smoking cessation, medical compliance, HIV care, gambling, eating disorders, and reducing sexual risk behaviors (Gabbay et al., 2011; Hall et al., 2021; Hettema et al., 2005; Marsden et al., 2006; Miller & Rose, 2009). Furthermore, since ambivalence and the benefits of change appertained to many types of behaviors, professionals used MI for a range of mental health issues and anxiety disorders, as well (Marcus et al., 2011). Researchers analyzing alcohol and substance abuse literature found statistically significant effects for MI, even when used with other interventions; clients engaged in treatment, adhered to recommendations, and experienced improved outcomes compared to clients receiving the same intervention without MI (Frey et al., 2011; Hettema et al., 2005). Meta-analyses presented MI as equivalent to or better than other treatments, such as cognitive-behavioral therapy (CBT) and preferable to nontreatment controls and placebos (Burke et al., 2003; Hettema et al., 2005; Jensen et al., 2010).

The most recent meta-analysis, Jensen et al. (2010), offered the following conclusions on 25 years of MI literature examining the effect sizes of MI treatments helping clients change. Research showed MI promoted positive behavior change over a wide array of issues; however, effect sizes also widely differed for individual problems and even the same issue, such as alcohol abuse over different sites and populations, exposing the approach's variability (Hettema et al., 2005; Jensen et al., 2010). The meta-analysis addressed the debates on treatment manuals, session formats, and interviewer training; reliance on manuals sometimes inadvertently caused interference with client-centered practices, however, flexibility in formatting increased the strength and portability of the intervention, fitting into the overall philosophy of MI. After revealing a deficiency of studies addressing the issue of interviewer training, Jensen et al. (2010) cited a personal communication with Miller (2006) explaining the importance of practitioner empathy over training background. Overall, 75% of participants achieved some level of improvement from MI, contrasted to 25% of treatments considered ineffective or less effective when compared to other interventions (Jensen et al., 2010, p. 433). While researchers discovered the use of MI contributed to positive gains in well-being, enforcing client engagement and motivation, most of the research dealt with counselor behaviors or client outcomes, excluding information on client perspectives (Jensen et al., 2010). Marcus et al. (2011) explained, at the time of writing, only two studies examined client experiences in the clinical setting. In research on MI for HIV risk-reduction (Zuckoff, 2007), clients shared feelings of safety in therapy, appreciating counselor empathy, and gratefulness for client autonomy and choice (as cited in Marcus et al., 2011). Comparably, in another study (Kagan & Angus, 2009), clients experienced

positive feelings for opening up, self-determination, strengthened relationships with others, and facilitator empathy (as cited in Marcus et al., 2011). One approach not specifically mentioned in the meta-analyses (Burke et al., 2003; Hettema et al., 2005; Jensen et al., 2010) included Brief Motivational Interviewing (BMI), discussed in the next section.

Brief Motivational Interviewing

While training practitioners, Rollnick and Bell (1991) developed BMI explicitly for non-specialists working with patients of shifting readiness to change (Marsden et al., 2006; Rollnick et al., 1992). BMI requirements included time-limited consultations, no more than 12 to 15 hours of training for facilitators, the spirit of MI embodied in each session, and flexibility among practitioners in adapting to a patient's readiness to change level (Rollnick et al., 1992). Similar to the general practice of MI, the goal of BMI remained helping clients in exploring ambivalence, embracing autonomy, and moving towards positive behavior change at the person's own pace (Rollnick et al., 1992). Martino et al. (2007) studied the teaching of BMI to three-year medical students with increasing efficacy in patient-doctor relationships as the goal of the treatment. Considering the time restraints in the healthcare profession, the carrying out of BMI only took 5 to 15 minutes and involved establishing rapport between doctor and patient using the MI tactics of asking open questions, analyzing, and understanding patient health concerns with reflections and summaries, and promoting behavior change goals (Martino et al., 2007). After success with adults in clinical settings, several MI and BMI studies featured adolescents challenged with similar problems, including drug and alcohol abuse, as well as mental health issues.

MI with Adolescents in Clinical Settings

While adolescents dealt with many of the same challenges as adults, researchers remained unclear as to whether MI and BMI worked in the same capacity with young people. Baer and Peterson (2002) noted some of the advantages of MI and BMI for use with youth included the approach's practical use with other treatment programs and the brief format considering the conditions of locations where parents or judicial systems placed young people in distress or trouble. However, some of the challenges posed to counselors working with adolescents in clinical settings consisted of youth coerced into participating, oversaturation of drug education programs, and discontent with the controlling nature of parents, the justice system, or adults in general, often leading to angry, distrustful young people (Baer & Peterson, 2002). Baer and Peterson (2002) emphasized the flexibility, openness, and non-judgmental attitude needed from counselors toward young clients offering the adolescent an opportunity to address, in addition to the problem the youth must attend to, a variety of tangential existent struggles (identity, sexuality, peer relations), as well. For example, Brody (2009) examined a 17-year-old Caucasian woman with clinical depression. While the client's scores on the Beck Depression Inventory and Penn State Worry Questionnaire decreased, the person still expressed a substantial amount of worry (Brody, 2009). Despite still exhibiting some depression and worry, the adolescent commented, ''[My therapist] always made me feel worthwhile. She gave me strategies to help me improve myself" (Brody, 2009, p. 1177). The researcher concluded, while one participant's comments did not provide empirical evidence of effectiveness, the sentiment illustrated a warrant for further investigation of MI with young people concerning mental health challenges (Brody, 2009).

However, not all BMI studies resulted in such promises. In an intervention for adolescents abusing ecstasy, cocaine powder, and crack cocaine, using a manual-guided approach, researchers found the program no more powerful at producing abstinence than the information only (Marsden et al., 2006). Although after a follow-up, more BMI participants indicated increased attempts at stopping or reducing stimulant use than the control group, the authors cited the evidence as weak in the overall data (Marsden et al., 2006). Despite 78% of participants asserting the intervention prompted them to change, compared to 14% of clients saying the self-assessment induced the change, and 5.8% pinpointing the combination of the intervention and the self-assessment as producing the change, researchers claimed no greater difference over the information-only control group, judging the intervention as generally ineffective (Marsden et al., 2006, p. 1023).

However, Jensen et al. (2010), argued the results of a metanalysis on further MI studies concerning adolescents and substance abuse produced small, but significant effect sizes, especially noteworthy, since 62% of the interventions consisted of single BMI sessions and 79% of practitioners lacked graduate-level training (p. 438). Despite one study (Marsden et al., 2006) claiming BMI as not effective with adolescent drug abusers, and the lack of racially diverse samples in the clinical depression case study (Brody, 2009) and the meta-analysis (Jensen et al., 2010), more studies addressing the use of MI with adolescents continued emerging and showing promise. Rollnick et al. (1992) noted although MI and BMI derived from addressing problem drinkers in a clinical setting, the approach's relevance applied to changes in general behavior significantly, as well, galvanizing the research on MI for adolescents in non-clinical settings reviewed in the next section.

Motivational Interviewing with Adolescents

MI proved to be a useful counseling technique for adults with addictive behaviors in clinical settings (Reich et al., 2015), but researchers questioned utilizing the approach with younger people and in different settings as "adolescents are different from adults in important ways" (Baer & Peterson, 2002, p. 320) and "due to the neuropsychological demands of the MI process" (Snape & Atkinson, 2016, p. 3). Lundahl et al. (2010) explained the hesitancy, due to MI's necessity for abstract reasoning usually developed at or after 12 years of age, according to Piaget (1963). However, researchers emphasized the necessity of schools providing early identification and acceptable support for youth with signs of risk or students affected by mental health disorders, rather than waiting for failure or the increase in problem severity (O'Brennan et al., 2020; Terry et al., 2020). O'Brennan et al. (2020) also pointed out the ideal timing of adolescence for practice with problem-solving, a key skill in MI. Seeing a need for an intervention, which addressed the neurological and psychological factors affecting adolescents, and the urgency of support imperative for schools, researchers examined the cognitive development of students before experimenting on the demographic with MI (Baer & Peterson, 2002; Ruhl, 2020; Rutschman, 2018; Snape & Atkinson, 2017; Strait et al., 2012a; Terry et al., 2014).

Cognitive and Neurological Development

Researchers examined the cognitive theories and neurological development of adolescents, specifically scrutinizing both Piaget's Theory of Cognitive Development (1936) and Erikson's Stages of Psychosocial Development (1958, 1963) assessing the appropriateness and applicability of MI for use with young people (Rutschman, 2018;

Strait et al., 2012a). Piaget (1936) and Erikson (1958, 1963) outlined moving through the stages of life from childhood, through adolescence, and onto adulthood as an ever-evolving process where repetition of previous stages occurred (Orenstein & Lewis, 2020). Researchers contended students operating within Piaget's (1936) concrete operational and formal operational stages, as well as Erikson's (1958, 1963) stage of adolescence, retained the cognitive ability to participate in an intervention, such as MI (Strait et al., 2012a; Terry et al., 2014; Snape & Atkinson, 2016). Webb (1980) explained children moving into the concrete operational stage started analyzing relationships and categorizing life into substantial categories, while adolescents transitioning into the period of formal operations began manipulating abstract concepts through employing hypotheses and propositions. Young people interacting positively with adults, examining relationships with peers, and proposing goals and solutions to problems required the maturity of the stages spoken of by Piaget (1936) and Erikson (1958, 1963) (as cited in Strait et al., 2012a; Terry et al., 2014). Additionally, "after concrete operations, an individual may acquire abstract thinking in behavioral, symbolic, semantic, and/or figural content areas depending on experience" (Webb, 1980, p. 95). Students participating in MI frequently reflected on personal values, behavior, and self-regulation, essentially becoming aware of personal thoughts, obligating an active transition from concrete to formal operations (Zimmerman, 2001).

Erikson's (1958, 1963) fifth stage of personality development, the stage of adolescence, referred to identity formation where a person evaluated prior experiences, social expectations, and current and future values, as well as establishing autonomy (Orenstein & Lewis, 2020). Furthermore, students developed self-appraisal, self-

awareness, and theory of mind, important cognitive mechanisms linked to identity formation, developing before and during adolescence (Strait et al., 2012a). Furthermore, young adults also heavily relied on peer appraisal, even more so than self-appraisal, according to the current brain imaging (Naar-King & Suarez, 2011, as cited in Strait et al., 2012a). In addition to Erikson's (1958, 1963) theories on personality and identity evolution, Ruhl (2020) submitted young people with a developed theory of mind interpreted and predicted the behavior of others, essential keys to participating in MI.

Additionally, Rutschman (2018) asserted according to the self-determination theory (SDT) proposed by Deci and Ryan (1996), MI helped students in meeting the psychological needs of adolescence, namely, autonomy, competence, and relatedness. SDT (1996) alleged all cultures and ages shared the three basic needs, and when met, resulted in intrinsically motivated individuals (Rutschman, 2018). Researchers not only examined the cognitive development of adolescents in relation to MI, but also investigated the neurodevelopmental aspects, as well; neuroimaging analysis proposed young people in the throes of puberty maintained a heightened sensitivity to emotional and social information processing (Straitet al., 2012a). Furthermore, during cognitive development, adolescents participated in the higher-level processes like planning and decision making, necessary for engaging in MI (Strait et al., 2012a). Other abilities controlled by executive functioning needed for success in MI included the capacity to self-monitor, self-regulate, and inhibit responses in conjunction with detecting and attending to social stimuli (Strait et al., 2012a). Snape and Atkinson (2016) confirmed the use of MI with adolescents, emphasizing the inappropriateness of MI for students under the age of 12 with still developing skills, such as planning and decision making.

Baer and Peterson (2002) contended the major psychological tasks of adolescence consisted of the maturation of autonomy and identity, as well as the evolution of personal and social competencies necessary for the appropriation of adult roles. The structure and practice of MI facilitated tasks supported neural connections, decision-making processes, and the growth of youth participants (Rutschman, 2018). In other words, a coach activated and enhanced the brain structures for planning and forward-thinking; when reflecting back the participant's voiced thoughts to the student (Rutschman, 2018). Despite the underdeveloped impulse control occurring in young people during the developmental stage of adolescence, researchers believed theoretical guidance and solid reasoning bolstered using MI with students of middle school and high school age, since most brain systems crucial to MI fully functioned by age 12 (Strait et al., 2012a). Snape and Atkinson (2016) supported Strait et al.'s (2012) research, maintaining students benefited from school-based mentors and interventions reminding participants of change goals, positively reinforced by the cognitive and neurodevelopmental requirements of MI.

MI also allowed counselors the opportunity in addressing two major tasks of adolescence: confronting ambivalence and forming autonomy (Baer & Peterson, 2002). According to Rutschman (2018), when threats decreased in connection with brain processes related to ambivalence, as in the practice of MI, brain connectivity increased, helping students on the path to change. Researchers asserted ambivalence applied to issues of identity formation and societal roles, especially among students (Baer & Peterson, 2002; Rutschman, 2018). Rollnick et al. (2016) illustrated learners appreciated autonomy and freedom to choose as individuals moved closer to ambivalence, and

consequently, pressure to change, designating MI a best practice for coaches and students. Furthermore, researchers claimed clinical styles acknowledging ambivalence, respecting choices, encouraging identity formation, and decreasing resistance remained logical options for school interventions (Baer & Peterson, 2002; Naar-King, 2011; Snape & Atkinson, 2016).

In addition to the cognitive and neurodevelopmental support for using MI with adolescents, researchers detailed supplementary evidence, as well (Rollnick et al., 2016; Strait, et al., 2012b; Terry et al., 2013; Terry et al., 2020). Strait et al. (2012a) noted the effectiveness in adult populations, the brevity of the approach, and the attention devoted to motivation and behavior change as to the plausibility of MI working in educational settings with young people. Researchers discussed a range of adolescent groups possibly benefiting from Student Focused Motivational Interviewing (SFMI), including students grappling with behavior or motivation, students struggling with academics, students dealing with mental health issues, and students in AP/IB programs (Baer & Peterson, 2002; Frey et al., 2011; Snape & Atkinson, 2017; O'Brennan et al, 2020; Suldo et al., 2021; Strait et al., 2012a; Terry et al., 2020). While SFMI did not necessarily include a definitive behavioral target, researchers concluded SFMI helped students' academic performance, attendance, engagement, and mental well-being (McQuillin et al., 2015, as cited in Strait et al., 2018; Miller and Rollnick, 2013; Reich et al., 2015; Strait et al., 2012b; Terry et al., 2014). However, Strait et al. (2018) conceded to the variations of the components and delivery of SFMI discussed later in the section. Additionally, researchers agreed on the dearth of preventative measures for the previously mentioned issues in

schools, as well as the lack of research concerning MI interventions addressing student struggles within educational settings (Kittles & Atkinson, 2009; Terry et al., 2020).

Behavior and Motivation

Research studying MI within the context of student behavior and motivation composed most of the literature currently available. Rutschman (2018) proposed the propensity of adults focusing on negative behaviors and attributes of young people and relying on discipline and punishment in the present educational system as undermining student success. Punitive measures often created resentment in students towards educational staff leading to a general feeling of alienation from school, as a whole (Rutschman, 2018). Researchers identified using MI as a replacement tool for punishment, emphasizing encouragement and working with mistakes and negative behavior as opportunities for growth, instead of seeing deficits as warranting discipline (Enea & Dafinoiu, 2009; Rutschman, 2018). The use of MI benefited middle and high school students, potentially directly changing student behavior and motivation; young people expressed MI permitted the reflection on negative behavioral issues and helped students in learning about the regulation of behaviors (Snape & Atkinson, 2017; Strait et al., 2012b).

Researchers also conveyed MI's ability in regulating behavior and changing motivation for young people regarding the core concept of embracing autonomy (Atkinson & Amesu, 2007; Baer & Peterson, 2002; Rollnick et al., 2016). Suldo et al. (2021) argued some adults concentrated on telling adolescents how to behave, rather than attending to students' existing goals, values, and knowledge base. Furthermore, well-intentioned practitioners generated resistance when using phrases, such as, "Think about

how your parents feel!" or, "Can't you see how this makes your teachers angry?" increasing the difficulty of forming a working alliance with the student (Atkinson & Amesu, 2007, p. 32). However, when practicing MI, the focus shifted from the counselor's or school's ideas and goals to the views and explorations of the student, offering increased autonomy, not only a core concept of MI but an essential psychological human necessity, according to SDT (Baer & Peterson, 2002; Ryan & Deci, 2000).

MI research looking at behavior and motivation with adolescents included several studying disaffections, one focused on high school dropouts, and one concentrated on truancy, referenced in Table 4. For many of the following studies, researchers adapted and/or used MI with supportive frameworks, aiding non-specialist practitioners in the application of the approach (Snape & Atkinson, 2016). Rollnick and Miller (1995), researchers, questioned if structured or manualized MI procedures weakened the process, yet the frameworks remained popular (as cited in Snape & Atkinson, 2016). Researchers in the UK adapted forms of MI centered on two studies regarding disaffection around small opportunity samples of three students each (Kittles & Atkinson, 2009; Snape & Atkinson, 2017). MacNamara (2009) explained disaffection concerned negative beliefs and behaviors surrounding school life and academic demands (as cited in Snape & Atkinson, 2017). Kittles and Atkinson (2009) suggested one MI session alone offered interviewers with insight into an individual's views, current strategies, and readiness for change. In addition to student outcomes, the researchers also investigated the perceptions of young people concerning the process of MI, and the authors found two out of the three participants expressed positive experiences (Kittles & Atkinson, 2009).

Table 4

MI with Adolescents

Study	Participants	Interviewers and Training	Sessions
Enea & Dafinoiu (2009)	16-17 year olds (p. 185)	School Psychologists (training not reported) (p. 190)	(4-8) 1 hour sessions (p. 190)
Iachini et al. (2016)	15-17 year olds (p. 213)	Social work graduate students trained with MITAS (p. 212)	(2-9) sessions (length not reported) (p. 213)
Kittles & Atkinson (2009)	13-15 year olds (p. 246)	Educational psychologist trainee (training not reported) (p. 246)	(1-3) sessions (length not reported) (p. 246)
O'Brennan et al. (2020)	9th grade AP & IB students (p. 22)	Faculty, postdoctoral fellows, and graduate students in a psychology department trained with MITAS (p. 23)	(2) 50 minute sessions (p. 34)
Reich et al. (2015)	Undergrad students (p. 340)	Psychology professors (training not reported) (p. 340)	(1) 15-20 minute session (p. 340)
Snape & Atkinson (2017)	11-13 year old males (pp. 191-192)	Educational psychologists with previous training and a refresher (p. 191)	(5-6) sessions (length not reported) (p. 193)
Strait, McQuillin, Smith, et al. (2012)	Middle school students (p. 1033)	School/clinical psychology graduate student with previous training and a 90 minute intervention specific training (p. 1034)	(1) 50 minute session (p. 1034)
Suldo et al. (2021)	High school freshmen (p. 814)	Faculty, postdoctoral fellows, and graduate students in a psychology department trained with MITAS (p. 814)	(2) sessions averaging from 34-51 minutes (pp. 817-818)
Terry et al. (2013)	Middle school students (p. 904)	Graduate students and research specialists trained with 3 training sessions (p. 904)	(1) 45 minute session (p. 906)
Terry et al. (2014)	Middle school students (p. 64)	Psychology graduate students and undergraduate research specialists with previous training and an additional 4.5 hours of training (p. 66)	(1) 45 minute session or (2) 45 minute sessions (p. 66)
Terry et al. (2020)	Middle school students (p. 803)	Psychology doctoral students trained with Didactic MI training, role playing, and fidelity assessments for an average of 13.4 hours (p. 802)	(2) 40 minute sessions (p. 802)

Additionally, Kittles and Atkinson (2009) concluded the student with the non-positive experience expressed a lower level of readiness to change in comparison to the other two students, indicating a possible relationship between a student's readiness to change and how adolescents responded to and viewed the delivery of MI. Another determination proposed using MI as an assessment and consultation tool helping practitioners and school staff in designing personalized interventions for students (Kittles & Atkinson, 2009). Snape and Atkinson (2017) also looked at student opinions of experiencing MI where the researchers used a pack of materials called, Facilitating Change, created by Atkinson (2013). Researchers, interested in the fidelity of the program, audio-recorded sessions, in addition to facilitators writing diary entries after each conversation, and practitioners completing a self-assessment checklist focused on maintaining the spirit and principles of MI post-session (Snape & Atkinson, 2017). Students not only reported an enjoyable experience but also explained the importance of confidentiality leading to more openness by participants in sessions (Snape & Atkinson, 2017).

Researchers also applied MI to two other specific behaviors, student dropout and student truancy (Enea & Dafinoiu, 2009; Iachini et al., 2016). Researchers warned without prevention and intervention, high schools possessed the capability of turning into dropout mills (America's Promise Alliance, 2015, as cited in Iachini et al., 2016). Another concern for schools included the designation of school-to-prison pipelines (Child Trends, 2015, as cited in Iachini et al., 2016). Rutschman (2018) added individuals not graduating entertained a higher risk of unemployment and poorer health. Despite the dangerous possibilities, Iachini et al. (2016) identified no prevention programs for at-risk dropout students using MI and diagnosed the need for more in-school secondary

intervention options. The outcome of the study showed MI as a viable option; the program offered flexibility providing the practitioner with additional time with students and supplemental resources reinforcing the curriculum as needed (Iachini et al., 2016). Participants characterized organization, communication, study skills, and behavior control as qualities learned from MI and facilitators described students as establishing feelings of empowerment. When researchers studied the results of MI on students struggling with truancy, practitioners found truancy decreased in the experimental group, while no difference existed in the control group (Enea & Dafinoiu, 2009). In both studies, participants and coaches expressed MI promoted student autonomy, supported a working alliance, and represented a promising intervention connecting students with adult role models (Enea & Dafinoiu, 2009; Iachini et al., 2016). In addition to behavioral and motivational outcomes, researchers also explored the possible relationship of MI implementation to adolescent mental health.

Mental Health

While not representing a large portion of MI studies, the mental health of students proved an interesting topic for researchers with significant consequences for young people. Researchers acknowledged many student risk factors derived from familial, social, or mental health problems threatening adolescent quality of life and educational success (Baer & Peterson, 2002; Frey et al., 2011; Suldo et al., 2018). Student mental health issues garnered more attention in recent years, and educators, policy-makers, mental health officials, and the general public called for support and assistance in schools (Frey et al., 2011; Terry et al., 2014). Most recently, Terry et al. (2020) advocated for feasible and reliable preventative programs for students struggling with mental health

disorders. School mental health experts referenced MI as an acceptable intervention attributing to the practice's roots in social cognitive theory, as well as the approach's brevity, flexibility, and focus on collaborative relationships and participant autonomy (Frey et al., 2011; Naar-King, 2011; Strait et al., 2012a; Terry et al., 2014).

Frey et al. (2011) examined the usefulness of MI on not only students, but classroom teachers and parents as well, combining several interventions already in use. The authors argued for infusing MI into large-scale interventions and using the approach in a variety of educational situations when facilitating change, whether that be with individuals, groups, or even entire organizations. Furthermore, Frey et al. (2011) cited possible future research as including the study of barriers to implementing MI for students struggling with mental health issues within the context of existing programs. In a more current study, Terry et al. (2020) researched student behavior, cognition, and psychosocial functioning using an adaptation of MI called Footprints, blending MI, Cognitive Behavior Therapy (CBT), and academic protective factors. The researchers endorsed the program feasibility as promising, acceptability by participants and counselors as high, and individual MI sessions as receiving significant marks for therapeutic alliance (Terry et al., 2020). Researchers concluded studying MI with adolescents in educational settings concerning behavior, motivation, and mental health demonstrated acceptability, feasibility, and promise, encouraging research in the academic realm as well (Enea & Dafinoiu, 2009; Frey et al., 2011; Iachini et al., 2016; Kittles & Atkinson, 2009; Snape & Atkinson, 2016; Snape & Atkinson, 2017; Terry et al., 2020).

Academics and AP/IB

While most studies concerning MI with youth in educational settings alluded to academics in some form, the following studies primarily examined academic outcomes in addition to behavior, motivation, and mental health. Researchers claimed MI treatment with adolescents resulted in a proliferation of the completion of homework, participation in class, development of self-efficacy, growth in quality and satisfaction of life, and positive increases in academic performance, behavior, and motivation (O'Brennan et al., 2020; Reich et al., 2015; Strait et al., 2012b; Strait et al., 2012a; Terry et al., 2014; Suldo et al., 2021). In a study and replication study of the use of MI on middle school students, researchers addressed changes in school-related behavior, such as classroom participation, academic achievement, and self-efficacy (Strait et al., 2012b; Terry et al., 2013). Another goal of the studies assessed the significance of smaller doses of MI consisting of just one or two sessions supporting Rollnick et al.'s (1995) research on BMI (Strait et al., 2012b; Terry et al., 2013).

Similar to studies on behavior and motivation (Kittles & Atkinson, 2009; Snape & Atkinson, 2016), researchers used a structured interview framework to guide the MI sessions, but facilitators possessed flexibility in responding to student answers (Strait et al., 2012b). In the original study, no statistical significance resulted for homework completion, self-efficacy, reading, language arts, or science (Strait et al., 2012b). However, students participating in MI increased participation and positive behavior and showed statistically significant improvement in mathematics scores boosting grades from a B to a B+ average compared with the control group (Strait et al., 2012b). In the replication study, studied outcomes included academic grades, self-report criterion of classroom participation, homework completion, and self-efficacy; as in the first study, a

statistically significant effect on mathematics grades emerged (Terry et al., 2013). In contrast to the original study, the ELA effect size significantly decreased; however, across both studies, effect sizes for student reported academic behaviors remained consistent (Terry et al., 2013). Researchers concluded the results contributed from both studies provided introductory support for using MI, even briefly, in improving adolescent academic performance (Strait et al., 2012b; Terry et al., 2013).

Strait et al. (2014) continued the research on BMI (Rollnick et al., 1995) in educational settings, conducting a study comparing the difference of one brief session of MI against two brief sessions. Researchers hypothesized two MI conversations produced higher grades and increased levels of self-reported participation, self-efficacy, engagement, and motivation in school, as well as life satisfaction (Terry et al., 2014). In contrast to the previous two studies (Strait et al., 2012b; Terry et al., 2013), research showed students who participated in two sessions over one achieved higher grades in math, science, and history (Terry et al., 2014). While the study found two doses resulted in more engagement, both dosage groups showed relatively the same increase in levels of intrinsic motivation from pre-test to post-test, indicating even the lowest amount of MI sessions enhanced intrinsic motivation (Terry et al., 2014). Although students demonstrated growth after one to two MI conversations, researchers clarified the most productive dosage for MI with young people remained unknown in the current literature and suggested increasing the number of sessions, as well as individualizing conversations based on unique participants in future studies (Terry et al., 2014). Researchers addressed the time-limited nature of school schedules, emphasizing the benefit of a brief intervention, such as MI, yet recognized the necessity of more research on the benefit of

multiple brief sessions (Terry et al., 2014). Jensen et al. (2010) proposed the dosage of MI mattered and more treatment time related to better outcomes; but claimed the assumption of a brief MI program producing lasting change unreasonable. Ultimately, no current research provided an absolute answer as to the most beneficial dosage of treatment time for the use of MI with adolescents *or* adults.

In considering an older population of students, Reich et al. (2015), investigated motivation, exam preparation, and academic outcomes of college students in psychology classes. Researchers noted when student motivation lagged, less exam preparation took place and when motivation increased, students engaged in more strategic studying habits and attained higher grades (Pressley, et al., 1997, as cited in Reich et al., 2015; Simons, et al., 2004, as cited in Reich et al., 2015). Two professors acting as both researchers and facilitators conducted a group-based intervention at different points in the semester before mid-term or final exams (Reich et al., 2015). Researchers concluded student participants in MI performed better on an exam preceded by a session than on an exam not following a session, suggesting such a brief group-oriented treatment as possibly helpful in raising college students' grades on exams (Reich et al., 2015). In relation to MI with higher-level students, researchers acknowledged the scarcity of research on MI conducted in conjunction with high school college preparatory programs (O'Brennan et al., 2020; Suldo et al., 2021).

Concerning high-achieving students in advanced curricula, researchers argued students participating in AP and IB classes experienced more academic and emotional challenges, expressed perceiving higher levels of stress than students in general education programs, and confirmed feelings of burnout, inadequacy, and exhaustion (O'Brennan et

al., 2020; Suldo et al., 2018). Students of AP/IB caliber carried different social-emotional and academic obligations, often going unnoticed because of an aptitude for maintaining acceptable behavior and good grades despite unspoken needs for additional resources and support; researchers noted the absence of curricular and social-emotional interventions devoted to students in advanced curricula (O'Brennan et al., 2020; Suldo et al., 2018). Researchers specified a critical predictor of success as students capably coping with academic challenges and recommended equipping adolescents with AP/IB selective supports early in high school easing both academic and emotional struggles, as well as encouraging the continuation of challenging coursework (O'Brennan et al., 2020; Suldo et al., 2018). O'Brennan et al., (2020) and Suldo et al., (2021) developed an MI program called Motivational, Assessment, and Planning (MAP) with the lack of research in mind and conducted an initial study and a follow-up study with a second sample assessing the acceptability and feasibility of MI with advanced students in addition to other multi-tiered systems of support (MTSS) already in place.

Researchers claimed MAP as one of few interventions for young people genuinely adhering to the skills, processes, and spirit of MI (Suldo et al., 2021). Tailored to the unique characteristics of adolescents, the intervention supplied students with an opportunity for success as opposed to framing MAP as something for struggling students, appealing to AP/IB students' achievement-forward sensibilities (O'Brennan et al., 2020). In congruence with ideas stated earlier regarding punishment and discipline (Atkinson & Amesu, 2007; Baer & Peterson, 2002; Rollnick et al., 2016), O'Brennan et al. (2020) ascertained the MAP program focused on building adolescent autonomy and developing students' innate strengths in lieu of a punitive approach to behavior. While "MAP is not a

form of long-term therapy, crisis intervention, or mental health support to address issues beyond coping and engagement targets" (O'Brennan et al., 2020, p. 35), the framework exemplified an intervention explicitly aligned with the spirit, processes, and skills outlined by Miller and Rollnick (2013, as cited in Suldo et al., 2021).

In both studies, students overwhelmingly decided concentrating on task and time management in sessions as paramount to individual development and MAP helped students in identifying specific areas for growth and creating an action plan with the goal of improving academic and/or emotional struggles (O'Brennan et al., 2020; Suldo et al., 2021). Students, coaches, and additional School Mental Health (SMH) officials overwhelmingly expressed high acceptability of the program, calling the framework understandable and engaging; students enjoyed the autonomy and accountability of the planning stage, as well as the support from a caring adult, coaches, cited the amount of change talk from students, and SMH service providers mentioned the prevention of later problems, such as stress and anxiety, for students as contributing to the promise of MAP (Suldo et al., 2021). In accordance with the Iachini et al. study (2016), MI facilitators claimed the sessions helped students in feeling "autonomous, empowered, and understood" (O'Brennan et al., 2020, p. 21). Researchers also connected the acceptability of the program to the framework's intentionally crafted design for students in accelerated curricula (O'Brennan et al., 2020; Suldo et al., 2021). Critical thinking, reflection, and self-regulation, the skills necessary for AP/IB coursework highlighted in MAP, thoroughly aligned to the developmental and cognitive characteristics of the student population (Suldo et al., 2021). Researchers also found MI as benefitting adolescents in the areas of strengthening hope and optimism for positive change and coaches discovered

student displays of insight, self-awareness, and perception of the individual's place in the academic community (Suldo et al., 2021). Both studies concluded MAP treatments with adolescents renounced "wait-to-fail model[s]" (Suldo et al., 2021, p. 823) already in place at schools by equipping students with earlier assistance before more severe emotional or academic problems progressed, preventing substandard outcomes, fundamentally supporting MI's underlying framework of boosting motivation for self-improvement (O'Brennan et al., 2020).

Researchers addressed the limits of terminating conversations after two meetings as necessary for research protocol, but recognized the formality as inconsistent with mental health care in schools where additional meetings and relationships between students and facilitators happened more often if necessary and suggested more research into how MAP accommodated school scheduling (Suldo et al., 2021). Other challenges included student difficulties in comprehending the intervention materials, students lacking elaboration and exhibiting sustain talk, as well as practitioner obstacles in building rapport with students (O'Brennan et al., 2020). Although Suldo et al. (2018) mentioned increasing numbers of minorities in advanced curricula across the country, the studies failed to examine diversity and cultural sensitivity, but the authors asserted the current studies' demographics corresponded to other research, such as Kolluri (2018) and Wildhagen (2014), further indicating the underrepresentation of Black students in AP and IB (O'Brennan et al., 2020; Suldo et al., 2021). While Rutschman (2018) claimed "the MI guiding process helps prevent stereotyped guidance counseling that can befall students, i.e., guidance based on gender, race, ability or cultural background," (p. 17) no studies in the current literature consisted of specificities regarding diversity or cultural

sensitivity in MI programs. Despite the limits pertaining to the studies, promising aspects included a manual and protocol adherent to MI and adept enough for non-professionals, as well as a model for schools desiring a focus of resources on students in accelerated curricula for an adolescent group with a higher risk of detrimental outcomes (Suldo et al., 2021).

MI Summary

When conducting meta-analyses, researchers pointed out several implications for the implementation of MI, including topics, such as manuals and protocols, interviewer qualifications and training, and faithfulness to the spirit, skills, and process of the MI approach (Hettema et al., 2005; Snape & Atkinson, 2016). Snape and Atkinson (2016) discovered only one out of eight best-evidence studies in the educational setting used OARS (Sheftel et al., 2014), and suggested some adaptations incorporated more structured procedures, accounting for non-specialist practitioners; the meta-analysis did not include the work of O'Brennan et al. (2020) or Suldo et al. (2021). In an earlier meta-analysis of clinical studies, Hettema et al. (2005) determined smaller effect sizes resulted from manual guided MI sessions but designated the topic as needing further exploration and replication. Some manuals contained strict timelines leading to counselors untrained in flexibility completing the protocols as written, violating MI best practices, and forcing decisions about change for less-ready clients, consequently evoking resistance (Hettema et al., 2005). Additionally, researchers noted the unstudied circumstance concerning the fidelity of teachers, counselors, or other school staff in delivering individual MI sessions with adolescents (Strait et al., 2012a, p. 301). According to the studies mentioned in Table 4 and Snape and Atkinson (2016), many MI facilitators consisted of professionals

or graduate students with a background in psychology or research, special education teachers or experts, and specialized school personnel or counselors trained with various methods. None of the studies consisted of a general education teacher acting as an MI coach and "the outcomes of tests of the ability of these providers to successfully deliver MI will shape the future of this intervention" (Strait et al., 2012a, p. 301). Ultimately, researchers agreed on the mounting evidence for the application of SFMI in supporting behavioral and academic success in schools, but also acknowledged the necessity for further research (Iachini et al., 2016; Naar-King & Suarez, 2011; Frey et al., 2011; Snape & Atkinson, 2016; Snape & Atkinson, 2017; Strait et al., 2012a; Terry et al., 2013).

Literature Review Summary

In the literature review, the researcher addressed equity, AP equity, self-regulation, theoretical perspectives, and MI concerning adolescent students. Consistent themes included fair and non-discriminatory practices, self-efficacy, and student autonomy. In Chapter Three, the researcher described the mixed-method design of the study, reported on the research site and participants, explained the implemented interventions, outlined the hypotheses and research questions, and examined methodology-specific limitations.

Chapter Three: Research Method and Design

Purpose

The researcher focused the study on strengthening equity in the classroom, learner self-efficacy and autonomy, self-regulation, and feedback competencies for the purpose of increasing AP exam scores. Bandura's (1986) social-cognitive theory guided the researcher's development of feedback and self-regulation interventions. The perspective viewed students as individuals with agency evolving purposely with self-regulation and action-based decisions (Pajares, 2008; Schunk, 2001; Zimmerman & Schunk, 2008). From the researcher's experience, students encountered a fixed mindset in the face of challenging tasks and struggled self-regulating and self-motivating. Learners in the APELC course also consistently underperformed on the AP exam.

The researcher designed Visible Learning Feedback, a feedback intervention, in association with Motivational Interviewing, a social-emotional intervention. The study ascertained whether implementing the interventions resulted in higher scores on the MSLQ, improved grades on practice essays, and increased results on the AP exam. Furthermore, the researcher created the VLF cycle and MI pilot program with the purpose of enhancing equity and student self-efficacy determined by the various data sets.

Future implications of the study included expanding the interventions to other AP courses, the wider school population, and the district. Further implications included associations with the College Board concerning feedback in the APELC classroom and the Motivational Interviewing Network of Trainers (MINT) regarding MI with adolescents. In the existing literature, the researcher found a lack of interventions assisting in the reduction of the achievement gap for educators teaching APELC minority

students. The study provided an example of the importance of feedback in the course and a model of execution in the classroom. Additionally, the study contributed to the growing interest in using MI in the educational setting, specifically concerning self-regulated learning and academic achievement among secondary students.

Methodology

The researcher composed a quasi-experimental mixed-method action research study. The students participating in the study constituted a convenience sample, providing less control over variables, due to the opportune sampling (Johnson & Christensen, 2020). Quantitatively, the researcher embraced the virtue of solid data collection where AP scores, essay grades, and MSLQ results illustrated whether growth and improvement occurred in students (Johnson & Onwuegbuzie, 2004). Qualitatively, feedback survey questions, feedback forms, and interviews garnered different depths of observational data, student perceptions, and teacher conclusions. Triangulating the quantitative and qualitative data generated strengthened study conclusions and employing a mixed method ensured the strengths of one method surmounted the weaknesses of the other (Creswell & Creswell, 2018; Johnson & Christensen, 2020).

After approval from the Institutional Review Board of the study university, as well as permission from the researched district, study participants answered questions on the pre-MSLQ and pre-feedback perceptions questionnaires in the same class period as seen on the instrument and intervention implementation calendar in Table 5. The MSLQ resided in the public domain, indicating no approval necessary for the researcher to use the questionnaire in the study. The MSLQ represented a reliable and valid instrument used for decades, worldwide, measuring self-regulation and self-motivation (Duncan &

McKeachie, 2005). While the published MSLQ applied to a singular course, the researcher generalized the questions and changed references from "this class" to "previous academic experience." Students taking the MSLQ at the beginning of the year did not yet possess the required knowledge or experience to apply the questions to APELC.

Table 5

Instrument and Intervention Implementation Calendar

Instrument or Intervention	Hypotheses/Research Questions Addressed	Date	Duration
Generalized Pre-MSLQ	H5, H6		45 Minutes
Pre-Feedback Perceptions Survey	RQ1, RQ3		45 Minutes
Pre-test Essay	H3, H4	September 1, 2021	40 Minutes
Feedback Forms	RQ1, RQ3, RQ5	September-April	5-10 Minutes
MI Invitation Email – 1st Round	N/A		5 Minutes
MI Invitation Email – 2nd Round	N/A		5 Minutes
MI Sessions	RQ2, RQ4, RQ6	December-May	20-40 Minutes
APELC Exam	H1, H2	May 12, 2022	3 Hours 15 Minutes
Post-test Essay	H3, H4	May 17, 2022	40 Minutes
APELC Specific Post-MSLQ	H5, H6		45 Minutes
APELC Specific Post-Feedback Perceptions Survey with Added Open-ended Questions	RQ1, RQ3, RQ5		45 Minutes

Of the feedback surveys available in the current literature, the researcher found Rowe and Wood's (2008) questions as highly aligned with the study's purpose and research questions. The researcher requested permission from the authors for use and adaptation, and Rowe granted the appeal (see Appendix E). The researcher used pattern coding in identifying a baseline of students' perceptions of feedback from previous classes and

years in school organizing the data into initial major themes (Johnson & Christensen, 2020). Furthermore, the information from the survey advised the researcher on aspects of feedback to emphasize or amplify in the VLF cycle.

Three colleagues with Citi (IRB) certification administered the questionnaires. while the teacher oversaw non-participants in a separate location avoiding threats to validity, such as the Hawthorne effect. After completing the surveys, the researcher averaged the MSLQ scores and reviewed the feedback perceptions, taking notes on students' current thoughts surrounding feedback in the classroom. At the end of the school year in May, after the AP exam, students completed the post-MSLQ and post-feedback perceptions questionnaires administered by the same Citi-certified colleagues. The researcher analyzed the MSLQ results with a two-tailed, paired *t*-test looking for statistical significance in the differences between pre- and post-assessment mean scores; the study involved precisely two groups and determined whether the null hypothesis was true necessitating a *t*-test (Johnson & Christensen, 2020). Additionally, the researcher evaluated the MSLQ scores for a difference in the percentage increase between students who participated in VLF and students who engaged in VLF and MI using a two-tailed, independent *t*-test. The feedback perceptions post-survey revealed students' thoughts after participating in VLF, and the researcher made observations of conceptions on self-regulation, self-motivation, equity in feedback, and Visible Learning Feedback.

Students also completed a pre-test essay from a previous exam prompt (see Appendix F) in September; the teacher scored the writings with the College Board's updated (2019-2020) rubric (see Appendix C). Before administering the pre-test essay, the researcher participated in two years of AP reading, where the teacher received

rigorous training on scoring calibration and scored hundreds of exam essays, increasing the teacher's grading efficacy and accuracy. After the AP exam, students engaged in a post-test essay assessment. The researcher used a two-tailed, paired *t*-test evaluating the difference in ratios for the pre- and post-test scores. Additionally, the researcher employed a *t*-test and Cohen's D determining whether a difference in effect size growth existed between students participating in VLF and students engaged in VLF and MI. Throughout the school year, the teacher collected student feedback data on Google forms, including self-assessments, self-reflections, and reflections of feedback. The teacher also used student comments from the feedback forms, changing or improving instruction and updated the feedback cycle or forms, as necessary. Additionally, the researcher conducted interviews with 11 students concerning feedback, self-regulation, and self-motivation after the AP exam. Six students decided not to participate in the interviews.

After calculating the average MSLQ scores, the researcher sent an invitation email (see Appendix G) in November to six students with the lowest averages, all scoring under five out of seven. Five students accepted, one student decided not to participate, and one had a single session, but later dropped the class, bringing the total to four participants. The researcher sent a second round of five invitations in December, adding four more students to the program, one deciding not to participate, bringing the total to eight participants in the MI pilot program. MI students engaged in three to five sessions throughout the school year, where the researcher recorded the conversations, took notes, and collected activity data. Students also answered interview questions during the final session after the AP exam. The researcher listened to the conversations after the school year ended, took additional notes, and analyzed, for themes, through process coding.

The researcher collected the official AP exam scores from the College Board website in July of 2022 and analyzed the results with a two-tailed independent *t*-test determining whether a difference in score ratios existed between students engaged in VLF and students who participated in VLF and MI. The researcher also identified exam scores from previous years and used a two-tailed, independent *t*-test, establishing whether a difference existed between prior exam scores and the scores of students in the study (Johnson & Christensen, 2020).

Research Site and Participants

The researcher studied a convenience sample of juniors from three APELC courses from a mid-sized high school located in an urban county in Missouri. The students in the teacher's classes provided an advantageous opportunity for study with readily available learners willing to participate (Johnson & Christensen, 2020). Enrollment in the course constituted the only requirement for participation in the study. However, prerequisites for enrollment included passing an Honors English class, a GPA of 3 or higher, at least 90% attendance, and a positive rapport with the English department. The researcher provided students in all three sections of APELC the opportunity to participate voluntarily. Initially, 22 students signed consent forms, but by the end of the school year, four students dropped the class, and one student sustained a long-term suspension, excluding the learners from the sample and reducing the total to 17 students participating in the study (see Table 6). The researcher assigned each participant a code letter identifying the student, retaining learner anonymity throughout the study.

Table 6

Study Participants

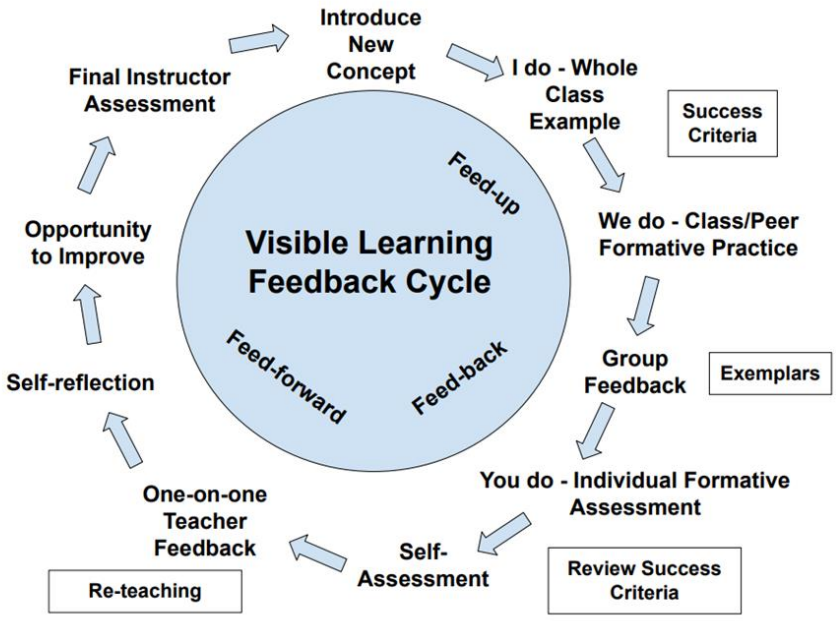
#	Participant ID Code	Race/ Ethnicity	Gender	Grade Level	MI	MSLQ Average	AP Exam Score
1	A	Black	F	11	Yes	4.64	2
2	B	Black	F	11	Yes	4.67	1
3	C	Black	M	11	Yes	4.88	1
4	D	Black	F	11	Yes	4.62	1
5	E	White	M	11	Yes	4.4	1
6	F	Black	F	11	Yes	4.94	1
7	G	Black	F	11	Yes	4.95	1
8	H	Black	F	11	Yes	4.57	1
9	I	Black	M	11	Invited - No	3.8	1
10	J	Black	M	12	Invited - No	4.83	1
11	K	Black	F	11	No	5.41	1
12	L	Black	F	11	No	5.36	1
13	M	Black	F	11	No	5.07	2
14	N	Black	F	11	No	5.77	1
15	O	Hispanic	F	11	No	5.3	1
16	P	Black	F	11	No	5.27	2
17	Q	Black	M	11	No	5.43	1

Interventions

The researcher developed two interventions for student participants. The first intervention consisted of a Visible Learning Feedback cycle implemented throughout the school year as students participated in formative writing assignments (see Figure 3).

Figure 3

Visible Learning Feedback Cycle



The researcher designed an intervention and feedback cycle for APELC as one did not exist in the current literature. The researcher scoured the internet, journals, and books for feedback frameworks, however, the models contained vague language and failed in meeting requirements for AP minority students. In designing an APELC framework suitable for underserved students, the researcher initially created a checklist of elements necessary for powerful feedback models from the current research (see Chapter One Table 2). Furthermore, the researcher used Hattie and Timperley's (2007) Visible Learning Feedback model as a base for the APELC-specific cycle of feedback as described in Chapter One (see Figure 3). The researcher also transformed the AP rubrics into success criteria checklists and created self-assessments, self-reflections, and questions for students to answer, providing feedback for the teacher on the lesson, activities, and comments offered to the learner (see Appendix H). Additionally, the

researcher aligned formative assessments with AP learning concepts and timed the performance tasks in coordination with the cycle.

In addition to the feedback intervention, the researcher also created the MI pilot program. After researching MI and deciding to use the approach in the study, the researcher participated in two training sessions for MI practitioners (see Appendix I). The beginner session consisted of two four-hour zoom sessions and four additional one-hour practice sessions conducted by Bob Jope, a Motivational Interviewing trainer, coach, and consultant with MINT. The initial training sessions focused on the basics of MI, specifically the spirit and the skills of the approach. The intermediate session, conducted by Heather Lynch, a Certified Rehabilitation Counselor and MI trainer, amounted to seven contact hours and emphasized setting practitioner goals, identifying interviewing strengths and weaknesses, and practicing conversations with other attendees. In sum, the researcher engaged in 19 hours of training, a comparable amount to practitioners from previous studies (see Table 4). In addition to the background knowledge and information learned from the training sessions, the researcher used Miller and Rollnick's (2013) work on MI, Atkinson's (2013) Facilitating Change material pack, and Rosengren's (2018) practitioner's workbook in developing the MI pilot program. The researcher designed session agendas, guiding activities, and conversation prompts. Furthermore, the researcher arranged each agenda as the sessions progressed, individualizing the activities and conversations per students' change goals and personal growth.

Null Hypotheses

Null Hypothesis 1: There is no difference in Advanced Placement exam scores between students who participated in both the Visible Learning Feedback Model and

Motivational Interviewing and students who only participated in Visible Learning Feedback and not Motivational Interviewing.

Null Hypothesis 2: There is no difference between the Advanced Placement exam scores of students who participated in Visible Learning Feedback in 2021-2022 and scores of those who did not participate in Visible Learning Feedback in the years 2017-2018, 2018-2019, 2019-2020, 2020-2021.

Null Hypothesis 3: There is no difference between students' pre- and post-practice essay scores after participating in the Visible Learning Feedback intervention.

Null Hypothesis 4: There is no difference between the effect size growth in the pre- and post-essay scores between students who participated in Visible Learning Feedback and those who participated in both Visible Learning Feedback and Motivational Interviewing.

Null Hypothesis 5: There no a difference between students' pre- and post-Motivated Student Learning Questionnaire scores after participating in the Visible Learning Feedback intervention.

Null Hypothesis 6: There is no difference in the percentage increase in Motivated Student Learning Questionnaire scores between students who completed both Visible Learning Feedback and Motivational Interviewing and those who only received the Visible Learning Feedback intervention.

Research Questions

Research Question 1: How do students perceive Visible Learning Feedback?

Research Question 2: How do students perceive self-motivation and self-regulation during and after participating in Visible Learning Feedback?

Research Question 3: How do students perceive racial bias in feedback before and after participating in Visible Learning Feedback?

Research Question 4: How do students perceive Motivational Interviewing?

Research Question 5: How do students perceive self-regulation and self-motivation during and after participating in Motivational Interviewing?

Methodology Limitations

Various limitations specific to the researcher's methodology existed in the study. For instance, four participants dropped the class mid-year, and one student earned a long-term suspension, excluding the five learners from the study and causing a disruption in data collection. Furthermore, the variability of the difficulty of the exam threatened the validity of the study's conclusions; each year, the exam offered different passages, questions, and exam prompts, resulting in some years producing more challenging assessments. In 2019, the College Board reduced the number of multiple-choice questions from 55 to 45, retaining the one-hour time limit, possibly resulting in a difference in scores. Additionally, the College Board heavily modified the 2020 exam, due to COVID-19. Years previously and subsequently, students completed one section of multiple-choice questions and three essays, whereas, in 2020, students only submitted one timed essay; once again, possibly concluding in a difference in scores.

Concerning the interventions, the researcher completed two MI training sessions, excluding the advanced session, possibly limiting the expertise in practicing the approach. Scheduling conflicts interrupted MI sessions, as well. Students engaged in MI conversations during a 30-minute advisory period, a time used for various other purposes by the school. The teacher, often involuntarily substituted for absent teachers, and

students, also rescheduled for assorted reasons. Numerous limitations related to timing also pertained to the study. Differing class sizes influenced the timing of one-on-one conversational feedback provided to students; one class period possessed considerably more students where the teacher offered feedback over the course of several days instead of in one class period, as in the smaller classes. The teacher also planned on giving the post-test essay before the AP exam, but due to student absences, the teacher delayed the writing until after the exam. The researcher observed students completing the post-test essay with less dedication after completing the exam, experiencing mental exhaustion from multiple AP exams, end-of-the-year projects, and studying for finals. Furthermore, the school environment conceivably hindered the educational and social-emotional development of the participants. Weekly, if not daily, fights between students caused delays in starting class, interrupting the feedback cycle, and resulted in students being late to class or MI sessions.

Summary

The purpose of the study was to encourage equity, student self-regulation, and powerful feedback practices through a social-cognitive perspective in a convenience sample from an urban Missouri high school. The researcher implemented two interventions within a mixed-method approach, triangulating data from exam scores, essay scores, questionnaires, feedback forms, interviews, and MI conversations. Furthermore, the researcher designed the feedback and MI interventions in accordance with the specific needs of the underserved demographic in the APELC course. The next chapter explains the results obtained from the mixed-method action research study.

Chapter Four: Results

Overview

The researcher addressed the mixed method approach of the study, along with the development of the implemented interventions in Chapter Three. In Chapter Four, the researcher discussed the study's results, tested the hypotheses for statistical significance and sought answers to the research questions through data coding. The researcher triangulated the data supporting pre- and post-test essay grades, and exam scores with student and researcher perspectives supporting questionnaire responses.

Quantitative Analysis Procedure

The researcher tested six hypotheses concerning AP exam scores, essay grades, and MSLQ results. The College Board scores website provided participant scores from the 2022 exam and scores from 2018, 2019, 2020, and 2021 for Hypotheses 1 and 2. The researcher ran an independent *t*-test for Hypothesis 1 and an independent *t*-test for Hypothesis 2, comparing the means of the control groups and experimental groups. The teacher scored student pre- and post-test essay grades with the AP rubric and entered results on an Excel spreadsheet for Hypotheses 3 and 4. The researcher conducted a paired *t*-test for difference in means for Hypothesis 3, comparing the pre- and post-test essay means and calculated the Cohen's D effect size. Hypothesis 4 consisted of two sets of data; pre- and post-test essay scores from the control group participating in VLF and pre- and post-test essay scores from the experimental group engaged in both VLF and MI. The researcher ran a paired *t*-test for difference in means for each set of data and investigated the difference in *p*-values. Additionally, the researcher calculated Cohen's D for the control and experimental groups, comparing the difference in results.

Concerning Hypotheses 5 and 6, the researcher retrieved the pre- and post-MSLQ scores from *Qualtrics* and imported the data into an Excel spreadsheet. Numbers 33, 37, 40, 52, 57, 60, 77, and 80 constituted reversed questions, wherefore the researcher manually switched scores for each participant in the spreadsheet from 1 to 7, 2 to 6, 3 to 5, 4 to 4, 5 to 3, 6 to 2, and 7 to 1. The researcher ran a paired *t*-test for difference in means for Hypothesis 5, comparing the pre- and post-MSLQ scores, and an independent *t*-test for different in proportions for Hypothesis 6, comparing the percentage increase in MSLQ scores between the control and experimental groups. The researcher failed to reject Null Hypotheses 1, 5, and 6, and rejected Null Hypotheses 2, 3, and 4, although the data from Hypotheses 2 and 4 moved in unexpected directions from the researcher's assumptions. The researcher addressed the results of the tested hypotheses in the following section.

Null Hypothesis 1

Null Hypothesis 1: There is no difference in Advanced Placement exam scores between students who participated in both the Visible Learning Feedback Model and Motivational Interviewing and students who only participated in Visible Learning Feedback and not Motivational Interviewing.

The researcher analyzed the student exam scores investigating whether a difference existed between students participating in VLF and learners engaging in VLF and MI. Students took the exam in May 2022 consisting of 45 multiple-choice questions and three essays; after individual scoring, the College Board formulated the scores into one number between 1 and 5. The teacher accessed the scores in July 2022 delineated in Table 7.

Table 7

AP Exam Scores

Experimental Group (VLF & MI)	Control Group (VLF)
1	1
1	1
1	1
1	1
1	1
1	1
1	1
2	2
	2

The independent *t*-test for Hypothesis 1 determined whether students completing MI and VLF achieved higher scores than students participating in VLF alone. The sample size for the control group participating in VLF consisted of nine students with a mean score of 1.22, whereas the experimental group consisted of eight students with a mean score of 1.13. An independent *t*-test compared the means of the two groups resulting in a *p*-Value of .62 (see Appendix J; $p > 0.05$). The researcher failed to reject the null hypothesis and concluded the results of the test indicated no statistically significant difference between the mean scores of the control and experimental group. The presence of statistical significance demonstrated the addition of the MI intervention did substantially change exam performance. Multiple restrictions existed surrounding the exam; teachers of the course must be absent for the entirety of the testing period, and students cannot speak with teachers about the nature of the exam after completion. Additionally, the teacher only received the amalgamated score for each student, instead of individual multiple-choice and essay scores. Due to the secretive and generalized conditions of the exam and results, the question remained as to why students continued performing poorly. The researcher addressed enduring questions in Chapter Five and

suggested further research with a larger population and a randomized sample, due to the small sample size and convenient nature of the sampling. See Appendix J for further statistical results.

Null Hypothesis 2

Null Hypothesis 2: There is no difference between the Advanced Placement exam scores of students who participated in Visible Learning Feedback in 2021-2022 and scores of those who did not participate in Visible Learning Feedback in the years 2017-2018, 2018-2019, 2019-2020, 2020-2021.

The independent *t*-test for Hypothesis 2 established whether a difference in AP exam scores existed between students completing VLF and students not participating in VLF in previous years of the teacher's APELC course. The sample size for the control group consisted of 108 students with a mean of 1.35, whereas the experimental group consisted of 17 students with a mean of 1.18. The researcher used an independent *t*-test comparing the means of the two groups concluding with a *p*-Value of ,002 (see Appendix J; $p<0.05$). The researcher rejected the null hypothesis indicating a statistically significant difference between the mean scores of the control and experimental group. However, the difference moved in an unexpected direction; the control group achieved a statistically higher mean score than the experimental group. The researcher discussed possible factors involving the skewed direction in Chapter Five.

Null Hypothesis 3

Null Hypothesis 3: There is no difference between students' pre- and post-practice essay scores after participating in the Visible Learning Feedback intervention.

The paired *t*-test for difference in means for Hypothesis 3 determined whether a difference existed between pre- and post-essay test scores for students engaging in the VLF cycle. The sample consisted of 17 students with a pre-test mean of 1.18 and a post-test mean of 3.41. A paired *t*-test for difference in means compared the means of the two tests resulting in a *p*-value of .000001 (see Appendix J; $p<0.05$). The researcher rejected the null hypothesis, indicating a statistically significant difference between the mean scores of the pre- and post-test essay scores. Additionally, the researcher calculated Cohen's D effect size and compared the data to Hattie's (2018) Visible Learning effect size for feedback. Hattie's (2018) meta-analysis concluded with a 0.70 effect size for feedback (Table 1) contrasted with 2.45 for Hypothesis 3. According to Cohen (1988), an effect size of ($d = 0.8$) constituted a large effect size (as cited in Lakens, 2013). Despite evidence of a correlation between the VLF intervention and improved essay performance, in addition to a substantial effect size, the researcher suggested future studies test the hypothesis with a larger population and randomized sample.

Null Hypothesis 4

Null Hypothesis 4: There is no difference between the effect size growth in the pre- and post-essay scores between students who participated in Visible Learning Feedback and those who participated in both Visible Learning Feedback and Motivational Interviewing.

The researcher conducted a paired *t*-test for difference in means for the control group, concluding in a mean of 1.13 for the pre-essay and 2.88 for the post. The researcher also ran a paired *t*-test for difference in means for the experimental group resulting in a mean of 1.22 for the pre-essay and 3.89 for the post. Both tests established a

p-value outcome of .006 and .00004 (see Appendix J; $p<0.05$) indicating a rejection of the null hypothesis and a statistically significant difference in the pre- and post-essay scores for the control and experimental groups. The researcher calculated Cohen's D effect size for each group generating 3.32 for the control group and 1.91 for the experimental group. The researcher rejected the null hypothesis, confirming a difference existed between the effect size growth in pre- and post-essay scores of the control and experimental groups. However, the data moved in a surprising direction; the researcher predicted a higher effect size for the experimental group. The researcher discussed possible circumstances accountable for the skewed direction in Chapter Five.

Null Hypothesis 5

Null Hypothesis 5: There is no difference between students' pre- and post-Motivated Student Learning Questionnaire scores after participating in the Visible Learning Feedback intervention.

The paired *t*-test for difference in means for Hypothesis 5 ascertained whether a statistically significant difference existed between pre- and post-MSLQ scores. The sample size consisted of 17 students with a mean score of 4.897 for the pre-MSLQ, and a mean score of 4.772 for the post-MSLQ. A paired *t*-test for difference in means compared the means of the two scores concluding in a $p = .41$ (see Appendix J; $p>0.05$). The researcher failed to reject the null hypothesis illustrating no statistically significant difference between the pre- and post-MSLQ mean scores. While no statistically significant difference existed between the scores, the researcher noted the data moved in an unexpected direction with nine out of 17 students' mean scores decreasing from pre to

post. The researcher addressed possible reasons for the surprising results in Chapter Five.

Null Hypothesis 6

Null Hypothesis 6: There is no difference in the percentage increase in Motivated Student Learning Questionnaire scores between students who completed both Visible Learning Feedback and Motivational Interviewing and those who only received the Visible Learning Feedback intervention.

The independent *t*-test for difference in means for Hypothesis 6 identified whether a statistically significant difference existed in the percentage increase in MSLQ scores between students participating in VLF and students engaging in VLF and MI. The sample size for the control group participating in VLF consisted of nine students with a mean percentage increase of -0.04, whereas the experimental group consisted of eight students with a mean percentage increase of -0.003. An independent *t*-test for difference in means compared the means of the two groups resulting in a $p = .50$ (see Appendix J; $p>0.05$). The researcher failed to reject the null hypothesis indicating no statistically significant difference between the mean percentage increase of the control and experimental group. While the conclusions of the test showed no statistically significant difference, the researcher recommended a larger population with a random sample in future studies. In Chapter Five, the researcher discussed possible factors responsible for the decrease in mean percentages for the control and experimental groups. In addition to six null hypotheses, the researcher examined five research questions.

Qualitative Analysis Procedure

The researcher analyzed qualitative data via the pre- and post-feedback questionnaire, feedback forms, feedback interviews, MI conversations, pre- and post-MSLQ, and MI interviews. Seventeen students completed the pre- and post-feedback questionnaire and MSLQ. For the pre-feedback and pre-MSLQ, the researcher analyzed the Likert responses, setting a baseline for students' perceptions of feedback and initial self-regulation and self-motivation beliefs. Additionally, the researcher compared the pre- and post-feedback and pre- and post-MSLQ, looking for similarities, differences, growth, and depreciation.

Eight students participated in the MI conversations and interviews, forming the experimental group, whereas nine out of the 17 participants engaged in the feedback interviews; and one graduated, one left school on medical leave, and six declined. The researcher recorded the interviews and MI conversations with Otter, an online voice and transcription software. The researcher listened to the interviews and edited the transcriptions for accuracy. According to Saldaña (2011), transcribing interviews ensured the researcher achieved "cognitive ownership" of the data.

Coding Procedure

The researcher conducted separate thematic analyses on the post-feedback open-ended questions, feedback interviews, feedback forms, MI conversations, and MI interviews. The researcher conducted open coding and inductively developed codes, categories, and themes for research questions 1, 3, 4, and 6 (Elliot, 2018; Williams & Moser, 2019). The researcher process-coded the feedback data sets in three to four rounds, analyzing student responses line-by-line, engaging intimately with the data and

correcting novice coding errors (Williams & Moser, 2019). The process also necessitated editing, combining, and specifying themes. According to Elliot (2018), emergent codes often required editing for consistency, ensuring labels correlated correctly to the data. The researcher additionally employed counting for some emergent themes, documenting the widespread nature of the code and indicating the greater significance of the theme (Elliot, 2018).

For research questions 2 and 5, involving self-regulation and self-motivation, the researcher administered an adapted deductive coding approach, utilizing categories and themes appropriated from the existing literature (Linneberg & Korsgaard, 2019). Once the data were deductively coded, the researcher then conducted open coding on the organized student remarks. The researcher referenced the pre-defined list of codes from the MSLQ and the Non-Cognitive Self-Regulation Flow Chart (see Figure 2) as an organizational guide, concentrating the focus of the coding on aspects of self-regulation and self-motivation prominent in the literature (Linneberg & Korsgaard, 2019). The researcher re-coded the themes, answering the research question after organizing student quotes by the pre-determined list. Employing the MSLQ terms as the initial stage of coding ensured structural consistency and theoretical alignment (Linneberg & Korsgaard, 2019). Furthermore, due to a large number of comments, the researcher also applied counting, demonstrating the greater strength of certain themes.

The researcher elected the dual approach of inductively coding some data sets and adapted deductive coding for others, in the interest of practicality and depth. The openly coded results granted voice to the data, where no set themes existed in the literature and the adapted deductive coding retained the connection to an already existent theoretical

schematic developed by researchers, yet left room for flexibility and genuine student contributions (Linneberg & Korsgaard, 2019). The coding processes aided in reducing the study's large amount of data, ensuring accessibility for analysis (Linneberg & Korsgaard, 2019). The researcher decided against using software for coding, due to a desire for extensive reflection and deeper insight (Elliot, 2018; Linneberg & Korsgaard, 2019). Additionally, the researcher preserved student voice in the analysis by reproducing student responses as originally written or spoken, using single quotation marks signifying student words. The coding processes and analysis of the qualitative data contributed to answering the researcher's six research questions.

Thematic Analysis of Research Question 1

Research Question 1: How do students perceive Visible Learning Feedback? The researcher analyzed the pre- and post-feedback questionnaire, feedback forms, and feedback interviews to answer Research Question 1. Three themes emerged from the open-coding of the data sets, including students perceiving VLF as lacking efficacy, as a process for growth, and as fulfilling the requirements of wise and visible feedback.

Feedback Lacking Efficacy

Throughout the data sets, some students expressed doubt relating to the productiveness of VLF, often taking the form of interpretations of incomplete feedback, participant disappointment, or insecure conceptions of writing ability. Concerning efficacy in general, two statements from the pre-feedback questionnaire concerned student opinions regarding feedback's lack of yield, as shown in Table 8.

Table 8

Pre-Feedback Questionnaire – Lacking Efficacy

Question	Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
I receive enough feedback from my teachers.	5	5	1	4	2
My teachers need to be more active in providing feedback.	3	7	4	1	2

Participants largely agreed, before participating in VLF, teachers needed to be more active in providing feedback. Additionally, while most learners also agreed the amount of feedback from teachers proved acceptable, some students shared the opposite opinion, disagreeing on obtaining enough feedback. The perceptions from the pre-feedback questionnaire responses demonstrated some students conceived of feedback as less than adequate. Student comments from the open-ended survey questions and feedback interviews also contributed to the theme of students viewing VLF as lacking capability.

Students engaged in completing feedback forms throughout the year, reflecting student opinions of VLF during implementation. The teacher administered eight feedback forms over the course of the school year for various formative and summative writing assignments (see Appendix H). Within the feedback forms, some misunderstandings occurred, due to a perception of incomplete feedback. Student F explained, in addition to the original feedback from the teacher, the participant desired more information regarding how to improve vocabulary. In a one-on-one conversation, the participant revealed a lack of knowledge of how to resolve the repetitiveness in the essay and did not receive enough

information from the written feedback. Participant K communicated frustration with an assignment regarding writing an introductory paragraph, stating, ‘It was stuff that we couldn't do, or put and it wasn't told to us, or physically me before we started the assignment. Also, what are all the pieces of SOAP that I didn't contain?’ Additionally, Student K expressed a remaining unawareness of the reasons behind the incorrectness of work. Another example of viewing feedback as incomplete included a response to the question, ‘how do you feel about the feedback you’ve been given?’ Student A described confusion about the teacher’s remarks, articulating, ‘I can kinda see how it could get miscommunicated, but I don't feel like i should've gotten so many points taken off.’ The teacher addressed the students’ concerns in the classroom. Participant comments illustrated the feedback process did not meet standards required by students.

Another way participants voiced the perception of feedback lacking efficacy within the feedback forms consisted of students exhibiting disappointment over the feedback received after asserting confidence about the performance task. Several participant remarks featured disbelief; Student G conveyed, ‘I thought I was doing the assignment right, but I guess not so.’ Participant E commented, ‘I would say I did a decent job but my grade seems to differ,’ and Student K indicated, ‘I understood it well, I just didn't think I did it the "correct" way.’ Student H displayed two instances of disappointment with the feedback disclosing, ‘i thought i did well, but i guess i didn’t,’ and ‘i understood it but my teacher thought otherwise.’ The teacher reviewed the discontent with students one-on-one during class time. Furthermore, the researcher scrutinized the comments in reference to self-motivation regarding Research Question 2, considered later in the analysis. The participant comments reflected the belief of VLF as

not as capable as desired. Students' insecure perceptions of writing ability also indicated a certain level of reluctance towards the efficacy of VLF.

When asked to describe individual writing, most students expressed fluctuating, unsure opinions. However, participants also exhibited signs of improved learning beliefs, discussed in the thematic analysis of Research Question 2. Student N expressed feelings concerning the writing before the VLF process began, 'My writing at the beginning of the school year, I wasn't a very great writer' and 'I definitely had doubts about my writing at the beginning of the school year.' Participant A also divulged doubts about writing capabilities, declaring, 'I didn't really think I was a good writer. I still think that I think I'm an okay writer now.' Student E explained the haphazard nature of writing without direction before VLF, acknowledging, 'my writing was basically, I just tried to take the main feel of what I wanted and the main topic of what I was writing and just try to stretch it out as long as I could.' Similarly, Participant F described vague writing practices, conceding, 'in the beginning, I would say that I didn't know, because I didn't know what I was doing and I was newly introduced to it' and 'then when I actually got to like time to write the essay, I had no idea what I had to write.'

Some students articulated a more specific oscillating view of writing. Participant B explained, 'My writing was, you know, unbalanced. Sometimes I would be proficient in it and sometimes I would be, you know, not as great.' Additionally, Student C highlighted, 'if I have like a good idea of what I'm doing, I feel like I can do pretty generally well on a subject,' but admitted, 'if I'm kind of lost or like, not really doing well and on like whatever type of writing that we're doing, probably not the best.' Only one student reported a fully confident view of writing, but the participant assessed

capabilities throughout the entire year; Student O stated, 'I felt like my writing was really good during this school year.' Consistent student statements revealing faltering opinions on writing ability exposed VLF's possible deficiency in potency. The researcher further addressed the implications of student opinions on writing ability in connection to the perception of VLF in Chapter Five.

The theme of VLF lacking efficacy briefly surfaced in the feedback interviews. The researcher asked participants, "describe your SR and SM after participating in both MI and VLF," and two students remarked on the feedback process. Student C commented while feedback in the classroom occurred one-on-one at times, a classroom of other students remained and 'motivational interviews, they definitely were a little bit more personable than the schoolwork,' indicating MI held more value than VLF. Additionally, Student A elaborated on the feedback forms,

> I was kinda like, no offense, but like we do those a lot. Like not necessarily those type but we always have like, questionnaires about how we feel and how we how we do work, so I kind of really didn't I wouldn't say I didn't put my all into it, but I kinda was just taking it as like one of those like when we are something that we always do.

However, Participant A added, 'I wouldn't say that it doesn't help because it probably helps you, but the student. I don't think students take it that serious.' The students' responses demonstrated a perception of VLF lacking sufficiency for learners when compared with the MI intervention. Despite a number of lackluster opinions on feedback's efficacy, participants also viewed VLF as a process for growth.

Process for Growth

The researcher analyzed student quotes from the feedback interviews, open-ended survey responses, and feedback forms, where students emphasized VLF as a measure for progress offering remarks concerning improvement, comprehension, and the helpfulness of feedback. In response to the feedback interview questions as shown in Table 9, students explained the classroom feedback procedures in detail.

Table 9

Feedback Interview Questions

VLF
Describe your writing and the feedback process we engaged in during the school year.
Describe your self-regulation during the feedback process and at the conclusion of the year.
Describe your self-motivation during the feedback process and at the conclusion of the year.
VLF and MI
Describe your self-regulation and self-motivation after participating in both MI and VLF.

Note: The researcher authored the interview questions.

Student P explained, 'You had us like, participate in like a series of writing tasks and then afterward you would give us feedback and give us an opportunity to like, revise our paragraphs and then provide us with more feedback.' Another student supported the sentiment asserting students shared in various engaging activities in class (Student N). Participant F illustrated an example of one activity consisting of a helpful practice essay before the post-test. Additionally, Student C highlighted, 'During the writing process, most of the time like we got time before like the actual assignments to get like, like prep and like prepare for it.'

Other participants characterized the process in personal terms. Student B clarified, 'to me the process is more of like a checkup form to see how you personally feel like you improve academically,' Student Q resolved, 'if I got feedback that I needed to change this and I probably need to explain it more. I will go about; how should I explain it more?

And how would I explain it more?,' and Student F disclosed, 'when I got my feedback, and over the year when we were learning how to improve and what we actually had to do, I focused on the rubric.' Additionally, Student E detailed, 'Your feedback, being able to tell me what I did wrong and what I did right, my strongs and my weaks, then being able to twist and reapply them to a better writing process was able to be better.' Participant P demonstrated the positive progression of the feedback process,

> So, like throughout the year, you built on the feedback, and you would like, refer back to what we did, like at the beginning of the school year. You, like really went into detail and you highlighted on what we could improve on. And like, we built that over the year. So, you started off small and then you pointed out something different every time. So then like, towards the end we really had like an idea of everything we could improve on.

Within the mechanism of VLF, students generally concurred on perceiving the purpose of feedback as improvement. In response to the question, "Explain what you think is the most important function or purpose of feedback," 12 out of 17 students acknowledged improvement in some form, illustrating the significance of the opinion. Participant A remarked, 'I think the most important purpose is to provide students with information on how to improve.' Student J commented, 'Feedback is important because it lets you know what you need to improve on,' and Participant E declared, 'I feel the most important part of feedback is how it will grow the student receiving it.' Furthermore, Student N concluded, 'Feedback for any group of children is important for progress.' Two students included grades in the responses, highlighting the influence of external motivation, discussed further in Research Question 2. Student C cited, 'Feedback allows

a teacher to give comments about an assignment that would allow the student to further either their grade or just overall improvement in the class,' and Student I observed, 'Feedback is simply a way for the teacher to explain their reasoning with giving you the grade you got. It's important, because that lets the student know how they can improve if they wish to improve their grade.'

Additionally, in response to, "Explain why you think feedback is important," seven participants supported previous comments viewing feedback as significant for improvement. Student F referenced a prior remark, restating, 'Like I explained before feedback is important because it leaves room for improvement.' Participant M explained, 'Feedback is important because it helps improve your performance.' Similarly, Student J commented, 'Feedback is important because it lets you know what you need to improve on.' Other students responded more specifically, characterizing feedback as 'the main tool a teacher or peer can use to help one grow in their work' (Student E), and emphasizing, 'Feedback is important because it could give you very crucial information to improve your piece of writing or essay' (Student Q). Additionally, Participant P highlighted an enjoyable element, indicating, 'I like improving with feedback.' A minority report emerging from the comments included, 'i dont feel the need to have feedback on every assignment.' The researcher discussed the implications of Student H's comment in Chapter Five. While student responses overwhelmingly claimed improvement as the major function of feedback, many comments wove in comprehension, as well.

Students cited understanding the material, feedback, and strengths and weaknesses as significant to the purpose of comprehension, aiding individual progress. In

general, Student I characterized the purpose of feedback as ‘to know how you did,’ and Student B affirmed the teacher’s role in providing feedback, asserting, ‘she likes to make sure students understand the material.’ Participant B also underscored the importance of feedback relied on the ability, ‘For the students to fix their mistakes and better understand the material.’ Similarly, Student F illustrated, ‘I think the most important purpose of feedback is to make sure of the comprehension of your work and way to improve.’ Understanding the feedback also proved critical, as Student L pointed out a function of the process included being, ‘able to understand the feedback that was given to you.’ Furthermore, Participant L explained feedback ‘helps you get a better understanding of something you don't understand.’ Students also believed feedback provided information concerning strengths and weaknesses.

Student O mentioned feedback helped ‘students become aware of their mistakes,’ and Student J added, feedback ‘let’s you know what you are doing good at.’ Additionally, Student F disclosed, ‘Without feedback you can’t find your strengths and weaknesses.’ Several participants offered comments detailing opinions on the task level, revealing the dual nature of feedback; ‘To explain on what you need to work on or what part you did well on’ (Student K), ‘I think it will help students know what they did good on and what they need to improve on’ (Student A), and ‘It is important because the student has to have a clear idea on what they are doing, right and or wrong’ (Student I). Furthermore, Participant M deduced, ‘Telling the student what could be better and what they exceeded on prepares them to succeed on the practice.’ Students clearly believed the feedback process facilitated improvement and comprehension, therefore promoting growth, as well. Participants also maintained a perception of VLF as helpful.

Some students offered general comments concerning the helpfulness of the feedback process. Student O remarked, ‘the feedback was very helpful,’ and Student P mentioned, ‘it really like helped us out to see.’ Participants also described classroom learning and activities as helpful including ‘through the process of different learning, like I forget words. The appeals - appeal to credibility, authority, emotion, logic, those all helped me’ (Student E), and ‘I remember we did one before it was like a practice before the actual post-test. So, that actually helped too’ (Student F). Additionally, Participant E illustrated, ‘at the end of the year, I was able to just more cleanly and more neatly write out stuff that made more sense,’ and Student N referenced the teacher’s role in feedback, explaining, the writing ‘definitely did get better as the school year progressed due to [the teacher’s] help.’ Participant E examined the helpful perception of VLF in depth, remarking,

> The feedback process was undoubtedly some of the best help I'd actually gotten in my academic career. And, I went to the same place for over nine years and didn't get that type of attention out of it. It felt personalized and motivated. It was caring. It was fun. It was useful, just good stuff to have.

Participants provided comments on the feedback forms concerning the helpfulness of feedback, involving student articulations of positivity toward feedback and descriptions of the helpful nature of the teacher's comments. Student E held a broad view of feedback, voicing, ‘all feedback is helpful, because even if slight, it shows where you can expand upon anything.’ Similarly, Participant A declared, ‘I feel like all the advice I was giving will help me better my writing and get all my points.’ Students D, H, and O also approached the question ‘what do you think about the feedback you’ve been given’

generally and responded, ‘It was great feedback,’ ‘It was good feedback,’ and ‘feedback was helpful,’ respectively. Participants also expanded on opinions concerning VLF explaining the helpful aspects of feedback. Students agreed one of the feedback’s helpful features included shedding light on strengths and weaknesses, explaining, ‘I like the feedback i was given. The feedback pointed out things i need to improve on and things i did good on’ (Student J), ‘I think it is great because it helps me on some of my weaknesses’ (Student Q), and ‘This feedback was helpful, because I got a better view on what I need to work on’ (Student N). Participant B also alluded to strengths and weaknesses mentioning, ‘It was definitely helpful, because I am not the best essay writer, and my teacher is doing her best to let me know what mistakes I made, so I can write better.’

Other students specifically referenced writing skills or assignments in comments concerning the helpfulness of feedback. For example, Student O described the feedback as accurate and added, ‘I will elaborate on the personification that I mentioned was used and re-emphasize Helen Keller's message.’ Participant L characterized the feedback as ‘good’ after recognizing the teacher’s comments accurately described the writing, ‘I did just jump right into what I was talking about.’ Additionally, Student D conveyed the feedback, ‘was helpful because i made a lot of mistakes that could have been fixed if i re-read and made sure i provided good examples.’ Lastly, Participant F reflected ‘This is helpful for me because I struggle making a connection between my thesis and conclusion. With the feedback that I got I can practice improving this.’ Within the perceptions of VLF as helpful, students also viewed feedback as useful and remarked on applying knowledge to revisions and future endeavors.

Participant M described using the feedback for current revisions, saying, ‘The feedback i received was helpful. With it I will revise my introduction and second body paragraph.’ Similarly, Student G communicated, ‘I think it was good feedback im going to apply it to my work by trying to perfect my issues she assigned.’ Furthermore, Students M and G also remarked on utilizing feedback in the future; the participants expressed, ‘It was helpful. I will use the feedback to add the missing elements into my essay any futre writings,’ (Student M) and, ‘I think it was understandable and I plan to use it when I become a senior’ (Student G). Student I connected learning and feedback from a previous unit to a current learning activity articulating, ‘I feel it was fairly given and I was honestly surprised. I was able to apply all i learned from rhetorical analysis here.’

In the open-ended feedback questionnaire, the researcher asked for participant opinions concerning feedback and the VLF process (See Table 10). Students believed VLF contained useful information and commented on feedback serving as a helping aid. Student A referenced the usefulness of VLF multiple times in the questionnaire responses, conveying, ‘It helped me because it gave me confirmation on what I needed to work on,’ and ‘I feel like in the end everything was helpful.’ Participant H added the comment characterizing VLF as giving ‘useful advice’ and Student J summarized thoughts on VLF declaring, ‘Its very effective.’

Table 10

Feedback Questionnaire Open-Ended Questions for RQ1

64. What type of feedback do you find most helpful: grades, individual written comments, group verbal feedback, group written comments, individual verbal feedback, peer feedback, self-assessment?
65. Explain why you chose your answer for most helpful feedback in the previous question.
66. Explain what you think is the most important function or purpose of feedback. Be specific and provide examples.
67. Explain why you think feedback is important. Be specific and provide examples.
68. What are your suggestions for improving feedback in AP Language and Composition? Be specific and provide examples.
69. Explain how the Visible Learning Feedback process worked in the classroom. Be specific and provide examples.
70. Is there anything else you'd like to explain about your preferences for feedback in addition to or other than what was covered in the above questions?

Note: The researcher authored the open-ended questions.

Participant remarks concerning feedback as helpful and useful, as well as increasing improvement and comprehension indicated students perceived VLF as a process for growth. Additionally, learners provided responses revealing VLF fulfilled the requirements of wise and visible feedback.

Fulfilling the Requirements of Wise and Visible

In Chapters One and Three, the researcher established essential elements required for successful feedback and described how the aspects manifested within the VLF cycle. Students directly and indirectly remarked on two of the components; wise and visible. Researchers described wise feedback as constructive criticism provided with high standards and assertions of learner abilities conducted within a trusting relationship between teachers and students (Cohen et al., 1999; Farrington et al., 2012; Mendoza-Denton et al., 2010; Yeager et al., 2014). Additionally, Hattie (2012) defined visible learning as “making student learning visible to teachers” and “making teaching visible to the student,” creating lifelong learners and practitioners of self-regulation (p. 1). In the

open-ended feedback responses, students contributed comments referencing the multiple aspects of wise feedback including truthfulness, high expectations, and thoughtful communication between the learner and teacher.

The researcher interpreted student comments regarding authenticity as referencing the constructive criticism factor of wise feedback and participants expressed an appreciation for genuine feedback. Student G disclosed, 'I think the most important function is telling the truth so we can really see where our mistakes was.' Furthermore, Participant Q revealed constructive criticism as the most crucial element of feedback for improvement in writing. In reference to wise feedback's inclusion of high standards, Student F confirmed the teacher used examples establishing 'what the expectation is,' and Participant H explained the purpose of feedback consisted of helping the learner 'understand what the teacher thought of your work.' Students also commented on the relationship aspect of feedback. Participant O expressed feedback showed 'that you care about a student improving,' and the teacher 'encorages creativity.' Student J indicated a trusting relationship with the teacher emphasizing, 'The teacher has done an amazing job making sure we receive feedback.' Many students also mentioned asking for help and the researcher addressed the remarks concerning self-regulation in the results section for Research Question 2; however, concerning perceptions of VLF, the comments indicated participants felt comfortable with the teacher and viewed help-seeking as a natural element of feedback. Student B and Student F simply mentioned asking questions and asking for help as actions completed in class. Other participants outlined specific responses signifying comfort. Student N explained engaging activities in class encouraged asking more questions and emphasized, 'If I needed help, feedback was

always going to be given back.' Students C and O offered similar remarks, illustrating, 'As far as like if I needed any help or like had any questions, I definitely would ask like there's never like a time where I felt ignored or anything,' and 'we were constantly getting feedback and as someone that doesn't ask for help, I felt like that was helpful for me,' respectively.

Participants also indirectly alluded to Hattie and Timperley's (2007) model for feedback on the feedback forms, referencing feedback as closing the bridge between known and unknown information, exemplifying visible learning. Student H simply declared, 'it was helpful because i now know what to do,' and Student D revealed, 'I got good feedback for next time, and i know now that i need specific examples.' Similarly, Participant Q disclosed, 'It gave me more helpful information to try to use what I have read and turn it into an example.' Student M understood the purpose of feedback articulating, 'The feedback was helpful because I knew I was missing something but I didn't know what. I now know what not to do on the next one.'

Participants also commented directly on the visible nature of VLF in the open-ended questionnaire responses. When characterizing the VLF process in the classroom, Student D explained part of the procedure included 'putting comments on the assignments' where students received visual feedback in the form of writing. Participant B explained, 'some things I have to see in order to understand,' and Student E perceived the mechanism of looking at examples as helping 'me to revisualize it into my own type of work.' Similarly, Student O also remarked on aspects of VLF prior to receiving feedback, explaining, 'the teacher shows an outline of how to start our work.' Student L offered, 'I can see what the teacher thinks I need to work on more' as an answer to how

VLF worked in the classroom, perceiving feedback as something visually seen for the purpose of improvement. Additionally, Participant F had no suggestions for the improvement of VLF and instead awarded praise, offering, 'I am really happy with the feedback I was given generally/individually. Throughout this school year, I can visually see how much my writing has improved.' Another element of visible learning and successful feedback included relevance in delivery.

Students discussed the delivery of VLF including remarks on specific and precise feedback, verbal versus written feedback, personalization, and minority reports of grades and self-assessment. On the post-feedback questionnaire, the researcher asked students to rank the mode and delivery of feedback from most helpful to least helpful. While several participants failed to complete the section of the questionnaire correctly, some addressed in the limitations at the end of the section, or students explained the selection in a subsequent open-ended question resulting in more detailed responses. Student E emphasized, 'my teacher is incredibly helpful in regards to verbal feedback.' Additionally, participants described the pertinence of personalized feedback. Student O remarked on choosing individual written comments as most helpful, 'because it is specifically for me.' Participant A explained, 'I received the most help individually and that's when I understood the most,' and Student C illustrated, 'Individual feedback is better for me because it makes it more personal.' Participant M detailed why specific verbal feedback worked, detailing, 'Verbal feedback is better for me than written because I can hear the tone in her voice and explanation of exactly what I should improve on' and 'Individual feedback is more effective for me as well because it tells me exactly what I need to fix.' Student A preferred both written and verbal feedback emphasizing, 'I like

when the feedback is written and then gone over verbally because it's there so I can remember it but its also explained in greater detail when verbally stated.' Similarly, Student F composed a response outlining the participant's inclination toward a comprehensive view of relevance, in delivery.

> The most helpful for me was individual written and verbal feedback. Talking one on one provides more clarity on which assignment i'm working on. I also feel like since the feedback will mainly be focusing on my specific writing, I get precise detail on what I could do to improve.

Several minority reports also appeared within the data set concerning the relevance of delivery in visible feedback. One student noted self-assessment as the most helpful form of feedback, commenting, 'grading myself helps me more on what i need to focus more on' (Student D). Participants H and I marked grades as most helpful on the ranking question, but did not elaborate fully in the open-ended response, saying, 'because that's what i thought was most to least helpful,' and 'I don't remember what i put. I can assume it's because of the way i process information,' respectively. Overall, students perceived the individualization of feedback as having the utmost significance. In response to the survey question asking for suggestions for improving feedback, most students offered none, but Student M provided a reflective thought supporting student voice and choice,

> I think feedback can be improved by allowing students to choose which feedback they'd prefer. Not everyone likes verbal feedback and not everyone likes written feedback. Having that option for the individual to choose would make the process that much more helpful.

Participant responses from the feedback interviews and open-ended responses showed students perceived VLF as wise and visible. Despite the depth and scope of the comments in the feedback data sets, limitations existed.

Summary

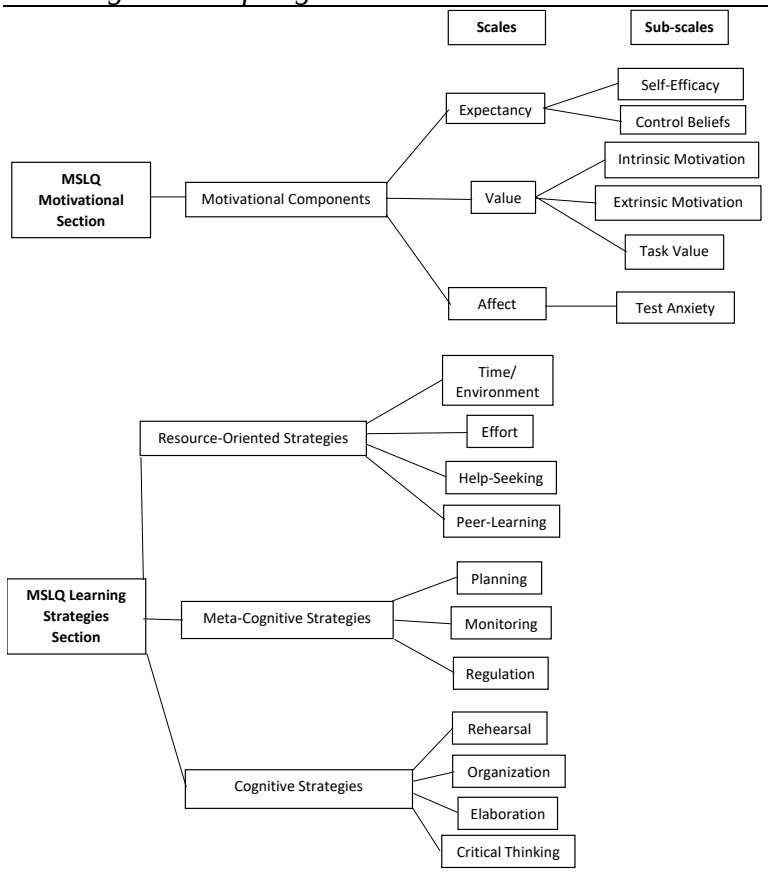
Three comprehensive, yet diverse themes emerged from the different data sets answering Research Question 1. Students largely perceived VLF and feedback in a positive light, however, participants voiced concerns relating to incomplete or disappointing feedback and expressed wavering views on writing ability in the interviews, indicating doubt about the efficacy of VLF. Despite some uncertainty, participants considered feedback as a process for growth and observed VLF accomplishing the roles of wise and visible.

Thematic Analysis of Research Question 2

Research Question 2: How do students perceive self-motivation and self-regulation before, during, and after VLF? The researcher analyzed the pre- and post-MSLQ, feedback forms, and feedback interviews to answer Research Question 2. Initially, the researcher organized the data by the scales and sub-scales delineated in the MSLQ and presented in the Non-Cognitive Self-Regulation Flow Chart, reproduced in Figure 2. The researcher then open-coded the deductive conclusions resulting in 11 emerging themes, answering Research Question 2.

Figure 4

Non-Cognitive Self-Regulation Flow Chart



Several themes emerged concerning student perceptions of self-motivation. Participants possessed tiered levels of self-efficacy and learning beliefs, attributed higher value to external over internal motivation, appropriated a growth mindset, illustrated divergent views regarding task value, and exhibited stress related to time. The pre-MSLQ represented student opinions respecting self-motivation before VLF. Table 11 and Table 12 detailed the averages for each sub-scale for the pre- and post-MSLQ, respectively. The researcher addressed students' expectancy levels first.

Table 11

Pre-MSLQ Self-Motivation Sub-Scale Averages

Scale	Sub-Scale	Experimental Group Total Average	Control Group Total Average	Sub-Scale Total Average
Expectancy	Self-Efficacy	4.51	5.15	4.82
	Control Beliefs	4.66	5.06	4.87
Value	Intrinsic Motivation	4.34	5.25	4.82
	Extrinsic Motivation	5.34	6.11	5.75
	Task Value	5.10	5.76	5.42
Affect	Test Anxiety	4.93	4.67	4.79

Presenting Tiered Levels of Self-Efficacy and Learning Beliefs

Within the MSLQ expectancy scale, the sub-scales consisted of self-efficacy and control of learning beliefs. Participants perceived self-motivation regarding self-efficacy and learning beliefs in three different levels: poor, uncertain, and high. Duncan and McKeachie (2005), developers of the questionnaire, defined self-efficacy as a learner's expectancy for success and the confidence in and judgment of the ability to perform a task. For the purposes of the study, the researcher divided the MSLQ's Likert scale into low (1-3), uncertain (4-5), and high (6-7). Before and after participating in VLF, self-efficacy remained in the uncertain zone for the experimental group, the control group, and the participants' average overall. Student responses via the feedback forms and feedback interviews elucidated on the raw MSLQ data.

Table 12

Post-MSLQ Self-Motivation Sub-Scale Averages

Scale	Sub-Scale	Experimental Group Total Average	Control Group Total Average	Sub-Scale Total Average
Expectancy	Self-Efficacy	4.94	5.17	5.06
	Control Beliefs	4.81	5.36	5.10
Value	Intrinsic Motivation	4.88	5.19	5.01
	Extrinsic Motivation	5.19	5.80	5.40
	Task Value	5.23	5.39	5.31
Affect	Test Anxiety	4.30	4.07	4.18

Thirty-four student comments from the feedback forms related to self-efficacy, with five (15%) related to a poor view of academic confidence, coming from a total of three students. Student G expressed, 'I personally feel and know it was not gonna be a good outcome,' Student P remarked, 'I performed horribly,' and Student H answered the question, "How well did I perform the task?," responding, 'Not good.' The small number of responses related to poor confidence indicated participants exhibited predominantly positive feelings. However, a large number of students perceived self-efficacy in a dubious fashion.

Participants offered uncertain views on the feedback forms regarding confidence in performing the task, making up 11 (32%) of the total remarks. Some students exhibited hesitation in expressing full confidence; Participant D illustrated, 'i believe i understood enough to know what i was supposed to write about,' Participant P detailed, 'I think that I understood the assignment and that I get the gist of it,' and Participant Q articulated, the learner 'thought the performance task was simple, I kind of understood what I was supposed to do.' Other learners voiced wavering assurances. Student A remarked, 'I understood some parts more than others,' Student N expressed, 'I understood what I was suppose to do to a certain extent.' Student F explained, 'I understood the majority of the assignment,' and Student K revealed, 'Im not sure the level but I think I did okay.' Two participants disclosed surprise at the level of performance, declaring, 'I think I did very good, gooder than I expected' (Student K), and 'i performed the task better than i expected' (Student M), indicating a lower self-efficacy before and during the task, yet higher confidence after receiving a high score or positive feedback. Concerning the feedback interviews, six students expressed doubt about writing abilities, as discussed in

the analysis of Research Question 1. Additionally, Student N communicated, 'I did progress as the school year started. Yeah, I wasn't a great writer, but it did better,' indicating the participant still possessed some hesitation, yet pursued full self-efficacy.

Despite some poor and uncertain levels of self-efficacy, most students communicated high confidence in understanding and performing the task, in contradiction with the pre- and post-MSLQ averages. Students dedicated 18 comments (53%) to communicating lofty levels of self-efficacy. Many students conferred comprehending the task; 12 testified with some form of "I understood." For example, Student E pronounced, 'I understood the assignment formidably well,' Student O asserted, 'I fully understood what to do,' and Student A suggested, 'I understood the success criteria completely.' The remaining students outrightly expressed confidence, conveying, 'I feel confident about my essay' (Student B); 'I think I did well on this performance task' (Student O); 'I think i did really good on proving examples and having reasons behind them' (Student D); and 'I think the performance task was pretty easy, I think I did well on it' (Student F). Student O communicated self-efficacy towards comprehension and performance, imparting, 'I understood what to do and think I did well.'

In addition to student comments, the researcher collected Likert responses from the last question on the last feedback form of the year phrased as, "Check the box for how confident you are in performing the argument essay task on the exam on May 10th," where students chose between "not confident at all," "slightly confident," "somewhat confident," "fairly confident," and "completely confident." Two students (13%) answered "slightly confident," nine (60%) responded, "somewhat confident," and four (27%)

marked, “fairly confident.” Participants also evaluated habits of mind, a student-friendly metric based loosely on the MSLQ, on several feedback forms (see Appendix K). The habits of mind section of the form asked learners to report on elements most needing improvement. The researcher calculated the results displayed in Table 13. Seven out of 65 comments mentioned self-efficacy, coinciding more accurately with the MSLQ raw data. Despite average pre- and post-MSLQ scores and several observations noting progress necessary for self-efficacy, overall, the results indicated participants perceived self-efficacy as high; learners occasionally expressed uncertainty and rarely viewed confidence poorly.

Table 13

Habits of Mind Mentions

Student Code	Organization/ Concentration	Effort/ Perseverance	Help-Seeking	Critical Thinking	Meta-Cognitive/ intrinsic	Learning Beliefs	Self-Efficacy
A		1		1	1	1	3
B				2		1	
C							
D	1	2	2	2	1	1	
E	1	1		1			
F	2	2			2	1	
G	1		1	1		1	
H	1				1		
I	1	1				1	2
J							1
K				1	1	1	1
L							
M	3	1	1				
N				3		1	
O		3	2	2			
P				1			
Q	1			1		1	
Total	11	11	6	15	6	9	7

Note: The researcher excluded responses indicating ‘all.’

The second sub-scale of expectancy consisted of control of learning beliefs. While similar to self-efficacy, researchers distinguished control beliefs noting student perceptions of outcomes resulted from individual efforts instead of external

circumstances (Al Khatib, 2010; Duncan & McKeachie, 2005; Pintrich et al., 1991). Student comments organized in the control beliefs category also fell within the three themes of poor, uncertain, and high, but contained the participant's justification for the belief. Most students warranted the performance with personal behaviors, but instances of blaming an external circumstance occurred.

The pre- and post-MSLQ data concerning control beliefs produced similar averages in the uncertain range compared with self-efficacy, reflecting the resemblance between the two sub-scales of expectancy. On the feedback forms, five (11%) out of 44 responses related to the control of learning beliefs and consisted of students perceiving individual work as poor. Student F explained, 'I think my working could be a little better and some of my points weren't very clear,' Student L observed, 'I think I didn't do too good on it because I only wrote a couple sentences when I should've been writing paragraphs and digging deeper into what I was trying to say,' and Student B exclaimed, 'I realized that I did not do as well as I hoped because of my lack of understanding!' Additionally, Participant A expressed, 'I feel like what i was trying to say wasn't fully explain and it wasn't my best work' and Student Q lamented, 'I forgot my notecards so I feel like I did horrible.' While the students communicated dissatisfaction with the performance, each also provided evidence for the poor outcome, based on individual effort. While only a small number of students cited a poor level of control beliefs, many students remained uncertain about the performance.

Ten (23%) participants exhibited hesitancy concerning learning beliefs. The following comments provided a level of reasoning behind the vagueness, distinguishing the responses from self-efficacy. Some students simply wavered in beliefs providing

ambiguous responses, for example, Student C disclosed, ‘i had the analysis.. kind of i just didnt know how,’ Student A illustrated, ‘I performed okay. I could have done better but I see my faults,’ and Student E reported, ‘I understood the assignment well but I seem to have missed a few key parts of it.’ Other learners voiced more specific evidence for reluctant beliefs. Participant O exemplified, ‘I did okay on this task. I provided specific examples but failed to provide one more example and write a conclusion,’ Participant A acknowledged, ‘I did okay in the task. I believe I could have did better explaining my thoughts. Also I didn't have as many examples as I should have. Also, my conclusion didn't rephrase my position,’ and Participant I specified, ‘I think i did okay. I did almost everything it asked for. I gave myself a 22 because i didn't have at least 2 examples per body paragraph and I could have provided more evidence.’

A number of students articulated a comprehension of the material but offered explanations of lower-level performances. For instance, Student G determined, ‘I understood like 70% I would say I was not all the way lost but I comprehended what the task was for me to do.’ Student C indicated, ‘I understood the topic well, but doing the actual writing, I used too much examplarery text and not enough connection back to the topic. But my example was highly detailed,’ and Student E explained, ‘I understood the assignment and prompt, I believe I just did a poor job at carrying out the task.’ Furthermore, in the feedback interviews, Participant N voiced some hesitation, stating, ‘my confidence about my work has never like decreased or anything just be like a little here and there mishaps but it definitely did get better as the school year progressed due to [the teacher’s] help,’ signaling an external force, the instructor, as responsible for some

forward movement. Despite the existence of poor and uncertain control beliefs in some responses, students overwhelmingly conveyed high opinions of individual work.

Due to a large number of responses, the researcher divided the comments regarding high confidence into three categories: differentiating the remarks by students faulting external circumstances, students expressing confidence, but also recognizing the performance needed improvements, and students exhibiting unequivocal confidence. Five remarks from the feedback forms contained connotations indicating some students believed circumstances other than individual effort held responsibility for an unexpected poor performance. A small number of participants reflected on assignments after receiving feedback, initially believing in a strong performance, but showed disappointment after obtaining a low grade or feedback stating otherwise. For example, Student E divulged, ‘I would say I did a decent job but my grade seems to differ,’ Student G revealed, ‘I think it was ok. I thought I was doing the assignment right but I guess not so,’ and Student K disclosed, ‘I understood it well, I just didn't think I did it the "correct" way.’ Similarly, Participant H demonstrated, ‘i thought i did well, but i guess i didnt,’ and added in a separate comment, ‘the performance task was okay, i understood it but my teacher thought otherwise.’ Although a minority of students manifested a low control of learning beliefs, many students exemplified formidable confidence and strong control beliefs.

The second grouping consisted of 13 (30%) student remarks expressing belief in a solid performance, yet also acknowledging the work required improvements and taking responsibility for individual effort. Several participants mentioned the received feedback or self-assessment helped in the realization of necessary upgrades to the task. For

instance, Student D explained, ‘I feel like i did good but from the feedback i see what i need to work on more,’ Student F clarified, ‘I think I did well on the performance looking back I realized the mistakes I made and how I could fix them,’ and Student K demonstrated, ‘I gave myself that score because I feel that's what I personally did on the argument. I graded myself truthfully I could have added more specific details but other that it was fine.’ Participant E and Participant O also referenced the success criteria for the assignment when describing the performance, illustrating, ‘I followed the success criteria fairly well, I subtracted those few points because I had not fully provided every criteria perfectly’ and ‘I got a 14/25. I think I did well even though I missed a whole section of the task. If I had completed that section I would have done better,’ respectively.

While some students vaguely referenced necessary improvements, saying, ‘I think I did well there were just some things I needed to do that I didn't do in the essay’ (Student K), and ‘It was great but there were still some strategies I neglected to mention’ (Student I), other students specifically mentioned strategies or skills required for progress. For example, Participant F detailed, ‘I performed pretty well, the only thing I would say is how I worded what the appeals were but I will fix that,’ and Participant O also alluded to the appeals, explaining, ‘I understood the task and what the prompt was asking. I knew what to do but I missed the last part where I had to identify the appeal.’ Additionally, Student N exclaimed, ‘I think I did a great job!’ but also recognized, ‘I need improvement on using phrases from the text instead of using full sentences,’ and Student J declared, ‘I had a good intro and body paragraphs. I had good examples,’ but added, ‘I could have made my conclusion stronger.’ Participant M acknowledged in two remarks,

‘I think I did well. My essay consists of everything needed I just need to add more commentary,’ and ‘I performed well I just didn't connect my evidence back to my claim. I need to further explain my examples and make connections.’ While many students acceded to requisite improvements for performance tasks, 11 (25%) participants expressed indisputable confidence in learning beliefs.

Some students acknowledged challenges yet maintained confidence. For instance, Student B illustrated, ‘I believe that I did well by following all of the steps even though my comprehension kills a'int the best,’ and Student G explained, ‘I thought i did good after not being present for awhile and the score is not to high nor to low.’ Student A referenced comprehension of the success criteria as aiding in success, commenting, ‘I understood what I was supposed to do fully because of all the other assignments we had over this success criteria.’ In addition, other participants observed fulfilling the assessment requirements, reporting, ‘I think I did exceptionally well, I feel I've covered all the ground required and put forth a proper assessment’ (Student E), ‘I understood well and included everything that I needed in my essay’ (Student M), and ‘I performed great on the performance task. I covered all the requirements perfectly’ (Student O). Student B mentioned a previous draft helping the progression of performance, explaining, ‘I feel like I did better than the first submission. I feel like I did better with explaining what the appeal was, and I was better at explaining why I stating the appeal of the author.’ Three participants specifically noted comprehension in the responses. Student I expressed, ‘I believe I understood the assignment well. I wasn't confused by the instructions and thought I knew what to do.’ Student P explained, ‘I think I did understand what I was supposed to do. It got easier this time,’ and Student F revealed, ‘I think I did well on my

assignment, I was able to read the passage and understand it to make connections.' Participants voiced confidence in specific improvements in the feedback interviews, as well.

Students showed high levels of control of learning beliefs and acknowledged individual progress as responsible for enhanced performance. For example, Participant E described a developing writing style, detailing, 'at the end of the year through the processes like learning the different ways of writing out stuff instead of just stretching and actually cutting stuff up and arranging more neatly,' adding, 'and at the end of the year, I was able to just more cleanly and more neatly write out stuff that made more sense.' Furthermore, Student C addressed advances from the pre- to the post-essay, reporting, 'I could definitely see some differences and like how I could write stuff like how I could you know, word because I had already seen the passage.' Student F discussed confidence in exam preparation, explaining, 'Like when it was time for the actual test. I knew what I had to do and it wasn't just me guessing in going blank and waiting for time to go out.' The student comments from the feedback forms and feedback interviews acknowledged the individual effort as responsible for the positive performance, indicating an unreserved high level of control of learning beliefs. However, participants mentioned improving learning beliefs nine times on the habits of mind section, demonstrating, despite positive remarks, students viewed progress on future assignments, as necessary.

Ascribing to External Over Internal Motivation

The second scale in the motivational components consisted of value and included the sub-scales intrinsic motivation and extrinsic motivation. Researchers characterized

internal motivation as learners engaging in academic behavior for inherent gratification and for the advantage of learning absent of collecting a dividend outside the task (Lens & Vansteenkiste, 2008; Pintrich, 2003; Ryan & Deci, 2000). Likewise, researchers explained external motivation as students performing for the sake of rewards, grades, or competition or due to evaluations from others and/or pressures external to the performance (Al Khatib, 2010; Lens & Vansteenkiste, 2008; Pintrich, 2003; Pintrich et al., 1991; Ryan & Deci, 2000).

Data revealed while internal motivation existed, students valued extrinsically motivating factors to a greater extent. According to the pre-MSLQ, a large gap of almost 1 (.93) existed between intrinsic and extrinsic motivation, showing students clearly displayed higher levels of external motivation. The results of the post-MSLQ revealed students maintained higher extrinsic scores, however the gap between the two motivational forces decreased; the average score for intrinsic motivation increased from the pre-questionnaire and the extrinsic decreased, demonstrating a slight change in attitude.

Participants remarked on external forces motivating performance on the feedback forms including scores, points, and grades. Student O referred to the AP rubric inquiring, 'I want to know how my essay could have been better since it was a 5/6. I want to know what is missing in order to have a 6/6.' Additionally, Participant G planned to, 'Try my best to take my scores up a notch,' and Participant I explained, 'I was close on all 3 topics but didnt touch on the topics enough to get full points.' Furthermore, Student I added, 'I think I understood it well enough to not fail.' The comments indicated students' concerns focused on extrinsic motivational aspects outside of the inherent joy of learning.

Participants also described the influence of external motivation in the feedback interviews. Student E expressed the importance of grades, and reflected inadequate writing, 'shows in My Grades reflection of it with the scoring,' and explaining at the beginning of the year, the motivation stemmed from writing, 'something good I can get a grade I can pass.' Similarly, Participant Q reported, 'So basically my self-motivation was I want to be good and pass the class,' concluding, 'I will try to at least get some minimum . . . But at the end of the year like let me take my time and actually get will try to get the highest score instead of getting the minimum score.' Student B also regarded grades as vitally important to the participant's future for college, explaining, 'I don't need them to see C's, D's, F's or whatever the letter there is for a grade. I only want them to see A's and B's.' Student F resolved, 'I just knew I wanted a higher score, because the one I had before was bad so that's really much my self-motivation.'

In addition to regarding extrinsic motivation as more important than intrinsic motivation, several students exhibited a total lack of motivation whatsoever. Participants expressed fluctuating motivation throughout the school year. For instance, Student O clarified, 'At the beginning of the year, I felt like I was very motivated and like even if I didn't want to do something, I could still do it. But at the end of the year I just couldn't.' Similarly, Student A reported,

> I got kind of lazy towards the end of the year. Kind of got this senioritis, or whatever-itis. I had -itis I had school-itis, so I couldn't. I was ready to go. So I think that in the beginning, it was bad, but I kind of started to work on it, but at the end, I started to decrease again.

Only one student expressed satisfaction without mentioning external forces on a feedback form, revealing the teacher, 'told me I grew since the beginning of the school year,' (Student G) indicating an appreciation for educational progress. Furthermore, students referred to intrinsic motivation six out of 65 times on the habits of mind section of the feedback forms. Participant data indicated external elements acted as powerful motivational forces in individual education. The researcher discussed the implications of student motivation further in Chapter Five. Despite a lack of intrinsic motivation expressed in the learners' comments, students communicated cultivating a growth mindset exclusively in the feedback interviews.

Developing a Growth Mindset

Researchers defined a growth mindset as individuals recognizing intelligence as controllable, changeable, and increasable; furthermore, learners believed competence advanced with time and achievement increased with effort (Dweck & Leggett, 1988; Dweck & Master, 2008; Farrington et al., 2012). Some learners indirectly referenced thinking with a growth mindset. For instance, Participant E illustrated, 'and through the process. It was more of those relearning to keep an optimistic outlook about it. And then at the end of the year, I was able to just say, You know what, I will get this done.' Similarly, Participant F stated, 'And then for the post test, I was just like, oh, like, I literally can just do this.' Additionally, Student B commented, 'Because it's like I was motivated myself, or trying to motivate myself at least to you know, work harder with this being my second to last year.' Student C explicitly referenced the mentality remarking, 'So just like thinking with a growth mindset helps you I guess, confidence-wise going into things. It helps you write better, just like a better mindset, I guess.' When

answering the question concerning VLF and MI, Participant F elaborated on the learner's evolving attitude,

> So, after participating in them, I feel like it actually helped me get it done because then I'm speaking it into existence. I'm like, I'm going to do this. So, I will do it. Unless like, because if I say I don't want to do it, then obviously my mindset is going to be Oh, I'm not gonna do this. I'm not gonna get it right. So, in my head, I'm like yeah, you got this. You're gonna ace this test. It's great like that. So yeah, I just think it helped me speak it into existence and find out what I was, what I wanted to do and what goals I had for myself.

Student P also revealed a flourishing growth mindset over time, initially describing low motivation concerning less interesting work. However, the participant demonstrated as the year progressed, 'you learn more and as you develop opinions on the topic and everything that really helped you to get more motivated and as you like, develop the skills to keep track of everything and everything doesn't get more overwhelming,' adding, 'It really helps you like stay on top of everything and really help you stay motivated to complete everything towards the end.' Furthermore, after several remarks related to apathy discussed in the next theme, Student Q concluded, 'And then I was like, let me just excel and take it to the max.' Regarding motivation, learners undoubtedly manifested an external over internal motivation, yet perceived the essential role of thinking with a growth mindset.

Possessing Divergent Attitudes Towards Tasks

Students also voiced opinions regarding task value including apathy, discontent, and validation. Researchers defined task value as a learner's interest in an assignment

based on the appeal, importance, value, or usefulness of the task (Al Khatib, 2010; Eccles, 1983; Pintrich, 1999; Pintrich, 2003; Pintrich et al., 1991). On the pre-MSLQ, task value averaged at 5.42 and only slightly decreased to 5.31 on the post-MSLQ. Considering the averages for the other scales, task value represented one of the higher scores; however, the results from the other data sets did not necessarily correspond with the outcome. Case in point, students responded to the question "What did you think of the task?" on multiple feedback forms and remarks varied. In addition to the forms, participants referenced assignments and self-motivation in the feedback interviews. The comments from the two data sets demonstrated participants possessed a vacillating view of task value, and therefore, self-motivation.

Students expressed an apathetic view on tasks, particularly in the interviews. Multiple learners commented on self-motivation at the start of the year. For example, Participant P acknowledged, 'okay, so like in the beginning of the year. I really like really didn't care about anything.' Student B also recognized at the outset of the year, 'it was more of me just trying but not trying at the same time, like I would do my work but I will not give it my all into the assignment,' adding, 'My motivation was I'm always the type to get my work done. So, for me, it's like get it and get it over with.' Similarly, Student E provided a colorful description, stating, 'I was just on that get it done mindset, just get it over with get it out of the way but don't half ass it, just do it well enough that it will eventually get you something good.' Participant F and Participant Q offered comments relating to the year in general explaining, 'self motivation. Honestly, just be random. I just, I just do it or if it's on my schedule, and I would like I'd be like, Okay, I need to do this' and 'So, at the like during the year, I was like I just have to get it done,'

respectively. Students remarking on the feedback forms also provided indifferent words characterizing tasks. Student O stated, 'I thought the performance tasks was okay. I understood what I need to do,' and Student B explained, 'The performance task was simple.' The student contributions revealed perceptions of seemingly uninteresting tasks. Participants also had various opinions on the value of a difficult task, some expressing malcontent while others offered endorsement.

On the feedback forms, Student A offered multiple comments, articulating, 'This assignment was probably the most challenging to complete. The directions were clear and direct but finding the figurative language and analyzing it made it difficult to finish,' and 'I thought the prompt was very difficult. I had trouble with the brainstorm and coming up with ideas,' suggesting a low investment in the task. Participant B provided a similar observation, explaining, 'I think that these performance task are difficult because whenever we do a prompt I write my answer based off either personal experience, or something totally not relatable,' adding, 'This is only because sometimes I don't fully understand the prompt in a deep sense, I either need to do research on it or something, but I hardly ever understand these prompts.' Student G communicated, 'I found it unneccesary,' and Student N suggested, 'I think it was overwhelming and very excessive.' Ostensibly, students understood the directions but struggled carrying out the task, while others begrudged the experience, illustrating lowered interest and value. Despite most students viewing tasks with apathy or discontent, some students opined assignments possessed validity.

Student O offered a higher level of task value, stating, 'I thought the performance task was a good challenge for me. I understood what to do perfectly,' indicating the

difficulty of the task increased the participants' interest. Student Q recognized the prospect of making connections, communicating, 'But also I wanted to learn like, how can I use this other than in the class and like, try to apply it to other things.' Furthermore, Participant E concluded, 'I need to take assignments more seriously and put 100% effort into them,' legitimizing the need for placing value on performance tasks. The final scale in the motivational components involved the sub-scale of test anxiety.

Exhibiting Stress Concerning Time

Student comments from feedback forms concerning test anxiety revolved summarily around stress related to time. Many of the APELC performance tasks involved timed writing in preparation for the timed exam, causing nervousness and tension for learners. According to the MSLQ results, students averaged a score of 4.79 on the pre-questionnaire for test anxiety. A significant drop occurred to 4.18 on the post-questionnaire, indicating student stress decreased over the course of the year. Despite the raw data from the MSLQ, participant remarks demonstrated a consistent tension. Many students felt pressed to complete the performance task. Student M explained, 'I took too long trying to understand the entire excerpt and had to rush my writing to finish in time,' and Student A acknowledged, 'I took a very long time on the introduction so my body paragraphs feel rushed.' Others expressed feeling overrun with pressure. Student K described, 'I was overwhelmed and thought that I wasn't going to finish in time, since it was timed and I felt like I had to rush.' Similarly, student H reflected on the future explaining, 'Next time make sure i have an thesis - take my time, read and make sure I don't get so overwhelmed.' Student O documented a challenge of the performance task involved, 'completing the task within the 40 minutes,' and likewise, Student A stated,

'the time kinda through me for a loop.' Furthermore, Student Q furnished the following comments characterizing the anxiety of a timed writing assessment; 'I did ok but I think I could do better I felt like I only did OK because I was all focused on time,' and 'I did OK for a timed essay because I normally get nervous writing a essay let alone a timed one but I most definitely need to work on it.' Participant comments regarding the affect scale indicated limited time, as the largest stressor for performance tasks.

After analyzing the motivational components of the MSLQ, feedback forms, and feedback interviews, the researcher observed students articulated varying perceptions of self-motivation. Participants expressed lower instances of poor self-efficacy and control of learning beliefs, medium levels of uncertainty, and high levels of confidence and strong learning beliefs. However, students persisted in perceiving motivation externally and oscillated on views of task value. Where students remarked on test anxiety, the pressures of time held consistently. In addition to self-motivation, the researcher investigated how students perceived self-regulation after participating in VLF.

The developers of the MSLQ organized and divided the self-regulation section with three learning strategy scales consisting of resource-oriented strategies, meta-cognitive strategies, and cognitive strategies (Duncan & McKeachie, 2005; Pintrich et al., 1993). Within the scale of resource-oriented strategies, four sub-scales existed consisting of time and environment management, effort, help-seeking, and peer-learning. As zero students commented on peer-learning, the researcher only addressed the first three elements. Themes for how students perceived self-regulation included students acknowledging the importance of excelling at resource strategies, demonstrating forthright perspectives on comprehension, recognizing deficits in comprehension,

displaying error correcting behavior, and utilizing cognitive strategies as a means of implementing feedback and as a mechanism for progress.

Acknowledging the Importance of Excelling at Resource Strategies

According to researchers, resource strategies manifested as learners controlled skills and resources outside of cognition and engaged in higher time and effort management than students at an average level of academic performance (Duncan & McKeachie, 2005; Pintrich, 1999; Pintrich et al., 1993; Zimmerman, 2008).

Table 14

Pre-MSLQ Self-Regulation Scale Averages

Strategy	Scale	Experimental Group Total Average	Control Group Total Average	Sub-Scale Total Average
Resource-Oriented	Time/Environment Management	4.32	4.78	4.56
	Effort	4.75	5.86	5.43
	Help-Seeking	4.83	5.14	5.26
Meta-Cognitive	Monitoring & Regulating	4.35	5.09	4.78
Cognitive	Rehearsal	4.54	5.33	4.96
	Organization	4.13	4.83	4.50
	Elaboration	4.69	5.31	5.02
	Critical Thinking	4.70	4.87	4.80

Table 15

Post-MSLQ Self-Regulation Scale Averages

Strategy	Scale	Experimental Group Total Average	Control Group Total Average	Sub-Scale Total Average
Resource-Oriented	Time/Environment Management	4.16	4.72	4.46
	Effort	4.31	5.14	4.75
	Help-Seeking	4.66	4.42	4.53
Meta-Cognitive	Monitoring & Regulating	4.53	4.76	4.65
Cognitive	Rehearsal	4.50	4.97	4.75
	Organization	4.09	4.89	4.51
	Elaboration	4.73	5.15	4.95
	Critical Thinking	4.53	4.89	4.72

In reference to the pre-MSLQ (Table 14) and post-MSLQ (Table 15), the total average for time and environment management marginally decreased, showing consistency in participant perceptions over time.

Since participant remarks focused solely on time management, the researcher analyzed student governance of time in the feedback interviews and on the feedback forms. Student O simply remarked in the feedback interview, 'I had good time management.' Conversely, as previously mentioned, students recognized time as a stressor, but participants also viewed time through the lens of improving self-regulation as related on the feedback forms. In response to the question "What do I need to know/do/learn to improve my next performance?" a number of students drafted some form of 'take my time.' Other students offered more specific comments, including, 'I am going to take as much time as I can so I can do better on analyzing the passage therefore my answer or essay is sufficient' (Student B), and 'If I would have took the time to explain what I was trying to say about Emerson's quote it would've been better' (Student L). While some participants viewed time management through a growth mindset, two students in the feedback interviews disclosed a perception of time management as a weakness. Student A expressed feeling confident about self-regulation, but acknowledged the sentiment did not apply to 'time management.' Similarly, Student C conceded, 'Yeah, time management time management has never been one of my strongest suit. So like, honestly, give or take that one,' reflecting the anxieties addressed earlier in the affect scale. In addition to time management, students also responded with comments referencing effort.

Student perceptions of effort fell within three different categories, including participants exuding effort on the task, learners reflecting on effort needing improvement, and students ensuring a better effort on future assignments. On the feedback forms, Participant N linked the outcome of a self-assessment to effort, demonstrating, 'On this argument essay I tried my best. I gave myself a 20 out of 25 because my thesis wasn't very clear. My commentary wasn't very explicit either.' Student K stated the learner 'tried to do my best,' Student B illustrated, 'I tried my best to follow the criteria,' and Student N reported, 'I feel like I did my personal best without any assistance,' adding, 'With all I that being said, I did my personal best. I do see growth from my first time writing a RA essay.'

Furthermore, participants remarked on exhibiting effort in the interviews. Student F discussed putting forth effort despite confusion, explaining, 'The beginning of the year, I didn't really want to do it because I didn't know what I was doing. I was actually trying though.' Participant A detailed a positive outlook on effort management, describing, 'like I know how to put, when I do do the work I do put a lot of effort, I put my all into it.' Additionally, Student B illustrated, 'I always push myself,' and 'I tried my best at the end of the day.' Participant C offered an in-depth analysis, recounting,

> As far as the effort like it has to be continuous effort and like classes like these because they are AP class and they push you to those limits. So like as far as effort, it may not have been the best at times, but it's always was a continuous effort. Because there was always something else to do.

Another student discussed a depreciation of motivation, yet a continuation of effort, stating, 'at the beginning of the year, I was very organized, put a lot of effort into

my work,' adding, 'but I felt like at the end of the year, it was not, I was not on the same level but I was still doing it' (Student O). Participant comments on the feedback forms supplemented additional views on effort.

Learners recognized personal performance possibly improved when individuals expended more effort. For example, Student D incorporated time and effort into an explanation of the difficulty of the assignment, characterizing the task as 'difficult because of time and having to really think about how to word what I wanted to write and putting good enough effort,' expanding the comment with, 'I feel like I did OK but I could of did better with time and effort. I wish I could really understand and catch on faster on what the message is and how to find SOAPSTONE but not even that making sure I can identify it.'

Additionally, Participant K articulated needing to 'also put more focus in it as much as I should' and Participant Q contributed, 'I did OK but, it wasn't my best because I feel like I didn't try hard enough.' Some students described the challenge of exhibiting effort explaining, 'It was also hard not to fall asleep' (Student F), and 'i think it was challenging, to actually focus and get the meaning positive and negative effects on how books are being used' (Student D). Other learners perceived effort as an aspect necessary for progress. Participant J voiced, 'The feedback was helpful because it showed me the areas to put more effort to,' adding, 'I will but more effort into essay and build more character in my writing.' Furthermore, Student E detailed, 'I will do my best to apply the given feedback to my future work.' Overall, learners reflected on effort in the sense of past assignments, current tasks, and future performances, recognizing effort as a

significant aspect of self-regulation. Participants also addressed help-seeking directly and indirectly, acknowledging the strategy's significance.

Several students observed when individual comprehension lacked. Student F asked for help directly on the feedback forms, inquiring, 'WHat words should I change to improve my vocabulary.' Student G also recognized the value of help-seeking, admitting, 'I did not quiet understand the assignment and I was to headstrong not to ask for help,' later acknowledging, 'I need to ask more questions for what I do not understand.' On the other hand, Student K addressed confusion with the task, explaining, 'Im not sure yest, I still dont know what I did wrong,' and 'I thought that it was explained very well this time, but sometimes the instructions be confusing' yet the participant did not seek help directly. In the feedback interviews, Participant C submitted multiple comments, explaining, 'As far as like if I needed any help or like had any questions, I definitely would ask like there's never like a time where I felt ignored or anything' and 'definitely if you didn't have if you had questions and didn't ask you would be lost.' Student O recognized the individual represented, 'someone that doesn't ask for help,' describing the justification for feedback's value, indicating help-seeking as a strategy necessary for improvement. In the habits of mind responses, students listed help-seeking six out of 65 times, one of the least mentioned improvements needed, demonstrating students felt comfortable with the strategy. The next learning strategy section in the MSLQ involved meta-cognitive strategies with the subscales of planning, monitoring, and regulation.

Portraying Forthright Perspective on Comprehension

No students mentioned planning in the feedback data sets, so the researcher focused attention on the vast amounts of remarks concerning monitoring and regulating.

Before participating in VLF, students answered meta-cognitive questions with an average score of 4.78, above average. The researcher noted, however, the post-MSLQ average for the scale reduced to 4.65. The experimental group's average increased on the post, but the control group's average decreased. The researcher addressed the depreciation further in Chapter Five. Regarding participant comments, students furnished an authentic outlook on monitoring, mentioned exclusively in the feedback forms.

Researchers defined monitoring as a student's awareness of the development of comprehension during a cognitive task dictating the level of performance (Schraw & Graham, 1997; Young & Fry, 2008). The researcher organized the following section with student comments involving information concerning the process of completing the performance tasks. While students showed a high level of efficacy in monitoring processes and progress, two sub-themes also emerged from the participants' responses, including comprehension challenges and skill difficulties.

The researcher divided the remarks exhibiting comprehension challenges into three types: prevailing confusion, conflicted confusion, and one occurrence of overcoming confusion. Many students expressed misunderstanding on the feedback forms and the confusion remained unresolved. For example, Student H demonstrated multiple instances of confusion, stating, 'I didn't understand it,' 'it was confusing,' and explained a challenge consisting of 'understanding what to write about.' Additionally, Participant G explained, 'All I faced was a misunderstanding and a bit of confusion' and Participant Q detailed, 'I had a hard time understanding the task.' Furthermore, Student Q characterized continued frustrations despite study materials, highlighting, 'I was very confused because I also used some of the soapsttone notes.' Several learners also

expressed sustained confusion in the feedback interviews. Student B mentioned, ‘with the class it was a AP class, therefore, it was a little bit more challenging for me there within the book we was reading and everything like that. So, it was hard.’ Participant C also commented on obstacles, stating, ‘there were some challenging times just throughout the year.’ Furthermore, Student C remarked, ‘just as an example. Um, so with this particular Gandhi assignment, the first this one was pretty particularly hard for me. I don't remember why,’ adding, ‘just because I had like stuff going on. And like it was to me at least a challenge to read it first.’ The student remarks demonstrated individual assignments and the nature of the AP class caused misunderstandings and challenges. Several students also exhibited conflicted perceptions of individual misunderstanding.

For instance, Student B explained, ‘The passage felt simple, but it was a little hard to comprehend. I felt like I understood what I was suppose to do well,’ and Student Q detailed, ‘I kind of understood it but had complications.’ Additionally, Student K expressed various clashing views on confusion. The participant demonstrated ‘I understood the task pretty well, I still had a lot of quesions and things I was confused about but overall I still did what I was asked to did,’ adding, ‘I understood but at the same time I still was confused.’ One participant expressed confusion, but also detailed overcoming the obstacle, observing, ‘at first i didn’t understand the task until i reread the passage and the instructions’ (Student M). Within the differentiation of the comments, students signified an authentic, straightforward attitude towards individual participant confusion related to and/or understanding of the task. While some students displayed concern over general comprehension, others provided specific tasks or strategies causing misunderstandings.

The SOAPSTTone strategy (see Appendix L), related to writing introductory paragraphs, manifested numerous struggles for students. Participant E detailed, ‘There wasn't much that interrupted me besides fitting all the required parts of soapstone in,’ and Participant D explained, ‘it was frustrating to really get the message but I kinda understood and the SOAPSTONE part i had to think about it hard.’ Understanding and applying rhetorical devices also resulted in confusion. Student G expressed, ‘I had questions about the rhetorical questions at that time’ and Student I detailed, ‘I had a hard time finding enough samples of rhetoric for the devices i chose.’ Furthermore, Participant B referenced struggling with rhetorical analysis indirectly explaining, ‘I can not tell you why the author is speaking a certain kind of way, ow what does the author want the reader to understand because I am not good at comprehending.’ Student F cited two skills needing improvement, describing, ‘I didn't know how to organize it at first, but it got easier as I kept writing,’ and ‘I understood the imagery part really well, what I struggled with was connecting my thesis with the last sentence.’ The final skill involved evidence; Participant F cited ‘explaining evidence’ as a challenge and Participant C offered the learner, ‘misunderstood what I was supposed to be writing abt. as for as examples wise.’ Additionally, Student E provided a more specific response, reflecting, ‘I worked too vaguely and near exclusively in conceptual ideals instead of any strong evidence for the prompt.’ In addition to monitoring, students reported on the meta-cognitive strategy of regulating.

Recognizing Deficits in Comprehension

Researchers characterized regulating as the consistent adjustment of a student’s learning activities including determining whether performance matched learning goals

and error correcting (Pintrich et al., 1991; Pintrich, 1999; Schraw & Graham, 1997; Weinstein & Mayer, 1986; Young & Fry, 2008). Whereas monitoring involved student discussions of in process work, regulating concerned reflections on correcting behavior and rectifying shortcomings in comprehension (Pintrich, 1999). Two themes emerged from the student comments regarding regulating, repairing deficits in comprehension and correcting behavior. Some participants also connected remarks from the themes back to the success criteria analyzing the correctness of performance.

Participants acknowledged deficits in comprehension and offered insights into rectifying faults. Several comments concerned general improvements for writing. For instance, Student D expressed, ‘I did do two body paragraphs i just think i put them together which made one, i also forgot to include my conclusion,’ Student A explained, ‘I need to do a better job explaining what I'm trying to do instead of thinking it in my head and assuming it's implied,’ and Student B disclosed, ‘I understood what mistakes I made because I realized that I was all over the place with the assignment and I wasn't making sense because I wasn't making clear statements.’ Additionally, Participant H voiced, ‘I need to know what and what not to say, where i go wrong at, etc.,’ Participant K suggested, ‘I know to be a little bit more specific next time’ and Participant I indicated, ‘Overall I did really well but there's room for improvement. I also had a lack of accurate information to commentate on.’

Numerous learners referenced elements in the success criteria, citing Aristotle’s appeals, SOAPSTTone, figurative language, examples and commentary, the claim, the thesis, and the conclusion. Student O commented, ‘I need to learn how to identify the appeals the author is using,’ and Student E explained, ‘I misinterpreted the passage and

did not include all I had written for soap.' Participants also reflected on figurative language, a device of rhetorical analysis; Student N remarked, 'I can find better examples of figurative language. I can use better explanation,' and Student D detailed, 'I understand where i messed up and i see why, i didnt really explain why i choose the fig lang i did and how i know thats what she used and how it supported the message.'

Several learners alluded to examples and making connections with commentary. Student I conveyed, 'I need to have better and more accurate examples so that i know what i'm talking about,' and Student D expressed, 'had the examples from my introduction but didn't really reflect back to emerson opinion on books.' Additionally, Participant P suggested, 'I need to work on connecting my ideas to each other at the end to make my conclusions stronger,' and Student Q communicated, 'I need to explain my examples and also go in detail when i'm explaining also don't throw off the reader by supporting the opposite of the claim.'

Learners also realized misunderstandings in relation to the claim, thesis, and conclusion. Student A reflected, 'I think I did the analysis good but I needed more work on my claim,' adding, 'I need to work more on my claim practice. Actually reading the passage and understanding the message behind it.' Furthermore, Participant Q considered, 'The personal connection was good but I need to be more clear claim also in the body paragraph give both sides of the argument but show your side.' Concerning the thesis Student J remarked, 'I now understand that i have to write more and go back to my thesis.' Participant F acknowledged the missing connection between the thesis and conclusion, indicating, 'as I reread my essay I found out that I didn't clarify the characters in the third paragraph. Also I didn't restate my thesis in my conclusion' deducing, 'I need

to learn how to connect my introduction with my conclusion.' The learners' responses revealed the recognition of inadequate comprehension and thoughts on repairing the deficits, demonstrating efficacy in regulating. Participants also commented on correcting behavior and actions for improvement.

Displaying Error Correcting Behavior

Although similar to repairing deficits in comprehension, the researcher distinguished student comments regarding correcting behavior with statements identifying and explaining the plan for progress. Some learners offered general visions for improvement. For example, Student Q stated the necessity 'to have more clarity in my writing,' and Student E reported, 'I took the feedback and fixed it where I needed to in my writing.' Other students provided more specific examinations. Participant B suggested, 'I understood what the more details you give the better the reader could understand,' and Participant A conveyed, 'I plan to connect my paragraph back to the prompt so it's not misunderstood.' Furthermore, Student Q reflected, 'I have to look back in the passage for more information and apply it to my my analysis body paragraph,' Student A disclosed, 'I will try to analyze more instead of summarizing,' and Student M expressed, 'I need to elaborate on the specifics and go into detail and tie back to the purpose of the writing.' Similarly, Participant P identified, 'The next time I write a rhetorical analysis I will use more rhetorical devices and include more in depth analysis,' and Participant E recognized, 'actually following the prompt would probably be a good idea.' Additionally, in the feedback interview, Student A described the individual's evolving regulation, demonstrating, 'Like, now I know how to go back and I know how to like read my own writing without having so much, so much help. So I know how to

Yeah, kinda like correct myself before I get to the last step.' Students also referenced aspects of the success criteria.

In the same fashion as repairing deficits, participants cited Aristotle's appeals, figurative language, examples and commentary, and the introduction, claim, thesis, and conclusion. Student F focused on the appeals, explaining, 'I will now use appeals and use rhetorical analysis,' adding, 'What I need to do to improve my next performance is to use evidence for the appeal and be specific for what the appeals are. Instead of using "Ethos" I can say "The uses appeal to credibility when . . ."' Participant F also spotlighted correcting issues dealing with figurative language, stating, 'I have my imagery part right but I needed to add evidence from the text for the examples of the oxymoron and personification.' Additionally, Student O highlighted, 'I will elaborate on the personification that I mentioned was used and re-emphasize Helen Keller's message.' Numerous students remarked on rectifying issues with examples, evidence, and commentary. For example, Participant G suggested the learner needed to 'add more examples to my reasonings,' and Participant H acknowledged, 'I needed to explain my evidence more . . . Backing up my evidence.'

Moreover, learners established other future improvements including the necessity to 'prove more evidence' (Student K), 'Explain my evidence more in depth' (Student N), and 'Be more specific with my topics' (Student I). More precisely, Participant A suggested, 'I needed to do better at the commentary. Connecting what I said back to the prompt,' Participant L communicated, 'I need to learn how to be more vivid with my explanations and improve my writing skills,' and Participant P voiced, 'I just need to improve on connecting my evidence, the commentary behind my evidence, and setting up

my paper so that my ideas can build off of each other.' Additionally, Student M reflected the learner needed to 'tie together examples from second body to prevent contradicting statements,' and Student F explained, 'I needed to include more evidence especially in my paragraph,' adding, 'I plan to apply this in my response when rewriting my essay instead of including unnecessary information.' Furthermore, Participant D concluded, 'i know now that i need specific examples.. for instance i could include things that happened in real life to support my reasonings.' Learners also offered remarks concerning the correction of faults when writing the introduction, thesis, claim, and conclusion.

Learners recognized the need to 'introduce the reader to the topic' (Student M), 'explain more in the introduction so the reader can understand what i mean' (Student D), and 'revise some of my intro' (Student Q). Additionally. Participant L referenced the author of the passage, acknowledging, 'I need to introduce Emerson first before jumping straight into my thesis.' Also in relation to the thesis, Student O explained the requirement of the learner needing to 'add specific rhetorical devices to thesis,' and Student H explained the obligation of the participant 'to take out the examples from the passage and fix my thesis.' Furthermore, Student B discussed, 'that I need to work on explaining what my thesis statements,' and Student M planned to 'add a thesis and analyze the prompt of the essay so that I can make sure I include everything.' Learners also examined matters related to the claim. For instance, Student K explained, 'I needed to identify my claim more,' Student I suggested the participant needed to 'connect my examples and claim better,' and Student N expressed, 'I need to have a better claim and a reasoning underlying the claim.' Participants also articulated plans to, 'further introduce

the reader to the topic and connect examples to the claim' (Student M), and 'have a longer essay connect my claims to the intro and explain them' (Student Q). Lastly, learners discussed plans of improvement for the conclusion. Student Q acknowledged the individual arranged to 'add a conclusion' to the essay. Additionally, Student F recognized 'my conclusion doesn't match with my introduction,' adding more specifically, 'I needed to connect my thesis with my conclusion, especially with the point where I talked about Cassie I need to explain how her character promoted social progress.'

Several participants also noticed a lack of connection within the conclusion; Student J explained, 'I need to refer back to the thesis in my conclusion,' and Student N formulated a plan 'to not introduce any new topics in the conclusion and connect examples back to thesis.' Concerning the meta-cognitive strategies scale, participants demonstrated a forthright perspective on comprehension, in regards to monitoring and competence in recognizing deficiencies in comprehension and proficiency in detecting and correcting behaviors related to regulating. The final scale on the MSLQ addressed cognitive strategies and included rehearsal, organization, elaboration, and critical thinking.

The researcher appraised the elements of the cognitive scale collectively due to the smaller number of related responses. According to researchers, rehearsal, organization, and elaboration involved basic-to-complex skills ranging from grouping or ordering items, underlining or highlighting material, note-taking, organizing ideas, summarizing, and making connections (Hatcher & Pond, 1998; Pintrich, 1999; Pintrich et al., 1991; Pressley et al., 1987; Weinstein & Mayer, 1986). Moreover, critical thinking subsisted of strategic choices concerning cognitive skills undertaken by students, as well

as the control of thinking processes related to understanding ideas, solving problems, and constructing evaluations (Ennis, 1987; Gurcay & Ferah, 2018; Ku & Ho, 2010; Pintrich et al., 1991). The MSLQ results revealed participant thoughts remained relatively consistent from the pre to the post. The average scores for rehearsal, elaboration, and critical thinking decreased to a small extent and the average scores for organization steadied at 4.5 and 4.51. Two themes emerged from the student comments; learners perceived cognitive strategies as a means of implementing feedback and as a mechanism for progress.

Utilizing Cognitive Strategies as a Means of Implementing Feedback

While most student remarks regarding the implementation of feedback originated from the feedback forms, Student Q outlined an individual process of using cognitive strategies and subsequently applying feedback in the interview. The participant detailed,

> So basically what I would do is I would think of what I wanted to write, and I'd take it through a process of how would it improve or how would it be understood? And then I will write it down and then I will read over and basically just see if it makes sense to what I'm writing about. I will basically apply the feedback to what I was writing, like if I knew well, if I got feedback that I needed to change this and I probably need to explain it more. I will go about How should I explain it more? And how would I explain it more?

After receiving feedback, some participants addressed specific strategies on the feedback forms concerning how the individual planned on improving or practicing. For instance, Student D listed an abundance of skills, illustrating, ‘to improve my next performance i am going to take notes, re-read, ask more questions, and make sure im

giving the right information to what im being asked to do,' adding the participant planned to 'read more carefully so that I am sure I know what im learning, study more, quiz myself, underline words I dont know and read the sentence to figure out the meaning of the word.' Student Q also concluded, 'I need to re-read what I type to see if it makes sense.' Learners also reflected on future applications of cognitive strategies. Participant B detailed, 'I need to develop my comprehension skills because I can tell you what happens in a movie or book, but I am not able to tell you the deeper meaning of the movie or book,' Participant F expressed, 'I will apply this when I rewrite my essay, there are a few things that I need to make clear and also I can use more complex vocabulary,' and Student A conveyed, 'I need to explain my thoughts on the paper and not just in my head.' Additionally, Participant M illustrated, 'I will use the feedback to add the missing elements into my essay any futre writings,' Participant F highlighted, 'This is helpful for me because I struggle making a connection between my thesis and conclusion. With the feedback that I got I can practice improving this,' and Participant P detailed, 'I will apply it during the exam and look for common use of words when I read my papers before submitting.' Similarly, Student O recognized, 'I also need to research more to get a better understanding off the facts I know,' adding, 'I should practice writing more to improve my next performance task.'

Other students retroactively addressed the application of knowledge. Student I stated, 'I was able to apply all i learned from rhetorical analysis here,' Student K explained, 'I felt like since we did so much practice with the Rhetorical Devices I knew what I was expected to do,' and Student M contributed, 'It was hard at first but I

understood after I looked at another example.' Participant E detailed employing strategies in and out of the school environment, illustrating,

> The appeals - appeal to credibility, authority, emotion, logic, those all helped me even like now with stuff I'll be working with about different Nintendo games with a friend online and I'll be able to completely deconstruct their argument just they don't like it but it's fun. And at the end of the year, I'm able to I'm still able to apply that stuff just much better. I debate instead of just blatant arguing.

Only one student candidly revealed a lack of implementation disclosing, 'Im going to be honest I do not go back and look I just wait for more feedback' (Student G). Despite one inconsistency, learner remarks on the feedback forms concerning cognitive strategies indicated students viewed the sub-scales as a mechanism of resolving mistakes addressed in received feedback. Participants also perceived cognitive strategies as a technique for improving achievement.

Adopting Cognitive Strategies as a Mechanism for Progress

Students expressed thoughts on cognitive strategies differently in the feedback interviews, consequently resulting in the emergence of a separate theme. Participants mentioned some skills specifically, like organization and critical thinking, through the lens of advancement on performance tasks, in the APELC course, and in school overall. Student N expressed confidence in and the development of utilizing strategies, proclaiming, 'I definitely did great with that . . . Good timing, organization, critical thinking very much on top of all of that type of things, and it definitely got better as the school year progressed. Definitely take great with it.' Participants referenced organization as a tool for progress explaining, 'Organization. Like I said, I did use the rubric and then

calculated how much time was going to use in everything and that helped me a lot' (Student F), and 'Um definitely was a little was very unorganized at the start of the year. But like as being in the class and like also taking [teacher's name] class like that helps with the organization that helps you get on track' (Student C). Participant C also humorously described a cognitive element, reflecting, 'Critical Thinking definitely would like writing assignments and definitely some of the reading passages that we did. Critical thinking was definitely critical haha.'

Other learners chronicled using cognitive strategies indirectly. For example, Participant F explained, 'over the year when we were learning how to improve and what we actually had to do, I focused on the rubric,' adding, 'And then also I found out like how much time I should spend on each thing. So like reading, it should take like ten minutes to skim over and reread and highlight important things.' Student E described regulating with cognitive strategies, reporting, 'It's, I know how certain teachers regulate and stuff like due dates, how some of them are just recommendations, how others are strict as all get out, and just plan more accordingly. Based on that what takes priority.' Similarly, Participant P reflected on the evolution of the learner's cognitive regulation, Then like during the school year as you like kept helping us out and like kind of like inspired us to care a little more like towards the end of the school year everything got like a lot easier to like, organize, figure out, respond to everything started making a lot more sense. So like as you regulate yourself more and like develop like a process it makes it a lot easier to get things done and understand why more.

In addition to student comments on the feedback forms demonstrating the view of individuals utilizing cognitive strategies as a technique for fulfilling feedback, remarks

from the feedback interviews also articulated the perception of participants using cognitive strategies as a tool for improvement and progress. The habits of mind data affirmed students valued organization (11/65) and critical thinking (15/65) recognizing deficits in comprehension.

Summary

The researcher examined and analyzed the large amount of data concerning Research Question 2, first delineating student remarks from the feedback forms and feedback interviews into the proscribed scales and sub-scales of the MSLQ, and then deducing themes from within the categories. Additionally, the researcher addressed the raw results of the pre- and post-MSLQ along with the responses from the Habits of Mind data. Themes emerging from the data set results answered how students perceived self-motivation and subsisted of learners featuring tiered levels of self-efficacy and learning beliefs, ascribing higher value to external over internal motivation, fostering a growth mindset, promoting differing attitudes towards tasks, and demonstrating stress related to time. Correspondingly, emergent themes answering how students perceived self-regulation included students recognizing the importance of excelling at resource strategies, portraying a forthright perception of comprehension, displaying error correcting behavior, and utilizing cognitive strategies as a means of implementing feedback and as a tool for progress.

Thematic Analysis of Research Question 3

Research Question 3: How do students perceive racial bias in feedback before and after VLF? The researcher analyzed the Likert responses and open-ended comments on the pre- and post-feedback questionnaire to answer Research Question 3. The pre-

feedback Likert answers provided information concerning student perceptions of racial bias before participating in VLF. Student Likert and open-ended responses on the post-feedback questionnaire offered insight into participant opinions on racial bias focused more specifically on VLF and the APELC teacher after engaging in the feedback process. Two themes emerged from the Likert and open-ended responses: conviction against racial bias and teacher efficacy.

Conviction Against Racial Bias

The researcher compared the pre- and post-feedback Likert responses, shown in Table 16. Before participating in VLF, many students already "strongly disagreed" with the feeling of racial bias in feedback; however, some students only somewhat disagreed, and some chose neither agree nor disagree. The neutral answers possibly indicated learners had not encountered a question concerning racial bias in feedback before the questionnaire, or simply did not possess an opinion.

Table 16

Pre- and Post-Feedback Likert Responses

Pre-Feedback Question: I have felt as if a teacher's feedback was positively or negatively biased because of my race.				
Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
0	0	4	2	11
Post-Feedback Question: I have felt as if my AP Lang. and Comp teacher's feedback was positively or negatively biased because of my race.				
Strongly Agree	Somewhat Agree	Neither Agree nor Disagree	Somewhat Disagree	Strongly Disagree
0	0	1	0	16

After engaging in VLF, the researcher specified the question, adding the element of the APELC teacher. As seen in Table 16, students once again "strongly disagreed" with the perception of feedback feeling biased, suggesting categorical confidence. In the post-questionnaire, students received the opportunity to expand the Likert response with a

comment. Students portrayed an absolute belief in the teacher demonstrating zero racial bias in the individual remarks. A number of students backed up the Likert response with a simple answer. For example, Student K stated, 'Never happened,' Student J explained, 'Our race doesn't effect our feedback,' and Student Q suggested, 'None of the feedback had anything to do with my race.' Other students contributed conclusive responses. Participant A communicated, 'I don't believe my teacher was biased in any way regarding race,' Participant N expressed, '[Teacher's name] have not shown discrimination towards her students,' and Participant O suggested, 'my teacher has not done anything to imply that they are biased because of my race.' Similarly, learners voiced 'She isn't like that, She teaches all of us equally' (Student L), and 'My teacher has shown no bias to any student for any reason.'

Other students offered more specific illustrations. Participant H explained, '100% percent of my class is African American. some of us gets good feedback . . . some get not so good feedback. It's not because of our race . . . it's how we're doing academically,' and Participant I pointed out, 'There are students of different races in this class and it never seems like the teachers feedback is bias. Also, the feedback as a class is never targeted,' indicating racial bias in feedback did not occur in classes with different racial demographics. Additionally, Student P demonstrated, 'She does not judge anyone based off their race. She has not made us feel less lan because of our race,' and Student B concluded, 'I do not view my teacher grading my assignments based off whether or not she likes the color of my skin.' In addition to strong feelings against racial bias in feedback generally, participants confidently perceived no racial bias from the feedback

received from the APELC teacher. Students also offered remarks concerning the teacher's efficacy regarding feedback and positive relationships in the classroom.

Teacher Efficacy

In addition to emphasizing a lack of racial bias in feedback, participants also underscored the teacher's efficacy related to comments and remarks. Student F explained, 'When asking questions about an assignment she always answers my questions completely. I also feel like my writing has improve immensely because of my teacher,' Student H illustrated, 'I know when my teacher is giving feedback it's for the sake of our own good,' and Student A highlighted, 'She presented the feedback I needed in regards to the assignment.' Learners also testified to positive relationships with the teacher. Participant B illuminated, 'she has always be caring, kind, and fair to all of her students.' Furthermore, Student C expounded,

> She's always there when I need to talk to her. We have really open dialogue about any and everything. We have frequent conversations on the daily about any and everything, we have a really great relationship. Always eager to answer any questions or concerns I have.

Student N combined the sentiments concluding, 'She gives feedback in an appropriate amount of time. She is a great teacher.' Overall, participants viewed the teacher as possessing competent feedback practices and expressed evidence for constructive student-teacher interactions. Before and after engaging in VLF, students perceived racial bias in feedback as practically non-existent and asserted confidence in teacher feedback. The researcher addressed possible reasons for the homogenous nature of the participants' comments in Chapter Five.

Summary

The two themes emerging from the analysis of Research Question 3 indicated students possessed strong opinions opposing the presence of racial bias or discriminatory practices in feedback, both in the individuals' educational careers and in the APELC classroom. Participants also suggested the instructor, in addition to not displaying bias, also provided feedback with fidelity and regard for learners. The researcher analyzed possible justifications for the comments and implications for practice in Chapter Five.

Thematic Analysis of Research Question 4

Research Question 4: How do students perceive Motivational Interviewing? The researcher examined MI interviews, feedback interviews, and MI conversations to answer Research Question 4. Two themes emerged from the open coding; first, students perceived MI as promoting motivation and contributing to growth, and second, participants viewed MI as a personalized, encouraging, and enjoyable activity. Table 17 outlined the researcher's interview questions.

Table 17

MI-Related Interview Questions

MI Interview	Describe your experience of participating in Motivational Interviewing. Be specific and provide examples. Describe your levels of self-motivation and self-regulation before and after participating in Motivational Interviewing. Be specific and provide examples. Describe your academic life throughout the process of participating in Motivational Interviewing. Be specific and provide examples. If I were to offer this again next year, would you be interested in participating again? Explain why or why not.
Feedback Interview	Describe your self-regulation and self-motivation after participating in both MI and VLF.

Note: The researcher authored the interview questions.

MI Promoting Motivation and Contributing to Growth

Learners offered individual thoughts in the MI interviews on MI's role in stimulating self-motivation. Several students reported feeling ambivalent at the beginning of the year and explained participating in MI increased academic motivation. For instance, Student D expressed, 'when we don't meet, I think about the meetings, and like getting my work done. Because I'm lazy. I've been pushing myself to do more work,' indicating the memory of MI conversations contributed to boosted motivation. Furthermore, Participant D detailed changing opinions on plans after high school, articulating, 'like, it was in between. Like I care but I didn't care. It wasn't really, important to me. Like, college in college. Now that I know more about it, I actually do want to go.' Student B communicated comparable sentiments, signifying, 'I was doing assignments. I was, but it was hard for me to stay motivated to do them or not even motivated because it's not like I didn't want to do it. Like it was hard for me to stay consistent.' However, Participant B explained the benefits of MI, observing, 'I feel like these meetings help me motivate myself too because I was struggling completing the assignments,' adding, 'these meetings definitely helped me realize that I definitely need to get my stuff together.'

Similarly, Student G observed, 'the self-motivation really before it wasn't, it wasn't there. Like I was just ready to get over everything,' adding, 'but I think now my goals right now are better than before because they actually be thorough and it's something better to work towards.' Participant H also mentioned objectives, remarking, 'I actually start setting goals for myself and doing them and then for the second one. I've

got more organized and started taking the time to actually do my work.' Additionally, Student C detailed the activation of motivation, explaining,

> I think we had a meeting. And like after that meeting I had a talk with my mom at night. And like, it just like turned around and that, that really woke me up like about school because I was thinking like, I wasn't, I didn't know that most jobs look at your high school transcript, like your high school transcript was kind of like a big thing. And I didn't think that was a thing. I thought it was just like everybody was just kind of like talking. No it's a definitely a big thing. So I tried to, I'm trying to get back on education and I think with these meetings definitely has helped me.

Participant F also provided an in-depth observation of feeling 'closed off' and 'in a funk' when first starting the MI conversations, pointing out, 'I wasn't really motivated. And then later as like time progressed, and then we had our second interview, I started like organizing my life, being more like happy you know, and then joining more clubs,' adding, 'And like I'm finally getting my life together. And I have, I'm like motivated to do more and I'm more excited to do more that's coming in the future.' Learners also commented on the motivating aspects of MI in the feedback interviews. Participant A reported, 'the MI Kinda got me, it's kinda got me deeper into it, kind of got me into a deeper thinking and kinda got me like, trying harder. It made me try harder, did make me try.' In conjunction with VLF, Student F remarked, 'I feel like it actually helped me get it done because then I'm speaking it into existence. I'm like, I'm going to do this. So I will do it.'

In addition to promoting motivation, students also perceived MI as contributing to academic and personal growth. In the MI interviews, Student C reflected on the challenge of AP classes, stating, 'I was confident, you know, I think I was more cocky than confident,' adding, 'this is the AP class, you know, like, you got to step your game up.' Participant C's concluding thoughts on academics included, 'I feel like it's definitely grown.' Student E also remarked on academic improvements with the help of MI, explaining, 'I do take what you say in class, like, to heart. I, it's hard for me to say throughout the years, what I have learned but this year has been noticeably different,' adding, 'my main problem class has been this one grade-wise. So sitting down with the one who teaches it does give that sort of, like I said, foundation to more stably fix it.' Participant F also examined the connection between MI and more difficult coursework, observing, 'So I feel like my work ethic has been more improved than last year, because last year I came out pretty lazy,' adding, 'I wasn't really challenged like now. So, I feel like now that I'm more challenged, I'm more strive to do more work and quality work.' Furthermore, students associated MI conversations with enhanced performance, stating, 'I had a few C's, A's, B's, and C's now. I have all A's and B's' (Student H), and 'these meetings, helped me catch myself to do better, which is why majority of my assignments got turned in' (Student B). Participant B also linked MI to academic progress in the feedback interview relating, 'And with the grades I've got I got accepted to multiple colleges and two of them gave me scholarships. So I was just like, I'm just, I'm gonna continue and get better and better.' Additionally, in the MI conversations, Student B answered the question, "do you feel like you've achieved those [goals] for the end of the

school year?" stating, 'I definitely do feel like I achieved it. I feel like I've got a bunch of work done and I was like, so proud of myself for doing that.'

In addition to academic growth, students also showed progress personally while participating in MI. Student D communicated, 'I feel it's helpful. It's helping me… actually talk out loud about it,' and expressed the desire to continue MI 'to show how I improved from this year to next year,' demonstrating motivation for continued improvement. Participant A discussed the evolution of personal growth, declaring, 'I honestly and truthfully think that it helped that everything that we went over I always tried to, to work on. Like, with the, we're working on my attitude. I tried my best with the strategies,' adding, 'I mean it helps well to where I didn't have to use it specifically,' conveying the individual incorporated the strategies into daily life. Furthermore, Student F offered a meticulous look into the individual's personal advancements describing, 'I started trying to organize because I was like this is my future,' 'I involved myself in soccer,' 'And then I had a meal plan. So, I put alarms on my phone like eat this meal eat this meal,' and, 'I like my friend group more now than I had before.' While Participant A acknowledged improvement, the individual also recognized the remaining work necessary, explaining, 'I feel like the rest who I was before who I am now is growth, I guess you could say. But some of the specific details they didn't get as better as I wanted them to,' adding, 'But I don't think that was a you I think that was more of me. Not putting in as much work as I should,' indicating the student retained responsibility for personal progress. Additionally, in the feedback interview, Participant E characterized the MI conversations as a 'really a good platform, to iterate a lot of things. Like, just my emotional, academically, home life, just basic stuff like that.'

Student A in particular expressed feelings or instances of personal growth in the MI conversations. When the coach pointed out the participant's progression, the student observed the growth happened 'quickly - I thought that it would take a little longer.' Additionally, Participant A commented on the process of maturing, reflecting, 'I feel like I've grown in some parts and declined in other parts like, like some stuff of the stuff we've been working on. I feel like I'm doing better' adding, 'you know, my attitude, I feel like, every everything that I really wanted to work on, I did like I still got a little stuff to work on, but as a whole, I feel like I'm growing.' Furthermore, Student C declared in a positive affirmation, 'So I said at first that although I'm growing as a person, I will be true to myself no matter what happens.' The participants' remarks established MI as a growth process-oriented intervention. In addition to perceiving MI as fermenting academic and personal advancements, students also viewed the conversations as individualized, inspiring, and gratifying.

MI Acting as a Personalized, Encouraging, and Enjoyable Activity

Several students suggested one of the benefits of MI included the personal nature of the intervention. Participant E explained, 'Well, the motivation part from myself comes to be able to just face to face talk to a higher authority and sort of come up with a plan like we just did,' adding, 'And that sort of lays down foundation for how I feel about things. Just Oh, this is much more solid now. I've got that backing of the higher being.' When answering whether to participate or not again the following year, Student G expressed, 'Yes because I'm gonna say you won't be my English teacher next year. It'd be good to see you even more around my senior year so, yeah,' demonstrating the appreciation for the individualized nature of the intervention. Student C expressed

valuing the personalized quality of MI in multiple respects. The learner appreciated, ‘Like I think for you like as me as a student as me as a person like you got to see like for something like my personal life, my work life like how I am outside of school,’ and speaking directly to the MI coach reflected, ‘you've been there to talk to,’ and, ‘And you definitely helped me like a lot throughout the year. So, I want to thank you because you, you've helped me through some stuff you, you definitely been there. So yeah, this has been very helpful for me.’ Additionally, in the feedback interviews, when comparing MI and VLF, Participant C disclosed,

> So, I know with the motivational interviews they definitely were a little bit more personable than the schoolwork so definitely like a boost of confidence, like just overall boost of all of these things because it was more like one on one, and like not necessarily when there's a class around that it's not one on one, but it was just like a more personal connection.

Moreover, Student C observed in the MI conversations the intervention created a bond beyond the student-teacher relationship, explaining, ‘We have a different relationship. I wouldn't say friendship, but like we have a different relationship.’ Student comments from the data indicated learners valued the personalization factor of the MI intervention.

Furthermore, participants perceived MI as inspiring and enjoyable. In the first MI conversation, the coach asked students how often the participants would like to meet. Students responded with, ‘It could be once or twice a week’ (Student B), ‘I think once a week’ (Student H), ‘Once every week, every other week’ (Student G), and ‘Often, I’d rather do it more often’ (Student A). The desire of participants to meet more frequently

indicated students valued and enjoyed the sessions. Additionally, the MI interviews revealed 100% of students answered ‘yes,’ when asked, “If I were to offer this again next year, would you be interested in participating again?” Participant B elaborated, ‘I feel like it definitely helped. As far as as far as encouragement and motivation. So definitely next year, if I would be the year I needed the most no question. I would definitely be a part of it,’ and Participant E voiced, ‘Anything to help your studies out . . . it was fun to actually be able to just sit there and experience that it was nice.’ Additionally, Student C remarked, ‘I really enjoyed this like, I feel like we got to know each other like better like we already had a decent relationship coming into the school year, but it really gave like a different perspective,’ and Student H commented, ‘its good, I liked it for the two times we did it.’ Participant A expressed, ‘I would like to do it next year,’ adding, ‘I definitely feel like I like who I become working on certain things. And I feel like I've had I have more to work on. And I would like to work on it with you. Because you helped.’

Learners also reflected on the relaxed atmosphere of MI detailing, ‘it was very calming, I guess you could say. Yeah, it was calming, and it was a little fun. It was an escape from advisory sometimes’ (Student G), and ‘these alone have been really good pick mes up’ and ‘it's nice to be able to just sit down, talk in a formal manner, decently professional manner too, and just explain what I want to do because it's hard to just keep it in here [motioned to head]’ (Student E). Participant F outlined the encouraging aspects of MI detailing,

> I feel like these interviews even though I just had three, I feel like it really helped me organize my life in perspective, even though I write it down. It's different when you say it out loud, because you're like, Oh, now I actually need to do this.

> Now. I actually need to do that. So, I feel like this work actually inspired me, especially with like, looking at new colleges and stuff. It really inspired me and getting more involved in more things, because I get to say them out loud. And be like now I gotta do it.

Student E also concluded in the feedback interview, 'That was just good. It was nice. It was, like I said, a good platform.' In addition, learners perceived MI as encouraging and enjoyable in the MI conversations. Students expressed feeling emboldened after meetings, explaining, 'I felt like this was productive. Well, better than I usually do on my advisory' (Student E), 'Made me feel kind of good. Look at me' (Student A), and 'So better. Feel better, more organized' (Student C). Moreover, Participant A described enjoying the conversations in multiple comments, articulating, 'I kind of I feel like I was waiting on the session. It's nice talking to somebody that's not, that I don't really, you know, see on a daily basis,' and 'it's all confidential, so like I can say anything,' adding, 'That's why I like these sessions so much. I feel like I just this is a place to vent.'

Summary

The data from the MI interviews, feedback interviews, and MI conversations revealed student opinions of the intervention as promoting motivation and contributing to growth. Additionally, participants viewed MI as individualized, inspiring, and pleasant.

Thematic Analysis of Research Question 5

Research Question 5: How do students perceive self-motivation and self-regulation during and after MI? The researcher utilized a coding process similar to the thematic analysis of Research Question 2, first organizing student comments deductively

into the MSLQ scales and sub-scales (see Figure 2) and subsequently open-coding. To answer Research Question 5, the researcher examined the MI interviews, feedback interviews, and MI conversations. Seven themes emerged from the analysis concerning self-motivation and 11 themes emerged regarding self-regulation. Whereas Research Question 2 focused solely on self-motivation and self-regulation in regard to academics, the results of the data analysis for Research Question 5 involved topics ranging from education to work to personal issues. Numerous themes surfaced related to self-motivation. In regards to expectancy (self-efficacy and control beliefs), students possessed differing views on responsibility, exhibited self-skepticism, and demonstrated self-awareness and confidence.

Differing Views on Responsibility

In the MI conversations, students held one of two positions on responsibility; either outcomes resulted from external forces or consequences developed, due to personal actions or behaviors. Students discussed difficult classes, busy schedules, work, other students, and adults as external forces associated with academic performance. Participant F described an intense schedule of challenging coursework, explaining, ‘I have four. I had AP Calculus, AP Seminar, and AP Government and Politics. And then for government, I had to take also the Constitution tests and the EOC, and that’s why I'm so behind on work.’ Furthermore, Student C simply stated, ‘And I've been busy so it's like, I'm tired.’ Participant B characterized the addition of a job as a contributing factor to changing behaviors, explaining,

> Before I had a job, doing things were way easier. So, whenever I didn't have a job, I will always have the ability to say okay, when I get home I'll finish this.

> Like I said, maybe I will do this. But with my hours that I have I in my job, and I only have a few days off. It just does not work that way anymore. Because it's like whenever I do get a chance to sit down, I just want to sit down and like I don't even watch TV for real no more.

Participants also designated other people as causing poor outcomes. Student H voiced struggling in class because of 'the people in the class. It's like, they didn't give the teacher time to teach how to do it - all they do is talk,' and Student E articulated challenges with the school play, communicating, 'it's partly our director's fault. I will say he's been inconsiderate. The first day of tech week or hell week as we call it. He didn't feed us as he promised he would.' However, participants suggested personal responsibility for outcomes, as well in the conversations. Student E signified the individual's scores did not match intelligence when discussing understanding material and knowing answers yet, 'unfortunately, my grade does not reflect that.' More positively, Participant H wrote an affirmation declaring, 'I have the power to become a better person each and every day,' and Participant F detailed a comprehensive plan for improving the individual's energy levels, revealing, 'I have a meal plan that I did last year during quarantine, so I'm following that' and 'I decided to be more active so that's why I joined soccer so I can get up and then after school I'm not like really tired because I've already played like sports,' adding 'I was more energized when I was playing than just going home, doing nothing.' Student B offered an important insight on academic personal responsibility asserting, 'the thing is, if you want something to happen, it doesn't happen for you. So, it's really me that's stopping myself because can't nobody else do my schoolwork for me.' Participant C broached a similar stance in the MI interview,

explaining, ‘this is the AP class, you know, like, you got to step your game up.’ Learner comments indicated students possessed dueling perceptions of responsibility, either blaming external forces or individually answering for outcomes.

Viewing the Self with Skepticism

Students held a skeptical attitude toward the self and personal capabilities. Several participants mentioned working on the self when evaluating important life values. Student F expressed a desire to improve self-esteem, explaining, ‘I just, I picked that because I felt like I have problems with self-esteem. So, it'd be nice to feel good about myself,’ Student A communicated, **‘**I want to make a goal for self-acceptance and self-esteem. All the selfs,’ and Student G disclosed an eagerness for ‘self-acceptance to accept myself as I am. I say that so I won't be insecure because I'm being insecure sometimes’ and ‘self-esteem. I picked that again, about insecurity so I can feel good about myself.’ Student A similarly stated, ‘It's just that I feel bad, like it makes me feel bad about myself. Which goes into self-esteem.’ Furthermore, Participant A elaborated, ‘I don't think I can do the work even if on top of the class,’ and Participant C illustrated, ‘There's just a lot of stuff there that like I'm personally insecure about.’ Learners also discussed skepticism concerning abilities more specifically.

Students voiced doubts about challenging classes, citing, ‘I don't think I should have been put into the AP course’ (Student E), and ‘So the AP classes and chemistry, it's hard for me this year because I'm not used to having all my work piling on top of each other,’ adding, ‘Like chemistry. It's kind of hard for me because it got a lot to do with math, and I'm not that good at math’ (Student G). Additionally, Participant A revealed,

> Do I think I can do this work? No. Honestly, I don't know. That might be a deep one, like, coming from when I was like, little. Whenever stuff started getting hard for me. Maybe, I don't know. I don't know when stuff started getting hard. I feel like middle school was fun. I had a couple of classes that was hard. I was taking advanced math. High School. I guess that's when it really started. Yeah, High School.

Student F remarked on uncertainty concerning exam performance, reflecting, ‘I think it was okay. Cuz the first two essays I started like having a lot of motivation’ and ‘then at the end, I saw I was running out of time, so I was kind of like, I didn't get to finish it. So, I stopped in like the last paragraph.’ Participant C detailed a reluctant thought process concerning a certification test, deliberating, ‘I'm still on the fence about it. I think realistically the chances of me getting my CCNA is not great. It's really not,’ adding, ‘So do I want to invest my time in something where my possibilities of getting in is what 13, 14%?’ Moreover, Student F ruminated on multiple areas of skepticism, including academics, athletics, and extracurriculars. In the MI interview, the learner expressed ‘I thought it was going to be more calmed down just because we got back from COVID and then the work was good at first and then as I kept doing it, it started getting more challenging,’ determining, ‘I wanted to like skip over it. I was like, I'm not going to do this, like this is just too much work. And then I got three books and I was like, no, I can't do this.’ Participant F also expressed doubt concerning success in sports, explaining, ‘My soccer season just ended. We won conference, so I was very surprised, because I didn't think, it was a lot of drama at first. So, I didn't think it was gonna work out like that.’ The individual remarked on concerns regarding capabilities in making a speech for

the National Honor Society induction ceremony, detailing, ‘I was really nervous because we had a lot. It was more people who showed up and I thought, I was just like, nervous I was gonna mess up on the speech,’ concluding, ‘When I'm like, looking up and looking at people, it's like, I can't do it.’ Despite some self-skepticism, students also expressed self-understanding and assurance.

Demonstrating Self-Awareness and Confidence

Participants showed a keen sense of self-awareness in the MI conversations, leading to statements and reflections of confidence. For instance, Student C discussed the individual’s personality and academic ability, articulating, ‘Okay, but it's like, I know how I am as a person,’ and ‘Academically, I don't think I would ever have to be worried if I for real put my mind to it. Like, I know I'm not no dummy.’ Participant G continued addressing self-esteem discussed previously, remarking, ‘But I don't know, sometimes I have my days when I be insecure and other days I'm just like, there's nothing wrong with me,’ indicating an awareness of shifting personal attitudes. Additionally, Student G revealed, ‘With inner peace, I cannot relate to what the card say. I don't have personal peace’ during a value card sort activity. Furthermore, Participant A voiced cognizance of an individual impediment, explaining, ‘I have an attitude sometimes because I'm really strong-minded about what I want. And like sometimes it can come off harsh when I don't really achieve that goal,’ demonstrating the inclination for improvement.

Despite conveying struggles with mental health, Participant E detailed recognizing how to overcome obstacles, relaying, ‘I've gotten better. It's just that reoccurring thought that things get better. I just keep playing it back in my head. I've gotten through worse. I can do this.’ Student A also addressed grappling with challenges,

stating, ‘which is why I’m still afloat, I can do it but I don't want to,’ adding, ‘I didn't know myself in fourth and fifth grade. Like I know now.’ Additionally, Participant A reflected on several personal hindrances related to friendships and relationships,

> At first everything was just, but now it's just kind of, it's getting better. Yeah, like I said, the problem I was having last time where I felt like an object. I don't feel like that no more because I feel like I had the confidence and heart to tell everybody that I just don't want anything. Yeah, I don't want to have negative friends anymore.

Student F appreciated the positives of self-awareness commenting, ‘I like people who feel like I'm a person they can like rely on and trust to talk about their problems.’ In addition to expressing self-awareness, participants also exuded confidence in several areas including academics/intelligence, future plans, and personal qualities. When discussing grades, the coach asked Student B “How confident are you that you’ll achieve your goal of all B’s?,” and the learner responded, ‘out of 10 I give it a seven.’ Other learners also displayed confidence in academics, reporting, ‘I have complete faith that I will bring my grades up before the end of the semester’ (Student G), and ‘I trust that one day all my goals will be achieved’ (Student H).

Participant F addressed the support of MI and a research class in helping overcome public speaking fears, stating, ‘I feel like it helped me and also with [teacher’s name] class helped me talk in front of people. So, I felt more confident. I knew I wasn't gonna like mess up. It was all in my head.’ Student E acknowledged in the MI conversations and MI interview assurances of intelligence, declaring, ‘I've got a bit of a head on my shoulders. Anyone will tell you that. Oh, yeah. Him, he’s smart. Got a whole

library up there. I like to learn stuff,' and 'It's like Albert Einstein, those guys. Everyone said they were crazy until decades later realized, you might be on to something. I feel like one of those guys because I taught myself how to multiply at like age four.' In the feedback interview, Participant F concluded MI and VLF contributed to greater confidence, explaining, 'So after participating in them, I feel like it actually helped me get it done because then I'm speaking it into existence. I'm like, I'm going to do this. So, I will do it.' Equally important, learners expressed confidence in future plans.

For instance, Student H visualized 'being successful in college. I want to be a lawyer or orthodontist, and having my own business. I just like helping people. I like that type of stuff and I think I'll be good at it,' adding, 'Owning a business boosts your confidence because you got something going for yourself. You're not working for nobody else.' Similarly, Participant B articulated in an affirmation, 'I said that I am ready to do things, big things in life, such as finishing school and develop my own business.' Student C also divulged, 'When I pass the certification test, then I'll have endless opportunities for a start-up. But I also got my cybersecurity certificate early this school year. So already a guaranteed job coming out of high school as it is.' Lastly, learners provided confident opinions regarding individual qualities.

Student C focused on a joyous attitude expressing, 'I have the resolve I need to be happy and successful,' adding the participant wished to 'just be myself and be happy.' Student E articulated confidence in the individual's characterization as a good friend and a proficient actor. Concerning friendship, Participant E explained, 'I'm there for people to unpack what they need to unpack stuff with. I like to listen to people. They have a problem. They go to me for it. It's nice.' Furthermore, Student E recalled, 'I was brought

to [principal's name] office to receive a reward for just being a good person. I guess if I needed any reinforcement that I was doing a good job, that would be it.'

The participant also addressed the spring play explaining, 'I've got 12 years of acting experience on my belt,' and 'I've been told that I am the "what to do." The very first few days I was used as an example. "You see, you kind of have the character like him. You gotta act like that. That is what you're supposed to be doing. Be like him."' Despite some participant comments describing different levels of responsibility, others imbuing self-skepticism, and still, others depicting the self-awareness of negative qualities, students also remarked on positive individual aspects and confidence in academics, the future, and personal traits. Themes also emerged about the perception of self-motivation concerning value (intrinsic motivation, extrinsic motivation, task value) including apathetic motivational attitudes, external forces as major motivational factors, focused intrinsic mindset, and visualizations of the future as positive motivational components.

Expressing Apathetic Motivational Attitudes

In the MI conversations, numerous students demonstrated detached thoughts on motivation and learners vacillated in dedication to schoolwork. For example, Participant B detailed, 'I just know that I got to get it done. It's also like trying to motivate myself. I'll be like, okay, when I get home, like the days that I'm off work, I'm gonna do these assignments,' however, 'then I wind up starting them but never finishing them. It's not like I don't do no work at all. It's just that it's draining.' Similarly, Student A outlined a wavering perspective, stating, 'Stuff that mattered don't really matter no more because like I said, it's just a mentally checked out kind of thing. I feel like I still care about them.

Like I don't try as hard with a lot of stuff though,' adding, 'With school, going to class just seems so optional nowadays. I still care because I go to the important classes, the classes I know I need.' Student G proposed a comparable sentiment, explaining, 'I always been the type if something's hard I fight to try to keep going. But this year, I feel like I haven't done it like that for real. I want to keep trying to stay on track with it.' The learners' comments signified an aspiration to remain motivated, yet a lack of ability in sustaining actuation.

Furthermore, participants articulated generally apathetic perspectives. Student C illustrated, 'I know that I'm not really a stickler when it comes to like invest time in. I get bored really easily,' concluding, 'I'm ready to get out here. I'm ready to go,' referring to the end of the school year. Participant G mirrored the keenness stating, 'I'm just ready to leave school.' When the coach asked about the activities the learner participated in during an extended, unexcused absence from school, the participant responded, 'Nothing. I was literally sat in my room sometimes. The other times I went outside. And then came back into my room and did nothing. I was on my phone watching Tik Toks' (Student G). The MI interviews revealed congruent viewpoints. Student G elaborated, 'The self-motivation really before it wasn't, it wasn't there. Like I was just ready to get over everything.' Additionally, Participant F provided a detailed account of a lack of motivation at the beginning of the year, explaining, 'I was sleeping a lot, I would skip my meals, I would wake up late, and then I'd be tired throughout the whole day. And then I would just ignore assignments. I wouldn't do them for real,' adding, 'And then I would just like sleep a lot. And I feel like I was in a very bad place and I didn't have any like activities to do. I would just do nothing.' Student remarks indicated an acute sense of apathy,

addressed further in Chapter Five. While learners displayed some indifference concerning school, participants offered a large number of comments regarding external motivation.

Establishing External Forces as Major Motivational Factors

Learners exhibited a high level of extrinsic motivation in areas including teachers, friends, family, and money; students, however, identified grades as the single most important influence on motivation. Concerning teachers as motivators, Student A explained, ‘The good thing about it is they don't really mark me late as much as they should. I should not have the attendance that I have. So, I'm grateful for them, which is why I'm trying to do better.’ Additionally, Participant E cited, **‘**I love the teachers. You are very pleasant. You make it actually engaging to learn, but the work, dear God, the work, it's totally just, yeah, you engage, the work disengages.’ The learner comments indicated some students showed up to school and completed work for the sake of the external influence of teachers, not due to an internal drive.

Participants also referred to friends and family as motivational components; for example, Student A pinpointed, ‘My motivations were like my friends, my family, other outside things.’ Furthermore, Student E communicated, ‘My main emotional focus is I've got two friends, I just want to make sure they're happy because their emotional states are fragile, to say the least. And just, I like making them happy,’ and recounted buying the friends' favorite foods. Participant C also voiced the leverage of friendships on academics and future plans, explaining, ‘School tries to be that tries to be my main priority, so I keep it, you know, in check with academics. Um, but I wouldn't, I wouldn't say that I've had productive friends here.’ Student C elaborated on the difference between peers at the current school to a previous school, detailing,

> Like at my old school, there's clear difference. Like, yeah, my friends would kick it, go to the parties, they're drinking, do whatever they do, right. But still on Sunday morning after they're done with their hangover or whatever it may be, "Okay, let's get this essay done. Let's get this project done." You know, right. And it's like, well, here, it's like, okay, yeah, we kick it, we party but, like, not really the academic thing.

However, the learner also attended a technical school in conjunction with the studied school and expounded on the peer group, clarifying, 'They're probably my most valuable friends because they know what they're going to do with their lives, or most of them do, you know, they have an idea and they're trying to get plans for their future jobs.' The participants' remarks indicated the significance of positive friendships on motivation.

Students A and C also provided commentary on the role of family as motivators. Participant A's remarks featured the learner's mom revealing, 'She cares a lot. So, she's a reason that I always try to stay on top of everything, which can be stressful,' adding, 'Which is a good thing and a bad thing. Because I feel like every time I don't do the right thing, she like disciplining,' and, 'Attendance is like really important to her which I get it is important. But lately, it's just like, ugh.' Student C also described interactions with mom, disclosing,

> And like I was like I told her I got all A's last report card and she was like, "oh you coulda been doing it like da da da," and I was like, okay, but I wasn't doing it. Like I'm doing it now. And she's like, "I don't know like what you expect me to do. Like I'm not gonna jump for joy because you got A's," and I was like, I'm

> never expecting you to jump for joy. Do whatever you got to do, but at least like acknowledge and be happy for me like, it's like every time I have a conversation with her, she just gets an attitude or, it's like "It should have been expected or you should've been doing this da da da."

Another important motivational factor for students included money. Learners discussed earning currency in practical and futuristic terms. For instance, Student D characterized attaining a second summer job for the purpose of 'Just to have something to do. Oh and to get me prepared for senior year. So, I can start saving.' Additionally, Participant G justified working to save 'my money to buy my car at the end of next month.' Furthermore, Student C explained the motivation to continue working long hours, resolving, 'I mean, I be tired when I come home, but you know, the money's gonna be worth it. Like I know my paycheck gonna be nice.' Participant H validated the desire to own a business because the line of work 'gets you a lot of money.'

Another practical viewpoint originated from Student A in reference to higher education institutions providing scholarships; the learner affirmed, 'I mean, we'll see. Obviously, I'm gonna go where the money at because I'm not trying to be in debt, right first off in my life.' The participant also furnished a prospective view on the necessity of funds, illuminating, 'I feel like if I don't have a lot of money, I'm gonna be living a life I don't want to live. Having to live paycheck to paycheck just to get by, like, I won't have a better life,' adding, 'I want to have a better life for my kids. Eventually, I just want to have better and I don't want them to see me struggle to get by and think that that's how life should be.' In addition to teachers, friends, family, and money, the unique external force of motivation from a celebrity also appeared in one conversation. Student F

expounded on the desire to attend an Ivy League school, explaining, ‘I was also looking at the University of Chicago, I did some research and I saw that a lot of people went there. Even Obama went there. So, I was wanting to go there too.’ Despite mentioning the previous external motivators, learners clearly identified grades as the greatest force driving motivation.

Learners specifically discussed grades, rank, GPA, failing, and graduation. Some students addressed poor grades and the desire to raise performance scores. For example, Student A declared, ‘I care about my grades tremendously.’ Additionally, Participant E stated, ‘My Grades could be better I feel in my AP classes,’ Participant D articulated, ‘I just want to get my grade higher than what it is,’ Participant H disclosed, ‘I've got good grades, but some of them not is cool,’ and Participant G communicated, ‘Cuz my grades, all my grades dropped tremendously. So, I was like, dang like, I was like, I'm not that type of student. So, I need to go get back into school.’ Participant F explained an action plan for raising scores; when the coach asked, “And what was the thing that made you say, okay, I have to make a plan?,” the student responded, ‘When I looked on Tyler and I saw my grades.’

Other learners possessed a pre-emptive outlook and proactively planned on completing assignments ahead of time. Before attending a family trip, and missing multiple days of school, Participant A arranged the finalization of assignments prior to leaving, explaining, ‘I don't want to have to worry about my grades dropping when I get there.’ Similarly, Student B detailed the justification for concluding tasks before a school holiday, stating, ‘I'm gonna try to get it done before we go on break because I feel like once we come back from winter break I want to make sure that my grades is up to date.’

Additionally, learners commented on protecting high scores. For instance, Participant D voiced the student wished to ‘continue to have good grades,’ and Participant H determined a goal, ‘namely getting, keeping, maintaining good grades, and focus on my hard classes.’ Furthermore, learners pinpointed grades explicitly as the primary motivating agent. Student G revealed, ‘So I'm the type of student like my grades is what keep me to like, keep going. So, when I see them drop, I was just like, yeah, I gotta change it,’ and Student A concluded, ‘I mean if my grades go down, that's probably gonna be my last straw. This whole time I cannot let nothing slip at the very end. So that's probably my motivator.’

In addition to grades, learners mentioned rank and GPA as moving forces. Student F conveyed, ‘I want to put my rank up,’ and Student A expressed, **‘**I really want to keep my grades and keep my position, my rank.’ Furthermore, Participant G explained, ‘I see my GPA go down,’ as a reason for refocusing on school. Comparatively, Student A articulated, ‘I don't want my GPA to fall,’ and Student H declared the learner desired to ‘end school with a good GPA.’ The concept of failing also loomed in the minds of learners.

Student B expressed, ‘I got assignments in so I want to get that in as much as possible. I mean, as soon as possible. And yeah, I'll just try to stay on top of my work, so I don’t fail anything.’ Participant B also used the strategy of visualization, reflecting, ‘Maybe like, it'll probably help to, like, think about how my grades are. My grades aren't bad, but it's like, if I had the mindset of if I fail my classes, I don't pass high school,’ adding, ‘So maybe that will probably help me stay motivated and consistent with doing my assignments.’ Furthermore, Student A commented, ‘I know like how high test grades

are and how they affect your grades. So, I know if I like completely fail this test, I'm completely failing this class.' Learners also remarked on grades in terms of graduation. Participant B signified, 'As I finish in my high school career, I need to make sure that I'm at a place where I want to be. I don't want a C here, or going into my senior year with an F' adding, 'So I need to make sure that my work is what it should be.' Student A, at the time of the study, retained the number one rank in the junior class. The individual ruminated on senior year, communicating, 'I honestly want to graduate valedictorian. I've been number one for basically all the years of my life. And I feel like, why not continue if you've already come so far? Why give up now?' In the same fashion, Participant C mused about graduation, declaring a goal of a 3.0 GPA, exclaiming, 'If I can graduate with that next year, man, I'll do cartwheels down the aisle at graduation.' Student opinions on teachers, friends, family, money, and grades demonstrated the power of extrinsic motivation on student behaviors and mindsets. While not as influential as external motivators, participants also exhibited a focused intrinsic mindset and a positive outlook on the future.

Manifesting a Focused Intrinsic Mindset and Affirmative Future Viewpoint

Learners, despite the heavy presence of extrinsic motivators, displayed signs of internal motivation as well. Participants offered comments, such as, 'I am absolutely thrilled to be pushing myself harder in school' (Student D), 'I'm just trying to keep myself focused, prioritized' (Student B), and 'I'm a hard-working student. Like, if stuff do get hard, I just keep doing it' (Student G). Academically, students revealed 'I'm mainly here to like, get my education and do my work. So, like, making friends is something extra, but my priority is to try to get stuff done as much as I can' (Student B),

and ‘they’re honors classes and AP classes, so I get why it's like challenging work,’ adding, ‘I feel like at the end towards when junior year is over, I'll be like, relieved that I did it’ (Student F). Students also discussed engaging in enjoyable classes. Participant E explained excitement for senior year because ‘I can actually take classes I enjoy instead of building up that college garbage.’ Student C explained, ‘I kinda want to take gym for the fun. Not to sit in front of a computer doing exercises. I didn't have a gym class at my old school. I want the high school gym class experience.’

Other learners addressed internal motivation more generally or personally. Student B discussed self-talk, stating, ‘I keep telling myself, I keep talking to myself in my head saying no, I'm gonna do this. I'm gonna do that whenever I get the chance. So, I try to motivate myself.’ Furthermore, Participant A disclosed, ‘Like I need to figure out how to stand on my own two feet without waiting on this for others for happiness or something like that,’ and Participant F asserted, ‘Yeah, I want to pay for my car. I want to buy it because like I want to like have a big purchase by myself,’ adding, ‘I want to be, I want to feel pride and saying oh, yeah, I bought my own car.’ Learner remarks indicated a desire for education for the sake of learning as well as an internal drive promoting achievement academically and individually. Additionally, students discussed a positive perception of the future.

In the MI conversations, participants viewed the future with great importance. In general, Student B explained, ‘If I'm very serious about my future, I feel like the type of person that's like okay, work is going to get done’ and ‘as long as I have a mindset, or as long as I visualize how I want my future to be will help with my consistency.’ Learners also discussed the future in terms of employment. For instance, Participant F illustrated,

‘I was looking for like a job and I didn't want to work in fast food. So, when I saw the internship, I was like, whoa, that's a miracle. I want to be an engineer, so Boeing has exactly that,’ adding, ‘I can learn more about the career I want to pursue and possibly meet people who have that career.’ Additionally, Student B described personal motivation as ‘the mindset of me wanting to be something or someone in the future, not just a clerk at Family Dollar.’ Comparatively, Participant C commented, ‘I just want to find something that I'm actually going to, like I'm passionate about, like, deeply passionate about. For example, like a job. That's like my main purpose is finding something that I can spend 30 years doing.’ Furthermore, in the MI interview, Student F characterized a new outlook on life remarking, ‘I'm motivated to do more and I'm more excited to do more that's coming in the future. Like I want to get up early. I want to go to sleep early.’ Learner observations illustrated a targeted internal motivation and positive prospects for future endeavors. Additionally, themes emerged pertaining to self-motivation in the realm of affect (anxiety) involving a variety of stressors.

Expressing Anxiety Concerning a Multitude of Areas

Participants offered concerns regarding pressure associated with friends/family/work, mental health, and academic stress. Some learners provided statements mentioning multiple problem areas. For example, Student C described dealing with social, mental, and academic issues. Additionally, Participant A explained, **‘**I'm stressed out. Just so much stuff to do. So little time, so many classes, personal issues, and just trying to deal with it all.’ Numerous learners discussed anxiety related to friends, family, or jobs. Student C voiced, ‘I've always had social pressure, just like me, being me, you know, everybody expects me to act a certain way. Everybody has expectations.’

Additionally, Student C elaborated, ‘One of my biggest fears is not being there for somebody when I’m needed, like in my personal life. I've had a couple of friends that have been suicidal and like, just talking them off the ledge.’ Participant A consistently reported on issues with friends in multiple sessions, detailing in one instance, ‘I feel like even small things like my friendships, it shouldn't affect me as much as it does. Like, I shouldn't be stressed out about that. I shouldn't be stressing myself out over what will happen next with it.’

Student C also reported on ‘family issues, family pressure,’ and addressed feelings concerning a family member currently in the hospital expressing, ‘Almost lost my stuff at school. I didn't really want to know the details because the anxiety, it is too much for me. So, I just wanted to keep cordial and see him. I didn't want to be there too long. I didn't want to get in my feelings.’ In addition to friends and family, participants also exhibited anxiety about work. Student D described enjoying work but expressed stress over employee shortages. Furthermore, Student G stated going back to work after an absence, ‘was okay. It was stressful,’ and Participant H stated, ‘I got work and that's stressful.’ Many students addressed general anxieties and mental health struggles, as well.

For example, Student H articulated, ‘Growing up becoming a young adult, it is what it is,’ adding, ‘It's a lot on me and I still gotta figure out what I want to do with my life,’ and Student A stated the planning of a birthday party, ‘was very stressful.’ Numerous learners demonstrated mental health challenges, discussing past and present difficulties, and singular and persistent obstacles. For instance, Student C communicated, ‘I been stressed. Not gonna lie. Mental pressure, emotional pressure,’ adding, ‘This is a lot mentally. Oh, man. Mentally I've been everywhere this year. This last year was a year

for me.' Furthermore, Participant E voiced, 'I had my low moments. Recently I had, as the comedian Bo Burnham would call it, an ATL, all-time low.' Additionally, students disclosed, 'I have a lot of anxiety when I'm in big groups' (Student F), 'I cracked under pressure and I feel like a lot of pressure' (Student A), and 'I'm just trying to like, keep myself to have a decent mental state' (Student B), illustrating the imposing position of anxiety in participants' lives. However, most student contributions concerned academic stressors.

Participant H declared, 'The hardest right now is school,' and Participant B detailed feeling anxious 'especially with tests are gonna come up and things like that.' Student B also voiced the challenges of particular classes, stating, 'So honestly, the hard or somewhat stressful classes were my 7th and 8th hour.' Learners also offered comments related to accomplishing the vast amount of assigned work. Participant A acknowledged, 'I'm stressed. I'm just trying to figure out how I'm gonna cram in all my work before I go out of town because I'm trying to finish everything,' and Participant B contemplated, 'I'm just trying to like, complete work and I'm trying to like, get them all done so I can not be like stressed about it.' Furthermore, Student F addressed a large workload and time management issues, explaining, 'I just feel like only in some classes like the work is like piled up. Like we would be focusing on one thing and then later, we would get work on top of that to do at home,' adding, 'And sometimes they make the due dates close together. So, I have to like, stress and write everything down.'

Learners commented on junior year and second semester specifically as posing the most difficulties. For instance, Student F stated, 'I feel like last semester, I was less stressed,' and Student H suggested, 'School was easier last year because I didn't have that

much to worry about. But now because I'm a junior and I'm almost finished, it's just hard.' Additionally, Participant A revealed, 'I was so stressed out. Over I don't even know why I was so stressed. Cuz I just did not want to be in the school. I feel like it's the root of all my problems.' Conversely, learners conveyed diminished stress levels at the very end of the year. 'So maybe there's another reason I'm so happy. School is over. No more finals' (Student A), and 'Things are much better. I'm happy now that all the AP tests are over with, so everything's much easier and calm. I still have work to catch up on but it's getting better. So relieved' (Student F).

Despite displaying an alleviated attitude toward the end of junior year, Participant F also exhibited stress regarding senior year, explaining, 'Oh my god. I'm so nervous thinking about senior year. It came by so fast. I feel like I'm still a sophomore,' adding, 'But senior year, I don't know, whatever gets thrown at me,' indicating a resolve to meet the challenges of the final year of high school. Furthermore, Student B also expressed concerns about the future, revealing,

> I am worried about it. Because I know that college comes with a lot of work. Because I said hectic. And since I want to major in business, to be able to start my own business, I noticed it being like a lot of math and reading this stuff involves like, it's just gonna be a lot. I could visualize it. It might not be as bad as I imagined, as I'm visualizing. But I could just see that that portion of my life is going to be a little worse.

Student remarks indicated stress and anxiety played a major role in daily life and centered around the areas of friends, family, work, mental health, and academics. Overall, after participating in MI, participants perceived self-motivation with differing views on

responsibility, self-skepticism, self-awareness, confidence, apathy, external mindsets, intrinsic motivation, positivity for the future, and anxiety. In addition to self-motivation, learners also provided remarks concerning self-regulation regarding resource strategies, meta-cognitive strategies, and cognitive strategies.

Struggling with Time Management and Governing Environment Management

Concerning time and environment management, learners overwhelmingly faced struggles in keeping proper control over time yet changed behavior and handled environment regulation sufficiently well. In general, Student D expressed a desire to improve on ‘having stuff done at the right time.’ Similarly, Participant H reported a goal of, ‘turning in my work on time and focusing and don’t play so I don't have to do the work later.’ Comparatively, some learners specifically pinpointed the utilization of time as a weakness. Student C communicated, ‘I need to find like a valuable time. You know, like, use this time wisely. And I just can't do that,’ and Student A declared, ‘I gotta find better time management. Because that's, that should have been a goal that I've been working on. My time management is terrible. It's like really bad.’ Other students conveyed explicit obstacles in the way of managing time efficiently. For example, Student C signified necessary chores around the home interrupted schoolwork time, explaining, ‘Like I have to like clean up the entire house, and it's a decent sized house. Now if I'm painting that by myself, it takes a minute. And I hate washing dishes because washing, this takes me forever.’

Numerous participants cited getting enough sleep as an obstacle and complained of tiredness, demonstrating a lack of time management. For instance, Student B justified not completing homework after arriving home from a job, ‘cuz it be late. So yeah, I don't

want to intrude on my sleep. For me to be tired and cranky the next day.' Additionally, Participant A explained, **'**Don't tell my momma. She is so mad when I come here late. But I just need that extra sleep,' adding, 'I come here, and I hate to be here. I just need to sleep when I can. So that's why I be so late.' Furthermore, Student C expressed, 'If I'm like home, then I'm like tired, like even during like the weekends.' Other obstacles to proper time management included after-school obligations. For example, Participant H revealed the individual arrived home late every night, stating, 'I leave right after cheer practice to go to work,' and Participant F detailed, 'Currently, I have to watch some of my siblings. We always have to go somewhere because they have like after-school activities and stuff. So, I watch them sometimes.' During the last session of MI, the coach asked Student A about the progress of goals, and the individual concluded, 'I was better at the time, but I can never make 8:05, but I try. It was before 8:25, so sometimes I was still late, but I definitely wasn't as late as I was,' adding, 'My time is stuff that didn't get as good as I wanted it to but I don't think that was you, I think that was more of me not putting in as much work as I should.' Learner comments indicated an awareness of shortcomings in time management and an inclination for improvement, however, participants took little action towards progress. Despite stagnation in time governance, students displayed positive attitudes and forward movement in the realm of managing personal environments.

Several learners signified the importance of environment. For example, Student G discussed walking around the neighborhood while on a hiatus from school, explaining, 'I feel relaxed when I'm on them. I think it was just being outside in the fresh air.' Student E mentioned 'My chair broke. It was a super comfy chair.' When the MI guide affirmed,

“It’s your comfort spot,” the learner responded, ‘Exactly. That's what it is. Well, it's where I go when I want to get into my head. Quiet. It's just nice. It's super comfy.’ While discussing the qualifications for a future dorm, Participant F expressed, ‘I do not want to go to the public bathroom because I have seen so many videos where people have to wear the shower shoes and the bathroom is so dirty. I don't like that,’ demonstrating the requirement of cleanliness. Learner comments suggested student awareness of the individuals’ environment and signified attitudes enforcing well-being. Other participants outlined behaviors needing improvement or requiring actions for growth. For instance, Student B highlighted an issue at home, illustrating,

> Like when I'm home, I'm to myself, like I'm in my room the entire time unless I have to work. So, I feel like when I interact with the people I live with, I need to be more open, like with my sister. She consistently tells me that you're in your room all day. And we have a conversation. She's not feeling like it’s right. But in a way, it's hard for me to fix that. Like, it's just hard for me to just go out. And I don't know. I don't know why it's hard for me to walk out my door.

Participant C declared, ‘I am taking a break from,’ and mimed smoking weed, concluding, ‘I definitely need to clear my head for like this next week for finals. I have my tech final next Monday. It’s open-note and stuff, but still, I would like to have a clear head and a clear body.’ Student A described managing the learner’s environment in and out of school. The MI coach suggested moving seats in the APELC classroom, and removing the individual from certain peers, but Participant A responded, ‘I’m ok with where I’m sitting because like I'll be less of a talker.’ Additionally, after Student A wrote a goal on a notecard, the MI guide asked about the physical placement of the card, and

the participant suggested, ‘Maybe on the mirror. I will look at it every day. I will remember.’ The students’ comments indicated a strong awareness and firm control over the individuals’ surrounding environments. Another sub-scale of resource strategies involved effort, and two themes emerged from the analysis: students holding impediments as responsible for lack of effort and displaying effort despite apathy.

Justifying the Absence of Effort Through Deterrents

Students described a variety of reasons as liable for the dearth of effort, including challenging work, laziness, procrastination, and apathetic attitudes. Numerous participants complained of large workloads and difficult classes as disrupting effort. For example, in the MI interview, Student B described the justification behind dropping one of the individual’s AP courses, stating, ‘Taking both of these classes was not going to do it for me. Especially if I have a job because I'm reading multiple books and doing assignments in one class, and writing multiple essays in another,’ adding, ‘I just can't see myself doing that.’ Similarly, in the MI conversations, Participant D described, ‘AP classes are so tiring and so much to get done.’ Additionally, Student A reflected, ‘damn, so I got six classes where I got either AP or honors. So, I can kind of see my dilemma why I feel like this,’ citing thoughts of academic pressure. Furthermore, Participant C observed struggling with a 4,000-page essay, explaining, ‘I'm scrambling to still get 2,000 words in by the deadline.’

In addition to demanding course loads, learners addressed a recognition of laziness and procrastination. For instance, Participant A articulated, ‘I'm a little lazy. But I get it done. Or try. And I stuck through with your class for a long time,’ adding, ‘I mean, I got through to the end but that's when I got a little lazy and I didn't do all the

assignments. Your thing was torture sometimes.' Furthermore, Student C, in particular, commented on laziness numerous times, pointing out, 'I just really am like becoming lazy. Like, I'm not gonna lie. I'm getting real lazy. And I'm just losing my lack of effort for everything,' 'I don't for real want to put in that effort. And I don't know if that's just my lazy tendencies,' and 'I can get really lazy and just not do my thing and go to sleep and watch Netflix. I'm just trying to pull that effort out of me to get up and do something and not go to sleep.' Multiple learners also remarked on delaying the completion of tasks. Student F described the process of procrastinating, and reflected, 'I have like assignments and in my head, I plan like, I'm doing it. I'm like, I don't have to worry about it. And then eventually, I just, like, don't do it.' Comparatively, Participant B indicated, 'At the end of the day, I push off those plans because it's just like, I want the rest. I want to just chill and not have to worry about that.' Furthermore, Student A explained, 'I procrastinate because I've got so much work to do.' Conversely, Student C demonstrated uncertainty, revealing, 'I know. I'm a procrastinator. Like, I don't know why. I know I procrastinate. Like all of the essays for real. They were procrastinated like the last two days. They were well in the last few days before they would due.' In addition to difficult classes, laziness, and procrastination, students also referenced an apathetic attitude as a reason for the lack of academic effort.

While discussing the reasons why Student G missed several consecutive days of school, the learner responded, 'Everything is just hard and I've been tired. I don't know. I honestly think one day I just woke up like, I need a break. Because I haven't been going to work like that for real either,' adding, 'I'm getting close to ready to graduate and I need to just get away and be done because it's just tiring.' Similarly, Student A related, 'I can't

do this no more. I don't know. I'm so mentally checked out. It don't make no sense,' 'I feel like I'm trying to do better, but like I said, it all feels so optional,' and, 'I've been checked out. I wouldn't say I was this checked out. But ever since the beginning of the year, I was kind of like, oh my God, I can't do this. Now I'm like, really over it,' adding, 'Like this is the edge, and this is me. I'm real close now and at first, I was a little further back.' Furthermore, Participant C communicated, 'I just lose effort and I just don't feel like doing it anymore. One of my worst traits by far. I just get bored with stuff really easily,' concluding, 'I only do the effort that I feel like doing at the time.' In early sessions, Student F also articulated an apathetic viewpoint, voicing, 'Before, I used to be like working all the way until like 4 AM, 3 AM, and now I'm like, I can't even do it,' reflecting, 'I just don't feel like getting up. I don't know. It's just like, I just don't want to do anything.' Despite most student comments referencing negative aspects of effort, some students provided positive remarks regarding the struggle to achieve.

Displaying Effort Despite Apathy

For example, Participant E spoke directly to the MI coach in reference to the APELC course, disclosing, 'Personally, I want to apologize for my lacking effort and work,' demonstrating an inclination for improvement. Several students simply expressed the learner's attempts at achievement, stating, 'You know, I try' (Student A), and 'I'm just trying do my work and catch up' (Student D). Additionally, Participant A detailed overcoming a challenging year and articulated the role of MI in the individual's effort; 'I got through it. And I'll do it this year, and I thought I wouldn't,' and, **'**The MI kind of got me into a deeper thinking and kinda got me, like, trying harder. It made me try harder and it did make me try. So, I think it helped that part, definitely.' In addition to

time/environment management and effort, the resource management scale also included help-seeking and peer learning. Participants did not offer enough comments validating an additional theme, but the researcher included the relevant remarks from a single student.

Participant A discussed help-seeking and peer learning in an integrated nature, as the student mostly sought help from friends. For example, Student A explained, **‘**This year was easy because I have more people to like, get help from. But next year, everybody is like, “Yeah, I'm not taking that class, I'm not taking that class.”’ Participant A further addressed learning from and with peers in the context of previous friendship fall-outs, detailing,

> Yeah, maybe this year I was so in the bubble, and I didn't really look outside the bubble. When I got pushed out, now that I think about it, I did have other people that I went to like me, and [student name] we kind of got the exchange kind of thing. She sent me some assignments, I sent her some assignments. But like at first, I was just only looking within the group. So, it's kind of like a good thing, in a bad situation.

During one particular MI session, the coach asked Student A, “Who do you think would be there to help out? Perhaps the teacher for the class you’re struggling with?,” and the learner responded, ‘I don't know. I honestly don't. Because I really went to friends this year. Like we were a team,’ adding, ‘I gotta get good relationships like I have with you. They don't know me yet. And to some, I could come across attitude-ish. Maybe procrastinator, maybe a little lazy,’ concluding, ‘So I gotta build relationships with these teachers before I ask them.’ Student A’s comments indicated help-seeking and peer learning as a significant and highly utilized resource strategy for the individual.

Participants also provided a plethora of comments pertaining to the second scale in the self-regulation section of the MSLQ, meta-cognitive strategies, including the sub-scales of planning, monitoring, and regulating. One theme emerged from the planning sub-scale and involved students demonstrating autonomy and developing identity resulting from planning and setting goals.

Exhibiting Autonomy and Forging Identity Through Planning and Goal Setting

Students utilized planning by setting educational, personal, and future-focused goals, allowing individual autonomy and identity to flourish. Due to most sessions occurring in second semester, many participants planned by setting goals related to academics. For example, several learners designed goals related specifically to grades. Student C concocted a strategy for each individual class and concluded, ‘I want to try to stay a B right now. Like not all A's, you know? But like an A/B. As long as I can stay in a B range.’ Participant E also remarked on grades explaining, ‘So there are two things exclusively I'm planning to do. One, get my first-hour grade up. It’s at a 30%. And two, get my English grade up.’ Additionally, Student G referenced, ‘bringing my grades up,’ whereas Student H planned on ‘keeping my grades good.’ Furthermore, the MI coach asked Participant D, “Are you shooting for an A in every class? B in every class?,” and the learner responded, ‘Most likely B’s because I got mostly C's now.’

Other students organized agendas specifically for completing work. For instance, Student F outlined a plan for every individual class and Student E suggested intentions for a project, explaining, ‘I have a plan for that. I'm going to do the poems,’ whereas Student B proposed a less clear-cut plan, stating, ‘So my plan as far as consistency and order goes, on my off days I will want to give myself at least like two hours to get work

done.' Furthermore, the learner illustrated the importance of grit, voicing, 'If I motivate myself from now on, I'm just gonna stick to it. So, if I said that I'm gonna do schoolwork on this day, then I'm gonna do schoolwork on that day,' adding, 'It's gonna be hard, but it's definitely something that I'm going to be doing and working on' (Student B). Similarly, Participant A communicated an arrangement of 'actually working like I should, like I'm a few assignments behind in each class.' Other learners proposed intentions for future academic commitments, such as, 'I'm going to retake my ACT and maybe the SAT. And then I'm gonna start looking more at college campuses, field trips, and do a lot of volunteer work. Join more clubs than I already did' (Student F), and 'Next week, I want to definitely have like a schedule for work on like deadlines, major projects, and major dates like the ACT because I have my ACT next Tuesday' (Student C). Additionally, Participant A reflected, 'I need to figure out my plan. I guess I gotta start writing my essay. My college essay.' In a more general sense, Student A proposed, 'For the end of the school year, I just need to focus on getting here on time,' Student H stated the learner wished to 'end school with a good GPA,' and Student B offered, 'The main thing from my senior year is graduation. Finishing high school and then finishing college.'

Learners also contemplated personal goals, aiding in forging individual identity and autonomy. Students' personal goals included planning summer break, contemplating work options, and moving toward self-improvement. Several students indicated the importance of birthdays; Student G highlighted the learner focused on 'planning my 18th birthday,' and Student B indicated, 'This summer, I feel like the main event is my birthday. So, this is going to be my 18th birthday this summer.' Participant B also

planned on ‘possibly getting my driver's license, make sure that I have enough money for all senior activities, and focus on saving up for a car.’ The learner demonstrated autonomy, explaining, ‘That way, I could kind of move on my own. So, if I get out early, or if I want to leave early, I don't want to sit and wait for my mom to come get me,’ adding, ‘I want to be able to just go to my car and drive to my house myself’ (Student B). Similarly, Participant G detailed wanting to ‘buy a car and still graduate early.’ Student D’s summer consisted of going out of town a couple of times.’ While Participant C pondered summer plans, musing, ‘I have no clue right now because I've never had a real like summer. This would be like the first time I'd be like, free to do what I want,’ the learner fell short of creating a goal. However, Student C, along with other learners, contrived solid intentions for jobs over the summer and senior year.

Participant C utilized several sessions to strategize upcoming work schedules and aimed for increased hours over the summer, stating, ‘I definitely would like to be working most of the day. Like I'm trying to be chasing that bag.’ Similarly, Student G described, ‘Over the summer, I’m trying to pick up more hours at work,’ Student B cited the learner planned on ‘mainly working to save money over the summer,’ and Student D decided to ‘get another job over the summer.’ Additionally, Participant F proposed multiple ideas for keeping busy over the school holiday, explicating, ‘Along with the Boeing internship, I'm also going to be working in my aunt’s shop for extra money,’ adding, ‘I have other things in mind. There's an animal shelter that I can go to because I know one of my friends, she does that and she said they're looking for more people.’ Students also forged identity and autonomy through the creation of personal goals.

Participant C set organizational goals concerning events, dates, and money management. The learner explained, ‘So I got back using my planner and I got a big calendar in my room. A big wall calendar that I use to put dates down and big stuff like that,’ adding, ‘My mom wants me to step up in the house more so like picking up chores, and laundry, so I write that down as well.’ Furthermore, Participant C detailed concerns about spending too much money and reflected on solutions, considering,

> I think I have another account but I don't know who's the owner of the account. And I don't have access to that, so I'm thinking about just making like another separate account. Or like make another like yeah, just make another account and like putting money in there. Like, make it a permanent savings where it locks in so I can't get at it until like I'm 18 or something like automatically. Put like at least 200 or 300 dollars into the account. So, we're I can't spend anywhere I can't be like, Oh, well let me pull this money. So, because I do that a lot. Like I get paid, and I will buy something and then I don't have no money in my checking account.

Student F also prepared detailed plans for self-improvement along with justifications. For instance, ‘I think I want to do a sport in February. And then I have to, like, make sure that fits my schedule, too.’ The learner further communicated, ‘I'm planning on joining the cheer team, but it costs money. So, I have to pay for it myself,’ adding, ‘I also need to buy my car because my mom has to drop my sister off and my brother is moving out. So, I have to get a car to transport myself.’ Participant B specified the learner intended on ‘creating a plan to help with staying consistent.’

Student A exuded significant effort in multiple sessions on improving personal qualities the learner deemed necessary for development. For example, the learner utilized the skill of sequencing priorities, explaining, ‘I don't think I can confront situations like that and work on not having an attitude at the same time,’ adding, ‘Like, there's got to be work on the attitude first, and then I can work on confronting situations because I know that I can’t do both.’ Furthermore, Student A contemplated a future ambition and set a solid, actionable goal; ‘My goal for next session is to just figure out ways to set those boundaries. I feel like there's no rush to it. Like, this could be a goal that I'll work on for a while,’ and ‘In the next few weeks, I'm not going to hold a grudge against little things. I am going to work on things to help me with my attitude and come up with 3-5 things besides taking a deep breath.’

Several participants offered comments related to understanding life and personal development. For example, Student F explained, ‘I want to find the purpose to my life because when somebody asked me that question, like, I didn’t know what to say to it,’ Student B reflected, ‘I choose to let go of all the things that prevents me from doing or living life the way I want,’ Student H chose ‘overcoming obstacles’ as a significant element needing improvement, and Student A concluded, ‘I know I'm not going to know the secret of life, but I want to at least get halfway there. So, I know, like, I want to know how to live on my own without needing other people.’ Other identity-building remarks included students recognizing the gravity of self-worth. Participant G illustrated a desire for higher self-esteem but also acknowledged the learner focused on ‘thinking of my baby,’ after revealing a pregnancy. Finally, Student A resolved, ‘I need more self-love because I know it'd be better for me if I wasn't so snappy all the time and if I didn't hold

these grudges. Like, if I let that go, I know I will be happier.' In addition to educational and personal goals, learners also pondered individual futures.

Students contemplating the future of academics, careers, and personal lives contributed to growing autonomy and independence. Numerous learners conferred on attending college after high school, some offering plans and actions for accomplishing the goal. Student G stated a vague plan of 'Trying to go to college after senior year.' Correspondingly, Participant D communicated, **'**I want to start looking for colleges to see exactly where I want to go,' adding, 'I get emails from colleges, so I'm gonna start looking into those.' Student B articulated a somewhat more specific response, yet still possessed questions; 'Pretty much every college has a position for business and that's mainly what I'll be going to school for. Now, do I know what school I want to go to? Haha, no, but I should definitely figure that out.' Participants A and F provided more detailed thought processes regarding academic life after high school. For example, Student A explained, 'I do want to go to college. So, I guess I gotta start saving towards that' elaborating, 'I really, really want to go to an HBCU. I don't want it to be far but all the little ones I've been looking at are far. So, we'll see how they go with scholarships and whatnot.' The MI guide asked Student F about the individual's qualifications for applying to colleges, and the learner responded, 'They have to have a wide variety of majors and minors.' Furthermore, Participant F described a narrowing down strategy and explained, 'I'm gonna spend a few weeks researching the schools, seeing how they are, like, how far how or close they are, and seeing the programs they offer,' concluding, 'I need to start applying because I haven't applied to any schools yet.'

While many learners discussed college as the next step in future plans, two participants expressed alternate goals. Student E proclaimed, ‘College is my backup plan. People used to usually like to make the backup plan if they don't get into college. If I can't do anything successful after high school, college is my backup plan.’ Comparatively, Participant C articulated, ‘The apprenticeship is plan A. If I don't get the apprenticeship, the internship is plan B. If I don't get the internship, I'll probably go to college.’ Other learners similarly discussed future career plans. For instance, Student B declared, ‘I want to become a business owner,’ and Student A pronounced, ‘I want to be a nurse, a travel nurse,’ but recognized, ‘I guess the next step will be like, how do I get there? What do I have to do to get there?’

In addition to academics and careers, participants addressed concerns and expectations of a personal nature. While Student G provided the simple intention of ‘finding out what I want to do after high school,’ Participant A furnished several questions, anxieties, and ambiguous goals. The learner conveyed, ‘I don't want to have a stressful next year trying to figure out what, uh, what am I gonna do with my life? What is gonna be after this? Like after high school?’ Participant A also addressed future living conditions revealing, ‘Having to live paycheck to paycheck just to get by, like, I won't have a better life for me,’ asserting, ‘I want to have a better life for my kids and I don't want them to see me struggle to get by and think that that's how life should be.’ Despite initial worries, the learner ultimately determined, ‘For now, I just want to find my next step in life and do whatever benefits me for my senior year having as much fun as I can before life starts and working on myself towards the future.’ The participant comments related to planning indicated learners utilized planning as a means to accomplish goals

and cultivate independence. Similar, yet distinct from planning, monitoring involved students supervising current thoughts and behaviors. The themes emerging from the sub-scale monitoring included participants managing schedules, pondering different life options, overseeing relationships, and auditing thought processes and actions.

Managing Schedules

Learner management of schedules ranged from academics to personal plans. In the educational sphere, multiple students monitored goals for senior year. For instance, Student C lamented about the current absence of ACT prep on the learner's schedule, expressing, 'I have no ACT prep, which is stupid. I have no clue what the ACT is going to be about. I never took the ACT prep class. Never looked at a book. So, I'm going into my ACT dumbfounded.' Conversely, Student B explained, 'I think finishing high school is going to be simple. I think I'm graduating early next year.' Participant E similarly commented on senior year courses and detailed, 'Senior year I'm planning on, if I pass those two classes, and actually get that plan done, those grades up passing, then I can just chill out. I won't need another math class. Thank God - my worst subject.' Student A debated on the consequences of a possible decision to graduate early, reflecting, 'I'm pushing a little more towards college because I said I was gonna graduate early if I have like everything. Like I knew what college I was going to, I applied there. I got all the scholarships,' but, 'honestly, I don't think that's a good idea because if I get a whole semester of being lazy and not having to do nothing at school, I probably won't make it to college.' In the MI interview, Participant F contemplated senior year, as well in a more personal sense, describing an objective to 'join more clubs and like finally getting my life together.'

Student C ruminated on failing to schedule different work hours before finals, articulating, ‘I wish I would have said take me off the schedule. I'm sad that I didn't do that because it would have been better for me. I wouldn't have been so crunched for time,’ adding, ‘But I just wasn't thinking ahead to the future. Friday is probably gonna be my crunch day because it's my only off day this week. So, I'm gonna try to crunch on as much stuff as possible.’ The learner continued the conversation concerning work and scheduling into the summer, conveying, ‘I don't know how to do my summer because I just got two interviews for summer apprenticeships. So, if I get them, then I'll also be working at Footlocker. I don't know what my summer going to look like’ (Student C). Comparatively, Participant F discussed summer scheduling, imparting, ‘I also got an internship at Boeing. It starts on June 3rd, and I only learned about it two days ago,’ adding, ‘So they said they're gonna tell us more probably next week, but she gave me all the paperwork that I had to do to sign.’ On a separate, more personal note, Student F addressed a lack of meal planning, explaining, ‘Sometimes I blank out and I just don't eat. You’re supposed to eat three meals a day and I just don't eat breakfast or lunch and I’ll wait till dinner and then I just eat a lot of dinner.’ Participants’ remarks established the crucial role of maintaining schedules in an academic and personal sense. In addition to managing schedules, learners also pondered diverse opportunities.

Evaluating Multiple Alternatives

Numerous students contemplated various options for the future after high school. Participant F mused, ‘I know that, like you're supposed to be getting into colleges already and I know what college I want to go to. But I'm trying to, how do you say it, have more choices? So how does that work?’ The learner then specified, ‘It's a mix, kind of first I

want to do accounting. And then I want to do dentistry. And then I want to do business. So, it's like, I don't know which one to pick' (Student F). Similarly, Participant D percolated, 'I want to be a veterinarian but then again, I don't want to go to school for that long. I thought about being a firefighter, or a detective, or a cosmetologist,' and Participant A considered the following for careers, 'A travel nurse, engineering, computers,' reflecting, 'See, I'm just all over the place. I thought I knew for a while, but then as I got older and I studied like I started seeing different things.' After designating college as a backup plan, Student E contemplated, 'Well, I want to do more with like technology and like video games and stuff. My dad recommended I just start working at a Gamestop. I mean, it's a fun environment. I'm sure it'd be nice.' While students contemplated multiple career choices, learners likewise, monitored personal affiliations.

Overseeing Relationships

Students documented managing or mismanaging relationships with peers, family members, and school staff. Several participants reported struggling with friendships. For instance, Student D explained, 'I'm staying to myself now. For real, because people now just know how to use me. It's weird stuff going on,' and Student G detailed, 'Recently, me and a close friend since seventh grade, we just fell out. I don't think I could forgive her. If we were real friends, then you wouldn't have to take everything to social media about what's going on,' elaborating, 'I just can't forgive that. She made a post first, then I made another one. Then it just kept going. So, we had an online kind of fight.' Other learners portrayed positive relationships with peers. Participant F disclosed, 'I just met like new friends through other people or friends. Yeah, and we sometimes go out, like, once or twice a month,' and Participant A revealed, 'I really like work and the people I

work with. I like my new friends. I love my new friends. They bring out a part of me where I'm actually having fun.' Learners also observed situations dealing with family members.

Student G documented an incident with a cousin and the learner also counted as a peer. 'Yeah, me and my cousin, we had got into, like, real bad. And It was like, who going to forgive who?,' reflecting, 'So we didn't know if we was going to continue to talk to each other, we was going at it pretty hard, but we got back cool.' Multiple participants discussed managing experiences with parents and guardians. Student H addressed the changing relationship with the individual's parents, explaining, 'My family right now is teaching me how to be independent. So, it's kinda hard, not hard, but it's something new because I'm so used to my mom doing everything for me.' Similarly, Participant F commented on tension related to a struggle for freedom, reporting, 'I have strict parents, so I'm not allowed to go out all the time. Sometimes it's annoying, but, like, I get why they do it. So, I just respect their boundaries,' expounding, 'Plus, I get it. I'm a minor still, so, they're being my parents, they're trying to protect me. But also, I want to have fun and go out.' Furthermore, Student C delved into the complicated interchanges between family members, voicing,

> I'm in a weird place right now. I'm waiting on communication from my grandma to my mom about a conversation that we had. And just seeing how my mom is gonna respond to it will probably be, like, the biggest benefactor of March, like this is big. And if I can get the chance to meet with my mom and my grandma and talk about the situation, then I think things will be probably busier for me, but it will be better for me in the long run.

In addition to peers and family, learners addressed circumstances with school staff members, including counselors, play directors, and teachers. Participant C detailed a frustrating attempt at scheduling a meeting with the individual's grade-level counselor in order to plan the senior year course lineup, venting, 'I'll try to have a conversation with her, but she's always busy. I just need 15 minutes of her time,' verbalizing, 'It's like, hey, boom, boom, boom. Can you do it? If you can't do it, okay, cool. I'll find somebody else to do it. I'll find another way.' Student E also revealed a disappointing interaction with the school's play director, explaining, 'I feel like I'm one of the only people who can actually see through our director's good cop, bad cop act. He doesn't want to give us a compliment,' adding, 'because he wants us to see that the pain we're going through, that all that garbage is what's making us grow. It would help to get even the slightest bit of praise or constructive criticism instead of just criticism.' Participant C also experienced a discouraging occurrence with a teacher, recalling, 'She painted me out to be this bad kid, saying, "if you want to be lazy, if you don't want to be responsible, if you don't want the credit," like she was trying to throw shade. I felt awkward,' reflecting, 'In hindsight, I think I should have dropped, but I'm trying to be nice to her as a teacher. But I don't like the way she taught the lessons.' Despite an unseemly ending to the interaction with the previous teacher, Student C maturely addressed an interaction with the MI guide as the instructor of the study's class. The learner clarified,

> Like I felt like I was kind of stepping out, and I apologize if I disrespected you or if you felt like I was coming at you in any way. That is not what I meant it to come across as, because I really didn't mean harm by that. And when everybody kind of went silent like I felt like I was saying something that was incorrect or that

> was kind of like, oh, I should have shut up and not said that, and I really wasn't trying to be harmful. It's like all of yesterday, I had this weird vibe. Like I had did something or I had an attitude. And that's why I felt like today I definitely need to have this meeting because I don't want to have a bad relationship with you. But also, you know, just talk with you, and just see your thoughts and how you feel like about me as a student like, honestly, like, um, because yesterday kind of shook me like, I didn't think you were trying to be rude or anything. I feel like you handled the situation pretty well.

While learners managed schedules, pondered various opportunities, and oversaw relationships, the individuals also audited personal thoughts and behaviors.

Scrutinizing Individual Understandings and Actions

In the MI interview, Student G expressed, ‘I’ve never had this much hard classes. The junior academic year has been pretty hard,’ and Student B discussed the progression of schoolwork over the year, stating, ‘School has been easier. I was struggling with my 7th-hour class; it was rocky at first, but now I got the hang of it. It got a little easier and then just kept improving.’ Participant B also tracked thoughts on the future of the individual’s education, observing, ‘College - I feel like it's gonna be hectic, but worth it because as long as I do what I want, or what I see for myself, then I'll be okay.’ Conversely, Student C outlined justifications for not continuing school, disclosing, ‘I'm not going to hesitate going into the workforce. College is not really what I want to do, so it's like, do I want to give my all into school knowing that I'm probably not gonna go to college?’ adding, ‘It’s not what I want for my future.’ Similarly, Participant F speculated

on the learner's function in the future, deliberating, 'I don't know if my purpose is to, like, help other people. I feel like I need to get like more in-depth than just helping.'

Student H contemplated current life circumstances observing, 'My life is like so boring, but I like it. It's more peaceful,' however, the learner also reported, 'I wouldn't say I'm comfortable with life right now. But it's hard to be comfortable. I want to be comfortable in life.' Participant E exhibited monitoring the individual's mental health status, reflecting, 'Even before leaving sixth grade, I showed or noticed signs of it [dissociative identity disorder]. I've looked into it back when it was still called multiple personalities or whatever, and it seemed plausible,' adding, 'I had a few therapists. Ran them off scared. Also had a few counselors who stuck around for a while. All eventually left, though.' Students also addressed monitoring behaviors. Participant H explained, 'When life's not boring, that means I'm very productive, like babysitting my cousins.' Other students observed behaviors relating to work. For example, Student C articulated, 'I think that I kind of overworked myself, when it's not needed, like, it makes the job seem harder than it actually is,' Student B voiced, 'When I get home from work, sometimes I don't be tired. I be okay. But sometimes I'm like, I'm ready to slump.' Similarly, Participant F evaluated overcoming a fear before volunteering, stating, 'I'm very scared of old people. Because when they are at the nursing home they're so rude. They probably have their reasons, though. I'm afraid of old people, but I'm gonna give this a shot.' Student C also scrutinized spending habits; when the MI coach asked, "Did you have that plan written down?," the learner responded, 'For my money? Oh, no. Oh, I kind of just like just made a mental, you know, verbal agreement.'

Over several sessions, Participant A oscillated from monitoring thoughts to managing behaviors. Initially, the student struggled with friendships, feeling objectified, and displaying a snappy attitude. The learner acknowledged a physical sign of annoyance, outlining, **'**I tap my foot. It's like what I do that when I'm irritated, and then taking a deep breath, just stuff like that, like little tells.' Additionally, Student A remarked on the learner's impulsiveness concerning situations where friends expressed feeling disrespected, detailing, 'I told them to tell me when I snapped that it hurts your feelings and how that makes you feel. But then when they tell me that, it's like, I don't care in this moment, which makes me a hypocrite.' Additionally, Participant A recognized the difficulties of creating personal boundaries, explaining,

> I feel like if I draw that line, I come off as mean because I have a bad attitude and I am snappy. But if I sit and think about it, I don't want to say those things because, like, I don't want to come off as mean or rude. And I feel like that also gets me in a lot of situations because, like, if I drew that line before, it wouldn't be happening now. And for now, it's come to the point where like, if I don't draw that line, it's affecting me. I feel like I just need to, like, draw that line, like learn how to set the boundaries. Like, better than where I am now. I need to learn how to speak up and let them know that it's like not working out. I guess I just got to step out of my comfort zone and stop thinking of other people and how they would feel to what I say and start thinking about how I feel. Like they don't care when they overstep those boundaries. I shouldn't care when I tell them that you can't do that no more or this is over.

The learner's musings showed a mature effort at reconciling the tensions in the individual's life. Furthermore, Student A concluded, 'Even though I'm working on it, I know that I still got a breaking point. But still, it's like, I don't want people to be thinking just because I'm working on myself that I'm not still the same person.' Overall, the student remarks concerning monitoring demonstrated a tangible management of behaviors, active overseeing of relationships, and sincere reflections concerning the self. The final sub-scale in the meta-cognitive strategies category consisted of regulating where students indicated action steps beyond planning and monitoring into the realm of controlling thought processes and behavior. The themes emerging from regulating consisted of students adjusting behavior and altering perspectives, thus increasing autonomy and forging identity, as well as acknowledging the achievement of goals.

Adjusting Behavior and Modifying Viewpoints

Multiple learners remarked on tailoring behaviors, consequently forming increased autonomy, and developing individual adolescent identities. Student A discussed an improved relationship with the learner's mother, citing a discussion concerning hostility over schoolwork; 'Honestly, I feel I feel way better since we decided that school just won't be a topic for us. Especially over her watching my grades and like, why you got this grade why you got that grade?' resolving, 'We don't do that anymore. Ever since then, it's kind of been okay.' In the MI interview, Participant F addressed actions focused on improving assignments, detailing, 'I would do my own practice for rhetorical analysis, reread it, and give it to one of my people who are an English major or something. I'd give it to them to review it and stuff like that.' Similarly, Student B addressed changing behaviors for progress in school, citing, 'I did take one or two days off to complete some

assignments after school, but then I finished the majority of assignments during school,' adding, 'So I used a little bit of my off time to do work, but also used the school time to do it.' Participant E explained in the MI interview, the learner's motivation to finish assignments resulted from, 'talking face to face with a higher authority and sort of come up with a plan like we just did.'

Student C addressed regulating behavior with a counselor for the completion of the learner's senior schedule, postulating, 'I mean, like, when I have a conversation with her, I'd be like, "Hey. How's your day? You know, let's, let's sit down and talk." Yeah, like it's gonna be a different vibe. But I be thinking I really can't stand you right now,' indicating while the student internally felt frustrated, the learner's exterior behavior remained amenable. Other learners addressed personal or mental health issues. For instance, Participant G described dealing with a friendship fallout and the changes the learner implemented, stating, 'We both don't even want to talk to each other. I mean, I can brush it off,' resolving, 'I'm just not gonna let someone get me out of my character, and not argue, and not doing anything back.' Comparatively, Student A expressed, 'I need to hold myself accountable and I need others to hold me accountable,' adding the strategy of doing a 'deep breath definitely held.' Participant E discussed a personal decision, outlining, 'I mean, mentally, there have been ups and downs. I've been doing research on dissociative identity disorder, which is the multiple personality thing. All symptoms point to hey, you got that,' concluding, 'but I'd rather get a professional opinion because I see people online all the time taking quizzes like, oh, what cool internet boy am I secretly? What's my secret personality?' Student comments indicated the

individual ability to regulate behaviors for self-improvement. In addition to changing behaviors, learners also altered perspectives leading to growth.

Student D reflected on ending friendships, grasping, ‘I'm sad that it happened but people have they, what you call it, they perspectives?’ Similarly, Participant A declared, ‘Those friendships, I'm kind of glad they ended, but I had to realize, after a lot of thinking and feeling bad, that it was for the best. I thought they were my safe place in a way,’ adding, ‘Now I know I gotta work on my inner peace and like self-resolution, instead of having to ask for everybody and anybody for their opinions or whatever.’ Furthermore, the learner explained, ‘Everybody kept telling me the same thing over and over, but I didn't understand it until I told myself. I've literally had to tell myself the same things that they were saying but it didn't help until I realized it for myself’ (Student A). Participant H discussed altering the individual’s mindset from dependent on family to independent, detailing, ‘When I go to college, I could use a little bit of help, but I understand why they make me do what I'm doing, because I'm gonna eventually be on my own and have to do things myself.’ In the MI interview, Student C concluded, ‘I definitely think that you've helped me self-regulate, like just having that voice in my mind. I've heard it a couple times, so yeah, you definitely have helped me with that.’ While students changed individual behaviors and mindsets, learners also acknowledged achievements for previously set goals.

Recognizing Achievement for Previously Set Goals

Learners addressed both academic and personal goals. For instance, the MI guide asked Student B, “Do you feel like you've achieved those for the end of the school year?” and the participant responded, ‘I definitely do feel like I achieved it. I feel like I've got a

bunch of work done, and I was like, so proud of myself for doing that.' Furthermore, Participant C addressed all elements of self-regulation in the feedback interview, articulating, 'Just throughout the conversations that we've had throughout the year, I think they all have went up, and I think you can maybe see a difference as well.' On a personal level, Student E voiced, 'I used to have a lot of anger problems, destruction. I put enough holes in doors. I've gotten much better with that.' Additionally, Participant A communicated the individual's thoughts on personal progress, stating, 'I actually feel like I've been doing good. I think it's really just us talking about it,' elaborating, 'Like if somebody say something that I usually snap at, I just do a double take. And by that time, the moment passed and we just move on without me snapping.' While some students expressed achievement of goals, Participant C recognized the unmet goal of money management, stating, 'Oh yeah, that plan is dead. I spent all of my check money. I just be spending money just to be spending, like I've bought like four or five pairs of shoes in the past like two-three weeks.' While the learner failed in achieving the goal, Student C also acknowledged improvement as necessary, explaining, 'I'm definitely gonna have to figure out a way how to stop myself from spending money and I don't know what that is.' Student comments regarding regulating demonstrated academic and personal growth, as well as the recognition of further necessary improvements. The final scale on the MSLQ consisted of cognitive strategies, where students primarily remarked on organization.

Viewing Organization as Significant

Learners perceived the most important academic cognitive strategy as organization. For instance, Student B explained, 'For order, I feel like I need to write myself a schedule for having study sessions with myself and doing assignments because I

feel like it'll make things a lot easier,' adding, 'It's hard from me because I just always seem to be distracted from what's important sometimes.' Participant F noticed the significance of organization after re-developing bad habits, disclosing, 'At the beginning of the school year, I had very good organization, I planned everything out ahead. But that only lasted for, like, three months. As soon as winter break was over, I got back into bad habits,' later explaining, 'This semester, since we only have four months left, I'm trying to get everything situated.' Furthermore, Student F expressed, 'I don't like things to be disorganized and organized,' reporting, 'So I use the planner that you gave us.' In addition to the MI conversations, participants also addressed organization in the MI interviews. Student A detailed managing and prioritizing assignments, outlining, 'I knew exactly which classes that I needed to work more in and how much time I needed to put aside for the class. So, I have classes that I've spent more time on than others,' concluding, 'I guess I did have more organization than I thought.' Furthermore, Participant C also resolved, 'I think with these meetings definitely has helped me and with your class as well with the AP Language class definitely helped organization.' Learner comments indicated organization played a vital role in academic growth.

Summary

Student contributions concerning the perception of self-regulation after participating in MI garnered a variety of revelations. Participants struggled with time management but excelled at environment management. Furthermore, learners displayed difficulties maintaining effort, yet propagated autonomy and identity through planning, goal-setting, monitoring, and regulating.

Chapter Four Summary

In Chapter Four, the researcher reported the results of the hypothesis testing and presented the thematic analyses of the research questions. The researcher addressed the rejection of Null Hypotheses 2, 3, and 4 and the failure to reject Null Hypotheses 1, 5, and 6, as well as surprising results opposing the researcher's original assumptions. Furthermore, the researcher documented the emergent themes for Research Questions 1 through 5 concerning student perceptions regarding the VLF intervention, the MI pilot program, racial bias in feedback, self-regulation, and self-motivation. Chapter Five includes a discussion of the results, implications for practice, suggestions for future research, and conclusions.

Chapter Five: Discussion and Conclusion

Review of Study

Chapter Five encompasses the findings from the study, triangulates the quantitative and qualitative results, addresses the implications for further practice, and offers recommendations for future research. The researcher examined whether students' self-regulation and self-motivation, coupled with feedback, improved AP exam scores, grades on practice essays, and self-regulatory measures on the MSLQ. The study was conducted in an urban school district in Missouri; at the time of the study, the researched high school sustained the Title 1 program, designating students as underserved. The sample consisted of 17 Advanced Placement English Language and Composition juniors from the teacher's three class periods, eight of whom participated in MI. Participant demographics included 15 Black students, one Hispanic student, and one White student.

In response to the continued non-passing scores of students on the APELC exam, the researcher developed and instituted a feedback cycle in the classroom and an MI pilot program for a select number of students scoring the lowest on the MSLQ. The researcher developed the feedback intervention utilizing Hattie and Clarke's (2019) and Hattie and Timperley's (2017) work on visible feedback, among others. Additionally, the researcher used Miller and Rollnick's (2008) foundational text and included other MI educational texts and resources in developing and implementing the MI pilot program. Bandura's (1986) social cognitive theory established the theoretical foundation for the research. Furthermore, the study emphasized equity, self-efficacy, self-motivation, and self-regulation, and the research design included six hypotheses and five research questions. The researcher collected quantitative data stemming from practice essay grades, exam

scores, and MSLQ results, and subsequently tested the hypotheses. Additionally, the researcher assembled qualitative data from feedback surveys, feedback forms, feedback interviews, MI conversations, and MI interviews and later coded and interpreted the conclusions. In the following section, the researcher discussed the conclusions of the null hypotheses.

Null Hypothesis 1. There is no difference in Advanced Placement exam scores of students who participated in both Visible Learning Feedback and Motivational Interviewing compared to those who only participated in Visible Learning Feedback. The researcher failed to reject the null hypothesis and found no statistical significance between the mean scores of the control and experimental groups. The researcher reflected on multiple possible factors for the results. Despite exposure to an academic and social-emotional intervention, students sustained residence in an area of poverty and high levels of homelessness and received free and reduced-price lunch, as discussed in Chapter One. Researchers claimed students experiencing poverty, food insecurity, and homelessness encountered heightened levels of stress, increased health risks, and decreased academic performance (County Health Rankings, 2021; Hair et al., 2015; Manfra, 2018). While the researcher omitted a factor analysis from the study, the mentioned environmental elements conceivably played a role in the underperformance on the exam. Circumstances related to the College Board and the AP exam also existed.

Research showed despite increased enrollment of minorities in AP, students of color persisted in acquiring non-passing scores (College Board, 2012; Warne et al., 2015). While the College Board (2021) claimed scores of 1 and 2 represented results with benefits later in students' educational careers, external research (Warne et al., 2015)

argued passing the exam reaped the most benefits for learners. Furthermore, while students did not disclose specifics concerning the exam, learners revealed behaviors during the exam to the teacher after completion. In accordance with the thematic analysis of Research Question 2 and MSLQ results, students described the strict time limits of the exam as inducing anxiety and as a major impediment to success. Additionally, several participants revealed feelings of exasperation, stating the individuals ‘gave up’ and ‘failed to finish the last essay.’ The researcher determined students maintained a lack of grit and a growth mindset. Moreover, the teacher provided students with strategies for each individual essay, yet failed to offer learners an overall stratagem for the exam, possibly assisting in lower scores.

The continued trend generated enduring questions surrounding Null Hypothesis 1 including: Despite engaging in interventions, why are minority students still not passing exams? What are the causes of students' non-passing scores? What actions are the College Board taking to reduce the racial gap in achievement? What are the downsides to increased enrollment? What, if any, biased questions existed on the exam? What elements of VLF and MI required changes or improvements to further advance exam scores? The researcher further investigated underperforming scores in the discussion for Null Hypothesis 2.

Null Hypothesis 2. There is no difference between the Advanced Placement exam scores of students who participated in Visible Learning Feedback in 2021-2022 and scores of those who did not participate in Visible Learning Feedback in the years 2017-2018, 2018-2019, 2019-2020, 2020-2021. The researcher rejected the null hypothesis, although the results shifted in an unexpected direction. The researcher discussed the

following circumstances, in addition to the factors from Null Hypothesis 1, possibly responsible for the skewed movement. The 2019-2020 exam looked drastically different from previous or subsequent exams due to COVID-19. The College Board modified the exam and required students to submit only one exam. Consequently, the resulting scores also highly varied from other exam years, most likely skewing the study's data.

Additionally, the difficulty of the exam differed from year-to-year, as different College Board writing staff oscillated and original questions populated the exam each year, making collecting consistent data difficult. Comparatively, each student group from year-to-year retained unique qualities and possessed varying previous learning experiences, possibly misrepresenting the results. Furthermore, due to time constraints, the teacher bypassed large sections of the feedback cycle for the final synthesis essay and students did not receive the maximum instruction, conceivably concluding in lower exam scores.

Null Hypothesis 3. There is no difference between students' pre- and post-practice essay scores after participating in the Visible Learning Feedback intervention. As anticipated, the researcher rejected the null hypothesis, and the *t*-test results and Cohen's D data concluded a significant statistical difference and a large effect size. While the data showed a compelling improvement, students encountered the same prompt and passage in the pre-essay as in the post-essay. Participant familiarity with the text possibly caused a higher outcome compared with exam scores, where students experienced brand-new prompts and passages. Additionally, learners completed the pre- and post-practice essays in the classroom, a comfortable and friendly environment; conversely, students executed exam completion in a separate location, conceivably increasing anxiety. In the same

fashion, participants finished the 40-minute timed pre- and post-practice essays and then continued with the regular school day, versus participating in a nationwide exam for three hours and 15 minutes, consisting of an additional two essays and 45 multiple choice questions, perhaps inflating test stress and causing lower overall scores on the test.

Despite factors contributing to a discrepancy between maintained non-passing exam scores and surging post-essay grades, evidence from students' writing demonstrated the learning participants achieved. For example, 17 students did not include a thesis in the pre-essay, whereas 13 students incorporated a thesis in the post-essay. Additionally, 13 learners utilized the SOAPSTTone strategy in the post-essay, while zero participants employed the approach in the pre-essay. The hypothesis test results and data from the student essays demonstrated the implementation of VLF improved participant learning, supporting the research on the power of feedback (Butler & Winne 1995; Brookhart, 2008; Gamlem & Smith, 2013; Hattie & Timperley, 2007; Nicol & Macfarlane-Dick, 2006). The researcher explored the connection between the conclusions from the analysis of Null Hypothesis 3 further in the discussion concerning Research Question 1. Null Hypothesis 4 addressed the distinctions in essay scores between the control and experimental groups.

Null Hypothesis 4. There is no difference between the effect size growth in the pre- and post-essay scores between students who participated in Visible Learning Feedback and those who participated in both Visible Learning Feedback and Motivational Interviewing. The researcher rejected the null hypothesis, yet the data moved in the opposite direction than anticipated. While the control group and experimental group both exhibited statistical differential increases from the pre- to post-

essay scores, the Cohen's D effect size for the control group (3.32) proved higher than the experimental group (1.91). While the data conceivably conveyed that VLF showed a stronger influence on the control group, the researcher examined results from the MSLQ in reference to the test conclusions. The researcher established the following categories as the most highly aligned with the study's purpose: learning beliefs, self-efficacy, critical thinking, meta-cognitive self-regulation, and effort regulation. The post-MSLQ data from the mentioned sections for the control group resulted in higher scores than the experimental group. Furthermore, the experimental group exhibited higher test anxiety scores. Therefore, the control group's higher scores possibly indicated a relationship to VLF's high effect size.

Other conceivable contributing elements included students' prior writing ability, class attendance, and participation in the feedback forms. The number of MI sessions attended by participants varied, also possibly skewing the data. Furthermore, the learners led the direction of the MI conversations, and the discussions did not necessarily connect to classroom activities. The most reasonable explanation for the difference stemmed from the research affirming the variability of feedback; while countless studies existed concerning feedback, results regarding effect size consistently varied in the research due to implementation differences (Brookhart, 2008; Hattie & Clarke, 2019; Hattie & Yates, 2014; Hattie & Timperley, 2007; Kluger & DeNisi, 1996; Wisniewski et al., 2020). Nonetheless, researchers concurred feedback played a significant role in higher academic achievement for students, supported by the conclusions related to Null Hypothesis 3 and 4.

An enduring question existed for the researcher, What additional mitigating factors created the large difference in effect sizes among the control and experimental groups? The researcher addressed the query in recommendations for future research. In the discussion on Null Hypothesis 5, the researcher investigated pre- and post-MSLQ scores.

Null Hypothesis 5. There is no difference between students' pre- and post-Motivated Student Learning Questionnaire scores after participating in the Visible Learning Feedback intervention. The researcher failed to reject the null hypothesis after originally hypothesizing the increase of student MSLQ results due to participation in VLF and MI; however, no statistically significant difference existed between the scores in either direction. Despite no statistically significant difference, the researcher noted the total mean score decreased from the pre- to the post-MSLQ, and, in fact, nine out of 17 students' mean scores decreased, as well. Further surprising data resulted from the individual category mean decreases, as seen in Table 18.

Table 18

MSLQ Study-Aligned Category Mean Changes from Pre to Post

MSLQ Category	MI	Non-MI	Both
Intrinsic Goal Orientation	Increase (+0.54)	Decrease (-0.06)	Increase (+0.22)
Extrinsic Goal Orientation	Decrease (-0.15)	Decrease (-0.31)	Decrease (-0.35)
Learning Beliefs	Increase (+0.15)	Increase (+0.30)	Increase (+0.23)
Self-Efficacy	Increase (+0.43)	Increase (+0.02)	Increase (+0.24)
Test Anxiety	Decrease (-0.63)	Decrease (-0.60)	Decrease (-0.61)
Critical Thinking	Decrease (-0.17)	Increase (+0.02)	Decrease (-0.08)
Meta-Cognitive Self-Regulation	Increase (+0.18)	Decrease (-0.33)	Decrease (-0.13)
Effort Regulation	Decrease (-0.44)	Decrease (-0.72)	Decrease (-0.68)

While the decrease in extrinsic goal orientation and test anxiety exhibited positive changes, the decreases in critical thinking, meta-cognitive self-regulation, and effort regulation concluded in skewed data opposing the researcher's initial assumptions. The

unexpected shift caused the researcher to determine possible justifications for the unforeseen results. The researcher considered the literature regarding adolescent development. Research demonstrated children transitioning to adolescence potentially exhibited elevated stress levels and/or difficulties adjusting (Gestsdottir & Lerner, 2008; Schunk & Meece, 2006). Researchers also observed youth experienced a malleable maturation, often expressing new beliefs, values, and attributes at different points in the transition (McClelland et al., 2018; Schunk & Meece, 2006). Participants in the study encountered many changes, obstacles, and challenging situations over the course of the school year, in addition to undergoing the evolution of adolescence, possibly influencing perceptions from the pre- to the post-MSLQ.

Furthermore, a common theme running throughout the interviews and MI conversations, discussed later in the chapter, involved apathy. Students consistently reported feeling “done” and “ready to go.” Researchers suggested when students believed effort resulted in higher achievement, learners displayed an increase in positive behaviors and superior performance (Dweck & Leggett, 1988; Gestsdottir & Lerner, 2008). Participants also expressed lower levels of task value and intrinsic motivation on the MSLQ and in the qualitative data sets. Research showed learners interested in a task or committed to a task despite boredom, achieved more academic success (Duncan & McKeachie, 2005; Pintrich et al., 1991). Within the realm of possibility, participant apathy, weak esteem for and dedication to assignments resulted in lower post-MSLQ scores for effort regulation. Additionally, students cited an apt readiness for the end of school; perhaps the sentiment carried into the willingness and effort put forth in completing the MSLQ, thus causing unreliable results. An enduring question remained

for the researcher: What extenuating circumstances caused the decrease in mean scores, as well as the reduction in particular categories? The researcher addressed additional results concerning MSLQ score discrepancies in the following section on Null Hypothesis 6.

Null Hypothesis 6. There is no difference in the percentage increase in Motivated Student Learning Questionnaire scores between students who completed both Visible Learning Feedback and Motivational Interviewing and those who only received the Visible Learning Feedback intervention. The researcher failed to reject the null hypothesis demonstrating no statistically significant difference between the mean percentage increase of the control and experimental group. Not only did no statistically significant difference exist, but both the control and experimental groups exhibited decreased total mean percentages of scores from the pre- to the post-MSLQ.

The researcher questioned what factors led to the depreciation of the means and considered elements contributing to the experimental group's lack of improvement. Despite an overall shrinkage of mean scores for the experimental group, the researcher discovered the MI participants differed from non-participants, with scores growing in intrinsic goal orientation and meta-cognitive self-regulation, whereas the control group's scores fell from pre to post. Conceivably, engaging in MI generated higher levels of intrinsic motivation and self-regulation in students. However, a concerning result included the scores for critical thinking; the control group's scores produced a small increase, but the experimental group experienced a decrease, raising the question of the role of MI in the reduction. According to researchers, critical thinking comprised an essential lifelong learning skill obligating students to strategically decide on the most

useful cognitive strategies for a circumstance (Gurcay & Ferah, 2018; Ku & Ho, 2010; Pintrich et al., 1991; Pintrich et al., 1993). Perhaps the participants' spare knowledge and/or use of other procedures resulted in the inability to choose accurately in a deliberate manner, causing lower critical thinking scores. Ultimately, while the results from the hypothesis testing generated more questions and concerns than conclusive information, the qualitative data gleaned from student comments worked to add to and support the raw statistics.

Research Questions Discussion

Over the course of the study's duration, the researcher collected student remarks and opinions on VLF, MI, self-regulation, self-motivation, and racial bias in feedback through a variety of instruments. The five research questions aligned with the theoretical perspectives of the study. The phenomenological perspective supported the validity of authentic first-hand accounts, the volitional perspective promoted attention, emotional, and motivational control, and the social cognitive theory (Bandura, 1986), advocated the evolution of student autonomy and identity through self-regulation (Corno, 2001; McCombs, 2001; McCombs & Marzano, 1990; Pajares, 2008; Schunk, 2001; Zimmerman, 2001; Zimmerman & Schunk, 2008). In the following discussion on each research question, the researcher addressed the significance of themes, common threads connecting the study's conclusions to the current literature, and discrepancies and connections between the quantitative and qualitative results.

Research Question 1. How do students perceive Visible Learning Feedback?

The themes concerning student perceptions of VLF included both negative and positive connotations. Some students communicated frustration with incomplete or

misunderstood feedback in the feedback forms. The teacher expressed some disappointment over the negative comments, as clear directions and directive feedback constituted classroom norms; nonetheless, the remarks remained unsurprising. After presiding in the classroom for over a decade, the instructor understood inevitable miscommunications and gaps in learning occurred. To ensure the learner bridged the void in knowledge, the teacher spoke with students one-on-one regarding the discrepancies after examining the forms, ultimately leading to student comprehension, and fulfilling the purpose of feedback.

Additionally, participants clearly demarcated feedback forms, and even individual feedback conversations, as less personal than MI discussions. While Student A noted completing feedback forms felt like a routine practice, the participant also indicated, 'I wouldn't say that it doesn't help, because it probably helps you,' unintentionally referencing research on bi-directional feedback establishing student-to-teacher feedback as more powerful than teacher-to-student feedback (Brooks et al., 2019; Hattie, 2012; Hattie & Clarke, 2019; Hattie & Timperley, 2007; Nicol & Macfarlane-Dick, 2006). Despite seemingly negative remarks regarding VLF's efficacy, participants exhibited investment in the feedback procedures and demonstrated the validity of the intervention. Learners also revealed beliefs of VLF as a process for growth and described the intervention as wise and visible.

While the participant comments did not clearly present the feedback intervention implemented in the class, the teacher also did not consistently remind students of the cycle. Despite displaying less explicit knowledge of the specific steps in the framework, learners expressed the elements of importance and demonstrated a thorough, yet

nondescript, knowledge of the process and purpose of feedback. Participants overwhelmingly recognized the main reason for feedback as a path to improvement for the student, supporting the existing literature (Gamlem & Smith, 2013; Hattie, 2012; Hattie & Yates, 2014; Perrenoud, 1998; Wisniewski et al., 2020). Student H, however, articulated, 'i dont feel the need to have feedback on every assignment,' perhaps indicating a feeling of oversaturation of feedback on seemingly less important tasks. Nevertheless, the participant's comment designated a minority report, and most students promoted an appreciation of consistent and timely feedback. For example, Student E expressed, 'The feedback process was undoubtedly some of the best help I'd actually gotten in my academic career,' demonstrating the implementation of a structured feedback procedure as highly beneficial to students and aiding in academic progress.

Researchers maintained reducing the gap between known and unknown knowledge remained a priority goal of feedback (Gamlem & Smith, 2013; Hattie & Timperley, 2007; Hattie & Yates, 2014; Lipsch-Wijnen & Dirkx, 2022; Peterson & Irving, 2008). Participants illustrated VLF accomplished the goal of bridging the rift, explaining the teacher's feedback assisted learners in understanding information or skills not provided by the student in the task; participants demonstrated comprehension of the requirement to include the missing aspects on subsequent assignments. Learner comments also signaled the VLF cycle properly incorporated and addressed all three of the feedback types (feed-up, feed-back, feed-forward) listed in Hattie and Timperley's (2007) model.

Due to the demographics of the student population consisting mostly of students of color, wise feedback represented an essential element of the VLF framework. The

researched school denoted an underserved community where students populated a minority-majority school, increasing the likelihood of learners experiencing the consequences of the double segregation of poverty and race (Center for Public Education, 2016; Smith et. al., 2017). Wise feedback exemplified an action-based effort in combatting inequity in the classroom (Fields, 2021; Ndura et al., 2003; Reyes, 2010) with high expectations, constructive criticism, encouragement of student capabilities, and trusting relationships (Cohen et al., 1999; Croft & Schmader, 2012; Harber et al., 2018; Yeager et al., 2014). Students expressed feeling respected when receiving authentic feedback and when asked to reach high standards. Additionally, participants referred to a trusting, supportive, and pleasant relationship with the teacher, emphasizing Yeager et al.'s (2014) determination of wise feedback, and Hammond's (2015) description of CRT2, acting as trust-building tools for low-trust minority learners.

The researcher titled the feedback cycle as visible, illustrating the contribution of Hattie's work on visible learning to the formation of the process, but also to designate the explicit purpose of the procedure - making student learning visible. Many participants addressed visible learning vaguely; however, to the researcher's surprise, several students offered comments employing the word 'visible.' While initially exciting, the researcher proposed students merely appropriated the word from the researcher's questions. Nonetheless, the participants examining visible learning specifically accurately described the characteristics of the framework and illustrated the correct meaning of visible feedback, indicating a deeper-than-surface understanding of the process. A particularly encouraging comment provided by Student F concluded, 'Throughout this school year, I

can visually see how much my writing has improved,' indicating the applicability and power of VLF.

Students also connected autonomy and feedback, particularly when remarking on feedback delivery preferences. According to researchers, students forged identity and stimulated autonomy when seeking independence and actively engaging in learning (Brandstädter, 2006; Garn & Jolly, 2014; Lens & Vansteenkiste, 2008; Ryan & Deci, 2000). Learners endorsed Ryan and Deci's Self-Determination Theory (2000), when advocating for feedback preferences, for example, most students expressed an inclination toward individual feedback, but oscillated between verbal and written options. Furthermore, Participant M suggested, 'I think feedback can be improved by allowing students to choose which feedback they'd prefer,' concluding, 'Having that option for the individual to choose would make the process that much more helpful.' While allowing students a determination of feedback delivery burdened the teacher with additional time and effort, the researcher appreciated the comment and discussed the remark later in the chapter, under implications for further practice. Student comments indicated the importance of student choice and supported the learner's journey toward individual autonomy and identity formation. The researcher further investigated participants' perceptions of self-regulation and self-motivation within the context of VLF.

Research Question 2. How do students perceive self-motivation and self-regulation during and after participating in Visible Learning Feedback?

A plethora of themes emerged concerning the categories of self-motivation and self-regulation, answering Research Question 2. The wavering of students' self-efficacy and learning beliefs demonstrated participants continued evolving cognitively and

socially, developing the prefrontal cortex (Brandstädter, 2006; Gestsdottir & Lerner, 2008; McClelland et al., 2018; Moilanen, 2007). However, despite indications of maturation, students remained transfixed on external motivation - grades. Schunk and Meece (2006) argued an existing link between self-efficacy/motivation and performance behaviors. While student confidence and learning beliefs sustained a mostly positive mindset, extrinsic motivation heavily overshadowed intrinsic motivation. The participants' focus on the external force of grades did not necessarily negatively manifest on post-essay scores as supported by the results of testing Null Hypotheses 3 and 4; however, the inclination possibly negatively influenced exam performance, as discussed in the conclusions presented for Null Hypothesis 1. Researchers concluded grades cultivated ego-targeted viewpoints and hindered learners' cognitive progress and self-efficacy toward performance tasks (Hattie & Clarke, 2019; Lipnevich & Smith, 2009). The researcher found the disconnect between students' high self-efficacy and low intrinsic motivation interesting and discussed the quandary further in recommendations for future research. Despite low internal motivation, participants displayed expressions of a growth mindset, possibly negating some of the power of external forces controlling students' academic lives. Ultimately, despite the influence of grades and apathy, addressed later in the section, learners desired to excel academically, represented by Student Q's exclamation, 'let me just excel and take it to the max.'

The student comments on the feedback forms showed confidence in the VLF cycle; participants not only expressed self-efficacy, but also a strong control of learning beliefs taking responsibility for errors on performance tasks. Learners read the feedback, understood the feedback, and concocted plans for applying the feedback for the

improvement of future learning assignments, engaging in all three of Zimmerman's (2001) phases of self-regulation. Researchers claimed the social-cognitive based (Bandura, 1986) SRL procedure correlated to self-efficacy, and students developed and improved strategies during the process (Schunk, 2001; Zimmerman, 2001; Zimmerman, 2008). Additionally, the participants demonstrated control of learning beliefs and exhibited more self-motivation, increased achievement behaviors, and higher-level capabilities in overcoming challenges (Al Khatib, 2010; Dweck & Leggett, 1988; Dweck & Master, 2008; Farrington et al., 2012; Pintrich et al., 1991).

For most students, APELC comprised the first AP class taken in the individuals' high school careers. To provide a college-level course competing with more privileged districts in the area, the instructor offered a fast-paced, challenging curriculum, seemingly catching many students off guard. In response, participants revealed a particularly low assessment of performance task values. In the researcher's opinion, participants did not make the connection between tasks and exam expectations, diluting interest. Furthermore, the readings and writing prompts presented to learners consisted of unfamiliar material, conceivably causing the students' expressions of apathy. The researcher also considered the challenging nature of the tasks; several learners articulated the difficulty of assignments inspired increased levels of motivation; however, most students reacted with indifference. Researchers suggested students linking task value to academic goals exhibited more effort, used more self-regulatory strategies, and displayed more intrinsic motivation (Farrington et al., 2012; Pintrich et al., 1991; Pintrich, 1999; Pintrich, 2003). Therefore, the researcher determined participants' meager value for tasks materialized in lower post-MSLQ scores and possibly sustained non-passing exam

scores, as addressed in Null Hypotheses 1 and 5. While somewhat discouraging, the researcher viewed the conclusions as an opportunity for further research, addressed later in the chapter. Furthermore, the researcher discussed the obstacles of providing a demanding curriculum to underserved students to a greater extent in implications for future practice.

A surprising result concerning self-motivation related to VLF concerned student perceptions of anxiety, revolving around time stressors. The researcher attributed student unease regarding timed writing assignments to a lack of prior practice in earlier courses. Pressure and doubt related to timed tests posed concerns for the instructor due to the AP exam's time limit. While the learners practiced many timed writing and timed multiple-choice practice tests over the course of the year, mentally preparing for a three-hour and 15-minute exam constituted a severe obstacle for participants. Interestingly, the current research covering the MSLQ provided little information on anxiety related to time. As timed writing anxiety did not constitute a large portion of the study, the researcher suggested further investigation and possibly further research on the topic. However, within the purview of the study, researchers agreed, in addition to extrinsic motivation, test anxiety negatively corresponded to positive motivational thinking and cognitive employment, and students displaying adverse thoughts and behaviors tended to perform poorly in the class (Garcia & Pintrich, 1996; Pintrich et al., 1993). While the research paralleled exam scores, student performance in class did not necessarily mirror the literature. Despite the omission of class grades as an element in the study, many students expressing anxiety over timed writing performed well in the course overall, suggesting timed writing pressure did not necessarily indicate failure.

Student perceptions of effort largely mirrored the decrease in post-MSLQ scores, as discussed in the review of Null Hypothesis 5. According to Bandura (1986), self-efficacious students powerfully controlled effort output. Later researchers also linked effort to self-efficacy, claiming learners possessing strong self-beliefs exuded higher levels of effort and achieved more academically (Al Khatib, 2010; Farrington et al., 2012; Pintrich & de Groot, 1990; Pintrich & Schunk, 2002, as cited in Pintrich, 2003). A curious finding of the study involved participants displaying increased levels of self-efficacy and control of learning beliefs on the MSLQ and qualitative data, yet a reduction in effort production. While thought-provoking, researchers discovered similar results. According to the literature, student beliefs did not automatically correlate with real performance outcomes; learners' high self-efficacy did not solely guarantee exceptional academic achievement, particularly when students lacked knowledge and skills (Schunk & Meece, 2006; Schunk & Zimmerman, 2007). The researcher attributed the discrepancy in part to participant apathy but questioned other factors contributing to the decline in effort over the school year, addressed further in suggestions for future research.

While evaluating monitoring and regulating within the VLF cycle, the researcher discovered most student remarks concerned comprehension. Curiously, the current research investigated within the purview of the study failed to address general comprehension in any capacity. However, researchers discussed student understanding within the realm of error-correcting behavior and amending pitfalls in comprehension (Pintrich et al., 1991; Pintrich, 1999; Schraw & Graham, 1997; Weinstein & Mayer, 1986; Young & Fry, 2008). Students successfully utilized monitoring and regulating after receiving feedback and working toward closing the gap in knowledge examined in the

feedback data collection sets. Participants provided detailed information concerning the elements of individual writing requiring correction and improvement. The researcher credited learner precision to the consistent presence of relevant success criteria documents and the instructor's directive feedback.

The researcher expressed some surprise at the decrease in cognitive strategies on the post-MSLQ addressed earlier in Null Hypothesis 4. However, the lack of comments regarding cognitive strategies from the qualitative data supported the finding. Throughout the school year, the instructor focused most classroom energy on feedback and neglected teaching self-regulatory skills explicitly, possibly leading to a decrease in MSLQ scores, as well as a dearth of student comments regarding the skills. However, from the relevant data collected, the researcher determined students used cognitive skills in the operationalization of feedback. Researchers argued learners utilized cognitive strategies for the purpose of improving performance tasks and increasing academic achievement (Moilanen, 2007; Schunk, 2001; Zimmerman, 2001; Zimmerman & Schunk, 2008), supporting the emergent themes of wielding cognitive skills as a form of applying feedback and as a tool for progress. Additionally, the meta-cognitive strategy planning involved the selection of cognitive skills (Schraw & Graham, 1997); students displayed less control over cognitive strategies, thus conceivably concluding in the participants' lack of comments on planning and a focus on monitoring and regulating. However, learners indicated on the feedback forms a recognition of cognitive skills as an element necessitating improvement, demonstrating while students exhibited a deficiency, participants acknowledged the weakness, an important distinction in feedback and self-regulation.

Student comments offered varied and, at times, contradictory perceptions of self-motivation and self-regulation during and after VLF. Seemingly, learners lacked strong volitional control with wavering commitment and intention concerning academic priorities (Corno, 2001). While participants' opinions on motivation and regulation fluctuated, viewpoints on equity and discrimination in feedback remained fixed.

Research Question 3: How do students perceive racial bias in feedback before and after participating in Visible Learning Feedback?

Two themes emerged from the data concerning Research Question 3 and included conviction against racial bias and teacher efficacy. Students categorically denied any racial bias in the APELC classroom, testified to positive relationships with the teacher, and supported efficacious feedback practices. The researcher believed participant conclusions resulted partially from the addition of wise feedback and CRT2 into the feedback procedure, further supporting learner perceptions of VLF as wise from the discussion of Research Question 1. However, important differences existed between the study and the current research on racial discrimination in feedback. Most studies concerned a different population make-up than the sample of the study, using groups with varied demographics (Croft & Schmader, 2012; Harber et al., 2018), whereas the study consisted of a mostly homogenous racial group. Learners may not have experienced bias in the past or in the current study, due to consistent attendance in a minority-majority school district. Furthermore, the prevailing research investigated instructors without a personal connection to the participants. The researcher in the study also acted as the instructor of the APELC course, possibly misconstruing or influencing student opinions.

Despite contrasting research designs and population limitations, the strong wording of the participants' remarks indicated the reliability of the data and results.

Research Question 4: How do students perceive Motivational Interviewing?

Before starting the MI pilot program, the researcher expressed apprehension; in the current literature, most studies occurred in the clinical setting, and even in studies taking place in the educational sphere, MI coaches consisted of professional practitioners, such as counselors or psychologists (see Table 4). To the researcher's knowledge, the current study constituted the first investigation where the researcher also acted as the MI coach in an unprofessional capacity. Despite the trepidation and limitations, MI participants overwhelmingly communicated positive experiences with the intervention. Students viewed MI as encouraging motivation and promoting growth. Furthermore, learners voiced perceptions of MI as personalized and enjoyable.

The purpose of MI, as outlined by Miller and Rollnick (2013), served to decrease client ambivalence and foster positive change. Participant comments indicated MI helped academic achievement and personal growth, as well as individuals' expressions of thinking about MI outside of sessions, reassured the researcher of the program's beneficial qualities. The researcher believed the sentiments stemmed from learners embracing the opportunity to freely discuss the aspects of students' individual lives most important to each person. Researchers signified the development of autonomy as a basic need for adolescents to thrive, and MI offered a time and a place for the cultivation of learner independence (Baer & Peterson, 2002; Ryan & Deci, 2000).

The current literature discussed the mystery of the perfect dosage of session length and session number for clients. researchers agreed the determinants depended on

individual clients; however, positive outcomes resulted sometimes after just one or two sessions (Strait et al., 2014). While the study supported the prior resolution, an important discovery included, from the researcher's perspective, the more sessions a student attended, and the longer the sessions persisted, the more the adolescent exhibited freedom of expression. Research reflected the concept and added the private aspect of MI also resulted in more openness from participants (Snape & Atkinson, 2017), supported by Student A's comment, 'It's all confidential, so like I can say anything. That's why I like these sessions so much. I feel like I just this is a place to vent.' Learners engaging in longer and more frequent conversations, particularly Participant A and Participant C, offered more personal information and dove deeper into the individuals' struggles and ambitions. The researcher deduced the increased time spent between the student and the interviewer established heightened levels of trust and comfortability, thus increasing the personal nature of the discussions.

Jensen (2010) claimed the impracticality of a short MI intervention leading to lasting change; however in the current study, even students engaging in less frequent conversations articulated the benefits of the intervention and advocated for future sessions. The researcher conceded the sentiments measuring enduring change fell outside the purview of the study and addressed the concept in implications for further practice. In the same fashion, the studies concerning MI with advanced students indicated the restriction of only two sessions per student served as a limitation and represented a situation inconsistent with the reality of mental health support for students (O'Brennan et al., 2020; Suldo et al., 2021). The researcher seized the recommendation of allowing a more flexible implementation of MI within the boundaries of the school schedule in the

current study; however, the researcher addressed further suggestions for future practice later in the chapter (Suldo et al., 2021). Ultimately, participants signified the MI pilot program as time well spent.

Research Question 5: How do students perceive self-regulation and self-motivation during and after participating in Motivational Interviewing?

While similar to Research Question 2, students contributed very different perceptions of self-motivation and self-regulation regarding MI, as opposed to feedback. Most participants claimed responsibility for poor performance or misunderstandings relating to VLF; however, MI conversations revealed students struggled with several extenuating circumstances impeding success, both personally and academically. Participants argued challenging classes, over-packed schedules, and other people hindered progress. The researcher attributed the new conditions to the safe environment of MI, allowing students an open speaking space. The existing literature approved the use of MI for academic and social-emotional support and guidance for adolescents, arguing for the feasibility of the approach (Enea & Dafinoiu, 2009; Frey et al., 2011; Iachini, 2016; Kittles & Atkinson, 2009; Snape & Atkinson, 2016; Snape & Atkinson, 2017; Terry et al., 2020). Thus, in addition to academic struggles, participants expressed openly about life values, seeming to enjoy the ranking activity concerning values. Nevertheless, learners offered authentic statements regarding the elements of the individuals' lives necessitating improvement. Multiple students voiced distress over self-esteem. Whereas most participants communicated self-efficacy and control of learning beliefs relating to feedback, on a personal level, students worried far more about the state of "the self." The MI guide accepted learner concerns and recognized insecurity as a common theme in

adolescence. Students also expressed more academic doubts in the MI conversations; participants utilized the encouraging nature of MI as an opportunity to converse about academics, and not just pertaining to the coach's APELC class.

Students displayed cognizance and confidence reflecting recent research claiming MI resulted in participant revelations of insight, self-awareness, and feelings of inclusion in the educational environment (Suldo et al., 2021). The researcher presumed participant intuition concerning personal and academic life resulted in demonstrations of self-assurance, increasing self-efficacy. The study's conclusions endorsed the current literature where researchers advocated MI with adolescents promoted progress in satisfaction of life, the development of self-efficacy, and increased levels of positive behavior (O'Brennan et al., 2020; Reich et al., 2015; Strait et al., 2012b; Strait et al., 2012a; Strait et al., 2014; Suldo et al., 2021).

However, participant comments deviated from the research in the realm of motivation. The researchers mentioned above also claimed adolescents engaging in MI produced higher levels of positive motivation, yet the current study discovered contradictory sentiments. Throughout the school year, students possessed wavering self-motivation, at times bordering on apathy, and a strong focus on external motivation. Despite a heavy emphasis on indifferent self-motivation and extrinsic motivation, the post-MSLQ results opposed the seemingly negative conclusions from the MI data sets. The experimental group increased in intrinsic goal orientation and decreased in extrinsic goal orientation. At first puzzling, the researcher determined participants exuded attention to unfavorable notions in MI conversations during the year but concluded the year, and engaged in the post-MSLQ, with a more positive, encouraged outlook. The presence,

albeit less heavy, of displays of intrinsic mindset and positive future opinions, buttressed the previous judgment.

Whereas student anxiety persisted mostly in the realm of timed writing tests regarding feedback, participants exhibited multiple stressors in the MI discussions. Researchers alleged a range of professionals urged for increased mental health support in schools, yet a shortage of MI interventions for struggling students existed in the current educational climate (Frey et al., 2011; Kittles & Atkinson, 2009; Strait et al., 2014; Terry et al., 2020). Additionally, social-emotional and MI interventions further neglected high-achieving AP students experiencing higher levels of pressure, inadequacy, exhaustion, and academic and emotional difficulties (O'Brennan et al., 2020; Suldo et al., 2018). The researcher discovered, in addition to academics, students struggled with personal relationships, mental health concerns, and work challenges. Notably, seven out of eight learners engaged in after-school jobs, sometimes after participating in after-school activities. Unsurprisingly, students expressed burnout, exhaustion, and a lack of time to complete important schoolwork, often from honors or AP classes. The researcher felt disturbed by the overburdened state of the participants and addressed the sentiment in recommendations for future research.

Students' mental health also alarmed the researcher. While the MI coach engaged in two training sessions for practicing MI with youth (see Appendix J), as well as two earlier training sessions on Youth Mental Health First Aid, the guide did not constitute a mental health professional and therefore did not possess the knowledge or power in diagnosing students. However, the interviewer sensed signs of clinical anxiety and depression appearing in participants, in addition to Student E's self-diagnosis of

dissociative identity disorder. Due to the guide's unprofessional designation, the researcher labeled most of the sentiments featuring representations of anxiety and depression as apathy. For example, several students blamed lack of effort on laziness or procrastination. While the existing literature proposed defensive reactions, such as procrastination, possibly resulted instead of the adaptation of problem-solving skills after a poor performance event, the research did not account for circumstances external to education. Therefore, the researcher identified the substance of the comments as possible symptoms of depression. According to the Mayo Clinic (2022), teens dealing with depression experienced emotional changes, such as loss of interest, conflict with friends and/or family, low self-esteem, and trouble concentrating, as well as behavior changes, such as lack of energy, too much or not enough sleep, and poor performance and/or attendance at school. In the interviewer's opinion, all eight participants exhibited one or more of the above-stated symptoms, yet none of the students mentioned depression. A reason for the lack of participant knowledge concerning mental health conceivably originated from a cultural bias against psychology and therapy, as well as an absence of mental health education in schools. The researcher addressed student mental health further in recommendations for future research later in the chapter.

In accordance with the only studies concerning MI and AP students at the time of the study (O'Brennan et al., 2020; Suldo et al., 2021), participants articulated time management as a primary challenge hindering academic achievement, but also mentioned organization as a dominant concern. While students struggled with organization, learners recognized the strategy's significance and marked the skill as requiring improvement. Researchers, however, asserted task and time management consisted of students' number

one issue for growth focused on in sessions (O'Brennan et al., 2020; Suldo et al., 2021). Interestingly, participants demonstrated battling with time management, but, contrary to the prior research, showed signs of successful environment management. Most of the students' challenges with time resulted from the overwhelming academic and personal schedules mentioned previously, possibly adding to a decreased state of mental health as well. While the Mayo Clinic (2022) asserted depression as a serious condition not treatable with will power alone, students expressed the desire to demonstrate more effort, at times indicating MI inspired dedicated attempts at 'trying harder' (Student A).

Despite the researcher's concerns regarding participants' mental health, learners successfully utilized MI as a platform to cultivate autonomy and forge identity. Ryan and Deci (2000) designated autonomy as one of three innate psychological needs required for a stable state of well-being for adolescents. Participants fulfilled the necessity of developing autonomy and identity through planning and goal-setting (Brandstädter, 2006). Planning, an integral element of self-regulation, also consisted of the final step in the processes of MI. Before planning occurred in MI conversations, the guide and participants engaged in the previous processes of engaging, focusing, and evoking (Rosengren, 2018). Because students successfully carried out the planning stage, the researcher deemed the prior aspects of MI as completed with fidelity. Interestingly, the researcher found no comments or data related to planning in the realm of feedback, but copious amounts of remarks within MI, indicating students required steppingstones helping the individuals reach the planning stage. Once students felt comfortable in the space, focused on specific struggles, and engaged in change talk (Rollnick et al., 2016), participants strategically set forth actions transforming words into behaviors.

Furthermore, learners acknowledged and celebrated after achieving previously set goals. Researchers affirmed long-term decision making and preparing for personal futures concluded in further ossification of identity (Brandstädter, 2006; Gestsdottir & Lerner, 2008; McClelland et al., 2018). However, the researcher observed the learners participating in numerous and longer sessions created more developed and detailed plans, whereas students engaging in fewer and shorter sessions established vague plans and actions for fulfillment.

Relationships constituted a large portion of the content in the MI conversations. Researchers contended experiences with family members and peers aided the shaping of adolescents' attitudes, motivation, self-efficacy, sense of belonging, and behavior (Gestsdottir & Lerner, 2008; Schunk & Meece, 2006). Throughout the MI discussions, students' identities evolved as the learners processed situations with family, friends, and authority figures, changing and regulating behavior, as necessary. The MI coach deduced learners spoke about many of the occurrences for the first time, indicating the process of MI possibly benefitted the resolution of some incidences, furthering the maturation of identity.

Additionally, MI supported adolescent development of the pre-frontal cortex through monitoring and regulating, further cementing a burgeoning autonomy (Brandstädter, 2006; Gestsdottir & Lerner, 2008; McClelland et al., 2018; Moilanen, 2007). Participants not only recognized tensions in the learners' lives but also worked to improve personal behaviors. Student comments indicated MI played a role in supporting positive behaviors in and out of sessions; Student C embodied the sentiment describing the coach's 'voice in my mind,' helping the participant self-regulate.

Implications for Further Practice

The study possessed multiple implications for further practice within the studied district, as well as for AP and MI nationwide. Due to maintained non-passing scores, the researcher suggested modifying the VLF cycle specifically to help alleviate timed writing anxiety, while still allowing students to practice for the exam and adding a more detailed and explicit self-regulation curriculum. Additionally, the researcher advocated including the practice of goal-setting and allowing students to determine preferred modes and frequencies of feedback delivery. The researcher planned to incorporate the changes in future APELC classes. While the researcher designed and presented the VLF process and information on wise feedback as professional development to members of the district, the researcher believed the College Board should incorporate feedback practices into the APELC curriculum, increasing equity in the program. The researcher planned on applying for a professional development position within the College Board, teaching new and returning APELC instructors further disseminating the knowledge gleaned from the study.

As the practice of MI remained in the infancy stage in the educational sphere, opportunities for growth abounded. Along with O'Brennan et al. (2020) and Suldo et al. (2021), the current study aimed at filling the gap in utilizing MI in academia with AP students. Furthermore, the study maintained the status of the only research investigating the use of MI with mostly underserved minority students. Rutschman (2018) claimed the MI practice prevented stereotyped counseling and contained no bias concerning race, gender, or cultural background; however, studies examining equity, diversity, and discrimination regarding MI simply did not exist in the current literature, providing a

fortuitous opening for future educational researchers, MI practitioners, and MI trainers. Additionally, the conclusions of the study indicated several adjustments necessary to the MI pilot program. The researcher suggested creating a more structured framework and a higher number of sessions for each student, at least four to five, especially considering the limited amounts of time slots available in the school day schedule. Despite a desire to continue practicing MI, especially with the eight participants of the study, the school deleted advisory from the 2022-2023 school bell schedule and other time constraints prevented an extension of the program. However, the researcher participated in an advisory planning committee for the 2023-2024 school year, and ensured advisory's re-placement in the schedule, as well as authorized specific days of the specialized time to implement social-emotional supportive resources.

Recommendations for Future Research

The most pervasive limitation of the study consisted of the small population and convenience sample. The meager number of participants resulted from the location of the study taking place in the researcher's classroom, concluding in a limited population. Furthermore, fewer students signed consent forms than originally anticipated, and several students dropped out of the study for various reasons, reducing the sample size. A larger sample size conceivably mitigated the skewed MSLQ results, and the researcher recommended conducting a modified study with a larger, randomized population and sample. The conditions of daily school life also played a role concerning the participants. Persistent violent altercations in the hallways delayed class time initiation, resulted in tardy students to the APELC class and MI sessions, and conceivably increased stress and anxiety in learners. Nonetheless, the resilience of the participants charging through a

difficult and sometimes threatening school year shocked, but encouraged the researcher/instructor/MI practitioner. Additionally, one student necessitated dropping out of the study, due to a long-term suspension, a surprising outcome for an advanced learner. The researcher advocated future studies investigate a modified version of the study including school violence and discipline in school as mitigating factors.

Demographically, students in the district encountered challenges, such as poverty, food insecurity, and homelessness. Due to the already complex nature of the study, the researcher decided not to conduct a factor analysis, but recommends future researchers examine the troubling elements in reference to VLF and MI. Furthermore, the studied district enrolled an increasing number of Hispanic students. While the study focused on the demographic of minority students as a whole, the steadily rising number of Hispanic students deserves further inquiry by future researchers.

Relating to equity, the study revealed a mostly one-sided, homogenous view of racial bias in feedback, possibly due to the minority-majority status of the participants in the studied district. The researcher recommended further inquiries into discriminatory feedback practices with a larger, more diverse population revealing whether student perceptions from the current study paralleled other students of color residing in non-minority-majority districts. An element of interest not examined concerning feedback in the study concerned student implementation of received feedback. The researcher later questioned, Did students actually apply the feedback and fix the errors discussed in the feedback forms? In future practice and research, the researcher would amend the methodology to include the evaluation of a first draft, student responses on a feedback

form, and analysis of the utilization of feedback on a second draft, exploring the fulfillment of the VLF cycle.

Further possible changes to the MI pilot program include self-assessment of the coach, submitting recorded sessions to the Motivational Interviewing Network of Trainers (MINT) for feedback, and mental health evaluations for participants from a licensed professional. During the MI training sessions, the interviewer participated in self-assessment activities, but due to time constraints, the researcher cut the concept from the study. The self-assessments included counting the number of MI skills used in a conversation and allowed the practitioner to improve interviewing strategies. Another idea deleted from the study, due to limited time and funds involved the option to send MINT recorded conversations where a licensed trainer listened, assessed, and provided feedback for the guide to progress and grow with the approach. The primary reason the researcher added a social-emotional intervention to the study resulted from previous experiences with students struggling with mental health, and the conclusions of the study supported participant challenges with overwhelming and draining schedules. However, the depth and breadth of participants' difficulties surprised the interviewer, and the researcher realized the inadequacy of the program in terms of medical benefits. The researcher advocated for an avenue within the MI program to refer students struggling with serious mental health issues to a licensed psychologist or therapist, while maintaining sessions with participants measuring growth.

The researcher also recommended an extended study on MI with adolescents. As previously mentioned, Jensen et al. (2010) contended lasting change resulting from a very short MI intervention seemed unreasonable, suggesting more time with the practice

produced better outcomes, a conclusion resonating with the current study. Currently, zero longevity studies existed concerning MI with students focused on academic and personal positive change. The researcher promoted a future study starting with juniors, following the same participants into senior year, showing whether changes enacted in the first year of MI persisted into the next year.

Enduring questions remained regarding student effort, perseverance, task value, and the contradictory relationship between participants' high self-efficacy and low intrinsic motivation. The researcher recommended investigating the connection between the persistent decline in effort over the course of the school year with a lack of grit. Furthermore, the researcher suspected the absence of a vertical alignment between different grades of English contributed to unfamiliarity with challenging, timed tasks, resulting in disinterest in and indifference for assignments. The researcher advocated future studies explore the difference in task value between vertically aligned courses and unaligned courses, determining whether an influence exists.

The researcher employed a mixed-method approach to the study, ensuring the strengths from one method surmounted the weaknesses of the other. The design proved useful as several unexpected results originated from the tested hypotheses. For instance, Null Hypotheses 1 and 2 demonstrated no improvement in AP exam scores as a result of VLF or MI. However, student comments revealed the positive qualities and benefits from the two interventions. Furthermore, while the quantitative results showed no real statistical difference in MSLQ scores or AP exam scores, the conclusions from Null Hypotheses 3 and 4 indicated the powerful influence of feedback on student improvement in the post-test essay practice. Despite the absence of APELC post-essays from previous

years, in the instructor's opinion, the participants of the study exhibited more growth from pre- to post-essays than prior groups of students who did not participate in a structured feedback intervention. Additionally, qualitative data demonstrated the positive benefits of the VLF feedback framework in the APELC classroom. Moreover, participant remarks indicated VLF fulfilled every factor in the elements for powerful feedback list outlined in Chapter One (see Table 2).

The qualitative data largely supported the findings of Null Hypotheses 5 and 6. Participants heavily fluctuated in the favorable application of self-motivation and utilization of self-regulation, both personally and academically. According to researchers, successful, *intentional*, self-regulation required more than knowledge of the strategies, rather, SRL involved students purposefully choosing accurate techniques, actively pursuing motivation, and setting long-term goals with the future in mind (Gestsdottir & Lerner, 2008; McClelland et al., 2018; Paris et al., 2001; Schunk, 2001; Zimmerman, 2022). Within the study, most students correctly employed one or more of the above, but, in the researcher's opinion, learners struggled putting all the pieces together and self-regulating in a comprehensive manner.

Conclusion

As the first and only instructor of APELC at the studied school, the researcher acquired a weighty attachment to and investment in the course and to the success of the students in the class. Furthermore, the experience of teaching underserved minority students forever changed the researcher's view of academia and the meaning of education on a personal level. Therefore, when learners maintained non-passing AP scores, the researcher pursued an investigation with the study. Despite enduring scores of 1 and 2

after the implementation of VLF and MI, the supporting results of the study demonstrated positive qualities and benefits of the new approaches in and out of the classroom. The interventions represented aligned, equitable frameworks serving a diverse group of students, increasing academic and social-emotional support for participants.

The primary implication of the study consisted of the employment and prioritization of equity practices in the classroom. Utilizing wise feedback, actualizing Culturally Responsive Teaching, and invoking the spirit of MI transformed the researcher's teaching practice. While steps toward eliminating discrimination in the individual classroom proved pivotal, a revolution in approaches to equity in school districts and across America persisted in the form of empty promises. According to researchers, districts and states must take action, and design and apply progressive policies in order to create a just and fair education for *all* (Fields, 2021; Ndura et al., 2003; Reyes, 2010; Smith et al., 2017). In conclusion, VLF and MI cultivated a safe learning environment, trusting relationships with the instructor, and conclusively assisted students in personal and academic growth.

References

ACT. (2014). *Understanding the underserved learner*. https://www.act.org/content/dam/act/unsecured/documents/STEM-Underserved-Learner.pdf

Al Khatib, S. A. (2010). Meta-cognitive self-regulated learning and motivational beliefs as predictors of college students' performance. *International Journal for Research in Education*, *27*(8), 57-71.

Atkinson, C. (2013, July 1). *Facilitating Change 2: Motivational Interviewing using the Menu of Strategies (CD: ROM).* Bath: Sodapop; 2013. https://www.escholar.manchester.ac.uk/uk-ac-man-scw:192860

Atkinson, C., & Amesu, M. (2007). Using solution-focused approaches in motivational interviewing with young people. *Pastoral Care in Education*, *25*(2), 31–37. https://doi.org/10.1111/j.1468-0122.2007.00405.x

Atkinson, C., & Woods, K. (2018). Integrity of school-based MI: Protocols for practitioners. In *In Motivational Interviewing, Children and Young People III: Education and Community Settings* (pp. 76–91). Positive Behaviour Management.

Baer, J. S., & Peterson, P. L. (2002). Motivational interviewing with adolescents and young adults. In *Motivational interviewing: Preparing people for change* (pp. 320–332). Guilford Press.

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational behavior and human decision processes*, *50*(2), 248-287.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Asian Journal of Social Psychology*, *2*(1), 21–41. https://doi.org/10.1111/1467-839x.00024

Barth, P. (2016). Educational Equity: What Does It Mean? How Do We Know When We Reach It? Research Brief. *Center for Public Education*.

Bauer-Wolf, J. (2022, July 8). *College Board no longer disclosing AP test results by ethnicity, state*. Higher Ed Dive. https://www.highereddive.com/news/college-board-no-longer-disclosing-ap-test-results-by-ethnicity-state/626811/

Becker, B. E., & Luthar, S. S. (2002). Social-emotional factors affecting achievement outcomes among disadvantaged students: Closing the achievement gap. *Educational Psychologist*, *37*(4), 197–214. https://doi.org/10.1207/s15326985ep3704_1

Bem, D. J. (1972). Self-perception theory. *Advances in Experimental Social Psychology*, *6*, 1–32. Academic Press. http://healthyinfluence.com/wordpress/wp-content/uploads/2011/05/SP-Theory-Bem-Advances.pdf

Brandstädter, J. (2006). Action perspectives on human development. In W. Damon (Series Ed.), & R. Lerner (Vol. Ed.), Handbook of child psychology (Theoretical models of human development). (Vol. 1, pp. 516–568). Hoboken, NJ: Wiley

Brock, A., & Hundley, H. (2017). *The growth mindset playbook: A teacher's guide to promoting student success*. Ulysses Press.

Brody, A. E. (2009). Motivational interviewing with a depressed adolescent. *Journal of Clinical Psychology*, *65*(11), 1168–1179. https://doi.org/10.1002/jclp.20636

Brookhart, S. M. (2008). *How to give effective feedback to your students*. Hawker Brownlow Education. http://perino.pbworks.com/f/Effective+Feedback.pdf

Brooks, C., Carroll, A., Gillies, R., & Hattie, J. (2019). A matrix of feedback. *Australian Journal of Teacher Education, 44*(4), 14–32. https://doi.org/10.14221/ajte.2018v44n4.2

Burke, B. L., Arkowitz, H., & Menchola, M. (2003). The efficacy of motivational interviewing: A meta-analysis of controlled clinical trials. *Journal of Consulting and Clinical Psychology, 71*(5), 843–861. https://doi.org/10.1037/0022-006x.71.5.843

Butler, D. L., & Winne, P. H. (1995). Feedback and self-regulated learning: A theoretical synthesis. *Review of Educational Research, 65*(3), 245–281. https://doi.org/10.3102/00346543065003245

Census Reporter. (2021). *Census profile: Ferguson-Florissant R-II School District, MO*. Census Reporter. https://censusreporter.org/profiles/97000US2912010-ferguson-florissant-r-ii-school-district-mo/

Clariana, R. B., Wagner, D., Roher Murphy, L. C. (2000). Applying a connectionist description of feedback timing. *Educational Technology Research and Development, 48*(3), 5-21.

Cohen, G. L., Steele, C. M., & Ross, L. D. (1999). The mentor's dilemma: Providing critical feedback across the racial divide. *Personality and Social Psychology Bulletin, 25*(10), 1302–1318. https://doi.org/10.1177/0146167299258011

College Board. (2006, July 10). *AP English language and composition: The course.* AP Central. https://apcentral.collegeboard.org/courses/ap-english-language-and-composition/course#:~:text=AP%20English%20Language%20and%20Composition%20is%20an%20introductory%20college%2Dlevel

College Board. (2012). Summary reports: 2012. Retrieved from http://www.collegeboard.com/student/testing/ap/exgrd_sum/2012.html

College Board. (2018a). *AP Score Reports for Educators | College Board*. Scores.collegeboard.org. https://scores.collegeboard.org/

College Board. (2018b, June 19). *SA: About AP: How AP Develops Courses and Exams: Score Setting and Scoring*. AP Central. https://apcentral.collegeboard.org/courses/how-ap-develops-courses-and-exams/score-setting-and-scoring

College Board. (2018c, August 2). *AP Score Reports for Educators | College Board*. Scores.collegeboard.org. https://scores.collegeboard.org/

College Board. (2018d, December 6). *How We're Governed – About The College Board Organization*. About Us. https://about.collegeboard.org/governance

College Board. (2019a). *AP Score Reports for Educators | College Board*. Scores.collegeboard.org. https://scores.collegeboard.org/

College Board. (2019b, February 9). *About Us – The College Board – Regional Offices*. About Us. https://about.collegeboard.org/

College Board. (2019c, July 25). *AP Score Reports for Educators | College Board*. Scores.collegeboard.org. https://scores.collegeboard.org/

College Board. (2020a). *AP English Language and Composition: The Exam | AP Central – The College Board*. AP Central. https://apcentral.collegeboard.org/courses/ap-english-language-and-composition/exam

College Board. (2020). Annual AP Participation 1956-2020. https://reports.collegeboard.org/media/pdf/Annual-AP-Program-Participation-1956-2020_1.pdf

College Board. (2020b). *AP Score Reports for Educators | College Board*. Scores.collegeboard.org. https://scores.collegeboard.org/

College Board. (2020c). *Learn About the Advanced Placement (AP) Program*. Bigfuture.collegeboard.org. https://bigfuture.collegeboard.org/get-in/testing/learn-about-the-ap-program

College Board. (2021a). *AP English Language and Composition Exam Free-Response Question and Scoring Information Archive – AP Students | College Board*. Apstudents.collegeboard.org. https://apstudents.collegeboard.org/courses/ap-english-language-and-composition/free-response-questions-by-year

College Board. (2021b). *AP Program Results: Class of 2021 – Reports | College Board*. Reports.collegeboard.org. https://reports.collegeboard.org/ap-program-results/2021#:~:text=Amid%20disruptions%20caused%20by%20the

College Board. (2021c). *AP Score Reports for Educators | College Board*. Scores.collegeboard.org. https://scores.collegeboard.org/

College Board. (2021d). *New Analyses of AP Scores of 1 and 2 Background*. https://research.collegeboard.org/media/pdf/new-analyses-ap-scores-1-and-2.pdf

College Board. (2021). New Analyses of AP Scores of 1 and 2. https://research.collegeboard.org/media/pdf/new-analyses-ap-scores-1-and-2.pdf

Corno, L. (2001). Volitional aspects of self-regulated learning. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (pp. 191–225). Lawrence Erlbaum Associates.

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications, Inc.

Croft, A., & Schmader, T. (2012). The feedback withholding bias: Minority students do not receive critical feedback from evaluators concerned about appearing racist. *Journal of Experimental Social Psychology*, *48*(5), 1139–1144. https://doi.org/10.1016/j.jesp.2012.04.010

Duckworth, A. L., & Yeager, D. S. (2015). Measurement matters. *Educational Researcher*, *44*(4), 237–251. https://doi.org/10.3102/0013189x15584327

Duncan, T. G., & McKeachie, W. J. (2005). The making of the motivated strategies for learning questionnaire. *Educational Psychologist*, *40*(2), 117–128. https://doi.org/10.1207/s15326985ep4002_6

Dweck, C. S., & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, *95*(2), 256–273. https://doi.org/10.1037/0033-295x.95.2.256

Dweck, C. S., & Master, A. (2008). Self-theories motivate self-regulated learning. In D. H. Schunk & B. J. Zimmerman (Eds.), *Motivation and self-regulated learning: Theory, research, and applications* (pp. 31–51). Taylor & Francis Group.

Eccles, J. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motives* (pp. 79–146). W. H. Freeman and

Company. http://education-webfiles.s3-website-us-west-2.amazonaws.com/arp/garp/articles/ecclesparsons83b.pdf

Ehret, P. J., LaBrie, J. W., Santerre, C., & Sherman, D. K. (2013). Self-affirmation and motivational interviewing: Integrating perspectives to reduce resistance and increase efficacy of alcohol interventions. *Health Psychology Review*, *9*(1), 83–102. https://doi.org/10.1080/17437199.2013.840953

Elliott, V. (2018). Thinking about the coding process in qualitative data analysis. *The Qualitative Report, 23*(11), 2850-2861.

Enea, V., & Dafinoiu, I. (2009). Motivation/solution-focused intervention for reducing school truancy among adolescents. *Journal of Cognitive and Behavioral Psychotherapies*, *9*(2), 185–198.

Ennis, R. H. (1987). A taxonomy of critical thinking dispositions and abilities.

Farrington, C. A., Roderick, M., Allensworth, E., Nagaoka, J., Keyes, T. S., Johnson, D. W., & Beechum, N. O. (2012). *Teaching Adolescents to Become Learners: The Role of Noncognitive Factors in Shaping School Performance--A Critical Literature Review*. Consortium on Chicago School Research. 1313 East 60th Street, Chicago, IL 60637.

Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford University Press.

Fields, H. (2021). *How to Achieve Educational Equity*. Dr. Howard E. Fields III.

Finn, C. E., & Scanlan, A. E. (2021). *Learning in the fast lane: The past, present, and future of advanced placement.* Princeton University Press.

Frey, A. J., Cloud, R. N., Lee, J., Small, J. W., Seeley, J. R., Feil, E. G., Walker, H. M., & Golly, A. (2011). The promise of motivational interviewing in school mental

health. *School Mental Health, 3*(1), 1–12. https://doi.org/10.1007/s12310-010-9048-z

Gabbay, R. A., Kaul, S., Ulbrecht, J., Scheffler, N. M., & Armstrong, D. G. (2011). Motivational interviewing by podiatric physicians: A method for improving patient self-care of the Diabetic. *Journal of the American Podiatric Medical Association, 101*(1), 78–84.

Gamlem, S. M., & Smith, K. (2013). Student perceptions of classroom feedback. *Assessment in Education: Principles, Policy & Practice, 20*(2), 150–169. https://doi.org/10.1080/0969594x.2012.749212

Garcia, T., & Pintrich, P. R. (1996). Assessing students' motivation and learning strategies in the classroom context: The motivated strategies for learning questionnaire. In M. Birenbaum & F. Dochy (Eds.), *Alternatives in assessment of achievements, learning processes, and prior knowledge* (pp. 319–339). Springer.

Garn, A. C., & Jolly, J. L. (2014). High ability students' voice on learning motivation. *Journal of Advanced Academics, 25*(1), 7–24. https://doi.org/10.1177/1932202x13513262

Gestsdottir, S., & Lerner, R. M. (2008). Positive development in adolescence: The development and role of intentional self-regulation. *Human Development, 51*(3), 202–224. https://doi.org/10.1159/000135757

Gilbert, P. (2014). The origins and nature of compassion focused therapy. *British Journal of Clinical Psychology, 53*(1), 6–41. https://doi.org/10.1111/bjc.12043

Gurcay, D., & Ferah, H. O. (2018). High school students' critical thinking related to their metacognitive self-regulation and physics self-efficacy beliefs. *Journal of*

Education and Training Studies, *6*(4), 125. https://doi.org/10.11114/jets.v6i4.2980

Hair, N. L., Hanson, J. L., Wolfe, B. L., & Pollak, S. D. (2015). Association of child poverty, brain development and academic achievement. *JAMA Pediatrics*, *169*(9), 822. https://doi.org/10.1001/jamapediatrics.2015.1475

Hall, K., Gibbie, T., & Lubman, D. I. (2021). Motivational interviewing techniques: Facilitating beahviour change in the general practice setting. *Australian Family Physician*, *41*(9), 660–667.

Hamilton, R. J., & Akhter, S. (2009). Construct validity of the motivated strategies for learning questionnaire. *Psychological Reports*, *104*(3), 711–722. https://doi.org/10.2466/pr0.104.3.711-722

Hammond, Z. (2015). *Culturally responsive teaching and the brain: Promoting authentic engagement and rigor among culturally and linguistically diverse students*. Corwin, A Sage Company.

Harber, K. D., Reeves, S., Gorman, J. L., Williams, C. H., Malin, J., & Pennebaker, J. W. (2018). The conflicted language of interracial feedback. *Journal of Educational Psychology*, *111*(7), 1220–1242. https://doi.org/10.1037/edu0000326

Harks, B., Rakoczy, K., Hattie, J., Besser, M., & Klieme, E. (2013). The effects of feedback on achievement, interest, and self-evaluation: The role of feedback's perceived usefulness. *Educational Psychology*, *34*(3), 269–290. https://doi.org/10.1080/01443410.2013.785384

Harmon-Jones, E., & Mills, J. (2019). An introduction to cognitive dissonance theory and an overview of current perspectives on the theory. In E. Harmon-Jones (Ed.),

Cognitive dissonance: Reexamining a pivotal theory in psychology (2nd ed. pp. 3–24). American Psychological Association. https://doi.org/10.1037/0000135-001

Harris, L. R., Brown, G., & Harnett, J. A. (2014). Analysis of New Zealand primary and secondary student peer- and self-assessment comments: Applying Hattie & Timperley's feedback model. *Assessment in Education Principles Policy and Practice*, *22*(2), 265-281.

Hatcher, R. R., & Pond, B. N. (1998). Standardizing Organizational Skills for Student Success. *The Phi Delta Kappan, 79*(9), 715–716. http://www.jstor.org/stable/20439319

Hattie, J. (2012). *Visible learning for teachers: Maximizing impact on learning*. Routledge.

Hattie, J. (2018). *Hattie effect size list: 256 Influences Related To Achievement*. Visible Learning. https://visible-learning.org/hattie-ranking-influences-effect-sizes-learning-achievement/

Hattie, J. A. C., & Yates, G. C. R. (2014). Using feedback to promote learning. In V. A. Benassi, C. E. Overson, & C. M. Hakala (Eds.), *Applying science of learning in education: Infusing psychological science into the curriculum* (pp. 45–58). Society for the Teaching of Psychology.

Hattie, J., & Clarke, S. (2019). *Visible learning: Feedback*. Routledge, Taylor & Francis Group.

Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, *77*(1), 81–112. https://doi.org/10.3102/003465430298487

Hattie, J., & Yates, G. (2015, February 9). *Feedback in the classroom by John Hattie and Greg Yates*. Visible Learning. https://visible-learning.org/2015/02/feedback-in-the-classroom/

Heikkilä, A., & Lonka, K. (2006). Studying in higher education: Students' approaches to learning, self-regulation, and cognitive strategies. *Studies in Higher Education, 31*(1), 99–117. https://doi.org/10.1080/03075070500392433

Henry, M., de Sousa, T., Roddey, C., Gayen, S., & Bednar, T. J. (2021). *The 2020 Annual Homeless Assessment Report (AHAR) to Congress*. https://www.huduser.gov/portal/sites/default/files/pdf/2020-AHAR-Part-1.pdf

Hettema, J., Steele, J., & Miller, W. R. (2005). Motivational interviewing. *Annual Review of Clinical Psychology*, *1*(1), 91–111. https://doi.org/10.1146/annurev.clinpsy.1.102803.143833

Iachini, A. L., Rogelberg, S., Terry, J. D., & Lutz, A. (2016). Examining the feasibility and acceptability of a motivational interviewing early intervention program to prevent high school dropout. *Children & Schools*, *38*(4), 209–217. https://doi.org/10.1093/cs/cdw033

Jensen, C. D., Cushing, C. C., Aylward, B. S., Craig, J. T., Sorell, D. M., & Steele, R. G. (2010). Effectiveness of motivational interviewing interventions for adolescent substance use behavior change: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, *79*(4), 433–440. https://doi.org/10.1037/a0023992

Johnson, R. B., & Christensen, L. (2020). *Educational research: Quantitative, qualitative, and mixed approaches.* (7th ed.). Sage Publications.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational researcher*, *33*(7), 14-26.

Kittles, M., & Atkinson, C. (2009). The usefulness of motivational interviewing as a consultation and assessment tool for working with young people. *Pastoral Care in Education*, *27*(3), 241–254. https://doi.org/10.1080/02643940903133870

Klopfenstein, K. (2004). Advanced placement: Do minorities have equal opportunity? *Economics of Education Review*, *23*(2), 115–131. https://doi.org/10.1016/s0272-7757(03)00076-1

Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance: a historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological bulletin*, *119*(2), 254.

Kopp, C. B. (1982). Antecedents of self-regulation: A developmental perspective. *Developmental Psychology*, *18*(2), 199–214. https://doi.org/10.1037/0012-1649.18.2.199

Krisch, S. (2021, September 24). *APELC Instructor Information* [Face-to-face to Lori Vaughn].

Ku, K. Y. L., & Ho, I. T. (2010). Metacognitive strategies that enhance critical thinking. *Metacognition and Learning*, *5*(3), 251–267. https://doi.org/10.1007/s11409-010-9060-6

Ladson-Billings, G., & Tate, W. F. (1995). Toward a critical race theory of education. Teachers College Record, 97(1), 47–68. https://doi.org/10.1177/016146819509700104

Lee, J., Frey, A. J., Herman, K., & Reinke, W. (2014). Motivational interviewing as a framework to guide school-based coaching. *Advances in School Mental Health Promotion*, *7*(4), 225–239. https://doi.org/10.1080/1754730x.2014.949515

Lens, W., & Vansteenkiste, M. (2008). Promoting self-regulated learning: A motivational analysis. In D. H. Schunk & B. J. Zimmerman (Eds.), *Motivation and self-regulated learning: Theory, research, and applications* (pp. 141–168). Taylor & Francis Group.

Linneberg, M. S., & Korsgaard, S. (2019). Coding qualitative data: a synthesis guiding the novice. *Qualitative Research Journal*, *19*(3). https://doi.org/10.1108/qrj-12-2018-0012

Linnenbrink, E. A., & Pintrich, P. R. (2002). Motivation as an enabler for academic success. *School Psychology Review*, *31*(3), 313–327. https://doi.org/10.1080/02796015.2002.12086158

Lipnevich, A. A., & Smith, J. K. (2009). "I really need feedback to learn": Students' perspectives on the effectiveness of the differential feedback messages. *Educational Assessment, Evaluation and Accountability*, *21*(4), 347–367. https://doi.org/10.1007/s11092-009-9082-2

Lipsch-Wijnen, I., & Dirkx, K. (2022). A case study of the use of the Hattie and Timperley feedback model on written feedback in thesis examination in higher education. *Cogent Education*, *9*(1), https://doi.org/10.1080/2331186x.2022.2082089

Livingston, J. A. (2003). Metacognition: An Overview. *Psychology*, 13, 259-266.

Lundahl, B. W., Kunz, C., Brownell, C., Tollefson, D., & Burke, B. L. (2010). A meta-analysis of motivational interviewing: Twenty-five years of empirical studies. *Research on Social Work Practice*, *20*(2), 137–160. https://doi.org/10.1177/1049731509347850

Manfra, L. (2018). Impact of homelessness on school readiness skills and early academic achievement: A systematic review of the literature. *Early Childhood Education Journal*, *47*(2), 239–249. https://doi.org/10.1007/s10643-018-0918-6

Marcus, M., Westra, H., Angus, L., & Kertes, A. (2011). Client experiences of motivational interviewing for generalized anxiety disorder: A qualitative analysis. *Psychotherapy Research*, *21*(4), 447–461. https://doi.org/10.1080/10503307.2011.578265

Marsden, J., Stillwell, G., Barlow, H., Boys, A., Taylor, C., Hunt, N., & Farrell, M. (2006). An evaluation of a brief motivational intervention among young ecstasy and cocaine users: No effect on substance and alcohol use outcomes. *Addiction*, *101*(7), 1014–1026. https://doi.org/10.1111/j.1360-0443.2006.01290.x

Martino, S., Haeseler, F., Belitsky, R., Pantalon, M., & Fortin, A. H. (2007). Teaching brief motivational interviewing to year three medical students. *Medical Education*, *41*(2), 160–167. https://doi.org/10.1111/j.1365-2929.2006.02673.x

Mayo Clinic. (2022, August 12). *Teen Depression - Symptoms and Causes*. Mayo Clinic; Mayo Clinic. https://www.mayoclinic.org/diseases-conditions/teen-depression/symptoms-causes/syc-20350985

McClelland, M., Geldhof, J., Morrison, F., Gestsdottir, S., Cameron, C., Bowers, E., Duckworth, A., Little, T., & Grammer, J. (2018). Self-regulation. In N. Halfon, C.

B. Forrest, R. M. Lerner, & E. M. Faustman (Eds.), *Handbook of life course health development* (pp. 275–298). Springer.

McCoach, D. B., & Siegle, D. (2003). Factors that differentiate underachieving gifted students from high-achieving gifted students. *Gifted Child Quarterly*, *47*(2), 144–154. https://doi.org/10.1177/001698620304700205

McCombs, B. L. (2001). Self-regulated learning and academic achievement: A phenomenological view. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (pp. 67–123). Lawrence Erlbaum Associates.

McCombs, B. L., & Marzano, R. J. (1990). Putting the self in self-regulated learning: The self as agent in integrating will and skill. *Educational Psychologist*, *25*(1), 51–69. https://doi.org/10.1207/s15326985ep2501_5

Mendoza-Denton, R., Goldman-Flythe, M., Pietrzak, J., Downey, G., & Aceves, M. J. (2010). Group-value ambiguity: Understanding the effects of academic feedback on minority students' self-esteem. *Social Psychological and Personality Science*, *1*(2), 127–135. https://doi.org/10.1177/1948550609357796

Meusen-Beekman, K. D., Joosten-ten Brinke, D., & Boshuizen, H. P. A. (2015). Developing young adolescents' self-regulation by means of formative assessment: A theoretical perspective. *Cogent Education*, *2*(1). https://doi.org/10.1080/2331186x.2015.1071233

Miller, Barbara M. (2018). Motivational Interviewing [PowerPoint Slides]. http://miwisewoman.org/pdfs/2018annual_meeting/MotivationInterviewingBarbMiller.pdf

Miller, W. R., & Moyers, T. B. (2006). Eight Stages in Learning Motivational Interviewing. *Journal of Teaching in the Addictions*, *5*(1), 3–17. https://doi.org/10.1300/j188v05n01_02

Miller, W. R., Rollnick, S., & Press, G. (2013). *Motivational interviewing: Helping people change*. The Guilford Press.

Miller, W. R., & Rose, G. S. (2009). Toward a theory of motivational interviewing. *American Psychologist*, *64*(6), 527–537. https://doi.org/10.1037/a0016830

MO DESE. (2021). *DESE Web Log In*. Apps.dese.mo.gov. https://apps.dese.mo.gov/MCDS/Visualizations.aspx?id=22

MO DESE. (n.d.). *District Homeless Data Results 2019-2020 | Missouri Department of Elementary and Secondary Education*. Dese.mo.gov. Retrieved May 29, 2023, from https://dese.mo.gov/media/pdf/district-homeless-data-results-2019-2020

MO DESE. (2022). *DESE Building Demographic Data*. Apps.dese.mo.gov. https://apps.dese.mo.gov/MCDS/Reports/SSRS_Print.aspx?Reportid=1bd1a115-127a-4be0-a3ee-41f4680d8761

Moilanen, K. L. (2007). The adolescent self-regulatory inventory: The development and validation of a questionnaire of short-term and long-term self-regulation. *Journal of Youth and Adolescence*, *36*(6), 835–848. https://doi.org/10.1007/s10964-006-9107-9

Naar-King, S. (2011). Motivational interviewing in adolescent treatment. *The Canadian Journal of Psychiatry*, *56*(11), 651–657. https://doi.org/10.1177/070674371105601103

Najarro, I., & Pendharkar, E. (2022, July 29). The case of the missing data on AP students. *Education Week*. https://www.edweek.org/leadership/the-case-of-the-missing-data-on-ap-students/2022/07

Ndura, E., Robinson, M., & Ochs, G. (2003). Minority students in high school advanced placement courses: Opportunity and equity denied. *American Secondary Education*, 21-38.

Nicol, D. J., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: A model and seven principles of good feedback practice. *Studies in Higher Education*, *31*(2), 199–218. https://doi.org/10.1080/03075070600572090

Olszewski-Kubilius, P., Lee, S.-Y., Ngoi, M., & Ngoi, D. (2004). Addressing the achievement gap between minority and nonminority children by increasing access to gifted programs. *Journal for the Education of the Gifted*, *28*(2), 127–158. https://doi.org/10.1177/016235320402800202

Orenstein, G. A., & Lewis, L. (2020, November 22). *Eriksons stages of psychosocial development*. PubMed; StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK556096

O'Brennan, L. M., Suldo, S. M., Shaunessy-Dedrick, E., Dedrick, R. F., Parker, J. S., Lee, J. S., Ferron, J. M., & Hanks, C. (2020). Supports for youth in accelerated high school curricula: An initial study of applicability and acceptability of a motivational interviewing intervention. *Gifted Child Quarterly*, *64*(1), 19–40. https://doi.org/10.1177/0016986219886933

Pajares, F. (2008). Motivational role of self-efficacy beliefs in self-regulated learning. In D. H. Schunk & B. J. Zimmerman (Eds.), *Motivation and self-regulated learning: Theory, research, and applications* (pp. 111–139). Taylor & Francis Group.

Paris, S. G., Byrnes, J. P., & Paris, A. H. (2001). Constructing theories, identities, and actions of self-regulated learners. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (pp. 253–287). Lawrence Erlbaum Associates.

Perrenoud, P. (1998). From formative evaluation to a controlled regulation of learning processes. Towards a wider conceptual field. *Assessment in Education: principles, policy & practice, 5*(1), 85-102.

Peterson, E. R., & Irving, S. E. (2008). Secondary school students' conceptions of assessment and feedback. *Learning and Instruction, 18*(3), 238–250. https://doi.org/10.1016/j.learninstruc.2007.05.001

Pintrich, P. R. (1999). The role of motivation in promoting and sustaining self-regulated learning. *International Journal of Educational Research*, *31*(6), 459–470. https://doi.org/10.1016/s0883-0355(99)00015-4

Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology, 95*(4), 667–686. https://doi.org/10.1037/0022-0663.95.4.667

Pintrich, P. R., & de Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, *82*(1), 33–40. https://doi.org/10.1037/0022-0663.82.1.33

Pintrich, P. R., Smith, D. A. F., Garcia, T., & Mckeachie, W. J. (1991). *A manual for the use of the Motivated Strategies for Learning Questionnaire (MSLQ)*. National Center For Research To Improve Postsecondary Teaching And Learning. University of Michigan.

Pintrich, P. R., Smith, D. A. F., Garcia, T., & Mckeachie, W. J. (1993). Reliability and predictive validity of the motivated strategies for learning questionnaire (MSLQ). *Educational and Psychological Measurement*, *53*(3), 801–813. https://doi.org/10.1177/0013164493053003024

Pressley, M., & Harris, K. R. (2009). Cognitive strategies instruction: From basic research to classroom instruction. *Journal of Education*, *189*(1-2), 77–94. https://doi.org/10.1177/0022057409189001-206

Pressley, M., Borkowski, J. G., & Schneider, W. (1987). Cognitive strategies: Good strategy users coordinate metacognition and knowledge.

Quinton, S., & Smallbone, T. (2010). Feeding forward: Using feedback to promote student reflection and learning – a teaching model. *Innovations in Education and Teaching International*, *47*(1), 125–135. https://doi.org/10.1080/14703290903525911

Reich, C. M., Howard Sharp, K. M., & Berman, J. S. (2015). A motivational interviewing intervention for the classroom. *Teaching of Psychology*, *42*(4), 339–344. https://doi.org/10.1177/0098628315603250

Reinke, W. M., Herman, K. C., & Sprick, R. S. (2011). *Motivational interviewing for effective classroom management: The classroom check-up*. Guilford Press.

Reyes, X. A. (2010). Educational equity and access as universal human rights: Effects on teacher education in the US. *International Online Journal of Educational Sciences, 2*(1). 1-20.

Rodgers, C. R. (2006). Attending to student voice: The impact of descriptive feedback on learning and teaching. *Curriculum Inquiry*, *36*(2), 209–237. https://doi.org/10.1111/j.1467-873x.2006.00353.x

Rollnick, S., Heather, N., & Bell, A. (1992). Negotiating behaviour change in medical settings: The development of brief motivational interviewing. *Journal of Mental Health*, *1*(1), 25–37. https://doi.org/10.3109/09638239209034509

Rollnick, S., Kaplan, S. G., & Rutschman, R. (2016). *Motivational interviewing in schools : conversations to improve behavior and learning*. The Guilford Press.

Romano, M., & Peters, L. (2014). Understanding the process of motivational interviewing: A review of the relational and technical hypotheses. *Psychotherapy Research*, *26*(2), 220–240. https://doi.org/10.1080/10503307.2014.954154

Rosengren, D. B. (2018). *Building motivational interviewing skills: A practitioner workbook*. The Guilford Press.

Rowe, A. D., & Wood, L. N. (2008). Student perceptions and preferences for feedback. *Asian social science, 4*(3), 78-88.

Ruhl, C. (2020, August 7). *Theory of mind in psychology*: *Thinking people.* Simply Psychology. https://www.simplypsychology.org/theory-of-mind.html

Rutschman, R. C. (2018). MI in high schools. In *Motivational Interviewing - Children and Young People III: Education and Community Settings* (pp. 8–21). Positive Behaviour Management.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68–78. https://doi.org/10.1037//0003-066x.55.1.68

Saldaña, J. (2011). *Fundamentals of qualitative research*. Oxford University Press.

Schneider, J. (2009). Privilege, equity, and the advanced placement program: Tug of war. *Journal of Curriculum Studies, 41*(6), 813–831. https://doi.org/10.1080/00220270802713613

Schraw, G., & Graham, T. (1997). Helping gifted students develop metacognitive awareness. *Roeper Review*, *20*(1), 4-8.

Schunk, D. H. (2001). Social cognitive theory and self-regulated learning. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (pp. 125–151). Lawrence Erlbaum Associates.

Schunk, D. H., & Meece, J. L. (2006). Self-efficacy development in adolescence. *Self-Efficacy Beliefs of Adolescents*, *5*(1), 71-96. Information Age Publishing.

Schunk, D. H., & Zimmerman, B. J. (2007). Influencing children's self-efficacy and self-regulation of reading and writing through modeling. *Reading & Writing Quarterly, 23*(1), 7–25. https://doi.org/10.1080/10573560600837578

Schunk, D. H., & Zimmerman, B. J. (2008). *Motivation and self-regulated learning: (Re)theory, research, and applications*. Routledge.

Sheldon, L. A. (2010). Using motivational interviewing to help your students. *Thought & Action*: *The NEA Higher Education Journal*. 153-158.

Smith, D., Frey, N., Pumpian, I., & Fisher, D. (2017). *Building equity: Policies and practices to empower all learners*. Association for Supervision and Curriculum Development.

Snape, L., & Atkinson, C. (2016). The evidence for student-focused motivational interviewing in educational settings: A review of the literature. *Advances in School Mental Health Promotion*, *9*(2), 119–139. https://doi.org/10.1080/1754730x.2016.1157027

Snape, L., & Atkinson, C. (2017). Students' views on the effectiveness of motivational interviewing for challenging disaffection. *Educational Psychology in Practice, 33*(2), 189–205. https://doi.org/10.1080/02667363.2017.1287059

Solórzano, D. G., & Ornelas, A. (2002). A critical race analysis of advanced placement classes: A case of educational inequality. *Journal of Latinos and Education, 1*(4), 215–229. https://doi.org/10.1207/s1532771xjle0104_2

Strait, G., McQuillin, S., Anderson, J., & Williams, C. (2018). Practical applications of student focused motivational interviewing. In A. M. Macnamara, *Motivational interviewing, theory practice and applications with children and young people.* (pp. 22–34). Positive Behavior Management.

Strait, G. G., McQuillin, S., Smith, B., & Englund, J. A. (2012a). Using motivational interviewing with children and adolescents: A cognitive and neurodevelopmental perspective. *Advances in School Mental Health Promotion*, *5*(4), 290–304. https://doi.org/10.1080/1754730x.2012.736789

Strait, G. G., McQuillin, S., Terry, J., & Smith, b. H. (2014). School-based motivational interviewing with students, teachers, and parents: New developments and future direction. *Advances in School Mental Health Promotion, 7*(4), 205-207.

Strait, G. G., Smith, B. H., McQuillin, S., Terry, J., Swan, S., & Malone, P. S. (2012b). A randomized trial of motivational interviewing to improve middle school students' academic performance. *Journal of Community Psychology*, *40*(8), 1032–1039. https://doi.org/10.1002/jcop.21511

Suldo, S. M., Shaunessy-Dedrick, E., Ferron, J., & Dedrick, R. F. (2018). Predictors of success among high school students in advanced placement and international baccalaureate programs. *Gifted Child Quarterly*, *62*(4), 350–373. https://doi.org/10.1177/0016986218758443

Suldo, S. M., Wang, J. H., O'Brennan, L. M., Shaunessy-Dedrick, E., Dedrick, R. F., DiLeo, L. L., Ferron, J. M., & Lee, J. (2021). A motivational interviewing intervention for adolescents in accelerated high school curricula: Applicability and acceptability in a second sample. *Prevention Science, 22(6),* 811-825. https://doi.org/10.1007/s11121-021-01204-z

Tabatabaei, S.-S., Ahadi, H., Bani-Jamali, S., Bahrami, H., & Khamesan, A. (2017). The effects of motivated strategies for learning questionnaire (MSLQ) on students' cognitive and meta-cognitive skills. *NeuroQuantology*, *15*(2). https://doi.org/10.14704/nq.2017.15.2.1068

Tate IV, W. F. (1997). Critical race theory and education: History, theory, and implications. *Review of Research in Education, 22,* 195. https://doi.org/10.2307/1167376

Taylor, R. (2012). *Review of the Motivated Strategies for Learning Questionnaire (MSLQ) Using Reliability Generalization Techniques to Assess Scale Reliability* (pp. 1–182) [PDF]. https://etd.auburn.edu/bitstream/handle/10415/3114/Dissertation%20-%20TaylorRobin%202012.pdf?sequence=2

Terry, J. D., Weist, M. D., Strait, G. G., & Miller, M. (2020). Motivational interviewing to promote the effectiveness of selective prevention: An integrated school-based approach. *Prevention Science*. *22(6)*, 799-810. https://doi.org/10.1007/s11121-020-01124-4

Terry, J., Smith, B., Strait, G., & McQuillin, S. (2013). Motivational interviewing to improve middle school students' academic performance: A replication study. *Journal of Community Psychology*, *41*(7), 902–909. https://doi.org/10.1002/jcop.21574

Terry, J., Strait, G., McQuillin, S., & Smith, B. H. (2014). Dosage effects of motivational interviewing on middle-school students' academic performance: Randomized evaluation of one versus two sessions. *Advances in School Mental Health Promotion, 7*(1), 62–74. https://doi.org/10.1080/1754730x.2013.851995

U.S. Census Bureau. (2021). *QuickFacts: Missouri*. United States Census Bureau. https://www.census.gov/quickfacts/MO

Warne, R. T. (2017). Research on the academic benefits of the advanced placement program. *SAGE Open, 7*(1), 215824401668299. SAGE Publications. https://doi.org/10.1177/2158244016682996

Warne, R. T., Larsen, R., Anderson, B., & Odasso, A. J. (2015). The impact of participation in the advanced placement program on students' college admissions test scores. *The Journal of Educational Research*, *108*(5), 400–416. https://doi.org/10.1080/00220671.2014.917253

Webb, P. K. (1980). Piaget: Implications for teaching. *Theory into Practice*, *19*(2), 93–97. https://doi.org/10.1080/00405848009542880

Weinstein, C. E., & Mayer, R. E. (1986). The teaching of learning strategies. In M. Wittrock (Ed.), *Handbook of research on teaching* (pp. 315–327). Macmillan.

West, M. R., Kraft, M. A., Finn, A. S., Martin, R. E., Duckworth, A. L., Gabrieli, C. F. O., & Gabrieli, J. D. E. (2015). Promise and paradox: Measuring students' non-cognitive skills and the impact of schooling. *Educational Evaluation and Policy Analysis*, *38*(1), 148–170. https://doi.org/10.3102/0162373715597298

Williams, M., & Moser, T. (2019). The art of coding and thematic exploration in qualitative research. *International Management Review*, *15*(1), 45-55.

Wisniewski, B., Zierer, K., & Hattie, J. (2020). The power of feedback revisited: A meta-analysis of educational feedback research. *Frontiers in Psychology*, *10*(3087). https://doi.org/10.3389/fpsyg.2019.03087

Yeager, D. S., Purdie-Vaughns, V., Garcia, J., Apfel, N., Brzustoski, P., Master, A., Hessert, W. T., Williams, M. E., & Cohen, G. L. (2014). Breaking the cycle of mistrust: Wise interventions to provide critical feedback across the racial divide. *Journal of Experimental Psychology: General*, *143*(2), 804–824. https://doi.org/10.1037/a0033906

Young, A., & Fry, J. D. (2008). Metacognitive awareness and academic achievement in college students. *Journal of the Scholarship of Teaching and Learning*, *8*(2), 1-10.

Zamora, Á., Suárez, J. M., & Ardura, D. (2016). Error detection and self-assessment as mechanisms to promote self-regulation of learning among secondary education students. *The Journal of Educational Research*, *111*(2), 175–185. https://doi.org/10.1080/00220671.2016.1225657

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In *Handbook of self-regulation* (pp. 13-39). Academic press.

Zimmerman, B. J. (2001). Theories of self-regulated learning and academic achievement: An overview and analysis. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (pp. 1–37). Lawrence Erlbaum Associates.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice*, *41*(2), 64–70. https://doi.org/10.1207/s15430421tip4102_2

Zimmerman, B. J. (2008). Investigating self-regulation and motivation: Historical background, methodological developments, and future prospects. *American Educational Research Journal*, *45*(1), 166–183. https://doi.org/10.3102/0002831207312909

Zimmerman, B. J., Bandura, A., & Martinez-Pons, M. (1992). Self-motivation for academic attainment: The role of self-efficacy beliefs and personal goal setting. *American Educational Research Journal*, *29*(3), 663–676. https://doi.org/10.3102/00028312029003663

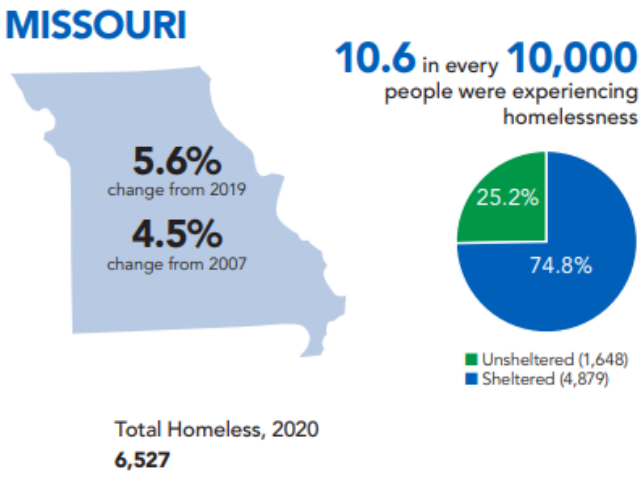
Zimmerman, B. J., & Campillo, M. (2003). Motivating self-regulated problem solvers. In J. E. Davidson & R. J. Sternberg (Eds.), *The psychology of problem solving* (pp. 233–262). Cambridge University Press.

Zimmerman, B. J., & Schunk, D. H. (2001). Reflections on theories of self-regulated learning and academic achievement. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (pp. 289–307). Lawrence Erlbaum Associates.

Zimmerman, B. J., & Schunk, D. H. (2008). Motivation: An essential dimension of self-regulated learning. In D. H. Schunk & B. J. Zimmerman (Eds.), *Motivation and self-regulated learning: Theory, research, and applications* (pp. 1–30). Taylor & Francis Group.

Appendix A

Missouri Homeless Data



Appendix B

School District Homeless Data

HOMELESS DISTRICT RESULTS								
SCHOOL YEAR 2013-14 THROUGH 2019-20								
County District Code	School District	19-20 Homeless Count	18-19 Homeless Count	17-18 Homeless Count	16-17 Homeless Count	15-16 Homeless Count	14-15 Homeless Count	13-14 Homeless Count
	Researched District	2815	2161	2533	1897	1669	1698	1585

Appendix C

Rhetorical Analysis Essay Rubric

	0 points	1 point
Thesis (4.B, 1.A)	For any of the following: • There is no defensible thesis. • The intended thesis only restates the prompt. • The intended thesis provides a summary of the issue with no apparent or coherent claim. • There is a thesis, but it does not respond to the prompt	Responds to the prompt with a defensible thesis that analyzes the writer's rhetorical choices.
Point(s) Earned	Responses that do not earn this point: • The intended thesis only restates the prompt. • The intended thesis fails to address the rhetorical choices the writer makes. • The intended thesis simply describes or repeats the text rather than making a claim that requires a defense.	Responses that earn this point: • The thesis responds to the prompt rather than restating or rephrasing the prompt and clearly articulates a defensible thesis about the rhetorical choices the writer makes.

	0	1	2	3	4
Evidence and Commentary (1.A, 2.A, 4.A, 6.A, 6.B, 6.C)	Simply restates thesis (if present). OR Repeats provided information. OR Provides examples that are generally irrelevant and/or incoherent	Summarizes the text without reference to a thesis. OR Provides non-specific references to the text. OR Provides references to the text that are vaguely relevant. AND Provides little or no commentary	Makes textual references (direct quotes or paraphrases) that are relevant to the thesis. AND Provides commentary; however, it repeats, oversimplifies, or misinterprets the cited information or evidence.	Makes textual references (direct quotes or paraphrases) that are relevant to the thesis. AND Provides commentary that explains the relationship between evidence and the thesis; however, commentary is uneven,	Makes textual references (direct quotes or paraphrases) that are relevant to the thesis. AND Provides well-developed commentary that consistently and explicitly explains the relationship between the evidence and the thesis.

				limited, or incomplete.	
Point(s) Earned	Typical responses that earn 0 points: • Are incoherent and do not address the prompt. • May offer just opinion with little or no evidence provided.	Typical responses that earn 1 point: • Are predominantly restatements of ideas in the text (no analysis).	Typical responses that earn 2 points: • Provide commentary that links the evidence to the thesis but suggests misunderstanding of the passage or misrepresentation of the rhetorical choices made. • Provide evidence and commentary that are unconvincing (makes assertions or assumptions that are not really supported by the text).	Typical responses that earn 3 points: • Provide commentary that is developed and insightful in places but there are occasional lapses into description or minor inaccuracies. • Provide commentary that is clear but there are times when the link between the textual evidence and the thesis may be strained.	Typical responses that earn 4 points: • Provide commentary that engages the details of the text to draw conclusions about rhetorical choices. • Integrate evidence from the text throughout to support the student's analysis.
Additional Notes: • Writing that suffers from grammatical and/or mechanical errors that interfere with communication cannot earn the fourth point in this row.					

Sophistication (2.A, 4.C, 6.B, 8.A, 8.B, 8.C)	**0 points**	**1 point**
	Does not meet the criteria for 1 point.	Demonstrates sophistication of thought and/or a complex understanding of the rhetorical situation.
Point(s) Earned	Responses that do not earn this point: • Attempt to contextualize the text, but such attempts consist of predominantly sweeping generalizations. • Only hint or suggest other arguments. • Examine individual rhetorical choices but do not examine the relationships among different choices throughout the text. • Oversimplify complexities in the text. • Use complicated or complex sentences or language that are	Responses that earn this point may demonstrate sophistication of thought and/or a complex understanding of the rhetorical situation by doing any of the following: 1. Crafting a thesis that demands nuanced consideration of textual evidence to prove – and then successfully proves it. 2. Explaining the significance or relevance of the text's purpose within a broader context. 3. Engaging concession, rebuttal, and/or refutation of other arguments relating to the thesis.

	ineffective in that they do not enhance their analysis.	4. Recognizing and accounting for contradictions or complexities within the text. 5. Making effective rhetorical choices that strengthen the force and impact of the student's argument 6. Utilizing a prose style that is especially vivid, persuasive, convincing, or appropriate to the student's argument.
Additional Notes: • This point should be awarded only if the demonstration of sophistication or complex understanding is part of the argument, not merely a phrase or reference.		

Appendix D

Motivated Strategies for Learning Questionnaire

Part A: Motivation

1. In a class like this, I prefer course material that really challenges me so I can learn new things.
2. If I study in appropriate ways, then I will be able to learn the material in this course.
3. When I take a test I think about how poorly I am doing compared with other students.
4. I think I will be able to use what I learn in this course in other courses.
5. I believe I will receive an excellent grade in this class.
6. I'm certain I can understand the most difficult material presented in the readings for this course.
7. Getting a good grade in this class is the most satisfying thing for me right now.
8. When I take a test I think about items on other parts of the test I can't answer.
9. It is my own fault if I don't learn the material in this course.
10. It is important for me to learn the course material in this class.
11. The most important thing for me right now is improving my overall grade point average, so my main concern in this class is getting a good grade.
12. I'm confident I can learn the basic concepts taught in this course.
13. If I can, I want to get better grades in this class than most of the other students.
14. When I take tests I think of the consequences of failing.
15. I'm confident I can understand the most complex material presented by the instructor in this course.
16. In a class like this, I prefer course material that arouses my curiosity, even if it is difficult to learn.
17. I am very interested in the content area of this course.
18. If I try hard enough, then I will understand the course material.
19. I have an uneasy, upset feeling when I take an exam.
20. I'm confident I can do an excellent job on the assignments and tests in this course.
21. I expect to do well in this class.
22. The most satisfying thing for me in this course is trying to understand the content as thoroughly as possible.
23. I think the course material in this class is useful for me to learn.
24. When I have the opportunity in this class, I choose course assignments that I can learn from even if they don't guarantee a good grade.
25. If I don't understand the course material, it is because I didn't try hard enough.
26. I like the subject matter of this course.
27. Understanding the subject matter of this course is very important to me.
28. I feel my heart beating fast when I take an exam.
29. I'm certain I can master the skills being taught in this class.
30. I want to do well in this class because it is important to show my ability to my family, friends, employer, or others.
31. Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class.

Part B: Learning Strategies

32. When I study the readings for this course, I outline the material to help me organize my thoughts.
33. During class time I often miss important points because I'm thinking of other things. (REVERSED)
34. When studying for this course, I often try to explain the material to a classmate or friend.
35. I usually study in a place where I can concentrate on my course work.
36. When reading for this course, I make up questions to help focus my reading.
37. I often feel so lazy or bored when I study for this class that I quit before I finish what I planned to do. (REVERSED)
38. I often find myself questioning things I hear or read in this course to decide if I find them convincing.
39. When I study for this class, I practice saying the material to myself over and over.
40. Even if I have trouble learning the material in this class, I try to do the work on my own, without help from anyone. (REVERSED)
41. When I become confused about something I'm reading for this class, I go back and try to figure it out.
42. When I study for this course, I go through the readings and my class notes and try to find the most important ideas.
43. I make good use of my study time for this course.
44. If course readings are difficult to understand, I change the way I read the material.
45. I try to work with other students from this class to complete the course assignments.
46. When studying for this course, I read my class notes and the course readings over and over again.
47. When a theory, interpretation, or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence.
48. I work hard to do well in this class even if I don't like what we are doing.
49. I make simple charts, diagrams, or tables to help me organize course material.
50. When studying for this course, I often set aside time to discuss course material with a group of students from the class.
51. I treat the course material as a starting point and try to develop my own ideas about it.
52. I find it hard to stick to a study schedule. (REVERSED)
53. When I study for this class, I pull together information from different sources, such as lectures, readings, and discussions.
54. Before I study new course material thoroughly, I often skim it to see how it is organized.
55. I ask myself questions to make sure I understand the material I have been studying in this class.
56. I try to change the way I study in order to fit the course requirements and the instructor's teaching style.
57. I often find that I have been reading for this class but don't know what it was all about. (REVERSED)
58. I ask the instructor to clarify concepts I don't understand well.
59. I memorize key words to remind me of important concepts in this class.
60. When course work is difficult, I either give up or only study the easy parts. (REVERSED)

61. I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying for this course.
62. I try to relate ideas in this subject to those in other courses whenever possible.
63. When I study for this course, I go over my class notes and make an outline of important concepts.
64. When reading for this class, I try to relate the material to what I already know.
65. I have a regular place set aside for studying.
66. I try to play around with ideas of my own related to what I am learning in this course.
67. When I study for this course, I write brief summaries of the main ideas from the readings and my class notes.
68. When I can't understand the material in this course, I ask another student in this class for help.
69. I try to understand the material in this class by making connections between the readings and the concepts from the lectures.
70. I make sure that I keep up with the weekly readings and assignments for this course.
71. Whenever I read or hear an assertion or conclusion in this class, I think about possible alternatives.
72. I make lists of important items for this course and memorize the lists.
73. I attend this class regularly.
74. Even when course materials are dull and uninteresting, I manage to keep working until I finish.
75. I try to identify students in this class whom I can ask for help if necessary.
76. When studying for this course I try to determine which concepts I don't understand well.
77. I often find that I don't spend very much time on this course because of other activities. (REVERSED)
78. When I study for this class, I set goals for myself in order to direct my activities in each study period.
79. If I get confused taking notes in class, I make sure I sort it out afterwards.
80. I rarely find time to review my notes or readings before an exam. (REVERSED)
81. I try to apply ideas from course readings in other class activities, such as lecture and discussion.

Appendix E

Approval for Use of Feedback Survey

Request for permission to use feedback survey. Report

Lori Vaughn Aug 3, 2020

Good afternoon,

My name is Lori Vaughn and I am a doctoral student at Lindenwood University in St. Louis, Missouri, USA. I am contacting you because I am interested in using your Student Feedback Questionnaire as an instrument in my study on the impact of academic and social-emotional interventions on self-regulated learning in Advanced Placement minority students. I will be implementing a feedback model in my AP Language and Composition course that is based on John Hattie's Visible Learning. Please let me know what steps I need to take in order to gain permission in using your questionnaire and if I may modify it to suit the purposes of my study.

Thank you,
Lori Vaughn

Anna D. Rowe to you Aug 3, 2020

Hi Lori

Thanks for your message. I am happy to give permission for you to use and/or modify the survey for your research as long as its appropriately acknowledged and referenced in any publications, e.g.

Rowe, A.D., & Wood, L.N. (2008). Student perceptions and preferences for feedback. Asian Social Science, 4(3), 78-88.

All the best with your research. Sounds very interesting!

Kind regards,
Anna

Appendix F

Rhetorical Analysis Pre- and Post-Essay Prompt

In 1930 Mohandas "Mahatma" Gandhi led a nonviolent march in India protesting Britain's colonial monopoly on and taxation of an essential resource: salt. The Salt March, as it came to be known, was a triggering moment for the larger civil disobedience movement that eventually won India independence from Britain in 1947. Shortly before the Salt March, Gandhi had written to Viceroy Lord Irwin, the representative of the British crown in India. The passage below is the conclusion of that letter. Read the passage carefully. Then, in a well-written essay, analyze the rhetorical choices Gandhi makes to present his case to Lord Irwin.

I know that in embarking on non-violence, I shall be running what might fairly be termed a mad risk. But the victories of truth have never been won without risks, often of the gravest character. Conversion of a nation that has consciously or unconsciously preyed upon another, far more numerous, far more ancient, and no less cultured than itself, is worth any amount of risk.

I have deliberately used the word conversion. For my ambition is no less than to convert the British people through non-violence, and thus to make them see the wrong they have done to India. I do not seek to harm your people. I want to serve them even as I want to serve my own. I believe that I have always served them.

I served them up to 1919, blindly. But when my eyes were opened and I conceived non-co-operation, the object still was to serve them. I employed the same weapon that I have, in all humility, successfully used against the dearest members of my family. If I have equal love for your people with mine, it will not long remain hidden. It will be acknowledged by them, even as the members of my family acknowledged, after they had tried me for several years. If the people join me, as I expect they will, the sufferings they will undergo, unless the British nation sooner retraces its steps, will be enough to melt the stoniest hearts.

The plan through civil disobedience will be to combat such evils as I have sampled out. If we want to sever the British connection it is because of such evils. When they are removed, the path becomes easy. Then the way to friendly negotiation will be open. If the British commerce with India is purified of greed, you will have no difficulty in recognizing our independence. I invite you then to pave the way for immediate removal of those evils, and thus open a way for a real conference between equals, interested only in promoting the common good of mankind through voluntary fellowship and in arranging terms of mutual help and commerce equally suited to both. You have unnecessarily laid stress upon communal problems that unhappily affect this land. Important though they undoubtedly are for the consideration of any scheme of Government they have little bearing on the greater problems which are above communities and which affect them all equally. But if you cannot see your way to deal with these evils and my letter makes no appeal to your heart, on the eleventh day of this month, I shall proceed with such co-workers of the Ashram[1] as I can take, to disregard the provisions of the salt laws. I regard this tax to be the most iniquitous of all from the poor man's standpoint. As the independence movement is essentially for the poorest in the land, the beginning will be made with this evil. The wonder is that we have submitted to the cruel monopoly for so long. It is, I know, open to you to frustrate my design by arresting me. I hope that there will be tens of thousands ready, in a disciplined manner, to take up the work after me, and, in the act of disobeying the Salt Act[2], to lay themselves open to the penalties of a law that should never have disfigured the statute book.

I have no desire to cause you unnecessary embarrassment, or any at all, so far as I can help. If you think that there is any substance in my letter, and if you will care to discuss matters with me, and if to that end you would like me to postpone publication of this letter, I shall gladly refrain on receipt of a telegram to that effect soon after this reaches you. You will, however, do me the favour not to deflect me from my course, unless you can see your way to conform to the substance of this letter.

This letter is not in any way intended as a threat, but is a simple and sacred duty, peremptory on a civil resister. Therefore, I am having it specially delivered by a young English friend who believes in the Indian cause and is a full believer in non-violence and whom Providence seems to have sent to me, as it were, for the very purpose.

[1] A spiritual retreat or monastery for a community of Hindus

[2] The India Salt Act (1882) enforced the British colonial government's monopoly on the collection, manufacture, and sale of salt in India.

Appendix G

MI Invitation Email

Dear student,
You have been selected to participate in Motivational Interviewing, an additional aspect to Ms. Vaughn's study. This is a student lead, one-on-one conversation style intervention. We will discuss both your academic and social-emotional life and work together to improve on the goals that you set. There will be 3-5 sessions of about 30 minutes each over the course of the entire school year and we will set them up to your schedule's availability. This is completely voluntary and you do not have to participate. Also, if you do participate and wish to stop, you can do so at any time. Your information will be kept confidential and if it is used in the study your identity will remain anonymous.

Click on the following link and click yes or no to let me know if you would like to participate or not. If you click yes, you will be taken to a screen to choose a time and date for our first meeting.

Thank you,
Ms. Vaughn

Appendix H

Feedback Forms

Unit 1 Feedback Form - Pre-test feedback: After getting your results for the pre-test essay, what will you do differently the next time you write a Rhetorical Analysis?

VL Student Feedback Form - Part 1 (Self-Evaluation ~ RA Practice #1) ~ Jeremy Lin
Self-Evaluation: How well did I understand the task? (Did you understand what the prompt was asking for and what your task was?) Explain.

Self-Evaluation: How well did I perform the task? (At what level of achievement did you accomplish the requirements?) Explain.

Self-Evaluation: What do I need to know/do/learn to improve my next performance? Explain.

SOAPSTTone Practice Feedback: Jamaica Kincaid OSEFTFT
What feedback did Ms. V give you (check your grade in canvas and click the comment icon).

What questions about the feedback do you have? If you missed points, go back into assignment, revise, and re-submit.

VL Feedback Form - Imagery (Helen Keller) - Self-Assessment
What did you think about the performance task? How well did you understand what you were supposed to do?

What feedback did you receive from Ms. Vaughn from your first draft?

What do you think about the initial feedback you've been given? Explain how you plan to apply it to your response.

What Habits of Mind strategies do I need to work on to improve my performance?

Final Exam_Albright_VL Self-Eval/Self-Assess
What did you think about the performance task? How well did you understand what you were supposed to do?

What challenges did you face on this performance task?

What Habits of Mind strategies do I need to work on to improve my performance?

In your own words, how well do you think you did on this performance task?

Emerson Argument Feedback Reflection

What did you think about the performance task? How well did you understand what you were supposed to do?

Self-Evaluation: How well did I perform the task? (At what level of achievement did you accomplish the requirements?) Explain.

What feedback did you receive from Ms. Vaughn?

What do you think about the feedback you've been given? Explain how you plan to apply it to your response.

Is there any feedback you would have liked that you did not receive?

What do I need to know/do/learn to improve my next performance? Explain.

What Habits of Mind strategies do I need to work on to improve my performance?

Disobedience Argument Essay Self-Assess

What did you think about the performance task? How well did you understand what you were supposed to do?

Self-Evaluation: How well did I perform the task? (At what level of achievement (high, medium, low) did you accomplish the requirements?) Explain why you gave yourself this score…

Disobedience Argument Essay Feedback Reflection

What feedback did you receive from Ms. Vaughn?

What do you think about the feedback you've been given? Explain how you plan to apply it to your response.

Explain why or why not the feedback from the first (Emerson) argument essay practice was helpful for you.

What do I need to know/do/learn to improve my next performance? Explain.

What Habits of Mind strategies do I need to work on to improve my performance?

Check the box for how confident you are in performing the argument essay task on the exam on May 10th.
Not confident at all
Slightly confident
Somewhat confident
Fairly confident
Completely confident

Appendix I

MI Training Certificates

Health Education & Training Institute

Certificate of Attendance and Participation

Lori Vaughn

Motivational Interviewing: The Basics

Bob Jope, LMHC, MINT Trainer
July 20 & 21 - August 18, 2020 - Online from New Bedford, Massachusetts

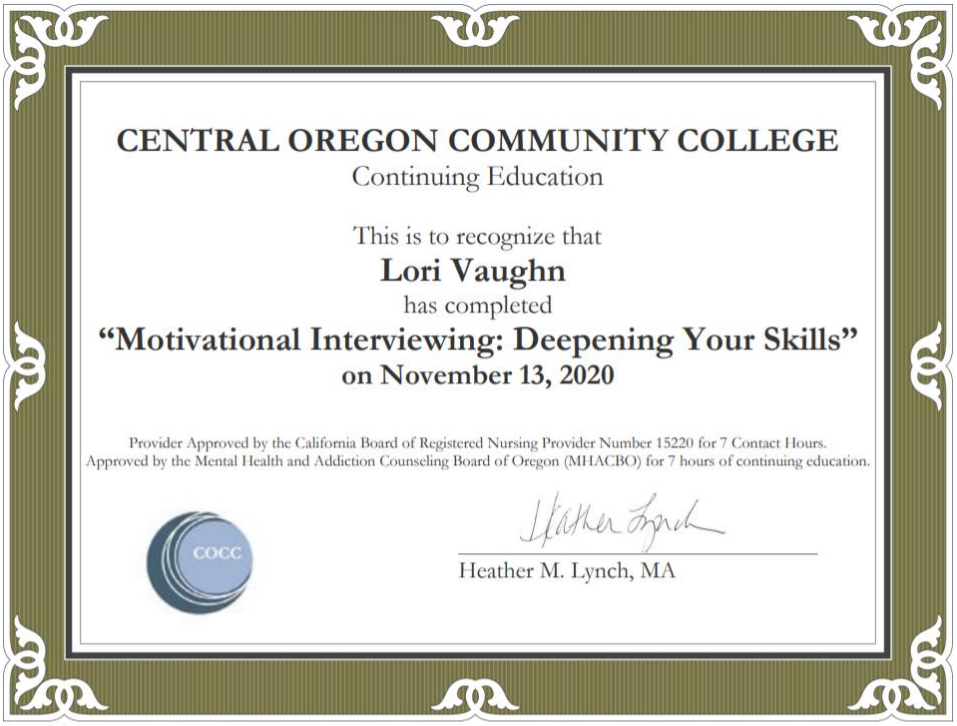
9 Continuing Education Contact Hours

This program is approved by:
Maine Board of Alcohol & Drug Counselors • Program #2435
National Association of Social Workers (Approval # 886615613-7593)

Stephen R. Andrew LCSW, LADC, CCS, CGP

Sponsored by:
Health Education & Training Institute
25 Middle Street
Portland, Maine 04101
www.hetimaine.org

We are grateful for your wonderful presence, your courage, your commitment, and your sense of fun.



CENTRAL OREGON COMMUNITY COLLEGE
Continuing Education

This is to recognize that
Lori Vaughn
has completed
"Motivational Interviewing: Deepening Your Skills"
on November 13, 2020

Provider Approved by the California Board of Registered Nursing Provider Number 15220 for 7 Contact Hours.
Approved by the Mental Health and Addiction Counseling Board of Oregon (MHACBO) for 7 hours of continuing education.

COCC

Heather M. Lynch, MA

Appendix J

Descriptive Statistics

Null Hypotheses	T-Statistic	P-Value	df	Cohen's D Effect Size
Null Hypothesis 1	-0.50	.62	14.87	0.23
Null Hypothesis 2	-4.21	.002	9.58	0.34
Null Hypothesis 3	-7.68	.000001	16	2.45
Null Hypothesis 4 Control Group	-3.86	.006	7	1.91
Null Hypothesis 4 Experimental Group	-8	.00004	8	3.32
Null Hypothesis 5	0.85	0.41	16	0.18
Null Hypothesis 5	0.63	.54	13.30	0.31

Appendix K

Habits of Mind

Strategy	Hints
Organization/Elaboration/ Time and Study Environment (Concentration)	Manage distractions Do one thing at a time Break things down into smaller tasks Plan, think it through, write it down Draw an organizational visual (diagram, chart, bubble, bullet points)
Effort Regulation/Grit (Perseverance)	Don't give up Work hard Practice, practice, practice Try a new strategy Ask for help Start again Take a brain break
Seek Help/ Peer Learning (Cooperation)	Work with others Listen Ask for clarification when you don't understand Be kind, tolerant, and respectful when you disagree Explain things to help others
Critical Thinking (Curiosity)	Ask questions Notice things Look for patterns and connections Think of possible reasons Research Ask "what if…?"
Meta-Cognitive/ Intrinsic Motivation (Risk)	Think with a growth mindset Don't worry if it goes wrong Learn from mistakes and errors Be excited to try new things
Learning Beliefs (Improvement)	Learn to learn Continue to review your work Identify your best parts Improve one thing at a time Be better than the last time Don't compare yourself to others, only yourself Take small steps
Self-Efficacy (Enjoyment)	Experience the joy of learning Feel proud of all your achievements Feel your neurons connecting! Imagine your intelligence growing every day Use what you've learned outside of class and outside of school Know you can do it if you've put in the hard work and practice

Note: Adapted from Hattie & Clark, 2019 and Pintrich et al., 1991

Appendix L

SOAPSTTone

Student…
Identifies who is giving the information (Speaker)
Explains the time and place (Occasion)
Identifies who the targeted audience is and why (Audience)
Describes the meaning/message of the piece (Purpose)
Identifies the real topic of the text (Subject)
Includes a thesis statement specifically referencing the Rhetorical Strategies the author uses (Thesis/Tone) [includes tone if the prompt asks for it]

Vitae

Lori A. Vaughn
lav887@lindenwood.edu

Education

2007-2011: Bachelor of Science in English Education with a Minor in Religious Studies from Missouri State University

2015-2017: Masters in English from University of Missouri Saint Louis

2018-present: Doctoral student, Doctorate of Education in Instructional Leadership with an emphasis in K-12 (expected graduation date June, 2024) from Lindenwood University

Work Experience

2012-2013: Reading specialist and English teacher at McCluer South Berkeley High School

2013-2023: English teacher at McCluer High School

2017-2023: AP teacher at McCluer High School

2019-2023: AP department chair at McCluer High School

2021-2022: AP Summer Success Academy at McCluer High School

2020-2023: AP Language and Composition Reader

Spring 2023: Accepted an English teaching position at Ladue Horton Watkins High School

Other Education

2016, 2018: Youth Mental Health First Aid

2018: UMSL Director's Certificate of Behavioral Health

2016, 2018, 2019, 2020: Advanced Placement Teacher Development Institute

2020: Beginner's Motivational Interviewing

2020: Intermediate Motivational Interviewing

2022, 2023: College Board's A Dream Deferred Conference

Honors/Awards/Other Achievements

2019: North Country Churches Uniting for Racial Harmony & Justice Youth Task Force: Mentor of the Year

2020-present: Alpha Chi National Honors Society