



Response to Outstanding Questions Pertaining
to the Initial Authorization Application from
Relay Graduate School of Education

Submitted August 11, 2015

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Introduction

This document provides Relay GSE's responses to the one outstanding Institutional Recommendation and one outstanding question from Colorado Department of Higher Education's (CDHE) consultation team.

At an in-person meeting on August 6, 2015, Relay GSE staff members were verbally informed by CDHE staff that two of the three remaining Institutional Recommendations had been adequately answered through the institution's July 31 written response or in communication via email with the Relay GSE Librarian. These two Institutional Recommendations are:

- Provide evidence regarding the appropriate use of relevant library resources and services at the graduate level and their availability "to students on a regular, dependable basis."
- Provide a plan for accommodating students if the program is suspended for any reason, including readily accessible avenues of completion of the degree through other regionally-accredited institutions and transfer of credits earned to other regionally-accredited institutions.

The outstanding Institutional Recommendation, below, is addressed in Section I of this document.

- Specify what direct, short-term measurable goals have been developed to assess the effectiveness of the program and provide the associated metrics.

During this meeting, Relay GSE staff members were verbally informed of one additional question from the evaluation team. This question focused on Relay GSE's program rigor and appropriateness as graduate-level coursework, both of which are addressed in Section II of this document.

Finally, the evaluators asked for a definition of the use of "banner texts" in their July 6 response. By this, Relay GSE meant research based texts that professors have found to be outstanding in their alignment to the institution's mission.

Section I: Relay GSE's Measurement of Goals and Results

The outstanding Institutional Recommendation reads:

- Specify what direct, short-term measurable goals have been developed to assess the effectiveness of the program and provide the associated metrics.

At Relay GSE, student growth and achievement is the end goal. Through the institution's Student Growth and Achievement modules, graduate students are taught to set ambitious academic goals for their students; learn how to measure and track student progress toward those goals; examine the factors that influence student achievement; and adjust instructional and motivational plans accordingly. The institution's commitment to student outcomes directly aligns with Section 1, Part P of CCHE policy,

"The primary goal of CCHE Educator Preparation Policy is to ensure high quality review of educator preparation programs based, when possible, on outcomes rather than inputs and to assist educator preparation programs with improving the effectiveness of their graduates by maintaining flexibility and encouraging creativity, rather than being strictly regulatory," (Colorado Commission on Higher Education).

The remainder of this section outlines Relay GSE's commitment to measuring programmatic effectiveness – toward the goal of student outcomes – and provides additional internally-measured student growth and achievement data.

External Validation Study

Relay GSE has engaged Mathematica Policy Research (Mathematica) to conduct an evaluation of the institution's teacher preparation efforts in New York City. This evaluation, which began in the fall of 2013 and will conclude in the spring of 2016, will provide Relay GSE with important information about the effectiveness of its teachers as described by value-added measures and about the validity of Relay GSE's internal measures of teacher effectiveness. Mathematica's study addresses two key questions about the graduates from Relay GSE's Master of Arts in Teaching (MAT) program in New York:

- Are Relay GSE graduates more effective than other new teachers at raising the achievement of their K-12 students?
- To what extent are Relay GSE's internal measures of its teachers' ability to produce a year of K-12 student achievement growth correlated with teacher effectiveness as measured by value-added models?

To answer the first question, Mathematica is examining the effectiveness of graduates of Relay GSE's New York MAT program using a quasi-experimental research design that involves identifying a matched comparison group of new teachers hired at the same time and in similar schools and classrooms as the Relay GSE graduate students. This research design allows Mathematica to hold constant such factors as teacher experience, school characteristics, classroom characteristics, student background, and prior achievement, all of which might influence a teacher's value-added contribution to his or her students' learning. Mathematica will then compare the value-added scores of Relay GSE graduates to those of teachers from the matched comparison group to determine Relay GSE graduates' relative effectiveness.

If Relay GSE graduates are found to be more effective than other new teachers, this would present valuable information for schools seeking to hire Relay GSE graduates.

Answering the second research question requires gauging the extent to which Relay GSE's internal measures of teacher effectiveness are related to estimates of teacher effectiveness from value-added models. As articulated in Relay GSE's initial authorization application to CDHE, all graduate students enrolled in Relay GSE are concurrently teaching in local public schools. Relay GSE has adopted an innovative and rigorous approach to educator preparation by requiring degree candidates in the MAT program to demonstrate that their K-12 students have made, on average, a year or more of learning growth during the academic year that they are taught by graduate students enrolled at Relay GSE. By answering the second research question, Relay GSE will gain valuable information about the validity of its measure of whether a teacher has produced a year or more of learning growth in a year's time.

It is worth noting that Mathematica is aggregating data from all Relay GSE teachers across grades and subjects to maximize the study's sample size. Nonetheless, Mathematica is also assessing the relative effectiveness of Relay GSE-prepared teachers of mathematics and English language arts, separately, to determine whether there are significant differences by subject. Additionally, Mathematica is including graduates from Teacher U, Relay GSE's predecessor program operated in partnership with Hunter College, to increase the overall sample size and determine whether teachers who graduated from either Teacher U or Relay GSE are more effective than other, similarly situated teachers.

Additional Results

Relay GSE graduate students learn how to set annual student achievement goals as a component of the Student Growth and Achievement module. The "Proficient Goal" represents basic levels of student achievement (e.g., 1 year of reading growth in a single year). Teachers also drive toward, and invest their students in, an "Ambitious Goal" — an advanced level of student achievement (e.g., 1.5 years of reading growth in a single year). Tables 1 and 2 provide Proficient and Ambitious Goal data from Relay GSE's New York Class of 2014 and aggregate data from 2010-14, respectively.

Table 1: Graduate Student Growth, Proficiency, and Ambitious Goals (New York Class of 2014)

Percent of students meeting or exceeding Proficient Goal in at least one subject	Percent of students meeting or exceeding Ambitious Goal in at least one subject
██████████	██████████

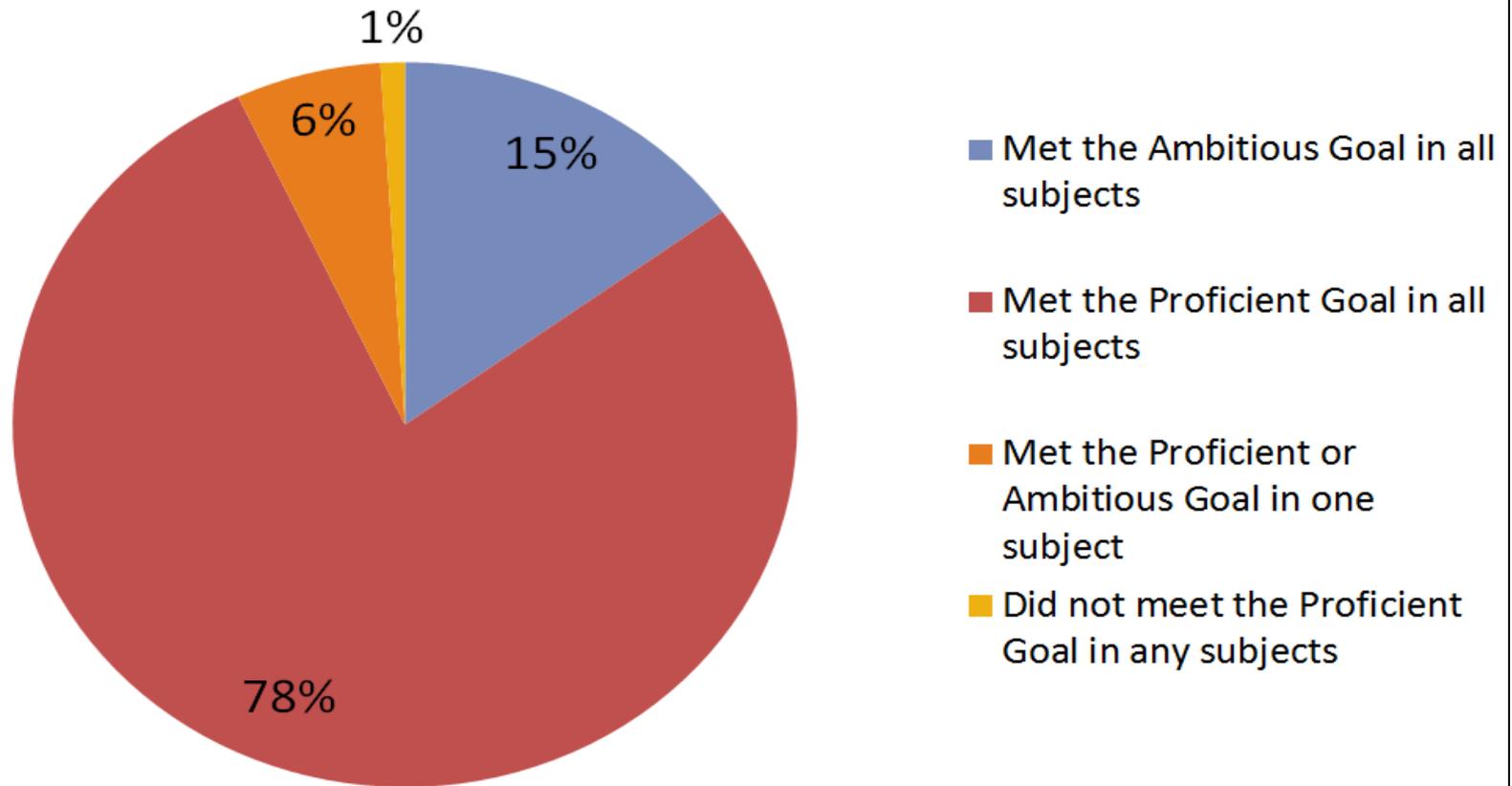
Table 2: Summary of Student Growth and Achievement Results: 2010-14

	New York 2010	New York 2011	New York 2012	New York 2013	New York 2014	Newark 2014
Number of Teachers	103	112	142	176	321	24
Average Reading Growth	██████████	██████████	██████████	██████████	██████████	██████████
Average % Standards Mastery	██████████	██████████	██████████	██████████	██████████	██████████

Additional Student Growth and Achievement data from Relay’s Houston, Newark, New Orleans, and New York City Classes of 2015 can be found on the following page.

Figure 1

Student Growth & Achievement, MAT CO'15



MAT CO'15 SGA results for all regions with graduating classes (Houston, Newark, NOLA, New York). To graduate, students must meet the Proficient Goal in at least one subject. 94% of eligible students submitted SGA data for review. Overall, 99% of the students who submitted their data for review met Relay's standard for graduation.

Section II: Graduate-Level Coursework and Rigor

Relay GSE appreciates the evaluation team’s question regarding program rigor, especially given recent reports evaluating the rigor of schools of education. In November of 2014, the National Council for Teacher Quality (NCTQ) issued a report indicating “...in a majority of institutions (58 percent), grading standards for teacher candidates are much lower than for students in other majors on the same campus,” (Putman, Greenberg and Walsh). NCTQ issued the following recommendations to improve this dilemma:

“Teacher educators and the preparation program administrators should work together to identify common standards to define excellence. Work that is merely competent should not be awarded an A. Teacher educators and the preparation program should ensure that a greater proportion of assignments are ‘criterion-referenced,’ especially in early teacher-training coursework,” (Putman, Greenberg and Walsh).

Relay GSE has implemented both recommendations since its inception. Professors, deans, curriculum designers, and program administrators regularly revisit rubrics and assessments in order to create a clear standard of excellence. Furthermore, every Relay GSE assignment has a rubric made transparent to graduate students and normed across all instructors. Graduate students do not receive a passing grade simply for completing the work; they must demonstrate proficiency in the specified skill or content area. Additional information on Relay GSE’s use of rubrics can be found in the *Use of Rubrics* subsection on the following pages.

Relay GSE was specifically designed to be a master’s program producing master teachers. By offering the Master of Arts in Teaching (MAT) degree, as opposed to a Master of Education, Relay GSE affirms its commitment to the art and science of teaching as well as student achievement outcomes.

Masters degrees are, typically, either academic or professional in focus. Graduate academic degree programs consist of advanced studies in an academic discipline. They must have as their purpose contributions to knowledge of the subject matter, rather than specific applications of knowledge to professional practices. Such programs emphasize theory and are not primarily designed as preparation for professional careers. Graduate professional degree programs, alternatively, must be comprised of advanced studies in professional or vocational fields. While they may have strong theoretical underpinnings, they must have as their primary purpose knowledge for application in professional practice. Relay GSE’s Master of Arts in Teaching degree was intentionally created as a professional degree to allow candidates to meaningfully integrate practice and theory.

Relay GSE coursework boasts multiple indicators of master’s-level rigor, such as cognitive development; diversity and equity issues; teaching exceptional learners; and teaching English language learners. As an example, the institution’s *What to Expect from an X Grader* addresses cognitive development and its *Teaching Exceptional Learners* modules address differentiation at both the elementary and secondary levels.

Though graduate students build a foundational knowledge of child development in *What to Expect from and X Grader*, Relay builds on student knowledge of child development in subsequent modules by requiring students to apply their knowledge to coursework related to, for example, classroom management. In *Introduction to Classroom Management* students must convey their management skill in a way that is

“developmentally appropriate for the students in the room,” a direct reference to their learning in *What to Expect from an X-Grader*. Students continue to apply this knowledge where appropriate throughout their time at Relay. Select module overviews demonstrating cognitive development, diversity and equity issues, and teaching exceptional learners can be found in Appendices 1 through 9. Module overviews include summaries, goals, assessments, and selected readings.

Relay GSE’s Content modules best gather evidence of candidates’ pedagogical content knowledge. In the Content modules, candidates simultaneously develop a conceptual understanding of content knowledge and the instructional approaches for organizing, delivering, and assessing content knowledge. Additionally, Teaching Cycle modules and the Evaluation of Teaching demonstrate and assess candidates’ ability to present content knowledge in a clear, meaningful and accurate manner. Appendices 10 and 11 contain select Content and Teaching Cycle module overviews, respectively.

Accrediting Agencies’ Recognition of Rigor and Promising Practices

Relay GSE received accreditation from The National Council for Accreditation of Teacher Education (NCATE) in 2013, and it continues to demonstrate compliance with NCATE standards through its annual report and ongoing submission of program reviews, which, given the institution’s age, will be submitted as complete data is available leading up to its next site visit in 2020. The 2012 Board of Evaluators NCATE Report included the following praise for pedagogical content knowledge mastery among graduate students, “Pedagogical content knowledge is assessed through the ‘Teaching Cycle modules,’ the ‘Content modules,’ and the Evaluation of Teaching [i.e., observations]. Interviews with candidates evidenced strong mastery of this as did data provided onsite,” (p.5). The pedagogical foundations of our coursework can be found in Appendix 12.

Furthermore, NCATE publicly recognized Relay GSE, (then Teacher U) in its November, 2010 Blue Ribbon Panel report, *Transforming Teacher Education Through Clinical Practice: A National Strategy to Prepare Effective Teachers*. The predecessor to Relay GSE, Teacher U, was one of only eleven institutions highlighted in the report’s “Promising Practices” section, included below.

“Teacher U is a partnership between Uncommon Schools, KIPP and Achievement First, three of the highest performing charter school networks in the country, and prepares teachers both for them and for other New York City district and charter public schools. It is a two-year teacher preparation program presently leading to a master’s degree from Hunter College. The program has a spiral curriculum and relies heavily on self-videotaping of student teaching for both formative and summative assessment. It ties teacher preparation to student achievement, requiring candidates to show a minimum of 12 months of growth in student achievement during the second year of their program in order to receive a master’s degree,” (Blue Ribbon Panel on Clinical Preparation and Partnerships for Improved Student Learning).

In 2011, The New York State Education Department (NYSED) granted Relay GSE a provisional charter to operate postsecondary degree programs and confer degrees approved and authorized by the Board of Regents, including the Master of Arts in Teaching. NYSED granted Relay GSE an absolute charter in 2013. The Middle States Commission on Higher Education (MSCHE) accredited Relay GSE in 2012 based on the institution’s coursework. Relay GSE addressed academic rigor throughout its original 2012 self-study and site visit, which received MSCHE’s commendation in many areas, including its “development of the

innovative curriculum and instruction to enable graduate students to lead their predominately low-income, urban P-12 students to demonstrable annual achievement gains.” In addition, MSCHE noted that “The institution considers a balance of both input-and outcomes-driven program assessment that supports and aligns with the conceptual framework.”¹ Relay GSE continues to demonstrate ongoing compliance with MSCHE standards and processes through the annual Institutional Report, and is currently planning for its next self-study and site visit in 2016-2017.

In its original Institutional Review submission to MSCHE, Relay GSE highlighted its academic rigor through the following summaries, among other indicators:

- **Mastery Focused:** The [Relay GSE] program is competency based. The courses and modules all end in performance tasks that demonstrate the extent to which a teacher has mastered course objectives that are clearly stated at the beginning of each course. Whether it’s a video of the graduate student demonstrating in real-time what s/he has learned, or a unit plan that meets the evaluation criteria taught in a planning course, the proof is in the teaching. Graduate students do not simply tell professors their teaching abilities in a paper they write after reading articles or by taking exams. They demonstrate that they have learned how to teach effectively, by showing their teaching and its impact on their students through video assignments, written lesson plans, and data samples.
- **Content Is Context:** There are basics to good teaching that apply to everyone, but execution requires context. The general pedagogy courses are paired with a content pedagogy course to provide that context. Each graduate student will be enrolled in an appropriate Content Pedagogy course or courses relevant to their grade level and subject area, where they can apply what they have learned in the general pedagogy courses with the guidance of a content expert. In general pedagogy courses, graduate students will be working on assessments, lessons plans, and activities that are germane to their content areas.
- **Beginning With The End Objective:** Ultimately, the entire [Relay GSE] program is designed, or backwards planned, with the end in mind, such that graduate students are being led minute by minute to generate student achievement in their classrooms which enhances their students’ ability to succeed in school and life. Furthermore, the graduate students build a portfolio of practices and skills that will move them from novice to proficient as teachers, and eventually to be exemplary teachers.
- **Spiraling:** The program schedule and sequence reflect the carefully designed program. One of the primary reasons [Relay GSE] courses last the duration of the two-year program is to accommodate graduate students who progress from introductory-level teaching techniques to more sophisticated levels as they gain experience in the classroom. Courses start with an introduction to the practical and research- based theory. Students are then given examples for these concepts, are provided with excellent modeling by their instructors, and finally are asked to provide proof of their understanding and mastery of such skills through video-based or written assignments. Modules grow in complexity as the courses transition from the first summer to the second summer, and the assignments

¹ Middle States Commission on Higher Education Site Visit Evaluation Team Final Report, 2012

that enrolled teachers complete in a module are often referred to and improved over time. This “spiraling” technique of instruction takes into account the learning patterns and development of enrolled teachers who are new to the teaching profession. The curriculum is based on prioritizing and sequencing the overall program objectives.

External Recognition of Rigor and Leadership

In 2014, both the White House and the US Department of Education praised Relay GSE for its rigor and innovation. In April, 2014, the White House cited Relay Graduate School of Education among several organizations, for “demonstrating vital leadership in improving teacher preparation,” (The White House, Office of the Press Secretary). Later in 2014, federal officials from the US Department of Education encouraged others to scale and replicate Relay’s “innovative” approach - which measures and hold itself accountable for both program graduate and employer satisfaction - as well as require that teachers meet high goals for student learning growth before they can complete their degrees, (U.S. Department of Education).

Prerequisite Content Knowledge

Institutional admission standards require a bachelor’s degree and demonstrated content knowledge, through a combination of undergraduate major, 24 semester hours, and/or PLACE or Praxis exam.

Masters Defense

As a further component of master’s-level work, Relay’s graduate students demonstrate their knowledge and skill development with a Master’s Defense in which they present evidence demonstrating that the K-12 students in their classrooms possess the academic knowledge and social skills that will provide the foundation for college and a productive and successful life. Relay GSE included an overview of the Master’s Defense in its initial MSCHE accreditation application. This can be found in Appendix 13.

The Master’s Defense consists of a Master’s Portfolio and an Oral Master’s Defense as a final, culminating assessment. For the Portfolio, graduate students compile assignments they submitted throughout the MAT program that showcase exemplary work in each of the five courses, or “elements of effective instruction” at Relay GSE. A student-facing summary of the Master’s Defense can be found below:

Over the past two years at Relay GSE you have gained knowledge, developed skills, and built the mindsets of a highly effective K-12 teacher. In your final chapter at Relay GSE, you’ll celebrate these accomplishments in the Master’s Defense capstone project. The Master’s Defense is all about what you and your students have learned over the past two years. You’ll reflect candidly on your teaching strengths, areas of improvement, and your professional growth over your time at Relay GSE. You’ll also highlight your students’ learning via their academic outcomes and the character growth they’ve made as a result you having YOU as their teacher.

The Master’s Defense is a two-part project that includes an annotated online Portfolio of your best module assessments, as well as an in-person Oral Defense in front of small panel of Relay GSE faculty. This module will set you up for success in both parts of this capstone project.

Graduate students will present the completed Portfolio through an Oral Defense of their learning and their K-12 students' achievement. All coursework that is part of the Student Growth & Achievement course prepares graduate students for the Master's Defense.

The Data Narrative

Additionally, The Data Narrative – a Student Growth and Achievement module – requires graduate students to demonstrate that, on average, all K-12 students in a graduate student's classroom have learned at least a year's worth of content in one school year. The Data Narrative involves comparing descriptive statistics and identifying their limitations, describing common mistakes associated with analyzing data, and evaluating research questions against criteria for quality. Graduate students also learn to apply statistical techniques to discover trends in student performance, disaggregate student data, create displays of student achievement, and summarize their findings. Throughout the module, graduate students distill meaningful takeaways from the performances of all students at both the subgroup and the individual levels, and leverage these discoveries to tell the story of their achievements in a polished, written account.

What Relay Teaches

Similar to other professional graduate schools, such as those in law and business, Relay has a core curriculum that focuses on the knowledge, skills, and mindsets that yield student growth and achievement. To this end, the institution's curriculum incorporates field-tested techniques and research-based findings. This blend of content means that graduate students can immediately apply what they learn at Relay to their K-12 classrooms. Another feature of the institution's rigorous curriculum design is its inclusion of character development, which has been identified as an important factor in students' academic success (Carter, 2010; U.S. Department of Education, 2008; Peterson & Seligman, 2004).

Graduate students experience this curriculum in a scope and sequence according to their development and proficiency in their classrooms. This approach to instruction allows Relay GSE to respond to the specific learning needs of its graduate students. This is of critical import given that all Relay GSE graduate students have instructional responsibilities in a K-12 classroom. Professors are also attentive to curricular differentiation for their specific cohorts of graduate students who may demonstrate varying strengths and weaknesses in learning, adopting, and implementing course material, and they spend hours each week specifically tailoring the curriculum for their graduate students and their learning needs.

The two components of this core curriculum include topics in General Pedagogy and Content Knowledge. The General Pedagogy curriculum addresses the elements of effective instruction: Classroom Culture, Self and Other People, Student Growth and Achievement, and Teaching Cycle. Content Knowledge is a curriculum sequence that provides content depth related to the graduate student's teaching assignment and a breadth of knowledge, for example literacy instruction, needed by all effective K-12 teachers.

Use of Rubrics

All Relay GSE assignments require graduate students to demonstrate their ability to apply the knowledge they have learned to date and perform the skills and techniques that have been associated with effective teaching. Relay GSE instructors measure graduate student performance using rubrics developed specifically for each individual performance task or assessment.

These rubrics serve four related purposes: first, the rubrics structure and streamline the assessments; second, the rubrics model effective assessment practices; third, the rubrics provide a reliable research tool for collecting and analyzing graduate student academic performance and achievement data; and fourth, and most importantly, the rubrics offer graduate students detailed guidance and feedback on the various skills that are being assessed through a given assignment.

Relay GSE’s rubrics measure both analytic and holistic graduate student performance on a 0-4 Likert scale. The analytic and holistic rubric components work in tandem: on a rubric with five total rows, for example, a professor uses the first four rows analytically to assess graduate students on the discrete components associated with a teaching technique, strategy, or skill, while reserving the fifth and final row to assess the graduate student’s holistic proficiency in that teaching technique, strategy, or skill. Graduate students must score at least a 3 in the final row of the rubric to be considered “proficient” on the assessment. A score of 2 in the final row of the rubric is considered the minimum passing score.

Faculty members measure graduate student performance on assessments using the following 0-4 Likert scale:

- **(4) Exemplary:** Graduate students who earn a 4 on a rubric row have demonstrated exemplary performance of the strategy or technique described in that row. Earning a 4 is rare.
- **(3) Proficient:** Graduate students who earn a 3 on a rubric row have demonstrated solid, proficient performance of the strategy or technique described in that row. Earning a 3 is the expected outcome of completing the module and submitting the assessment.
- **(2) Foundational:** Graduate students who earn a 2 on a rubric row have demonstrated foundational skills with respect to the strategy or technique described in that row. With more support, they will likely be able to demonstrate proficiency on that strategy or skill. Earning a 2 is the minimum overall score by which graduate students can earn the credit associated with an assessment.
- **(1) Attempting:** Graduate students who earn a 1 on a rubric row have attempted to master the strategy or technique described in that row. They need more support and/or need to put in more work before they can demonstrate proficiency on that strategy or technique. Earning a 1 on an assessment results in no credit earned for that assessment.
- **(0) Lacking:** Graduate students who earn a 0 on a rubric row have not attempted to master the strategy or technique described in that row. Earning a 0 on an assessment results in no credit earned for that assessment.

Table 3 on the next page provides a sample Relay GSE rubric, taken from the Checking for Understanding module, which is part of the Teaching Cycle course.

Table 3: Sample Relay GSE Rubric—Checking for Understanding

Rubric Row	(4) Exemplary	(3) Proficient	(2) Foundational	(1) Attempting	(0) Lacking
TC-121:1 The teacher will use Ask, Ask, Ask to gather real-time data on student learning	a. ASK, ASK, ASK: The teacher applies Ask, Ask, Ask effectively and intentionally (e.g., students sampled are strategically selected)	a. ASK, ASK, ASK: The teacher applies Ask, Ask, Ask effectively (i.e., repeatedly asks the same question, asks a variety of students, and waits to reveal the correct answer)	a. ASK, ASK, ASK: The teacher implements Ask, Ask, Ask; however, his implementation is not entirely effective (e.g., the sample size is slightly too small to make an inference about mastery)	a. ASK, ASK, ASK: The teacher attempts to implement Ask, Ask, Ask; however he has a misconception about the technique (e.g., he does not wait to reveal the answer)	a. ASK, ASK, ASK: The teacher does not implement Ask, Ask, Ask
TC-121:2 The teacher will use Gestures or Whiteboards to gather real-time data on student learning	a. GESTURES/ WHITEBOARDS: The teacher applies the technique effectively and intentionally (e.g., initial question is targeted to uncover misconceptions)	a. GESTURES/ WHITEBOARDS: The teacher applies the technique effectively (i.e., for Gestures, establishes clear gestures, gives a crisp in-cue, and always follows up with questions; for Whiteboards, gives a crisp in-cue and establishes tight procedures)	a. GESTURES/ WHITEBOARDS: The teacher applies the technique; however, his implementation is not entirely effective (e.g., an unclear in-cue complicates scanning in Gestures, procedures need tightening in Whiteboards, etc.)	a. GESTURES/ WHITEBOARDS: The teacher attempts to implement the technique; however, he has a misconception (e.g., does not ask follow-up questions in Gestures, students' responses are too long to scan in Whiteboards, etc.)	a. GESTURES/ WHITEBOARDS: The teacher does not implement the technique
TC-121:3 The teacher will adjust instruction effectively in response to check for understanding data	a. ADJUSTING: The teacher adjusts instruction effectively and intentionally (e.g., the adjustment technique is differentiated to address the needs of 100% of students in the classroom)	a. ADJUSTING: The teacher adjusts instruction effectively (i.e., the adjustment technique is responsive to the data gathered from the CFU)	a. ADJUSTING: The teacher adjusts instruction; however, his adjustment is not the most effective (i.e., the adjustment isn't <i>wrong</i> ; however, there might be a more effective choice)	a. ADJUSTING: The teacher attempts to adjust instruction; however, he has a misconception about adjusting (e.g., 90% of students demonstrate mastery, but he re-teaches the entire lesson to the entire class)	a. ADJUSTING: The teacher does not adjust instruction
SWITCH ROW: The teacher checks for understanding to and adjusts accordingly	a. OVERALL: Based on this video and commentary, it appears that this teacher effectively and intentionally checks for understanding and adjusts accordingly	a. OVERALL: Based on this video and commentary, it appears that this teacher effectively checks for understanding and adjusts accordingly	a. OVERALL: Based on this video and commentary, it appears that this teacher is not entirely effective at checking for understanding and adjusting accordingly	a. OVERALL: Based on this video and commentary, it appears that this teacher is attempting to check for understanding and to adjust accordingly; however he has one or more misconceptions	a. OVERALL: Based on this video and commentary, it appears that this teacher does not check for understanding or adjust accordingly

Given the significance of rubric-based assessment on graduate student success in the Relay GSE MAT program, the institution has developed clear institutional processes to minimize faculty error using rubric-based assessments and increase grading transparency for graduate students. Relay GSE's faculty members take the following proactive, highly systematized measures to preempt graduate student grievances around each assessment rubric:

- All curriculum design faculty members undergo rubric-writing training and ongoing professional development;
- During the curriculum design process, curriculum design faculty members offer feedback on and assess rubrics for clarity of criteria, alignment of rubric criteria with direct instruction, and fairness of distinctions between rubric scores; and
- Professors pilot new rubrics before using them for broad assessment of graduate students. For example, before finalizing the rubric Relay GSE professors use to assess graduate students during live classroom observations, professors used the rubric criteria to assess video of graduate student instruction and other professors' live instruction. Such feedback is then used to inform the final revision of the rubric's ultimate assessment criteria.

Before professors assess graduate student work or performance, curriculum design faculty lead grade alignment discussions with professors to ensure the consistency and fairness of the institution's assessment practices. In these discussions, the faculty member who oversees the course reviews with professors the primary learning objectives and the rubric used to assess whether graduate students met those objectives. Next, the course director provides professors with sample work to assess using the rubric. Professors then share their evaluations and discuss the rationale for giving a particular score. This evaluation occurs for every rubric row and the strands within each rubric row. Following any discussion, the group agrees on a final score for a particular rubric component, and then repeats this process for each part of the rubric.

Graduation Requirements and Rubric Score Average

Relay GSE requires more out of its students than simply completing the curriculum and moving on to new material. Graduate students must demonstrate that they have mastery of the techniques to which they have been exposed through Relay GSE coursework to successfully lead their K-12 students to meaningful and measurable achievement growth. To this end, Relay GSE utilizes a comprehensive rubric-based system to assess graduate student proficiency. Every formal, graded assessment graduate students submit has a rubric associated with it.

As discussed on the preceding pages, each rubric allows professors to assess graduate student performance analytically, through the first several rubric rows, and holistically, through the final rubric row. In other words, a graduate student's score on the final row in a given rubric is his or her overall 0-4 score on that particular assessment.

In order to graduate from Relay GSE, graduate students are required to:

- Demonstrate at least "Proficient" mastery (i.e. earn at least a "3" on the overall module rubric) on the Year 2 Student Outcomes module, which assesses if graduate students led their K-12 students to at least one year's worth of academic gains during the second year of the MAT program;

- Demonstrate at least “Foundational” mastery (i.e. earn at least a “2” on the overall module rubric) on all other Core and all Content modules; and
- Earn a cumulative Rubric Score Average (RSA) of 2.7 on all modules.

RSA for each graduate student is simply an un-weighted cumulative average of all overall rubric scores in the MAT program to date. As a final indication of rigor, this average must be at or above 2.7 to advance through and graduate from the program.

Conclusion

Relay Graduate School of Education looks forward to serving Colorado graduate students through a program that prepares individuals for positions in teaching. Along with other requirements, admission into one of Relay's programs requires a bachelor's degree, completed coursework aligned to intended area of educator preparation, and passing score(s) on required state examinations. All programs culminate in the Master's Defense, which includes a written and oral defense of their practice. In this project, graduate students collect, report, and analyze multiple forms of evidence to examine student achievement and growth. In examining these data, graduate students identify trend and sub-trends in student performance and development, address research questions grounded in problems of practice or research findings, and summarize these findings to identify implications related to strengths and areas for improvement in their personal practice or school.

The coursework graduate students complete supports the development of graduate students' content knowledge and pedagogical content knowledge as well as professional and pedagogical knowledge and skills. This coursework is interdisciplinary, reflecting knowledge and skills from education, the social sciences, and specific disciplines depending on program (e.g., English or biology). The institution's conceptual framework also features coursework devoted to data literacy. These learning experiences help graduate students develop the knowledge and skills needed to complete the Master's Defense project.

The institution's accreditation record and external recognition for its innovation, rigor, and leadership are a testament to its commitment to the art and science of teaching.

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- . *U.S. Department of Education: Archived Information*. 25 November 2014. Internet. 9 August 2015.

Appendix 1: What to Expect from an X Grader Overview²

Module Title
SOP-110: What to Expect from an X Grader
Module Summary
<p>Child development follows a pattern. Effective teachers familiarize themselves with this pattern, and they adjust their instruction to meet their students’ physical, social-emotional, cognitive, and language needs.</p> <p>In this module, you will familiarize yourself with basic learning theory and child development for the age of students you are likely to teach. Then, you will draft a list of action steps that will help you to create a developmentally appropriate classroom environment.</p>
Module Goal(s)
<ul style="list-style-type: none"> • The teacher will draft actions steps that will help her to create a developmentally appropriate classroom environment
Module Assessment
Teachers will draft a list of action steps that will help you to create a developmentally appropriate classroom environment.
Selected Readings
<ul style="list-style-type: none"> • Bearison, D. (1996). <i>Interpersonal collaboration and children’s cognitive development</i>. Philadelphia: Jean Piaget Society. • Children’s Defense Fund. (2010). The state of America’s children. Children’s Defense Fund. • Daniels, D.H. & Shumow, L. (2003). Child development and classroom teaching: A review of the literature and implications for educating teachers. <i>Applied Developmental Psychology</i>, 23, 495-526. • Dobbs, D. (2011). Beautiful Brains. National Geographic. • Elias, M. J., DeFini, J., & Bergmann, J. (2010). Coordinating social-emotional and character development. <i>Middle School Journal</i>, 42(1), pp. 30. • Lui, A. (2012). Teaching in the zone: An introduction to working within the zone of proximal development (ZPD) to drive effective early childhood instruction. Children’s Progress. • Reyes, J.A., & Elias, M.M. (2011). Fostering social-emotional resilience among latino youth. <i>Psychology in the Schools</i>, 48(7), pp. 723-737. • Santos, R.M., Fetting, A., & Shaffer, L. (2012). Helping families connect early literacy with social-emotional development. <i>Young Children</i>, 67(2), pp. 88. • Shaffer, D. (2009). <i>Developmental psychology: Childhood and adolescence</i> (8th ed.). Canada: Cengage Learning. • Steinberg, L. (2010). <i>Developing adolescents: A reference for professionals by American Psychological Association, 2002</i>. Boston: McGraw-Hill. • Tatum, B. (1997). “<i>Why are all the black kids sitting together in the cafeteria?</i>” <i>And other conversations about race</i>. New York: Basic Books. pp. 52-74. • Wood, C. (2007). <i>Yardsticks: Children in the classroom ages 4-14</i> (3rd ed.). Turners Falls, MA: Northeast Foundation for Children, Inc. pp. 50-53; 62-69; 78-81; 90-93; 100-103; 110-113; 124-127; 136-139; 148-151; 160-163; 174-177.

² All module readings are made available to students via direct links in the Course Platform.

Appendix 2: Building Cultural Responsiveness Overview

Module Title
SOP-111: Building Cultural Responsiveness
Module Summary
<p>What are some of the ways your students might perceive you? How might your colleagues perceive you? What about the community in which you teach? This module acknowledges the power of perception and is intended to support you in reflecting on the connection between self and other people.</p> <p>In this module, you will explore identity and culture and how they play into the curriculum you design and execute in your classroom. You will explore differences between yourself and the student groups you are likely to teach (e.g., race, socio-economic status, nationality, etc.). You will explore your biases and examine ways in which these may affect your expectations for students, and you will have the opportunity to learn about Multicultural Curriculum Transformation (Gorski, 2012). Finally, for your module assessment, you will write a reflection discussing your learning regarding perceptions and bias. Each of these learning experiences will help you to build your cultural responsiveness.</p>
Module Goal(s)
<ul style="list-style-type: none"> • The teacher will clearly describe her personal identity markers • The teacher will use her personal identity markers and comparative demographic data to draw sound conclusions about the points of convergence and points of divergence between herself and her students • The teacher will examine the intersection between perception and action based on her educational belief inventory • Overall, the teacher will critically examine viable ways to monitor her own biases in the classroom
Module Assessment
Teachers will write a double-spaced, two- to four-page reflection discussing their learning regarding perceptions and bias.
Selected Readings
<ul style="list-style-type: none"> • Aronson, J. (2008). Knowing Students as Individuals. In M. Pollock (Ed.), <i>Everyday Antiracism</i> (pp. 67 - 69). New York: The New Press. • Berlak, A. & Moyenda, S. (2001). <i>Taking it personally: Racism in the classroom from kindergarten to college</i>. Philadelphia, PA: Temple University Press. • Delpit, L. (2012). <i>"Multiplication is for white people:" Raising expectations for other people's children</i>. New York: The New Press. • Freire, P. (2000). <i>Pedagogy of the oppressed</i>. New York: Continuum. • Howard, G. (2006). <i>We Can't Teach What We Don't Know: White Teachers, Multiracial Schools</i>. New York: Teachers College Press. • Lorde, A. (1995). "Age, race, class, and sex: Women redefining difference." In P. Rothenberg (ed.), <i>Race, class, and gender in the United States: An integrated study</i>, 3d ed, 445-51. New York: St. Martin's Press. • Noguera, P. (2008). <i>The trouble with black boys: Essays on race, equity, and the future of public education</i>. San Francisco: Jossey-Bass. • Perry, T., Steele, C., & Hilliard, A.G. (2003). <i>Young, gifted, and black: Promoting high achievement among African-american students</i>. Boston: Beacon Press. • Steele, C. (2003). Stereotype Threat and African-American Student Achievement. In <i>Young, Gifted, and Black: Promoting High Achievement Among African-American Students</i> (pp. 109-130). Boston: Beacon Press. • Tajfel, H. and Turner, J. C. (1986). The social identity theory of inter-group behavior. In S. Worchel and L. W. Austin (eds.), <i>Psychology of intergroup relations</i>. Chicago: Nelson-Hall. • Tatum, B. D. (2003). <i>"Why are all the black kids sitting together in the cafeteria?" A psychologist explains the development of racial identity</i>. Basic Books.

- *White teacher/diverse classrooms: Creating inclusive schools, building on students' diversity, and providing true educational equity (2nd edition).* (2011). Stylus Publishing.

Appendix 3: Knowing Students, Families, and Schools Overview

Module Title
SOP-112: Knowing Students, Families, and Schools
Module Summary
There’s more to great teaching than lesson planning and becoming an expert in your content area. It also requires respect, humility, and the art of relationship-building. In this module, you will learn about the importance of building strong relationships with your students and their families. For your module assessment, you will use your learning about relationship-building to create a plan for building and maintaining relationships with students and families.
Module Goal(s)
<ul style="list-style-type: none"> • The teacher will generate a plan for building and maintaining relationships with students • The teacher will generate a plan for building and maintaining relationships with families
Module Assessment
Teachers will create a plan for building and maintaining relationships with students and families
Selected Readings
<ul style="list-style-type: none"> • Bryk, A.S. & Schneider, B. (2002). <i>Trust in schools: A core resource for improvement</i>. New York: Russell Sage Foundation. • Cameron, C. A., & Lee, K. (1997). <i>Bridging the gap between home and school with voicemail technology</i>. Journal of Educational Research, 90(3), pp. 182-191. • Comer, J. (1987). New Haven’s school-community connection. <i>Educational Leadership</i>, 44(6), pp. 13-16. • Cozzarelli, C., Wilkinson, A., Tagler, M. (2001). <i>Attitudes toward the poor and attributions for poverty</i>. Journal of Social Issues, 57(2), pp. 257-259. • Graham-Clay, S. (2005). <i>Communicating with parents: Strategies for teachers</i>. School Community Journal, 15(1), pp. 117-129. • Gregory, A and Ripski, M. (2008.) Adolescent trust in teacher: Implications for behavior in the high school classroom. <i>School Psychology Review</i>, 37 (3): pp. 337-353 • Gustafson, C. (1998). <i>Phone home</i>. Educational Leadership, 56(2), pp. 31-32. • Harvard Family Research Project. (2000). <i>A model for family-school-community partnerships</i>. DeWitt Wallace-Reader’s Digest Fund. • Patterson, K., Grenny, J., McMillan, R, & Switzler, A. (2011.) <i>Crucial conversations: Tools for talking when stakes are high</i>. New York: McGraw-Hill. pp.1-16. • Redding, S., Murphy, M., & Sheley, P., Eds. (2011). Handbook on family and community engagement. Lincoln, IL: Academic Development Institute. • Sebring, P.B., Allensworth, E., Bryk, A., Easton, J., & Luppescu, S. (2006). <i>The essential supports for school improvement</i>. Chicago, IL: Consortium on Chicago School Research at the University of Chicago. • SEDL. (2014). “Partners in education: A dual capacity-building framework for family-school partnerships.” SEDL • Teaching Tolerance: A Project of the Southern Poverty Law Center. (2014). Family engagement. • Thomas, A.F. (2011). <i>Know thy students – including my daughter</i>. <i>Middle Ground</i>, 15(1), pp. 19-20. • University of Pennsylvania Graduate School of Education. (2014). <i>Succeeding in the city: A report from the New York City Black and Latino Male High School Achievement Study</i>. The Trustees of the University of Pennsylvania. • Warren, M.R., Hong, S., Rubin, C.L., & Uy, P.S.. (2011). Beyond the bake sale: A community-based relational approach to parent engagement in schools. <i>Teachers College Record</i>, 111(9), pp. 2209-2254.

Appendix 4: Reflecting on Cultural Responsiveness Overview

Module Title
SOP-113: Reflecting on Cultural Responsiveness
Module Summary
<p>Who are you? Who are you when you are teaching? How does who you are affect the way you teach? How does who you are affect the way other people perceive you when you teach? Who are you becoming as a teacher? This module will prompt you to reflect upon these questions and others like them in your ongoing effort to become ever-increasingly socioculturally conscious—that is, to develop an understanding of your own worldview and its profound relationship to your life experiences, as mediated by a variety of factors, including your identity markers.</p> <p>You will review key ideas about culturally responsive teaching, look closely at the ways in which one's educational beliefs are contingent upon one's limited perspective, and reflect upon your own education and how it has shaped your perspective. You will then combine your reflection and learning to craft and share an educational autobiography.</p>
Module Goal(s)
<ul style="list-style-type: none"> • The teacher will explain the evolution of her sociocultural consciousness • The teacher will explain how an identity marker shaped her educational experiences • The teacher will explain how her evolving sociocultural consciousness impacts her students
Module Assessment
The teacher will generate a two-to-four-page reflection on the evolution of her sociocultural consciousness in which she responds to the question, "Who am I becoming as a teacher?"
Selected Readings

- Anzaldúa, G. (1987). *Borderlands/LaFrñtera*. In Rivkin, J. & Ryan, M. (Eds.), *Literary Theory: An Anthology*. Oxford: Blackwell, pp. 1017-1030.
- Aronson, J. (2008). Knowing students as individuals. In M. Pollock (Ed.), *Everyday antiracism: Getting real about race in school* (pp. 67 - 68). New York: The New Press.
- Banks, J.A. (1993). "Multicultural Education: Historical Development, Dimensions, and Practice." *Review of Research in Education*, 19: pp. 3-49.
- Berger, M. (2013 December 16). One drop, but many views on race. *New York Times*.
- Chideya, F. (2014 January 3). Traveling while black. *New York Times*.
- Coates, T. (2013 August 26). Through the parisian looking glass. *The Atlantic*.
- Gorski, P. (2012). Stages of multicultural curriculum transformation
- Howard, C. T. (2003). "Telling their side of the story: African-American students' perceptions of culturally relevant teaching," *The Urban Review*, 33(2): pp. 131-149
- Kelley, R. (2009, July 13). "The roots of racism: What we don't know can hurt us." *Newsweek*
- Ladson-Billings, G. (1995). "But that's just good teaching! The case for culturally relevant pedagogy." *Theory Into Practice*, 34(3): pp. 159-165.
- Marshall, K. (2009). *Rethinking teacher supervision and evaluation: How to work smart, build collaboration, and close the achievement gap*. San Francisco: Jossey-Bass. (Selected readings.)
- Nieto, S. (2003). *What keeps teachers going?* New York: Teachers College Press.
- Nieto, S., & Hawley, W. (2010). Another inconvenient truth: Race and ethnicity matter. *Educational Leadership*, 68(3), pp. 66-71.
- Powers, R. (1998). Using critical autobiography to teach the sociology of education. *Teaching Sociology* 26(3), pp. 198-206.
- Rist, R. (1970). "Student Social Class and Teacher Expectations: The Self-Fulfilling Prophecy in Ghetto Education." *Harvard Educational Review*, 40(3): pp. 266-301.
- Singham, M. (1998). The canary in the mine: The achievement gap between black and white students. *Phi Delta Kappan*, 80(1), pp. 8-15.
- Steele, C. M. (1999). Thin ice: Stereotype threat and black college students. *The Atlantic*.
- Tajfel, H. & Turner, J. C. (1986). The social identity theory of inter-group behavior. In S. Worchel and L. W. Austin (eds.), *Psychology of intergroup relations*. Chicago: Nelson-Hall.
- Tatum, B. D. (2003). *Why are all the black kids sitting together in the cafeteria?* New York: Basic Books.
- Villegas, A.M., & Lucas, T. (2002). *Educating culturally responsive teachers: A coherent approach*. Albany, NY: State University of New York Press.

Appendix 5: Building a Culturally Responsive Curriculum Overview

Module Title
SOP-210: Building a Culturally Responsive Curriculum
Module Summary
By this point, you have explored some ways in which teachers might continually build their sociocultural consciousness, and you have considered how to design curriculum according to the Stages of Multicultural Curriculum Transformation (Gorski, 2012). To begin this module, you will have the opportunity to review key concepts online and to read further about culturally responsive teaching. Then, in the first in-person session, you will debrief the online readings with your colleagues. In in-person sessions 3 and 4, you will identify evidence of culturally responsive strategies in the classrooms of other teachers and begin to draft a plan for how to increase the cultural responsiveness of your teaching in the upcoming school year.
Module Goal(s)
<ul style="list-style-type: none"> • The teacher will describe concrete ways in which her instruction will be culturally responsive • Overall, the teacher will monitor her approach to curriculum and the impact her actions have on student achievement
Module Assessment
Teachers will generate a plan for how to approach culturally responsive teaching this upcoming school year.
Selected Readings
<ul style="list-style-type: none"> • Ladson-Billings, G. (1995). But that's just good teaching! The case for culturally relevant pedagogy. <i>Theory into Practice</i>, Summer, pp. 159-165. • Southern Poverty Law Center. (2009). Relevant: Beyond the Basics. <i>Teaching Tolerance</i>, 45(36). • Tatum, B.D. (1997). "Why Are All the Black Kids Sitting Together in the Cafeteria?" New York: Basic Books. pp. 3-17.

Appendix 6: Working with Communities Overview

Module Title
SOP-216: Working with Communities
Module Summary
<p>“Community” is a word rich in meaning; it can describe both a group of people who live within certain boundaries (i.e., a neighborhood) and those who share experiences, practices, interests, or beliefs. School-community relationships enhance students’ educational experiences in myriad ways, through enriching students’ learning, teaching skills, raising awareness of career options, and providing resources (e.g., summer programs, health services, etc.).</p> <p>In this module, you will lay the groundwork for building school-community relationships that enrich <i>your</i> students’ educational experiences. After defining community and explaining the importance of school-community relationships, you will identify and visit asset institutions in your school community and describe some of the ways those assets might enrich your students’ educational experiences. Your module assessment is a community asset map that captures your interactions with assets and explains how your relationships with assets will enhance your students’ educational experiences.</p>
Module Goal(s)
<ul style="list-style-type: none"> The teacher will create a community asset map that identifies and describes assets and interactions with members of asset institutions in his school’s community
Module Assessment
Teachers will create a community asset map that identifies and describes assets and interactions with members of asset institutions in your school’s community; explain how your relationships with these assets will enhance your students’ educational experiences.
Selected Readings
<ul style="list-style-type: none"> Adger, C.T. (2000). School/community partnerships to support language minority student success. <i>Center for Applied Linguistics Research Brief</i>, 5. AEL. (2003). Interactions: A summary of research on school-community relationships. Charleston, WV: AEL (Appalachia Educational Laboratory) Regional Educational Laboratory Aguirre, A., Martinez, R., & Barboza, S. (2012). Mexican-American schoolchildren in U.S. public schools: A review of social science research on the Mexican-American family’s cultural capital. In B. Gastic & R.R. Verdugo (Eds.), <i>The education of the Hispanic population: Selected essays</i>. pp. 119-135. Anderson, B. (1983). <i>Imagined communities: Reflections on the origin and spread of nationalism</i>. New York: Verso. pp. 5-7 Cahill, M. (1996). <i>Schools and community partnerships: Reforming schools, revitalizing communities</i>. Chicago: Cross City Campaign for Urban School Reform. pp. 1-2. DeFilippis, J. & Saegert, S. (2008). Communities develop: The question is how? In DeFilippis, J. & Saegert, S. (Eds.) <i>The community development reader</i>. New York: Routledge. pp. 1-2 De Jesus, R.V. & Sayers, D. (2007). VOICES: Bilingual youth constructing and defending their identities across borders: A binational study of Puerto Rican circular migrant students. <i>Multicultural Education</i>, 14(4), pp. 16-19. Epstein, J.L. (2011). School, family, and community partnerships: Preparing educators and improving schools (second edition). Philadelphia: Westview Press. pp. 389-414. Ford, B. (2006). Culturally responsive school-community partnerships: Strategies for success. In Landsman, J. & Lewis, C. (Eds.). <i>White teachers/diverse classrooms</i>. Sterling, VA: Stylus. pp. 286-300 Lareau, A. (2003). <i>Unequal childhoods: Class, race, and family life</i>. Berkeley, CA: University of California Press. pp. 38-81. Lee, S. (2001) More than “model minorities” or “delinquents:” A look at Hmong American high school students. <i>Harvard Educational Review</i>, 71(3), pp. 505-528. Noguera, P. (2008). <i>The trouble with black boys and other reflections on race, equity, and the future of public</i>

education. San Francisco, CA: Jossey-Bass. pp. 199-202; 208-214.

- Pattillo, M. (1998). Sweet mothers and gangbangers: Managing crime in a black middle-class neighborhood. *Social Forces*, 76(3), pp. 747-774.
- Patillo, M. (1999). *Black picket fences: Privilege & peril among the black middle class*. Chicago, IL: The University of Chicago Press. pp.13-30; 68-90.
- Poole, D.L. (1997). The SAFE project: Community-driven partnerships in health, mental health, and education to prevent early school failure. *Health & Social Work*, 22(4), pp. 282-289.
- Quintela, M. (2012). Immigrant student educational experiences in an emerging Latina/o community in the Midwest. In B. Gastic & R.R. Verdugo (Eds.), *The education of the Hispanic population: Selected essays*. pp. 87-98.
- Sanders, M.G. & Lewis, K.C. (2005). Building bridges toward excellence: Community involvement in high schools. *High School Journal*, Feb/Mar, pp. 1-9.
- Suarez-Orozco, C., Yoshikawa, H., Teranishi, R., & Suarez-Orozco, M.M. (2011). Growing up in the shadows: The developmental implications of unauthorized status. *Harvard Educational Review*, 81(3), pp. 438-472.
- Suarez-Orozco, M.M. (2013 April 22). Immigrant kids, adrift. *New York Times*.
- Warren, M.R. (2005). Communities and schools: A new view of urban education reform. *Harvard Educational Review*, 75(2), pp. 133-173; 244.
- Wilson, W.J. & Taub, R. (2006). *There goes the neighborhood: Racial, ethnic, and class tensions in four Chicago neighborhoods and their meaning for America*. New York: Vintage Books. pp. 161-169; 177-189.

Appendix 7: The Master’s Defense Overview

Module Title
SGA-210: The Master’s Defense
Module Summary
<p>Over the past two years at Relay GSE you have gained knowledge, developed skills, and built the mindsets of a highly effective K-12 teacher. In your final chapter at Relay GSE, you’ll celebrate these accomplishments in the Master’s Defense capstone project. The Master’s Defense is all about what you and your students have learned over the past two years. You’ll reflect candidly on your teaching strengths, areas of improvement, and your professional growth over your time at Relay GSE. You’ll also highlight your students’ learning via their academic outcomes and the character growth they’ve made as a result you having YOU as their teacher.</p> <p>The Master’s Defense is a two-part project that includes an annotated online Portfolio of your best module assessments, as well as an in-person Oral Defense in front of small panel of Relay GSE faculty. This module will set you up for success in both parts of this capstone project.</p>
Module Goal(s)
<ul style="list-style-type: none"> • The teacher will curate and annotate a Master’s Defense Portfolio • The teacher will prepare and present an Oral Defense
Module Assessment
Teachers will curate and annotate an online Master’s Defense Portfolio and present an in-person Oral Defense.
Selected Readings
<ul style="list-style-type: none"> • Reynolds, G. (2008). <i>Presentation zen: Simple ideas on presentation design and delivery</i>. New Riders, Berkeley, CA, pp. 76-79.

Appendix 8: Differentiated Instruction, Elementary Overview

Module Title
TEL-202: Differentiated Instruction, Elementary
Module Summary
<p>Carol Ann Tomlinson and Caroline Cunningham Eidson, two leading educators in the world of differentiated instruction, compared teaching to learning a sport:</p> <p>“Anyone who has spent any time in a kindergarten classroom can attest that young children enter school at almost astoundingly different levels, with a wide variety of different interests and experiences, and with a broad range of learning preferences and styles. Just as in sports, where some students seem born to run, jump, and leap through games with ease while others struggle to walk in a straight line, some students enter school ready to learn, having managed to already grasp the skills needed to do so. Other students take a while to warm up to the structure and requirements of school. And, while some differences among elementary students diminish as all are exposed to the same types of experiences and given the same types of learning opportunities over time, other differences arise and become increasingly evident as students progress from grade to grade” (Tomlinson & Eidson, 2003, pg. x).</p> <p>This is where differentiated instruction comes in. It's your responsibility to meet the needs of all of your students in your classroom. This module will provide you with a foundation of theory related to differentiated instruction. Then you will engage with a variety of strategies, including those focused on differentiating your literacy instruction.</p>
Module Goal(s)
<ul style="list-style-type: none"> • The teacher plans an aligned lesson • The teacher differentiates the content, process, and/or product in a way that targets students' needs • The teacher identifies and addresses management pitfalls related to differentiation • The teacher demonstrates knowledge about aspects of English Language Arts
Module Assessment
You will submit a text-based lesson plan with elements of differentiation to meet the needs of individual students and/or groups of students at varying levels.
Selected Readings
<ul style="list-style-type: none"> • Tomlinson, C. A. (2001). <i>How to differentiate instruction in mixed-ability classrooms, 2nded.</i> Upper Saddle River, NJ: Pearson. Pgs. 8 – 9. • Tomlinson, C.A. (2003). <i>Differentiation in practice: A resource guide for differentiating curriculum.</i> Alexandria, VA: Association for Supervision and Curriculum Design. Pg. 1 – 13. • Gardner, H. (1998, 2000). A multiplicity of intelligences. <i>Scientific American Presents: Exploring Intelligence (A special issue of Scientific American)</i>, 19 – 23. • Weishaar, M., & Boyle, J. R. (1999). Note-taking strategies for students with disabilities. <i>Clearing House</i>, 72(6), 392-395. • Fisher, D., Brozo, W. G., Frey, N., and Ivey, G. (2007). <i>50 content area strategies for adolescent literacy.</i> Upper Saddle River, NJ: Merrill/ Pearson. Pg. 52 – 53. • Vatterott, C. (2010). Spotlight on homework. <i>Middle Ground</i>, 14(1), 29-31 • Vatterott, C. (2010). Spotlight on homework. <i>Middle Ground</i>, 14(1), 29-31 • Boyles, N. (2002). <i>Teaching written response to text.</i> Gainesville, FL: Maupin House. Pg. 28 – 31, 142 – 144. • Tomlinson, C. A. and McTighe, J. (2006). <i>Integrating differentiated instruction and understanding by design.</i> Alexandria, VA: ASCD. Pg. 101 – 105. • Wormeli, R. <i>Differentiation: From planning to practices grades 6-12.</i> Portland, ME: Stenhouse. Pg. 75 – 81.

Appendix 9: Differentiated Instruction, Secondary Overview

Module Title
TEL-212: Differentiated Instruction, Secondary
Module Summary
For some students, academic tasks and mastering content knowledge can be incredibly challenging, and we need to provide supports for them above and beyond what you may do on a day to day basis for all students. We must continue to hold all students to a high bar; however, we need to support some students in ways which will allow them to truly show mastery. In this module, you'll learn the foundations of differentiation, and then you'll review at least three concrete techniques that you can use in your classroom.
Module Goal(s)
<ul style="list-style-type: none"> • The teacher will plan a lesson that is aligned to the objective • The teacher will differentiate the content, process, and/or product of a lesson plan • The teacher will choose methods of differentiation that target student needs • The teacher will identify and address management pitfalls related to differentiation
Module Assessment
Teachers will differentiate a lesson plan based on a hypothetical group of students.
Selected Readings
<ul style="list-style-type: none"> • Boyles, N. (2013). <i>Teaching written response to text: Constructing quality answers to open-ended comprehension questions</i>. Gainesville, FL: Maupin House. pp. 28 – 31; 142 – 144. • Dykes, F., & Thomas, S. (2010). Strategies for every teacher's toolbox. <i>Principal Leadership</i>, 11(2), pp. 26-30. • Fisher, D., Brozo, W. G., Frey, N., and Ivey, G. (2007). <i>50 content area strategies for adolescent literacy</i>. Upper Saddle River, NJ: Merrill/ Pearson. pp. 52 – 53; 140 – 143. • Gardner, H. (1998, 2000). A multiplicity of intelligences. <i>Scientific American Presents: Exploring Intelligence (A special issue of Scientific American)</i>, pp. 19 – 23. • Graham, S., & Harris, K. (2005). <i>Writing better: Effective strategies for teaching students with learning disabilities</i>. Baltimore, MD: Paul Brookes Publishing. pp. 42; 49, 106 • Lenz, B. K. and Deshler, D. D. (2004). <i>Teaching content to all</i>. New York: Pearson. pp. 126 - 131. • McCarney, S. B., Wunderlich, K. C. (2006). <i>Pre-referral intervention manual</i>. Columbia, MO: Hawthorne. pp. 223 – 224. • Tomlinson, C. A., & Eidson, C. C. (2003). <i>Differentiation in practice: A resource guide for differentiating curriculum, grades 5-9</i>. Alexandria, Va: Association for Supervision and Curriculum Development. pp. 1 – 14; 149 – 157; 19 – 26; 62 – 69. • Tomlinson, C. A. and McTighe, J. (2006). <i>Integrating differentiated instruction and understanding by design</i>. Alexandria, VA: ASCD. pp. 101 – 105. • Vatterott, C. (2010). Spotlight on homework. <i>Middle Ground</i>, 14(1), pp. 29-31. • Weishaar, M., & Boyle, J. R. (1999). Note-taking strategies for students with disabilities. <i>Clearing House</i>, 72(6), pp. 392-395. • Wormeli, R. (2007). <i>Differentiation: From planning to practice grades 6 – 12</i>. Portland, ME: Stenhouse. Pgs. 1 – 4; 75 - 81

Appendix 10: Select Content Module Overviews

Module Title
ELA-112: Close Reading & Evidence-Based Writing
Module Summary
To gain the literacy skills needed for success in college and in the workforce, students must systematically analyze text. Students read, annotate, and reread text when engaging in this type of analysis. In recent Educational Leadership articles, Nancy Boyles (2012), Nancy Frey, and Douglas Fisher (2013) recommend close reading to help students increase their interest in and comprehension of text. In this module, you will learn to select texts/passages worthy of close reads, write text-dependent questions, lead students in a close reading of a text, and support them as they write about reading using strong evidence.
Module Goal(s)
<ul style="list-style-type: none"> • Teachers select a sufficiently complex and relevant text for close reading • Teachers pose text-dependent questions that support students in closely reading a text • Teachers plan opportunities for students to develop an argument about a text in writing • Teachers evaluate students' written arguments about texts • Teachers demonstrate knowledge about aspects of English Language Arts
Module Assessment
Teachers submit a video of a two- to three-day lesson sequence that includes the close reading of a text and writing about reading. Teachers will submit a video of one part of the close reading and one student work sample from the writing about reading.
Selected Readings
<ul style="list-style-type: none"> • Brown-Jeffy, S. & Cooper, J. E. (2011). Toward a conceptual framework for Culturally Relevant Pedagogy: An overview of the conceptual and theoretical literature. <i>Teacher Education Quarterly</i> 38(1), pp. 65-84. • Derrida, J. (1967/1997). <i>Of grammatology</i>. Baltimore: Johns Hopkins University Press. • De León, L. (2002). Multicultural literature: Reading to develop self-worth. <i>Multicultural Education</i> 10(2), pp. 49-51. • Ebe, A. E. (2010). Culturally relevant texts and reading assessment for English language learners. <i>Reading Horizons</i> 50(3), pp. 193-210. • Fisher, D., Frey, N., & Lapp, D. (2012). <i>Text complexity: Raising rigor in reading</i>. Newark, DE: International Reading Association. • Freeman, Y. & Freeman, D. (2004). Connecting students to culturally relevant texts. <i>Talking Points</i> 15(2), pp. 7-11. • Feger, M. (2006). "I want to read.": Culturally relevant texts increase student engagement in reading. <i>Multicultural Education</i> 13(3), pp. 18-19. • Harvey, S., & Goudvis, A. (2007). <i>Strategies that work: Teaching comprehension for understanding and engagement</i>. (2nd ed.). Portland, ME: Stenhouse. • National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). <i>Common Core State Standards for English language arts and literacy in history/ social studies, science, and technical subjects</i>.

Module Title
MATH-111: Rigorous Mathematical Tasks
Module Summary
What makes an assessment item or task aligned to the Common Core State Standards for Mathematics (CCSSM)? What are the components of a rigorous assessment task? To answer these questions, in this module you will analyze various assessment tasks through three lenses: assessment of conceptual understanding, procedural fluency, and application. You will then learn how to assess the strength of given mathematics tasks, using alignment and rigor as benchmarks. During this process, you will work to identify potential student misconceptions and develop strategies to effectively preempt and address these misconceptions in your instruction. By the end of this module, you will be able to clearly articulate what an assessment task is measuring and how it meets criteria for rigor, identify and plan for potential misconceptions related to a given task, and reflect on student work on assessment tasks.
Module Goal(s)
<ul style="list-style-type: none"> • The teacher effectively identifies and provides rationale for assessment task alignment to standards • The teacher effectively annotates the assessment tasks for evidence of rigor and criteria for success • The teacher effectively identifies different levels of mastery for given tasks • The teacher provides effective feedback for students • The teacher demonstrates knowledge about aspects of secondary math • Overall, the teacher effectively selects, modifies, and analyzes student work on rigorous CCSSM aligned assessment tasks
Module Assessment
Teachers will submit annotated Common Core State Standards for Mathematics aligned assessment tasks. Also, teachers will submit annotated samples of student work on the given assessment items and tasks.
Selected Readings
<ul style="list-style-type: none"> • Common Core Standards Writing Team. (2011). <i>Progressions for the Common Core State Standards in Mathematics</i>. Grade 6-8, expressions and equations. Tucson, AZ: Institute for Mathematics and Education, University of Arizona. • Council of Chief State School Officers (2013). <i>Publisher's criteria for the common core state standards for mathematics</i>. • Dunston, P. J., & Tyminski, A. M. (2013). What's the Big Deal about Vocabulary?. <i>Mathematics Teaching in the Middle School</i>, 19(1), 38-45. • Ginsburg, D. (2012, July 16). Procedural fluency: More than memorizing math facts. <i>Education Week</i>. • Harvey, S., & Goudvis, A. (2007). <i>Strategies that work: Teaching comprehension for understanding and engagement</i>. 2nd ed. Portland, ME: Stenhouse Publishers. • Hope, J. A., Reys, B., & Reys, R. E. (1988). <i>Mental math in junior high</i>. New York: Dale Seymour Publications. • Kilpatrick, J., Swafford, J. & Findell, B. (2001). <i>Adding it up: Helping children learn mathematics</i>. Washington, DC: National Academies Press. • National Council of Teachers of Mathematics (2014). <i>Principles to actions: Ensuring mathematical success for all</i>. (pp. 48-56). Reston, VA • National Governors Association, Council of Chief State School Officers, Achieve, Council of the Great City Schools, National Association of State Boards of Education. (2013). <i>High school publishers' criteria for the common core state standards for mathematics</i>. • National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). <i>The common core state standards for mathematics</i>. Washington, D.C. • Rubenstein, R.N. (2007). Focused Strategies for Middle-Grades Mathematics Vocabulary Development. <i>Mathematics Teaching in the Middle School</i>, 13(4), 200-207. • Smarter Balanced Assessment Consortium. <i>Mathematics sample task #43058: Decibels</i>. • Tovani, C. (2000). <i>I read it, but I don't get it: Comprehension strategies for adolescent readers</i>. (pp. 26-29). Portland, ME.: Stenhouse.

Module Title
SCI-113: Inquiry Through Labs
Module Summary
The laboratory exercise is a hallmark of science class. However, many students experience labs that are more akin to recipe-following than to authentic scientific inquiry. In this module, you will learn how to build student skills—in scientific reasoning, in writing, and in mathematical analysis—while ratcheting up the rigor and authenticity of the lab experience. In addition to learning how to design (and scaffold for) inquiry labs, you will also learn how to create student lab groups and analyze student labs for information about student progress.
Module Goal(s)
<ul style="list-style-type: none"> • The teacher will execute a scientifically accurate, objective-aligned lesson • The teacher will execute a lab that creates an inquiry learning experience for students • The teacher will use analysis of student work to inform future instruction • The teacher will demonstrate knowledge of aspects of science
Module Assessment
Teachers submit a video of an accurate, aligned, inquiry-based formal lab for students. Teachers will also complete a student work analysis based on the lab, analyzing a high, medium, and low-performing student work sample for specific inquiry skills and content mastery .
Selected Readings
<ul style="list-style-type: none"> • Bonevac, Nick (2013). Data and Analysis Manual: Formulas [Percent Error and Percent Difference] • Eisenkraft (2013). “Closing the Gap.” The Science Teacher. 80(4): 42- 45. • Hand, D. (2010). Statistics: A Brief Insight. New York: Sterling, 37-47. • National Institutes of Health. (2011-2012). K-12 Challenge Judging Rubric, 2011-12. • Nebraska Department of Education. (2001). Inquiry Student Scoring Rubric. • Wheater, C. (2012). Basic Math. New York: McGraw-Hill, 55-60, 68-71. • Zumdahl, S., & Zumdahl, S. (2010). Chemistry (8th ed.). Belmont, CA: Brooks/Cole, Cengage Learning, A1-A2, 11-17, 18-21.

Module Title
SS-111: Texts and Sources
Module Summary
Your job as a social studies teacher is to help students unpack the narratives of history with a critical lens. A foundational tool for building these understandings is multiculturalism. Through the study of multiple perspectives student will begin asking, how would different groups or individuals interpret the same event? However, in order to gain understanding of events and eras, students must be able to unpack the narratives through reading and source analysis. You will finish this module with the tools necessary for helping your students understand history through the multicultural lens.
Module Goal(s)
<ul style="list-style-type: none"> • The teacher will plan and implement social studies lessons that lead to accurate student understanding of the content • The teacher will plan social studies lessons with a multicultural mindset • The teacher will implement social studies lessons that incorporate skill-based instruction • The teacher will demonstrate knowledge about aspects of social studies
Module Assessment
You will submit a lesson plan and video integrating a multicultural mindset using accurate content and skill based instruction (reading and literacy strategies, or source analysis).
Selected Readings
<ul style="list-style-type: none"> • Adler, S. A., & Adler, F. (2010). <i>National curriculum standards for social studies: A framework for teaching, learning and assessment</i>. Silver Spring, Maryland: National Council for the Social Studies. • Beck, I.L., McKeown, M.G., & Kucan, L. (2002). <i>Bringing words to life</i>. New York, NY: The Guilford Press. • Daniels, H., & Zemelman, S. (2004). <i>Subjects matter</i>. Portsmouth, NH: Heinemann. • Harvey, S., & Goudvis, A. (2007). <i>Strategies that work: Teaching comprehension for understanding and engagement</i>. • Ladson-Billings, G. (1995). But that's just good teaching! The case for culturally relevant pedagogy. <i>Theory into Practice</i>, Summer, 159-165. • MacPhee, D. J. (2011). Bringing the “Social” Back to Social Studies: Literacy Strategies as Tools for Understanding History. <i>Social Studies</i>, 102(6), 263-267 • Merriman, J. M. (2004). <i>A history of modern Europe</i> (2nd ed.). New York, N.Y.: W.W. Norton. 1019 • Miller, J., & Thompson, J. M. (2006). <i>National Geographic almanac of American history</i>. Washington, D.C.: National Geographic., 57, 70, 144 • Myers, C.B.; Adler, S.; Branhorst, A.; Dougan, A.M.; Dumas, W.; Huffman, L.; Rossman, P.; Schneider, D.O.; Stahl, R.J. (2002) <i>National Standards for Social Studies Teachers</i>. • Nieto, S. (2004). <i>Affirming Diversity: The Sociopolitical Context of Multicultural Education</i>, 4th Ed., • Partnership for Assessment of Readiness for College and Careers. (2011). <i>PARCC model content frameworks: English language arts/literacy grades 3–11</i>. • Putnam, R. D. (2000). <i>Bowling alone: the collapse and revival of American community (31-32)</i>. New York: Simon & Schuster • Ravitch, D. (1990). Multiculturalism: E pluribus plures. <i>American Scholar</i>, 59(3), 337. • Reisman, A., & Wineburg, S. (2008). Teaching the skill of contextualizing in history. <i>The Social Studies</i>, 99(5), 202-207. • Robelen, E. W. (2012). Brand-new NAEP report on vocabulary shows same old gaps. <i>Education Week</i>, 32(14), 14. • Sinatra, R., & Dowd, C. A. (1991). Using syntactic and semantic clues to learn vocabulary. <i>Journal of Reading</i>, 35(3), 224. • Weir, C. (1998). “Using embedded questions to jump-start metacognition in middle school remedial

readers.” *Journal of Adolescent & Adult Literacy*, 41(6).

- Wineburg, S. (2006). A sobering big idea. *Phi Delta Kappan*, 87(5), 401-402.

Appendix 11: Select Teaching Cycle Module Overviews

Module Title
TC-210: Unit Planning
Module Summary
The summer is a natural time for unit planning. As such, we have dedicated a large chunk of time to work in content-specific groups to learn the finer points of unit planning based largely in the Understanding By Design (UbD) approach created by Grant Wiggins and Jay McTighe. Over the course of this module, you will receive ongoing feedback on an evolving unit plan. By the end of this module, you will have created two Understanding by Design unit plans complete with performance tasks and accompanying rubrics.
Module Goal(s)
<ul style="list-style-type: none"> • The teacher will focus her unit on a few clear and crucial student understandings and questions (Stage 1) • The teacher will make key considerations about important student learning and potential misconceptions (Stage 1) • The teacher will assess knowledge, skill, and understanding through multiple methods of assessment (Stage 2) • The teacher will design a rubric that accurately describes student performance (Stage 2) • The teacher will develop a learning plan that reflects meaning and transfer as the ends and content knowledge and skill as the means (Stage 3) • The teacher will align all three stages of the Understanding by Design (UbD) unit plan
Module Assessment
The teacher will submit a three-stage unit plan with accompanying rubric.
Selected Readings
<ul style="list-style-type: none"> • Arter, J, & Chappuis, J. (2006) <i>Creating & Recognizing Quality Rubrics</i>. Pearson. pp. 29-42. • McTighe, J. & Wiggins, G. (2004). <i>The Understanding by Design Professional Development Workbook</i>. Alexandria, VA: ASCD. • McTighe, J. & Wiggins, G. P., (2005). <i>Understanding by Design</i>. Alexandria, VA: ASCD. pp. 1-3; 13-21; 35-44; 126-132; 146-160; 172-182. • McTighe, J. And Wiggins, G. (2012). <i>The Understanding by Design Guide to Advanced Concepts in Creating and Reviewing Units</i>. Alexandria, VA: ASCD. Pp. 14-17 • McTighe, J. And Wiggins, G. (2012). <i>The Understanding by Design Guide to Creating High Quality Units</i>. Alexandria, VA: ASCD. Pp. 102-119

Module Title
TC-211: Planning for Academic Rigor
Module Summary
<p>"Rigor" is one of the most prominent buzzwords in education. The Common Core State Standards have been developed to "increase rigorous content" and ask our students to apply "higher-order skills." Reform-focused organizations have poured millions of dollars into initiatives aimed at increasing college-readiness by increasing academic rigor. Rigor is all the rage, but what does it mean to have a rigorous classroom? A concrete answer is surprisingly hard to find in the literature.</p> <p>At Relay GSE, we've taken a "begin with the end in mind" approach. We believe that teachers must first focus on setting a <i>rigorous bar</i> for what their students should know and be able to do. This module is all about how to do so. In the first of four online sessions, you'll explore multiple definitions of academic rigor and learn Walter Doyle's framework for evaluating the rigor of academic tasks. In the second and third online sessions, you'll unpack this theoretical framework and look at how it actually plays out in your instructional planning, which encompasses far more than just your lesson plans. In the final online session, you'll evaluate the rigor of sample academic tasks and explore multiple exemplars to inspire your own planning. To prepare for your in-person session, you'll apply what you've learned to draft a rigorous academic task, have your students complete that task, and collect student work. When you come together in-person, you'll receive feedback on your task and analyze student work samples. Finally, you'll reflect on what your students' performance means for your instruction.</p>
Module Goal(s)
<ul style="list-style-type: none"> • The teacher will plan a rigorous task • The teacher will plan analyze student work to determine outcomes on the rigorous task • The teacher will identify instructional next steps in response to her student work analysis
Module Assessment
Submit a task summary and accompanying material for a rigorous academic task (as defined in this module), a written task analysis, student work, and a written reflection including next steps for increasing the rigor of your instruction.
Selected Readings
<ul style="list-style-type: none"> • Chappuis, J. Seven strategies of assessment for learning. Pearson. pp. 17-51. • Doyle, W. (1983). Academic work. <i>Review of Educational Research</i>. (53.2), pp. 159-199. • Doyle, W. and Carter, K. (1984). Academic tasks in classrooms. <i>Curriculum Inquiry</i>. (14.2), pp. 129-149. • Jackson, R. (2011). How to plan rigorous instruction. ASCD. pp. 60-64; 74; 78-82. • Strong, R., Silver, H., & Perini, M. (2001). <i>Teaching what matters most</i>. Alexandria, Virginia. ASCD. • Wagner, T. (October, 2008) Rigor redefined. <i>Educational Leadership</i>. ASCD. • Washor, E. & Mojokowski, C. (December, 2006/January 2007). What do you mean by rigor? <i>Educational Leadership</i>. ASDC • Wiggins, G. P., & McTighe, J. (2005). Understanding by design. <i>Association for Supervision & Curriculum Development</i> pp.153 • Wiggins, G. (December 2013/January 2014) Getting students to mastery. <i>Educational Leadership</i>, 74 (4).

Module Title
TC-221: Implementing Rigorous Instruction
Module Summary
<p>To increase the academic rigor of your classroom, you must begin with the end in mind and set a rigorous bar for what your students should know and be able to do. But once you set that bar, how do you get them to meet it? We must ensure that our students are the ones doing the thinking – the talking, the working, and the answering of tough questions – not us. We must take every opportunity to "stretch" our students and push them aggressively toward the rigorous end goal we have in mind.</p> <p>First up in this module, you'll learn the critical attributes of rigorous instruction. Then, you'll zoom in on five concrete rigorous instructional strategies – "Ratio," "Take a Stand," "Stretch It," Chalk Talk, and Reciprocal Teaching. In your final in-person session, you'll have the opportunity to practice implementing these strategies with your colleagues.</p>
Module Goal(s)
<ul style="list-style-type: none"> • The teacher will effectively execute "Ratio" • The teacher will effectively execute "Take a Stand" • The teacher will effectively execute "Stretch It" • The teacher will effectively execute one additional rigorous instructional strategy
Module Assessment
The teacher will submit (1) a 5-7 minute highlight reel that illustrates their ability to ability to execute "Ratio", "Take a Stand", "Stretch It," and either Chalk Talk or Reciprocal Teaching (2) a completed module assessment template
Selected Readings
<ul style="list-style-type: none"> • Doyle, W. (1983). Academic work. <i>Review of Educational Research</i>. (53.2), pp. 159-199. • Fischer, D. & Frey, N. (2004). Improving adolescent literacy: content area strategies at work. Upper Saddle River, NJ: Pearson pp. 153-168. • Lemov, D. (2010). <i>Teach like a champion</i>. San Francisco, CA: Jossey-Bass. pp. 37 – 39; 41-47; 106-108. • Lemov, D. (2012). <i>Teach Like a Champion Field Guide: A Practical Resource to Make the 49 Techniques Your Own</i>. San Francisco, CA: Jossey-Bass. • Ritchart, R., Church, M., & Morrison, K. (2011). <i>Making thinking visible</i>. San Francisco, CA: Jossey-Bass. pp. 78-85. • Saphier, J. (2008). <i>The Skillful Teacher</i>. Acton, MA: Research for Better Teaching, Inc. Higher-Level Thinking Questions. pp.208-211.

Appendix 12: Pedagogical Knowledge Base

Knowledge Base

Holistically, and by element, the conceptual framework is grounded in, and informed by, research and scholarship on teaching and learning, and teacher preparation.

Student Growth and Achievement: From the Coleman Report³ to recent studies on teacher effectiveness⁴, a fundamental assertion in educational research is that teachers are well-positioned to have a positive effect on student achievement. Many studies suggest, across contexts, that setting clear, measurable goals helps drive success.⁵ Teaching is no exception.⁶ There also exists a growing body of literature that examines the professional skills that teachers must possess to accurately collect, analyze, and interpret evidence of student learning.⁷ The interpretation of these data is in relation to school, state, and national benchmarks and standards. Increasingly, research and policy reports capture these sets of professional skills as data-driven instruction.⁸ The literature on learning motivation and interests provides an important reminder that simply setting goals and measuring achievement is not likely to motivate student learning. Rather, researchers have examined the role of student investment in learning as a catalyst for student achievement.^{9,10}

Self and Other People: The Self and Other People element highlights the literature on the personal and social dimensions of teaching. Since Dewey, education researchers have argued that teachers must be able to reflect upon their practice.¹¹ According to this literature, reflections, often positioned within the context of race and culture, enable the teacher to consider multiple perspectives and find alternative solutions to problems of practice that, ultimately, improve teaching.^{12,13,14} Critically, such reflections facilitate more robust conversations with colleagues, families, communities, and other stakeholders. Research has highlighted, however, that the effectiveness of these conversations relies heavily on trust. While many types of trust exist, Bryk and Schneider (2002) identify relational trust—a trust that emerges from daily interactions and supports commitment, accountability, and reduces anxiety and uncertainty related to changing practice—as a key mechanism for improving schools and,

³ Coleman, J. S., Campbell, E. Q., Hobson, C. J., McPartland, J., Mood, A. M., Weinfeld, F. D., & York, R. L. (1966). *Equality of educational opportunity*. Washington, D.C.: U.S. Government Printing Office

⁴ Nye, Konstantopoulos, & Hedges (2004).

⁵ Locke, E. A., & Latham, G. P. (2002). Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. *American Psychologist*, 57(9), 705-717.

⁶ Farr, S. (2010). *Teaching as leadership: The highly effective teacher's guide to closing the achievement gap*. San Francisco, CA: Jossey Bass.

⁷ Marsh, J. A., Pane, J. F., Hamilton, J. S. (2006). *Making sense of data-driven decision making in education: Evidence from recent RAND research*. Santa Monica, CA: RAND Corporation.

⁸ Ibid.

⁹ Thoonen, E. J., Slegers, P. J. C., Peetsma, T. D., & Oort, F. J. (2011). Can teachers motivate students to learn? *Educational Studies*, 37(3), 345-360.

¹⁰ Dweck, C. (2006). *Mindset*. New York: Random House.

¹¹ Dewey, J. (1933). *How we think: A restatement of the relation of reflective thinking to the educative process*. Boston, MA: D.C. Heath.

¹² Schön, D. (1983). *The reflective practitioner: How professionals think in action*. London: Temple Smith.

¹³ Schön, D. (1987). *Educating the reflective practitioner*. San Francisco, CA: Jossey-Bass.

¹⁴ Milner, H. R. (2003). Teacher reflection and race in cultural contexts: History, meaning, and methods in teaching. *Theory into Practice*, 42(3), 173-180.

by extension, student growth and achievement.¹⁵ Teacher-student relations also rely on trust; however, scholars point out that this trust is less relational and more grounded in the teacher's ability to act as an authority.^{16,17} This authority is related to the teacher's ability to accurately and confidently convey knowledge, firmly establish and enforce expectations, and model character.¹⁸ Peterson and Seligman (2004) have found that, across culture and time, there are a set of character strengths that are dramatically associated with success and happiness.¹⁹ More recent research is replete with specific examples of the critical link between students' character strengths and their academic achievement.^{20,21}

Classroom Culture: Kounin (1977) completed a seminal study on behavior management and observed that teachers who are effective classroom managers first design an orderly environment to control student movement and improve classroom monitoring, allowing them to enforce classroom rules.²² Researchers and practitioners alike agree that rules establish the boundaries for acceptable behavior, and positive and negative consequences provide mechanisms for teachers to re-assert control when needed, especially if employed consistently.^{23,24,25} Amidst the diversity of behavior management plans that operationalize these findings, most converge on three basic steps: establishing clear behavioral expectations, normalizing rule compliance, and implementing corrective action when students are not meeting the expectation.^{26,27} In addition to behavior management, studies find that effective classroom managers also create a robust set of classroom procedures and a classroom environment that supports joyful learning, both of which have positive relationships with student achievement.^{28,29,30}

¹⁵ Bryk, A. S., & Schneider, B. (2002). *Trust in schools: A core resource for improvement*. New York: Russell Sage Foundation.

¹⁶ Frymier, A. B., & Houser, M. L. (2009). The teacher-student relationship as an interpersonal relationship. *Communication Education, 49*(3), 207-219.

¹⁷ Metz, M. H. (1978). Clashes in the classroom: The importance of norms for authority. *Education and Urban Society, 11*(1), 13-47.

¹⁸ Waller, W. W. (1932). *The sociology of teaching*. New York: Wiley.

¹⁹ Peterson, C., & Seligman, M. (2004). *Character strengths and virtues: A handbook and classification*. New York, NY: Oxford University Press.

²⁰ Seider, S. (2012). *Character compass: How powerful school culture can point students toward success*. Cambridge, MA: Harvard Education Press.

²¹ Tough, P. (2012). *How students succeed: Grit, curiosity, and the hidden power of character*. Boston, MA: Houghton Mifflin Harcourt.

²² Kounin, J. (1977). *Discipline and group management in classrooms*. New York: Holt, Rinehart & Winston.

²³ Boostrom, R. (1991). The nature and functions of classroom rules. *Curriculum Inquiry, 21*(2), 193-216.

²⁴ Buckley, P., & Cooper, J. (1978). Classroom management: A rule establishment and enforcement model. *The Elementary School Journal, 78*(4), 254-263.

²⁵ Brophy, J. (1981). Teacher praise: A functional analysis. *Review of Educational Research, 51*(1), 5-32.

²⁶ Canter, L. (2009). *Assertive discipline: Positive behavior management for today's classroom*. Bloomington, IN: Solution Tree.

²⁷ Denscombe, M. (1985). *Classroom control: A sociological perspective*. London: Allen and Unwin.

²⁸ Desimone, L., & Long, D. A. (2010). Teacher effects and the achievement gap: Do teacher and teaching quality influence the achievement gap between black and white high- and low-SES students in the early grades? *Teachers College Record, 112*(12), 3024-3073.

²⁹ Roorda, D. Koomen, H. M. Y., Split, J., & Oort, F. (2011). The influence of affective teacher-student relationships on students' engagement and achievement: A meta-analytic approach. *Review of Educational Research, 81*, 493-529.

³⁰ Norris, J. A. (2003). Looking at classroom management through a social and emotional learning lens. *Theory into Practice, 42*(4), 313-318.

Teaching Cycle: A long literature suggests that planning at the year-long, unit, and daily-lesson levels is a key to driving student achievement.³¹ At the year-long and unit-planning level, backward planning ensures that teachers cover school, state, and national standards and organize those experiences to support student mastery and deeper conceptual understanding.³² Daily lesson plans are the execution of those plans in a manner that clearly delivers the content and engages all students in the academic task. The rigor of the academic task a teacher designs for students can be classified according to its level of “risk” and “ambiguity”.³³ Lastly, all levels of planning involve informal assessments (e.g., checks for understanding) and formal assessments (e.g., unit assessments and performance tasks) that allow teachers to make inferences about student learning and adjust future plans accordingly.^{34,35,36}

Content: In the absence of content knowledge and pedagogical content knowledge, proficiency in any of the other elements of effective instruction is unlikely to translate to increased student growth and achievement. At the highest level, in any grade or subject, teachers must command both content knowledge and pedagogical content knowledge.^{37,38,39} Content knowledge refers to teachers’ possession of the domain of knowledge that he or she is charged with teaching. Pedagogical content knowledge describes the teachers’ ability to teach that content well, in a manner that reflects a deep and nuanced understanding of how students learn, and in a manner that anticipates and responds to common misconceptions and student difficulties through instruction.

To describe the knowledge base that informs each specific content domain taught at Relay GSE, it is necessary to disaggregate content into its constituent parts.

Literacy

There has been long-standing controversy about whether it is best to teach students to read using phonics (i.e., code-based instruction) or whole language (i.e., meaning-based instruction).⁴⁰ Code-based instruction focuses on explicitly teaching students decoding strategies, which include letter recognition, letter-sound correspondence, phonics, and phonological awareness.⁴¹ Meaning-based

³¹ Saphier, J. (2008). *Building your teaching skills*, 6th edition. Acton, MA: Research for Better Teaching.

³² Wiggins, G. P., & McTighe, J. (2001). *Understanding by design*. Alexandria, VA: Association for Supervision and Curriculum Development.

³³ Miller, D. M., Linn, R. L., & Gronlund, N. E. (2009). *Measurement and assessment in teaching*. Upper Saddle River, NJ: Pearson Education.

³⁴ Koretz, D. M. (2009). *Measuring up, what educational testing really tells us*. Cambridge, MA: Harvard University Press.

³⁵ Miller, D. M., Linn, R. L., & Gronlund, N. E. (2009). *Measurement and assessment in teaching*. Upper Saddle River, NJ: Pearson Education.

³⁶ McMillan, J. H. (2011). *Classroom assessment: Principles and practice for effective standards-based instruction*. 5th ed. Boston, MA: Pearson Education.

³⁷ Shulman, L. S. (1986).

³⁸ Hill, H. C., Rowan, B., & Ball, D. L. (2005). Effects of teachers’ mathematical knowledge for teaching on student achievement. *American Educational Research Journal*, 42(2), 371-406.

³⁹ Burn, K., Childs, A., & McNicholl, J. (2007). The potential and challenges for student teachers’ learning of subject-specific pedagogical knowledge within secondary school subject departments. *Curriculum Journal*, 18(4), 429-445.

⁴⁰ Rayner, K., Foorman, B. R., Perfetti, C. A., Pesetsky, D., & Seidenberg, M. S. (2001). How psychological science informs the teaching of reading. *Psychological Science in the Public Interest*, 2, 31-74.

⁴¹ Ehri, L. C., Nunes, S. R., Stahl, S. A., Willows, D. M. (2001). Systematic phonics instruction helps students learn to read: Evidence from the National Reading Panel’s meta-analysis. *Review of Educational Research*, 71(3), 393-447.

instruction requires consistent experience with meaningful text within a literature-rich environment.⁴² Nearly 20 years of evidence, and a persuasive report by the National Reading panel, all recommend an integrated balance of these approaches.⁴³ With respect to writing, the National Council of Teachers of English (NCTE) suggest that, students should use a wide range of strategies as they write and use different writing process elements that align to the purpose and audience.⁴⁴

Mathematics

Beginning in 1980, a mathematical debate emerged in reaction to the publication of three reports: *An Agenda for Action* (1980)⁴⁵, *Curriculum and Evaluation Standards for School Mathematics* (1989)⁴⁶, and *Principles and Standards for School Mathematics* (2000)⁴⁷. Collectively, these reports argued that the breadth and depth of exposure to mathematical thinking that students received was limited. Critically, these reports advocated for moving away from procedure-oriented instruction to multiple representations of mathematical thought and, by extension, multiple strategies for solution.⁴⁸ For instance, a teacher would teach students how to regroup *and* how to use partial sums.

With respect to equity in mathematics, evidence suggests that Algebra I is a “gateway class” to college-preparatory mathematics. There are a disproportionate number of students in high-need schools who are unprepared for Algebra in the 8th grade and, in turn, cannot participate in a college preparatory curriculum.⁴⁹ In response, elementary mathematics curricula now include an “algebraic thinking” strand that begins as early as Kindergarten.⁵⁰ Finally, it stands to reason that, to successfully drive achievement, teachers of mathematics should command the content knowledge articulated in the Common Core Standards for Mathematics and the NCTM’s *Principles and Standards for School Mathematics*.

Science

Inquiry is a defining characteristic of science as a discipline, and, in pedagogical terms, refers not simply to asking questions (or, "inquiring"), but to a wide range of possibilities. A comprehensive definition of all of the components can be found in the National Science Teachers Association's

⁴² Dahl, K. L., & Freppon, P. A. (1995). A comparison of inner city children’s interpretations of reading and writing instruction in the early grades in skills-based and whole language classrooms. *Reading Research Quarterly*, 30, 50-74

⁴³ National Institute of Child Health and Human Development. (2000). *Report of the National Reading Panel. Teaching children to read: An evidence-based assessment of the scientific research literature on reading and its implications for reading instruction* (NIH Publication No. 00-4769). Washington, DC: U.S. Government Printing Office.

⁴⁴ Van Sluys, K. (2011). *Becoming writers in the elementary classroom: Visions and decisions*. Urbana, IL: National Council of Teachers of English.

⁴⁵ National Council of Teachers of Mathematics. (1980). *An agenda for action: Recommendations for school mathematics of the 1980s*. Reston, VA: Author.

⁴⁶ National Council of Teachers of Mathematics. (1989). *Curriculum and evaluation standards for school mathematics*. Reston, VA: Author.

⁴⁷ National Council of Teachers of Mathematics. (2000). *Principles and standards for school mathematics: A guide for mathematicians*. Reston, VA: Author.

⁴⁸ Ma, L. (1999). *Knowing and teaching elementary mathematics: Teachers’ understanding of fundamental mathematics in China and the United States*. Mahwah, NJ: Lawrence Erlbaum Associates.

⁴⁹ Moses, R. P., & Cobb, Jr., C. E. (2001). *Radical equations: Civil rights from Mississippi to the Algebra Project*. Boston, MA: Beacon Press.

⁵⁰ National Council of Teachers of Mathematics. (2000).

position statement on scientific inquiry.⁵¹ An effective tool for teaching scientific inquiry is BSCS's 5E model, where teachers (and their students) engage, explore, explain, elaborate, and evaluate.⁵² Additionally, science teachers (and their students) should be able to recognize ideas that cross-cut all scientific disciplines, and make connections between aspects of science and their daily lives.⁵³ One example of these cross-cutting themes comes from the AAAS (Advancing Science, Serving Society), and includes models, systems, constancy and change, and scale. Finally, all science teachers should command the content knowledge articulated in the National Science Education Standards and the recently published Framework for K-12 Science Education.⁵⁴

Social Studies

The National Council for the Social Studies (NCSS) Task Force on Ethnic Studies Curriculum Guidelines⁵⁵, Ladson-Billings (1995)⁵⁶ and Gorski (2012)⁵⁷, suggest that social studies be taught through a multicultural lens with two facets. First, the content should present multiple viewpoints and help learners overcome bias and stereotype. Second, the curriculum should provide entry points for all learners to access the materials and see themselves reflected in the content. The NCSS National Standards for Social Studies Teachers recommend that teachers plan and teach social studies for conceptual understanding by leveraging the NCSS themes both in instruction and curricula design.⁵⁸ Gehlbach (2004) asks teachers to think conceptually and thematically about the past and changing present with historical empathy.⁵⁹ Finally, all social studies teachers should command the content knowledge articulated in the NCSS National Standards for Social Studies Teachers.⁶⁰

Teaching Students with Special Needs

Early identification and early intervention are the key levers in the Response to Intervention (RTI) model which is focused on preventing and addressing disabilities in students with special needs.⁶¹ In this model, the teacher uses data to develop and adjust specially-designed instruction (SDI) for students, and ensures that each student's absolute performance and rate of growth are on track to achieve their end-of-year goals. Teachers of students with special needs should also use evidence-

⁵¹ National Science Teachers Association (2004). *NSTA Position Statement: Scientific inquiry*. Arlington, VA: Author. Retrieved from: http://www.nsta.org/pdfs/PositionStatement_ScientificInquiry.pdf

⁵² Bybee, R.W. (2009). *The BSCS 5E Instructional Model and 21st century skills*. Paper prepared for the National Academies Board on Science Education, Washington, DC: Retrieved

⁵³ Rutherford, F. J., & Ahlgren, A. (1991). *Science for all Americans*. New York: Oxford University Press.

⁵⁴ National Research Council (2011). *A framework for K-12 science education: Practices, crosscutting concepts, and core ideas*. Washington, DC: The National Academies Press.

⁵⁵ NCSS Task Force on Ethnic Studies Curriculum Guidelines. (1991). *Curriculum guidelines for multicultural education*. Retrieved from <http://www.ncss.org/positions/multicultural>

⁵⁶ Ladson-Billings, G. (1995). But that's just good teaching! The case for culturally relevant pedagogy. *Theory into Practice*, 34(3), 159-165.

⁵⁷ Gorski, P. C. (2012). Stages of multicultural curriculum transformation. *EdChange*. Retrieved from: <http://www.edchange.org/multicultural/curriculum/steps.html>

⁵⁸ National Council for the Social Studies. (2002). *National standards for social studies teachers*. Silver Spring, MD: Author.

⁵⁹ Gehlbach, H. (2004). Social perspective taking: A facilitating aptitude for conflict resolution, historical empathy, and social studies achievement. *Theory and Research in Social Education*, 32(1), 39-55.

⁶⁰ National Council for the Social Studies. (2002).

⁶¹ Fuchs, D., & Fuchs, L. S. (2001). Responsiveness to intervention: A blueprint for practitioners, policymakers, and parents. *Teaching Exceptional Children*, 38, 57-61.

based practices (EBPs)^{62,63} differentiated classroom instruction⁶⁴, and they should seek to maximize opportunities for inclusion⁶⁵. In accordance with the Individuals with Disabilities Education Act of 2004, teachers must write comprehensive Individualized Education Plans (IEPs) and ensure that due process is followed.

Teaching English Language Learners

English language learners represent a group of culturally and linguistically diverse students. English for Speakers of Other Languages (ESOL) methods help students succeed in both social/language goals (i.e., speaking, reading, writing, listening) and academic content-area goals to develop communicative competence in all learners.⁶⁶ Teachers will use effective ESOL instructional strategies to scaffold students' language development while ensuring that they have access to the academic language and content they need to be successful in school settings.⁶⁷ Research suggests that the Structured Instructional Observation Protocol (SIOP) helps students succeed in mainstream settings. The SIOP uses knowledge of typical language acquisition processes to select instructional methods and assessments that are most appropriate for different language proficiency levels.⁶⁸

⁶² Blanton, L., Pugach, M., & Florian, L. (2011). *Preparing general education teachers to improve outcomes for students with disabilities*. Paper prepared for the American Association of Colleges for Teacher Education and National Center for Learning Disabilities.

⁶³ Cook, B., & Cook, S. (2011). *Thinking and communicating clearly about evidence-based practices in special education*. Arlington, VA: Division for Research of the Council for Exceptional Children.

⁶⁴ Tomlinson, C. A., & Eidson, C. C. (2003). *Differentiation in practice*. Alexandria, VA: Association for Supervision and Curriculum Development.

⁶⁵ Hehir, T. (2002). Eliminating ableism in education. *Harvard Educational Review*, 72(1), 1-32.

⁶⁶ Robinett, B. W. (1978). *Teaching English to speakers of other languages: Substance and technique*. Minneapolis, MN: University of Minnesota Press.

⁶⁷ Zwiers, J. (2008). *Building academic language: Essential practices for content classrooms, Grades 5–12*. San Francisco, CA: John Wiley & Sons.

⁶⁸ Echevarria, J., Vogt, M., Short, D. (2012) *Making content comprehensible for English learners: The SIOP Model (4th ed)*. Boston, MA: Allyn & Bacon.

Appendix 13: Master's Defense (Appendix from 2012 MSCHE Submission)

Appendix 14-C: Six Essential Parts of the Master's Defense

The following information is distributed to graduate students to provide context and additional details regarding the Master's Defense portfolio project that all students need to complete in order to graduate.²¹

²¹ Teacher U provides additional information, via syllabi, handbooks, classes, and academic advising to help support teachers in completing this capstone project. The documents included are from the TUHC program and are subject to modifications for the TUGSE programs.

PART 1:

Introduction: Contextualization the Master's Defense

We have designed Part 1 of the Master's Defense to help you hone two specific skills:

- How to share contextual framework for your students and your school
- How to "tell the story" of student achievement in your classroom, including the purpose behind your Ambitious Goal

PART 2:

Summary of Student Achievement Results

We have designed Part 2 of the Master's Defense to help you hone one specific skill:

- How to summarize and report student achievement data in a clear, concise way

PART 3:

Student Achievement Data Analysis

We have designed Part 3 of the Master's Defense to help you hone two specific skills:

- How to think about the myriad ways one can examine student achievement data
- How to report "the story" of students' achievement in a succinct, meaningful, and visual way
- How to ensure that you are considering ALL students when analyzing student achievement data

PART 4:

Growth and Achievement at the Individual Student Level

We have designed Part 4 of the Master’s Defense to help you hone these specific skills:

- How to think about student achievement results through the lens of a *single* student
- How to invest and motivate students through academic skill and character strength development
- How to mine student work for specific trends that may (or may not) impact his/her overall achievement
 - How to analyze the effectiveness of interventions

PART 5:

Using Video to Reflect on Student Achievement

We have designed part 5 of the Master’s Defense to help you hone these specific skills:

- How to demonstrate how your execution of a lesson led to student achievement
 - How to demonstrate your greatest execution strengths as a teacher
- How to demonstrate the arc of lesson objectives and rigor of your content over time

PART 6:

Next Steps to Increase Student Achievement

We have designed part 6 of the Master’s Defense to help you hone these specific skills:

- How to reflect on the Master’s Defense Process
- How to articulate your strengths as a teacher
- How to articulate your areas for growth as a teacher

PART 1: Introduction: Contextualizing the Master’s Defense

Description of Part 1

Part 1 of the Master’s Defense should “set the stage” for the entire body of your work. Each component is designed to build the contextual framework that the reader needs to understand your student achievement data and “the story” of student achievement in your classroom.

Student Achievement Goals

- *Describe your Achievement Floor and Ambitious Goal* – In the template provided, include a clear and concise description of your Achievement Floor and Ambitious Goals.
- *Provide rationale for Ambitious Goal*—You should explain why your Ambitious Goal is “Ambitious”, feasible, and meaningful.

Student and School Context

- *Describe your school context*—Provide the necessary and relevant information for your reader to understand your school in the broader educational context. Where is your school located? What is the demographic breakdown of your school? Where does your school fall in terms of the achievement gap? What is your school’s mission? You should leverage the readings and sessions from the Diversity course in this section.
- *Describe your student population*—Here is your chance to give a bit of background on the learners in your room. What is the make-up of your classroom? How many students do you have? What is the demographic breakdown of your classroom? Do you have students with IEPs? Do you have English Language Learners?

Assessment Selection and Rationale

- *Describe the assessment and its components*—Provide details on the assessment for which you will be using in your Master’s Defense. Assume that your reader will be a sophisticated educator, but s/he might not have deep familiarity with your particular assessment.
- *Provide rationale for your assessment selection* – You should explain why you have selected this assessment to measure student growth and/or mastery. Describe why this assessment is both appropriate and rigorous for your students.

Supporting Documents

- *Upload your tracker and other supporting documents*— You should include the Excel spreadsheet you used for data collection over the course of the year along with any other documents that the reviewer of your Master’s Defense will need to understand your data.
- *Provide an explanation of how to navigate these documents*—These supporting documents will serve as the evidence for the claims about student achievement you are presenting in the one-page summary in Part 2 of your Defense. Explain, with the reviewer of your Defense in mind, how to navigate any uploaded documents.
- *Explain any changes to your class roster and provide the rationale for exclusion of any students from your data set* – This is an opportunity to explain any changes to the original roster and tracker you uploaded for Assignment 1 from the Assessment Course, your first draft of the Master’s Defense Introduction. Reference the Master’s Defense for guidance.

PART 2: Summary of Student Achievement Results

Description of Part 2

We have designed Part 2 of the Master’s Defense to help you hone one specific skill:

- How to summarize and report student achievement data in a clear, concise way

Think about Part 2 as a one-page, just-the-facts-ma’am, dashboard of how your students did relative to the Achievement Floor and the Ambitious Goal. You will have ample opportunity in Parts 3 and 4 to make deep dives into the data, but for now, just report the 50,000-foot results.

We envision the descriptions of how your students did relative the Floor and Goal as a couple of sentences each. You should state specifically how your students performed and how they did relative to the Floor and Goal. You should also explicitly describe how a reviewer should navigate any supporting documentation of your results (e.g. data trackers, spreadsheets, state score reports, etc...). These supplemental materials will serve as the evidence for the claims about student achievement you are presenting in your one-page summary.

Assessment Notes for Part 2

- Please use the template when submitting your assignment. Please take extra care to complete all parts of the template and that you use your FINAL *approved* Ambitious Goal
- As seen on the rubric, you can only earn a “3” or a “0” for Part 1 of the Master’s Defense. Your students either met the Floor or they did not. Your description and associated data must help an assessor arrive at a conclusion as to whether your students met the Floor or not.
- Part 1 of the Master’s Defense is worth 18% of your Integrative Seminar grade. *To pass integrative seminar you must earn an 83% or above.* We have purposely engineered the course such that you cannot pass unless your students meet the Achievement Floor. Please remember that your students must meet the Floor only—your grade is not impacted (either positively or negatively) based on the how your students do relative to

the Ambitious Goal. Their performance relative to the Ambitious Goal impacts whether you will graduate “*with distinction*,” but has no impact on whether you *graduate*.

FAQs for Part 2

- *Q: I won't have my data until late June. What do I put into this section for the draft submissions?*
 - o A: Great question! Think of the draft for Part 2 as a test-drive. You should use the data you *do* have to complete this section (e.g. interim data). In this way, when you do get your final data from this year, you'll have a great idea of the type of language you need to use for your FINAL submission.
- *Q: Can I just give you my tracker? It shows in even greater detail how my students performed.*
 - o A: You can and *should* submit your student data tracker in Part 1. However, one of the skills we are hoping to develop is your ability to clearly write and speak about student achievement data. Thus, you will also need to provide a short written explanation of your data in addition to any supporting documentation.
- *Q: I know that my students did not meet the Achievement Floor and therefore I cannot pass the Integrative Seminar and need to retake it again next year. Should I even bother to complete the other four parts of the Master's Defense?*
 - o A: Absolutely. Completing all sections of the Master's Defense will be instrumental in helping you reflect on what are the fundamental reasons your students did not meet the Floor. If you do well on all of the other pieces of the Master's Defense, but your students just don't meet the floor, you *might* be able to test out of particular parts of next year's Integrative Seminar (policy to be determined).

PART 3: Student Achievement Data Analysis

Description of Part 3

We have designed Part 3 of the Master’s Defense to help you hone two specific skills:

- how to think about the myriad ways one can examine student achievement data
- how to report “the story” of students’ achievement in a succinct, meaningful, and visual way

Part 3 will be several pages long and should include three distinct analyses of your achievement data (described below.) Relative to other parts, Part 3 will have more tables and graphs.

Analysis 1: Impact of High- and Low-Performing Students on Overall Results (2-3 pages)

- Teachers often describe their students’ achievement “on average” (e.g. “On average, my students grew 1.5 years in reading this year,” or “On average, my students mastered 90% of all 5th grade math standards.”) As you are well aware, there are many problems with reporting “on average” student achievement data—not the least of which is data “hiding” in the extremes, a particularly troubling problem if lower-performing students’ achievement is masked by that of their higher-performing peers.
- In this first analysis you should go beyond “on average” by reporting how *each* student performed on the assessment. Additionally, you should report how many students exceeded the Floor/Goal and how many were below the Floor/Goal. Additionally, you should highlight any students who had results that were qualitatively much higher or much lower than the rest of the class. You should present this analysis both in words and in tables and/or graphs.
- Conclude this section by insightfully describing the impact of students with qualitatively higher or lower achievement results on the *overall* achievement results (e.g. What would your class average have been if you excluded the group of outlying students with high scores? What about excluding outlying students with low scores?)

Analysis 2: Assessment-Feature Analysis (2-3 pages)

- In Part 2, we are focused on student achievement at a very high level (e.g. How many years of reading growth did my students make? What percentage of standards did my students master?). But, as you know, student performance often varies greatly depending on particular assessment parts or features. For example, students might do better with decoding than comprehension. They might do well on items related to number sense, but struggle with items about geometry.
- Begin this section by clearly articulating a question that relates your assessment-feature analysis to your instruction. Think about this as a research question about your teaching that you hope to answer using your data. For example, “Do my students perform equally well on each of the 7th grade science standards?” or “Which component(s) of literacy most often hold my students back from progressing to the next reading level?”
- Next, describe the specific assessment feature you have selected and provide a compelling rationale for why it is especially important to know the answer to your question given your specific educational context.
- Then, leverage data to answer the specific question. Present your answer both in words and in tables and/or graphs.
- Conclude this section by insightfully describing the implications of the sub-groups’ performance on your teaching practice. What might you change in your practice/instruction given the answer to your question? Given your data will likely not produce “statistically significant” findings (i.e. differences or similarities in sub-group performance might not really exist), you should interpret your data cautiously and not make inappropriate conclusions or take unwarranted actions as a result of your findings.

Analysis 3: Sub-Group Analysis (2-3 pages)

- Politics aside, the *No Child Left Behind* legislation radically changed the way American educators thought about, and reported, student achievement results. One of the most important aspects of the law requires mandatory reporting of achievement by different student sub-groups (e.g. race, gender, SES, SPED status, etc...). Similarly, we are asking you to analyze and report the achievement results for *one* sub-group. You might choose to analyze your data using a NCLB sub-group, but you have the latitude to pick *any other sub-group*. Most importantly, your selection should be meaningful given your specific classroom context.
- As before, begin this section by clearly articulating a question that relates your sub-group analysis to your instruction. Again, think about this as a research question about your teaching that you hope to answer using your data. Consider the following examples:
 - o A teacher who has a group of chronically absent students might ask, “Do students who miss more than 15 days of school per year master as many standards as students who miss five days of school or fewer?”
 - o A teacher with rotating reading groups might ask, “On average, do students who spend a great percentage of time receiving reading instruction from me attain more reading growth?”
 - o A middle school teacher with students predominantly coming from two elementary schools might ask, “Do students who attended ES School X master the same number of standards as students who attended ES School Y?”
- Next, describe the specific sub-group you have selected and provide a compelling rationale for why it is especially important to know the answer to your question given your specific educational context. The sub-group could include: race, SES, gender, feeder school, number of years at current school, incoming test score, number of parents in the home, home language, starting reading level, homeroom, or any other interesting sub-group. Choose a sub-group that helps tell a meaningful “story” in your data.
- Then, leverage data to answer the specific question. Additionally, you should report how the sub-group did relative to the Floor and Achievement Goal. Present your answer both in words and in tables and/or graphs.

- Conclude this section by insightfully describing the implications of the sub-groups' performance on your teaching practice. What might you change in your practice/instruction given the answer to your question? Given your data will likely not produce "statistically significant" findings (i.e. differences or similarities in sub-group performance might not really exist), you should interpret your data cautiously and not make inappropriate conclusions or take unwarranted actions as a result of your findings.

FAQs for Part 3

- *Q: Do I need any supporting documents for Part 3?*
 - o A: Great question! Yes, you do. The most important supporting document will be your student achievement tracker/score reports from Part 2. Additionally, you should include the spreadsheets where you did your analyses. As a rule of thumb, your assessor should be able to recreate any graph/table in your Master's Defense using the data you have provided.
- *Q: Data Analysis #1 requires that I identify students with qualitatively high or low achievement and their impact on overall achievement. I don't think that I have any students with qualitatively high or low achievement (i.e. ALL of my students made somewhere between 1.3 and 1.6 years of reading growth). I did only have one student who made 1.6 years of growth. Is that student qualitatively higher than the rest? What should I do in this section?*
 - o A1: Great question! Your student who made 1.6 years of growth is probably not qualitatively high. Think about qualitatively high or low students as those whose performance is very different from the rest of your students (e.g. in your case, two students with 0.9 years of growth or a student with 1.9 years' worth of growth should all be classified as qualitatively low and qualitatively high, respectively.) For our purposes, we have no hard and fast rule about what constitutes a qualitatively low or high student (although you could look-up and employ the statistical definition of an "outlier", if you felt so inclined.)

- o A2: Because you don't have any students with qualitatively high or low achievement, simply state that fact, provide a rationale for your decision, and report that because you don't have any students with qualitatively high or low achievement, your overall achievement results are not impacted.

PART 4: Growth and Achievement at the Individual Student Level

Description of Part 4

We have designed Part 4 of the Master’s Defense to help you hone these specific skills:

- How to think about student achievement results through the lens of a *single* student
- How to invest and motivate students through academic skill and character strength development
- How to mine student work for specific trends that may (or may not) impact his/her overall achievement
- How to analyze the effectiveness of interventions

In Part 4 you have the opportunity to examine achievement at the level of an *individual* student. You will analyze how you invested and motivated ONE of your students to achieve at high levels through a careful analysis of their academic work AND their growth in a specific character strength. First, you will examine how the student did relative to the Achievement Floor and the Ambitious Goal. Then, you’ll reflect on how their academic work samples, which you have submitted throughout the year, relate to their final, summative achievement. Next, you will reflect on how that student grew on a specific character strength you focused on (with the entire class or individually) throughout the course of the year. Finally, you will analyze this student’s academic and character growth and use key insights from this analysis to reflect on your efforts to instruct and motivate your students.

Throughout this year you have followed three students (two randomly selected students and one student of your choosing). Now, you must narrow this set to **ONE** student to highlight as your case study student.

You should submit the following sections:

Description of Student (~1 page)

- *Rationale for Selection:* In a few sentences, please describe your selection rationale—explain “the why” behind choosing this particular student over the other two students you have been tracking throughout the year.
- *Out-of-School Ecological Context:* As you learned in the Diversity course, there are many factors that shape our students and their achievement. In this section, you should focus on factors at home and larger sociological forces. Describe some of the

most salient elements of this student's context outside of the school. You should leverage the readings and sessions from the Diversity course.

- *In-School Ecological Context:* In this section, you should describe the factors which shaper your student within the school environment (learning styles, behavioral history, interests, etc.) You should leverage the readings and sessions from the Diversity course.
- *Overview of Academic Growth and Achievement:* Briefly state where the student started academically (e.g. diagnostic level, performance on first IA, etc...) and how s/he performed relative to the rest of the class with respect to the Achievement Floor and Ambitious Goal.

Description of Academic Skill (~½ page)

- *Description of Academic Skill:* Describe the academic skill you chose to focus on with this student (e.g. – reading comprehension, lab reports, problem-solving skills, interpreting and analyzing maps, etc.) You should have already completed this section in Assignment #1 from the Assessment course.
- *Rationale for Academic Skill Selection:* Describe WHY you chose to focus on this academic skill.
- *Description of Academic Skill Samples:* Describe the academic skills SAMPLES you are using and HOW they will demonstrate student growth on this particular skill

Academic Skill Growth (2-3 pages)

- *Academic Skill Sample #1 Performance Analysis:* How did your selected student do on the first work sample? When you look at the student work and/or conduct error analysis, what do you notice? What did the student do well on? What is the “story”? What evidence do you have to support your claim?
- *Action/Intervention:* What feedback did you give the student on the work sample? What action/intervention followed your analysis of the work?
- *Academic Skill Sample #2 Performance Analysis:* How did your selected student do on the second work sample? When you look at the student work/conduct error analysis, what do you notice? What did the student do well on? How did they grow relative to the first work sample? What is the “story”? What evidence do you have to support your claim?
- *Analysis of Effectiveness of Action/Intervention:* In light of the action/intervention(s) you took, was your intervention effective? What worked well? What could you have done differently?

Description of Character Strength (~½ page)

- *Description of Character Strength:* Describe the character strength you chose to focus on with this student (e.g. – love, hope, grit, zest, etc.) You should have already completed this section in Assignment #1 from the Assessment course.
- *Rationale for Character Strength Selection:* Describe WHY you chose to focus on this character strength. *Description of Character Strength Samples:* Describe the character strength SAMPLES you are using and HOW they will demonstrate student growth on this particular skill

Character Strength Growth (2-3 pages)

- *Character Strength Sample #1 Performance Analysis:* How did your selected student do on the first character strength sample? What did the student do well on? What did they struggle with? What is the “story”? What evidence do you have to support your claim?
- *Action/Intervention:* What feedback did you give the student regarding this character strength? What action/intervention followed this analysis?

- *Character Strength Sample #2 Performance Analysis:* How did your selected student do on the second character strength sample? What did the student do well on? What did they struggle with? How did they grow relative to the first character strength sample? What is the “story”? What evidence do you have to support your claim?
- *Analysis of Effectiveness of Action/Intervention:* In light of the action/intervention(s) you took, was your intervention effective? What worked well? What could you have done differently?

Key Insights (~1 pages)

- *Analysis of Student’s Academic & Character Growth in Comparison to Rest of Class:* Compare this student’s growth to the rest of the class. In what respects did they exceed the performance of the rest of the class? In what respects did they struggle in comparison? Were there other students like this one or were they an exception?
- *Two Key Insights from Analysis:* Given this in-depth analysis, what are two key insights you have?

FAQs for Part 4

- *Q: What sort of supporting documents do I need for Part 4?*
 - o A: Great question! It is imperative that you include the actual samples of the student work that you will be discussing. It is best for your reviewer that you take screenshots of particular parts of the work and insert them directly into your word document.
- *Q: I've got video of my students performing the assessment (e.g. a reading running record or performing a skit about grit). How, if at all, should I leverage this video?*
 - o A: If it makes sense, please refer your reviewer to particular moments in the video (using time stamps) to help support your conclusions. The videos will be most helpful if your Master's Defense is randomly selected for auditing. Videos will provide very concrete evidence of your students' achievement and growth.
- *Q: Is reading an academic skill?*
 - o A: Reading is most certainly a skill, but you should think of one of the elements of reading (decoding, fluency, comprehension, etc.) to focus on for your academic skill.
- *Q: What kinds of character strengths samples can I use to demonstrate growth?*
 - o A: Great question! The VIA-Young Adults survey, which is available on the Course Platform under the MD Resources page, is a great quantitative measure of character strengths. You can also find other quantitative measurement instruments on the MD Resources page. Furthermore, you can also use qualitative video interviews with your selected students to show their growth on that character strength. If you'd like to learn more about measuring character growth, there will be a Choice Session offered during the Integrative Seminar course in the Spring.
- *Q: How can I compare character growth in my selected student to the rest of the class?*
 - o A: Great question! Ideally, you've given some sort of quantitative measurement to the entire class at both the beginning and end of the year. If you teach K-3, these might be teacher and parent report forms rather than self-assessments. You may also use teacher observations to make your

comparison if these types of quantitative measurements weren't possible in your classroom.

- *Q: Can I track a character strength that is NOT one of the eight we learned about in our Framework sessions? Can I track a school value that we teach?*
 - o A: Great question! You can definitely track another character strength outside of the eight Dave Levin talked about at the September 11th Framework session as well as track a school value. The idea here is that you are focusing on building some character strength regardless of what you call it!

PART 5: Using Video to Reflect on Student Achievement

Description of Part 5

Over your last two years at Teacher U you have learned what exemplary teachers do to drive student achievement in their classrooms. While we believe that all of these topics are important, we also realize that the relative effectiveness is likely somewhat idiosyncratic to you and your classroom. For this reason, we are asking that you select **ONE I do-We do- You do video** you believe is strongly associated with your students' achievement. This video is an opportunity for you to show how your instruction led to student achievement and is an opportunity for you to demonstrate your greatest execution strengths as a teacher. A short description of your classroom context, a time stamped annotation of your video, and a reflection on how this lesson led to student achievement will also accompany your video. You will be showing a 10 minute "draft" of your video to your small-group on March 17, March 31 or April 28.

Classroom and Curricular Context

- *Classroom Context:* Provide a brief description of what the viewer will see in your I do-We do-You do video. Please share context that is **specific to this particular lesson**. For instance, you may share how this lesson fits in your larger day, student groupings, student levels, co-teachers in your video, etc. and/or explain any other relevant information that will help the reviewer better understand what they are about to watch.
- *Unit of Study and Objective Sequence:* The purpose of this section is to illustrate how this lesson is situated in your larger unit or weeks of instruction. In the template provided please share the unit of study for this lesson as well as a portion of your objective sequence for the unit. What is the objective for the lesson featured in the video? What were your previous 5 objectives? What are your next 5 objectives?

Video Content

- *Video:* You will submit an “I do-We do-You do” video that demonstrates the arc of one full lesson. This video should be 15-20 minutes (not to exceed 20 minutes) and should have no more than 3 clips. The purpose of this video is for you to share large sections of uninterrupted instruction and demonstrate how you can lead your students to master a lesson objective.
- *Time stamped annotation:* You will also submit a time stamped annotation for your video where you highlight the key teaching “moves” you feel **most** led to student achievement during the lesson. We have handpicked each of the topics from your course sequence at Teacher U. As you will see below, there are topics (and even entire courses) that are excluded. These omissions are intentional—either because we believe that it would be exceptionally hard to demonstrate the topics in video (e.g. Foundations, Assessment), you have already demonstrated your competency on countless occasions (e.g. Content courses, Data Driven Instruction), or that we believe that we are likely to see your proficiency of the topic play out in the video (e.g. your ability to lesson plan).

Reflection and Association to Achievement

- *Key Teacher Move:* From your time stamped annotation, please highlight the **key** move you feel is your greatest execution strength as a teacher. For this move, please explain the topic in detail (including leveraging TU sessions/resources) and explain the purpose of using this move.
- *Argument for how this lesson led to student achievement:* What was your assessment for this lesson? How many students mastered the lesson objective(s)? Using your quantitative data and leveraging your I do-We do-You do lesson, make a compelling case for how this lesson led to increased student learning. How did you use this move to lead to student achievement within this lesson?
- *Area for growth:* If you had the opportunity to teach this lesson again, what is the one thing you would change? How would you see this change leading to an increase in student learning?

Assessment Notes for Part 5

- Please submit your video, supporting documents *and* the description template *each time* you submit your work (zipped together in one file).
- Your reviewer will spot check your time stamped annotations so please ensure that these accurately reflect the teaching practice taking place at that time.
- In order to create some internal structure and consistency in Part 5 we have included a rudimentary template. Consider using this template to help organize and guide your submission (i.e. using the template is options, but appreciated.)

FAQs for Part 5

- *Q: In my I do-We do-You do video time stamped annotation can I count a teacher “move” more than once ?*
 - o A: Yes. The purpose of this section is for you to highlight the key teacher moves you took that led to student mastery of the objective. This may mean highlighting a particular move more than once, but also will likely include highlighting a diversity of key teacher moves. Please highlight the moves that you feel most directly led to your students’ learning.
- *Q: What if I want to change my I do-We do-You do video between the time I submit my ten minute draft and the FINAL 15-20 minute submission?*
 - o A: Totally understandable and acceptable. However, know that you will lose the benefit of the feedback that you’ve gotten from your peers and small-group instructor on your first topic. We realize though that this process, like much of teaching, is an iterative one.

PART 6: Next Steps to Increase Student Achievement

Description of Part 6 (~2-3 pages)

In this final part of your Master's Defense you should reflect on the overall process, consider your strengths and areas of improvement as a teacher, and articulate next steps that will accentuate your strengths and foster improvement.

- *Insights from the Master's Defense:* What are at least three of the most salient insights or "learnings" that you have had by engaging in this entire process. Please cite specific examples from the Master's Defense as you discuss what you have learned.
- *Areas of Strength as a Teacher:* You undoubtedly have myriad strengths as a teacher. Many of these strengths should have been revealed throughout this process. What are these strengths and what makes you believe these strengths impact student achievement?
- *Areas of Improvement as a Teacher:* Given how challenging teaching is, you are also likely to have uncovered a few areas of improvement by completing the Master's Defense. What are these areas and what makes you believe they impact student achievement?
- *Next Steps:* Finally, to capitalize on the strengths revealed by the Master's Defense and to address your areas of improvement, please provide *four* concrete next steps—2 for each. Exemplary next steps will be specific, actionable, intrinsically linked to either a strength or an area of improvement, and likely to significantly impact student achievement.

Assessment Notes for Part 6

- In an effort to create some internal structure and consistency in Part 5 we have included a very rudimentary template. Please use this template to help organize and guide your submission.

FAQs for Part 6

- *Q: I'm not going to be teaching next year. How should that fact influence my responses to this section?*
 - o A: Great question. By this point in the year, you likely know what your trajectory for next year looks like. Regardless, you may approach this section *as if* you were teaching next year. That said, if you know your new context (e.g. school leader, law school, etc...), feel free to write about how the Master's Defense process will likely impact your future work. The way you approach this question should inform the way that you create next steps.