

**PURPOSEFUL PROFESSIONAL DEVELOPMENT
TO SUPPORT TEACHERS WITH IMPLEMENTING A
SCHOOL INSTRUCTIONAL FOCUS CALLED CREST**

by

Christine E. Colihan

An Education Leadership Portfolio submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Doctor of Education in Education Leadership

Summer 2018

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ABSTRACT

This Executive Leadership Portfolio (ELP) represents purposeful, professional development that supports teachers and students as they implement Hodgson Vocational Technical High School's instructional focus called CREST. CREST is an acronym that signifies Collaborative learning, Risk-free environment, Essential questions, Summarizing strategies and Technology integration. CREST was created to provide best practices for teachers to implement Common Core State Standards (CCSS), prepare students for college and career readiness and maintain positive classroom environments while incorporating technology. To achieve that goal, a school-wide Professional Development (PD) plan was created and implemented along with developing high-functioning Professional Learning Communities (PLCs). Also, it was a priority to instill the beliefs of a Growth Mindset (GM) within our students so they achieve more in school and life through hard work, determination, and grit. In order to help us instill this GM with students, creating a risk-free classroom environment was essential and highlighted in our instructional focus.

The PD plan is focused on three areas: (a) facilitate high functioning PLCs in which teachers receive PD, participate in a collaborative inquiry process to analyze assessment data, and, create lesson plans and activities, (b) plan for and facilitate a two-part PD plan around the instructional focus, CREST, and (c) conduct presentations to students about the benefits of promoting a GM.

Data was collected for this ELP in four ways: (a) the Professional Learning Communities Assessment – Revised questionnaire given to teachers that measures agreement with the six dimensions of PLCs, (b) CREST walkthrough guide to measure evidence and implementation of the instructional focus attributes, (c) GM student surveys, and (d) English Language Arts (ELA) and Mathematics assessment data.

The data indicated that teachers had a positive outlook about the six dimensions of PLCs. The outcomes of the CREST walkthrough guide indicated that teachers were incorporating CREST focal areas at varying levels through effective student collaboration, posing essential questions, and integrating technology during lesson activities. There was no significant increase in mean scores of students' beliefs in GM from the beginning to the end of the school year. The GM survey provided limited insight and uneven mindset responses that did not clearly give accurate student belief information. The ELA assessments depicted growth from first to second semester.

Recommendations for the future include focusing on structuring PLC meeting times with more emphasis on peer observations, peer feedback and celebrations of teacher success, offering more PD about CREST focal areas, and increasing awareness of GM attributes with students.

Chapter 1

INTRODUCTION

Education as an institution is dynamic. When Common Core State Standards (CCSS) were introduced in Delaware, a focus on shifting the way students think and learn was highlighted and all schools needed to transition to these new standards. CCSS are a set of standards nationally created by a consortium of governors, superintendents, and curriculum specialists. With the decision to adopt the CCSS, Delaware made adjustments to state wide curricula and created professional development (PD) groups, such as the Common Ground for the Common Core, to help school districts make the transition (Turner, 2013).

As administrators at Paul M. Hodgson Vocational Technical high school (Hodgson), we realized the need to develop a plan to support the implementation of CCSS because our teachers faced significant challenges in adapting their instruction to meet the new standards. Teachers would need time and resources to focus on best practices, share ideas, and analyze data to assess student growth. Our students would need extra support as well with developing a positive mindset to address these standards and new ways of learning. This Executive Leadership Project (ELP) was envisioned with these issues in mind.

The problem statement for my Executive Leadership Project is: How will teachers adapt their instruction to meet the CCSS and improve student achievement?

In order for students to meet the complex expectations of CCSS, all stakeholders needed to find successful ways to support student achievement.

This ELP has the following goals: (a) facilitate high functioning Professional Learning Communities (PLCs) in which teachers collaborate with fellow teachers, receive PD, and, participate in a collaborative inquiry process to analyze lesson plans and assessment data, (b) plan for and facilitate a two-part PD plan around a school instructional focus called CREST which is an acronym for Collaborative learning, Risk-free environment, Essential questions, Summarizing strategies and Technology integration, and, (c) conduct student meetings focused on the benefits of promoting a Growth Mindset (GM; See Figure 1). In addition, I analyzed assessment, CREST walkthrough, and teacher and student survey data to assess our school's progress.

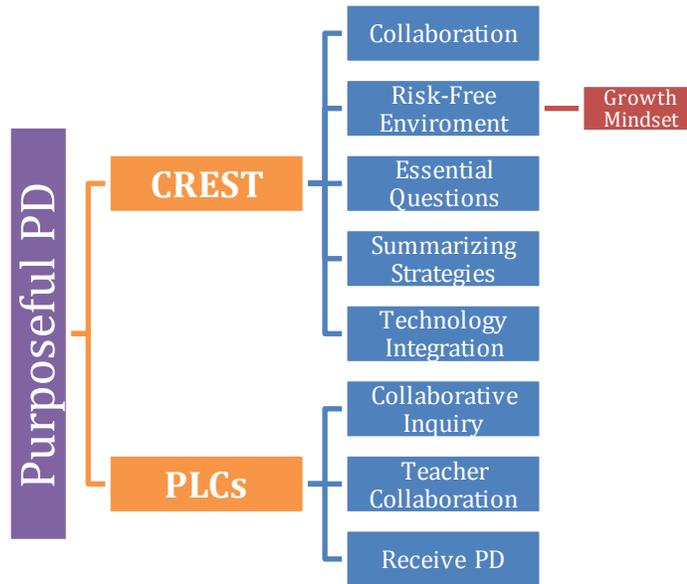


Figure 1: Graphical Representation of ELP

This ELP is organized into six chapters and includes nine appendices. Chapter 2 explains the organizational context and overall problems faced by schools and teachers when transitioning to CCSS. Chapter 3 explains the improvement

strategies to support teachers and students in this transition. Chapter 4 summarizes the results of the walkthroughs, PLC analysis, student surveys, and achievement data. Chapter 5 provides a reflection on the PD plan and new plans for next school year. Chapter 6 is a reflection of my leadership growth through the University of Delaware Ed.D. program. The nine appendices are a compilation of the artifacts created to support teachers during the transition and implementation of CREST at Hodgson.

Description of Appendices

Appendix A – Implementing Purposeful Professional Learning Communities

This document reviews research studies and literature that contributed to designing and facilitating effective PLC meetings. It helped to identify the definition of PLCs, attributes of PLCs, the role of the building administrator regarding PLCs, cultivating teacher leadership, employing a cycle of inquiry, and teacher collaboration.

Appendix B – Collaborative Inquiry Professional Development

This document describes how the Collaborative Inquiry Model was selected, the cyclical process of the Collaborative Inquiry Model, and the PD plan to train teachers with this model.

Appendix C – Using Schoology in Professional Learning Communities

This document describes the use of the comprehensive technology platform Schoology during PLC meeting times. Schoology is a learning management system that provides multiple online tools that enable HVT's teacher community to share resources and collaborate during PLCs.

Appendix D – Professional Learning Communities Effectiveness Analysis

This document describes PLC objectives and activities, my role as PLC supervisor, and the results of the Professional Learning Communities Assessment – Revised (PLCA-R) questionnaire given to teachers at the end of the 2016-2017 school year.

Appendix E – Development of Hodgson’s Instructional Focus - CREST

This document describes the creation and meaning behind our instructional focus CREST. Also included is a description of the PD plan to educate teachers about CREST and the use of the walkthrough guide during the school year to assess CREST focus areas.

Appendix F – CREST Walkthrough Data Analysis

This document investigates the usage of CREST focal points as observed during administrative walkthroughs. CREST is based on five strategies and concepts to support teacher best practices and improve student achievement. I developed the CREST walkthrough form which was used by Hodgson administrators from November 2016 through May of 2017. The results of the CREST walkthrough data are discussed.

Appendix G – Growth Mindset Professional Development & Presentations for Students

This document describes the PD training provided for teachers and students about the concepts of employing a GM. Additionally, an in-depth review of the GM administrative presentation for students with interactive slides is provided.

Appendix H – Student Survey Analysis of Growth Mindset

This document investigates the results of a student survey about GM given at the beginning and end of the 2016-2017 school year at Hodgson.

Appendix I – English Language Arts and Mathematics Assessment Data

This document analyzes the ninth and tenth grade assessment data from English Language Arts (ELA) and Mathematics classes at Hodgson during the 2016-2017 school year.

Chapter 2

PROBLEM ADDRESSED

Organizational Context

New Castle County Vocational Technical School District (NCCVT) is a vocational school district in Delaware consisting of four high schools. As stated on the NCCVT website, the vision “is to deliver world-class career and technical programs combined with rigorous academic curricula in order to equip students with 21st century skills that will best serve the State of Delaware, and the global community” (2017). As reflected in the district’s vision, students are required to meet academic, career, and technical requirements to graduate. These requirements provide the opportunities for students to be both college and career ready upon graduation. Students earn both a state approved diploma and a certificate in their chosen career area, and are prepared for life beyond high school whether they enroll in a two- or four-year college or apprenticeship program.

This ELP took place at Paul M. Hodgson Vocational Technical high school (Hodgson), one of four high schools in NCCVT. Hodgson provides educational services for 1,119 students and offers 16 career programs, each allowing students to earn ten career credits. It provides a fully inclusive special education program in which students are placed in regular academic and career classes and receive assistance as needed from learning support coaches and paraprofessionals.

During the 2016-2017 school year, the highest percentage of students was African American while Caucasian/White and Hispanic students made up the second and third highest percentage (See Figure 2) (State of Delaware, 2017).

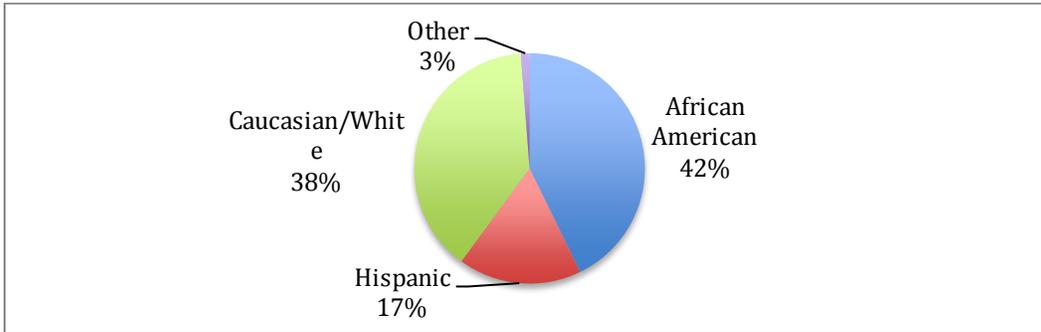


Figure 2: 2017 Hodgson Student Characteristics

Figure 3 depicts the demographic makeup of Hodgson students. The State of Delaware (2017) reported that just over a quarter of the student population was from low-income families. Special Education students comprised 11% of the student population, while only 1% was classified as English Language Learners (ELL).

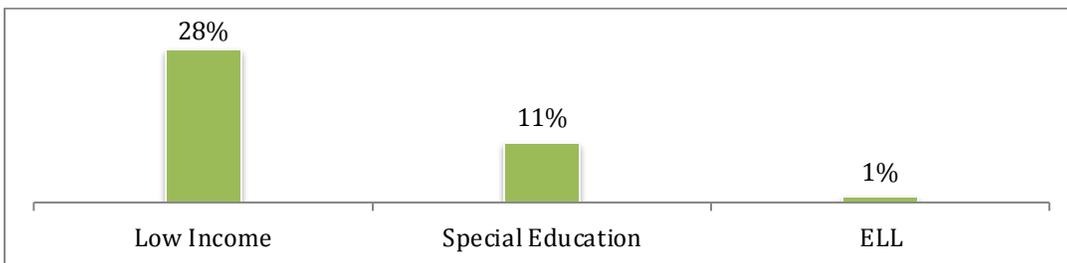


Figure 3: 2017 Hodgson Demographic Information

Organizational Role

My current position at Hodgson is assistant principal. In this role, I am responsible for supervising the teachers and content areas of ELA, Mathematics, and Social Studies. My additional responsibilities include designing and delivering PD, planning and facilitating PLCs, implementing Response to Intervention (RTI), and overseeing student activities such as homecoming and prom.

My focus on purposeful PD is linked to and originates from my role at Hodgson. It is my responsibility to provide productive PD that supports teachers' content areas and curriculum. I coach teachers in instructional practices and provide resources for effective teaching. I also observe teachers during lessons to ensure students receive appropriate instruction to master the CCSS, and perform well on district assessments and the Scholastic Assessment Test (SAT) exam.

Professional Development for Teachers about CCSS

Starting in 2013, The Delaware Department of Education (DDOE) established a PD group called the Common Ground for Common Core (Turner, 2013). DDOE instructional specialists conducted CCSS meetings with representatives from schools in Delaware. These specialists provided educators with clinics, online webinars, large-scale meetings, and access to national experts about the CCSS. During the meetings, participants discussed strategies for how they were implementing CCSS in their districts. NCCVT participated in this group with lead teachers and administrators representing the four high schools. Each school was required to showcase their CCSS implementation goals and progress at the final meeting of the school year.

Starting in 2014, NCCVT Instructional Services provided district PD for teachers to take time to address the standards and help teachers with their curriculum and teaching strategies. The PD for ELA teachers focused on close reading strategies, which teach students to reread grade-level texts to comprehend the information and understand the purpose of the text (Shanahan, 2012). The mathematics teachers received PD about the CCSS eight standards for mathematical

practices which help students persevere in problem solving, reason conceptually, increase mathematical communication, model with mathematics, adapt their reasoning, conceptual understanding, and mathematical fluency (NGA Center & CCSSO, 2010).

Hodgson teachers were provided with additional PD at the same time. Teachers were made aware of and discussed the instructional and curricular shifts of CCSS. The shifts emphasized in the ELA CCSS were: “1) Regular practice with complex texts and their academic language, 2) Reading, writing, and speaking grounded in evidence from texts, and, 3) Building knowledge through content-rich nonfiction” (NGA Center & CCSSO, 2010).

The shifts emphasized in math CCSS were: “1) Greater focus on fewer topics, 2) Linking topics and thinking across grades, and, 3) Pursue conceptual understanding, procedural skills and fluency, and application with equal intensity” (NGA Center & CCSSO, 2010). Teachers used these shifts to analyze their curriculum and lessons to determine how best to address the CCSS with their students.

Curriculum Resources in NCCVT

To meet and support the high demands of CCSS, NCCVT Instructional Services made changes to the district’s curriculum. The ELA department adopted the *SpringBoard* (2010) curriculum to use as a supplemental resource. *Springboard* (2010) provides lessons, activities and assessments that address the ELA CCSS standards.

NCCVT Instructional Services, with the help of math lead teachers, determined that the curriculum appropriately addressed the math CCSS and continued to use *Core Plus* (Hirsh & Fey, 2015). *Core Plus* (Hirsh & Fey, 2015) is an integrated mathematics curriculum in which standards and concepts spiral together to support the CCSS mathematical practices. It engages students in mathematical investigations that focus on mathematical modeling and the development of reasoning, justification, and proof (McGraw-Hill Education, 2015).

PLC Implementation and Purposes

PLCs were formed to provide time for educators to meet regularly, share expertise, analyze data to make informed decisions, and work collaboratively to improve teaching skills and the academic performance of students (Professional Learning Community, 2014). From 2009-2013, the DDOE provided data coaches to help train teachers to analyze data and create action research plans. “Action research in education is any systematic inquiry conducted by teachers, administrators or guidance counselors in the teaching-learning environment, to gather information about the ways in which their particular schools operate, the teachers teach and the students learn” (Gay, Mills, & Airasian, 2006, p. 8). All schools had the autonomy to develop PLC meeting plans that fit their school schedule the best. Teachers would meet with the coaches to discuss pertinent data and create action research plans.

Starting in 2014, school districts were given the opportunity to plan for and structure PLC meeting times. These plans included teachers meeting in content or grade-level teams or when meetings might occur during the school

day. Also, PLC plans included the topics to be covered, using a cycle of inquiry to analyze data, and promoting teacher collaboration.

In 2014, Hodgson administration decided to adjust the school schedule to provide time for teachers to participate in PLCs during morning meetings. Teachers met twice a week and were organized in PLCs by their content area, which is currently still our schedule at Hodgson during the 2016-2017 school year. During these meetings, a designated teacher took minutes to record information about the topics covered, progress of the meeting, and teacher concerns. As supervisor of PLCs, I reviewed these minutes to determine the focus and scope of the PLC's work, discussions, and outcomes.

From the beginning of PLCs at Hodgson, I would meet with each individual content area's teacher leaders every six weeks during the school year. During these meetings, the teacher leader and I would discuss and plan the upcoming PLC meetings. This gave leaders an opportunity to discuss the goals for their content area and activities they must complete for district initiatives. Other items we discussed were upcoming PD to be delivered during PLC meetings and using a collaborative inquiry process to review and analyze assessment data. Important information I gleaned from these meetings included how the PLC meetings were functioning, teacher concerns, and progress being made from previous plans.

Schoology Use during PLCs

Schoology is an online learning management system that is a comprehensive technology platform. This platform provides multiple online tools for teachers to use with students. At Hodgson, teachers used this platform to create groups and share

resources with fellow teachers, participate in discussion posts, and record data. They were able to easily upload lesson plans and activities to have continuous access to shared resources.

Smarter Balanced Assessment Consortium

To assess students' knowledge of CCSS, the DDOE selected the Smarter Balanced Assessment Consortium (SBAC) to test all students in Delaware. The SBAC assessment provided scores that measured student proficiency of CCSS to determine if schools met their annual yearly progress (AYP). The DDOE would determine a school's AYP goals once the test was administered and graded. In April of 2015, Hodgson students took the SBAC assessment for the first time. Figure 4 illustrates the results of SBAC were dismal with only 39% of ELA and 10% of math students achieving proficiency.

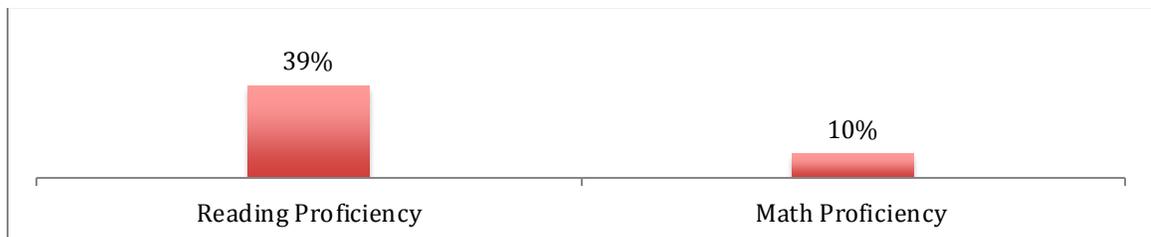


Figure 4: Percentage of Students Scoring Proficiency on 2015 SBAC
Source: State of Delaware: The Official Website of the First State (2017)

In December of 2015, the DDOE decided to end the use of SBAC in Delaware high schools to assess students' knowledge of CCSS, and replaced SBAC in all high schools with the SAT test as the measure of student success (May, 2016). Starting in 2016, the DDOE provided monetary funds for all juniors in Delaware high schools to take the SAT during the school year.

Relationship between Hodgson and ELP

NCCVT Instructional Services and Hodgson have provided teachers with PD opportunities to align their lesson planning to the CCSS. For the 2016-2017 school year, Hodgson administration decided to use PD and PLC meeting time to deliver an instructional focus that supported the best practices to implement CCSS. Schoology would be used during PLC meeting time to digitally house resources and create opportunities for teachers to collaborate and share information. Additionally, teachers would participate during PLCs in a collaborative inquiry process to analyze student data. The administration also determined that providing information and training to students about employing a GM would be beneficial as students work with CCSS standards and prepare to take assessments and the SAT test.

My ELP portfolio will examine these supports and their effects in helping teachers meet the expectations of the CCSS in their classroom. More specifically, it will discuss how I facilitated the two-part PD plan utilizing the common instructional focus called CREST. I provided PD to inform teachers about using a collaborative inquiry process to analyze assessment data during their PLC meeting time. I met with students to present information about the concepts and benefits of having a Growth Mindset. Lastly, I analyzed assessment, walkthrough, and survey data to assess our school's progress.

Chapter 3

IMPROVEMENT STRATEGIES

Rationale

In order to help Hodgson teachers and students transition and understand the CCSS, this ELP focused on three improvement goals: (a) provide PLC meeting time that was effectively facilitated by teacher leaders to analyze data, create lessons that focused on implementing CCSS, and share resources; (b) create an instructional focus and PD plan that centered on specific instructional strategies and overall school climate that addressed CCSS and supported student achievement; and (c) develop presentations for students to teach them how employing a GM can increase their academic achievement.

This chapter will explain how these goals were addressed and will examine the rationale behind the design of the instructional focus, CREST, a literature review of implementing purposeful PLCs, the process of collaborative inquiry, the use of Schoology as a tool to support teachers during PLCs, and the implementation of employing a GM with students. Walkthrough data, PLC teacher surveys, and student GM surveys were used to evaluate the effectiveness of the PD plan, PLC meeting time, and GM presentations to students.

PLCs at Hodgson

To develop a well-informed view of how to implement successful PLCs, I looked at literature and case studies about PLCs to help guide my planning and

approach. The published literature helped me to determine the features and characteristics that make PLC meetings successful. These characteristics include attributes of PLCs, the role of the building administrator regarding PLCs, cultivating teacher leadership, employing a cycle of inquiry, and cultivating teacher collaboration.

As with any school-wide initiative, attention must be given to specific and important features for the organizational arrangement of PLCs. Hord, Roussin, and Sommers (2010) noted that these attributes include supportive and shared leadership, intentional collective learning, shared values and vision, supportive conditions, and shared personal practice. The impact of the building administrator is extensive and significant in regards to promoting purposeful PLC meeting time (Hord, 1997). The administrator must promote school initiatives, build an instructional focus, and provide appropriate organization of teachers to cultivate high functioning PLC meetings. Appendix A gives an overview of the research I discovered to gather more knowledge about PLCs.

Collaborative Inquiry

The Hodgson administrative team determined that employing a process of Collaborative Inquiry (CI) would best fit the needs of teachers when analyzing data during PLC meeting time. CI transforms the way teachers work together to achieve relevant goals. These goals might include reviewing assessment data, collaborating about a lesson activity or implementing a new classroom management plan. The inquiry approach recognizes teacher values as the driver for school improvement and “provides a systematic approach for teachers to explore issues and determine

resolutions through shared inquiry, reflection and dialogue” (Donohoo & Velasco, 2016, p4). This goal is achieved by teachers working together on a shared vision while meeting in PLCs. CI encompasses teacher inquiry with the added emphasis on teacher collaboration and professional learning communities.

PD trainings for teachers would cover the aspects of the model and expectations. Donohoo and Velasco’s (2016) resource and facilitator’s guide was an important resource for us. I took this PD guide and divided it into smaller portions to fit within seven PLC meetings. Also, the form used to take minutes during PLCs was updated to include the CI stages. This provided an area for the note taker to record characteristics and details about each stage of inquiry. An overview of the CI model and seven PD presentation can be found in Appendix B.

Schoology Use in PLCs

Hodgson administration encourages the use of Schoology during PLC meeting time. This online learning platform provides a way for teachers to stay organized, share resources and generate discussions during PLC meeting times. Schoology provides teachers access to all PLC activities. These Schoology groups house their resources, PLC minutes, and attendance. Schoology allows teachers to create group sites in which they are able to share and access teaching recourses, lesson plans, and activities. Teachers would post messages to their group sites about upcoming events or assessments and the calendar tool makes it possible for teachers to schedule meetings and reminders. Teachers also participate in discussion posts on current issues or share ideas. Administrators have access to all items in each content area group and are able to participate or comment on PLC activities at any time.

Information about Schoology and how teachers specifically use this online platform can be found in Appendix C.

PLC-R Questionnaire

At the end of the 2016-2017 school year, Hodgson teachers completed the PLC-R questionnaire. This questionnaire measures the staff perceptions of school practices related to the six dimensions of PLCs which are: (a) shared and supportive leadership, (b) shared values and vision, (c) collective learning and application, (d) shared personal practice, (e) supportive conditions – relationships, and (f) supportive conditions – structures. This questionnaire asked teachers their agreement in regards to aspects of PLCs as indicated by the six dimensions. A detailed analysis of survey results can be found in Appendix D.

Hodgson’s Instructional Focus - CREST

During the 2015-2016 school year, with the support of my fellow administrators, I created an instructional focus that supports the CCSS and college and career readiness for students. The superintendent, Dr. Vicki Gehrt, gave the school administrative team the freedom to create a focus that helped meet the needs of students at Hodgson, but also supported district initiatives. It was important for teachers and students to have an instructional focus that highlights best practices supported by research and CCSS. Schooling, Toth, and Marzano (2013) believed that “A common language/model of instruction provides a framework for a way to talk about instruction that is shared by everyone in the state, educational service agency region, and at the district or school level” (p. 1). Building opportunities for teachers and administrators to use common language to discuss teaching strategies was

essential to providing quality feedback and making necessary adjustments to lesson planning and activities.

The CCSS helps ensure students are ready for success after high school through clear and consistent guidelines in Literacy and Mathematics, and were designed to develop critical-thinking, problem-solving, and analytical skills (NGA Center & CCSO, 2017). The Literacy and Mathematics CCSS emphasize the importance of collaborative practices, summarizing skills, and use of technology (e.g., digital media). I analyzed the CCSS standards to look for common themes to develop our focus because I wanted the strategies and best practices at Hodgson to support student success with CCSS implementation.

Hodgson administrators also wanted to instill the beliefs of a GM within our students so they achieve more in school and life through hard work, determination, and grit. In order to help us instill this GM in students, creating a risk-free classroom environment was an essential addition to our instructional focus. As Thornton (2015) explained, “risk combined with abundant opportunity and the safety of being treated as a cherished individual is what we should allow in our classrooms”(www.edutopia.org). Hodgson teachers and administrators have studied the importance of teaching students about having a growth mindset since 2012, and teachers have participated in multiple PD opportunities about GM for the last four years.

Hodgson’s instructional focus is based on five strategies and concepts to highlight best practices and improve student achievement. After taking into account our district’s support of CCSS and Growth Mindset practices, the five areas of

CREST were determined to be the most important and critical for Hodgson teachers to implement to provide opportunities for students to be successful. Once CREST was formulated, I created a PD plan that informed teachers about why these focal areas were important, strategic, and based on best practices to implement CCSS. Once the PD was developed, we presented an in-depth and interactive presentation to teachers about our new instructional focus. This presentation occurred during a three-hour session with teachers, and continued on throughout the 2016-2017 school year during PLC meeting time. A detailed overview of the creation of CREST and the PD presentations can be found in Appendix E.

CREST Walkthrough Guide

During the PD presentations about CREST, teachers were informed about the walkthrough guide administrators would use during the school year to observe CREST focal areas. Because it was important to the administrative team to be transparent about the specific indicators and activities to be observed during walkthroughs, I developed the walkthrough guide which included specific attributes from each CREST focal area. A complete analysis of the walkthrough data for each component of CREST can be found in Appendix F.

Growth Mindset at Hodgson

Growth Mindset Presentations to Students

“Individuals who believe they can develop their intelligence over time” are defined as having a GM (Blackwell, Tresniewski, & Dweck, 2007, p. 247). Students who value effort, persevere when faced with adversity, and believe their intelligence

is malleable have a GM. The Hodgson administration and teachers believe this is a major component in the success of our students and overall school performance.

To provide knowledge and understanding to our student population about employing a GM, our principal and myself conducted GM student presentations with all ninth and tenth grade students. I created presentations that provided students with a well developed definition of GM, interactive videos showing the importance of employing GM and group discussions about the impact having a GM will have on their achievement in school and life. A detailed overview of GM and the student presentation can be found in Appendix F.

Student Survey Analysis of Growth Mindset

At the beginning of each student presentation, we gave a GM survey to allow students to gauge their understanding of the concept. After they completed the survey, we started the presentation. The survey was designed with four statements describing a GM, and four statements describing a fixed mindset (FM). This same survey was given to students at the end of the 2016-2017 school year. The goal of these presentations was to teach students about employing a GM and how that could impact their achievement in school. A complete analysis of the student survey can be found in Appendix H.

ELA and Math Unit Assessment Data

To determine if students were making advancements with CCSS, the administrative team looked to the ELA and Mathematics assessment data. These are common district assessments that all ninth and tenth grade students take during a school year. These assessments were created with the intention to assess content

curriculum and CCSS. The tests are given online, so all students must take the assessment on a computer. The data was compiled and analyzed to determine how well students are learning and mastering these standards. A complete analysis of the assessment data can be found in Appendix I.

The ELA curriculum in NCCVT was divided into grade level courses – ELA 1 for ninth grade students, ELA 2 for tenth grade students, ELA 3 for eleventh grade students, and ELA 4 for twelfth grade students. Each grade level also had an honors course. During the 2016-2017 school year, only the ELA 1 and 2 assessments were recorded using an online testing system. Therefore, that is the data that is available to use for this analysis. This lack of data for upperclassmen is impactful because it limits the ability to know if students understand CCSS.

Each ELA course was divided into four units of study and included a curriculum plan that covered a portion of the CCSS ELA Literacy standards for ninth and tenth grade. All CCSS were covered in the four units of study throughout the course. The data provided was for the ninth-grade courses ELA 1 and ELA 1 Honors. The tenth-grade courses included ELA 2 and ELA 2 Honors.

Student eligibility for Honors courses required earning an A or B grade in their prior ELA course and recommendation from their teacher. During each course, ELA teachers were required to give the online district unit assessment. The school schedule was divided into two semesters using a block-scheduling format with 90-minute courses. Each semester was the equivalent of two marking periods.

The NCCVT math curriculum was divided into seven courses. All ninth-grade students take two math courses, one each semester. Incoming ninth grade

students with advanced math skills begin in Integrated Math II. This placement was based on their previous middle school course and grade. The math courses offered at Hodgson were Integrated Math I (IM I) and Integrated Math II (IM II) for ninth grade and Integrated Math (IM III) for tenth grade.

IM I courses were divided into four units of study, and IM II was divided into five units of study. Each unit provided a curriculum plan that covered a portion of the CCSS math standards for ninth and tenth grade. All CCSS were covered in the units of study throughout each course. Teachers were required to give online assessments at the end of each unit.

Chapter 4

IMPROVEMENT STRATEGIES RESULTS

As a result of my purposeful PD plan, new resources and practices are in place to support high functioning PLCs, an instructional focus that highlights CCSS, and best practices that influence a positive classroom environment. The improvement initiatives helped foster an environment of common practices around an instructional focus, positive teacher beliefs about PLC meetings, and bringing knowledge to students about employing a GM. The results of these improvement plans are described in the development of: (a) facilitate and plan for high-functioning PLCs that supported teachers in their quest to implement CCSS and improve student achievement, (b) an instructional focus that supports CCSS, classroom environment, and technology integration, (c) presentations for students about the importance of employing a GM, and (d) reviewing the average scores of ELA and math unit assessments to determine student achievement in understanding CCSS.

PLCs and Collaborative Inquiry (CI)

Creating high-functioning PLCs was an essential initiative at Hodgson to provide time for teachers to share resources, work collaboratively, lesson plan, and review data.

A primary goal of PLCs at Hodgson was for teachers to engage in CI. To determine if teachers practiced CI during PLC time, I analyzed PLC agenda items and minutes. Each PLC group has the freedom to determine their mode of minute taking.

The minutes provided insight into the time spent on CI activities. In general, all content areas participated in CI process during the course of the school year. This includes teachers giving common assessments, discussing the outcomes of those assessments and determining or creating new activities to support student achievement.

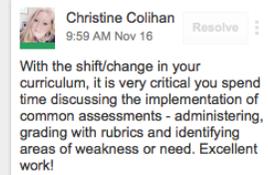
Figure 5 shows the agenda items and minutes for the Science PLC during the month of October 2016. Teachers took turns taking the minutes using a Google Doc. Google Docs provide teachers the opportunity to share a document. This also gives me the opportunity to read and make comments about their activities and agenda items as depicted in Figure 5 in the right hand column. These minutes show the teachers' work on common assessments, discussing the incorporation of literacy activities to support student achievement on PSAT and SAT, and practice uploading documents into Schoology.

MONTH: October

NOTE-TAKER: Paris Crockett

Paris - Very thorough and informative - Thank you!

DATE	AGENDA	MEETING NOTES
10/4/16 Attendance: https://goo.gl/reQKos	Common Assessments -9th and 10th grade and discuss the assessments given -Integrated and Chemistry prepare/plan for the assessments to be given at the end of the month	Teachers discussed their plan for giving the common assessment. Most teachers have either given the assessment or plan on giving it in the next couple of days.
10/5/16 Attendance: https://goo.gl/reQKos	Common Assessments -9th and 10th grade and discuss the assessments given -Integrated and Chemistry prepare/plan for the assessments to be given at the end of the month	Teachers discuss and grade common assessments. We discussed using PLC time to grade these common assessments. Fridays PD will have time to look at preparing students for the SAT.
10/11/16 Attendance: https://goo.gl/reQKos	Cancelled Due To PSAT	
10/12/16 Attendance: https://goo.gl/reQKos	-Continue work started on PD, 10/6 --Revise or create NGSS literacy lessons that prepare students for SAT's.	We discussed how the PSAT went for students in terms of literacy. Apparently, there were some science related questions on the PSAT. We plan on bringing articles to the group as examples for students to prepare for the SAT in terms of literacy. The challenge is finding reading material that is relevant and on their level.
10/18/16 Attendance: https://goo.gl/reQKos	-NGSS Literacy/SAT Alignment -Teachers are going either review current readings or find new readings to make a more NGSS-like and SAT-aligned lesson.	Teachers discussed various ways to incorporate literacy into their lessons. Resources such as UDLlib/ Search, SAT practice tests, Current Science articles.
10/19/16 Attendance: https://goo.gl/reQKos	-NGSS Literacy/SAT Alignment -Teachers are going either review current readings or find new readings to make a more NGSS-like and SAT-aligned lesson.	Teachers got together in the faculty lounge to review how to scan multi-page documents into the scanner. Instruction on how to upload literacy documents into Schoology followed.



Christine Colihan
9:59 AM Nov 16
Resolve

With the shift/change in your curriculum, it is very critical you spend time discussing the implementation of common assessments - administering, grading with rubrics and identifying areas of weakness or need. Excellent work!

Figure 5: Science PLC Agendas and Minutes for October 2016

Another example of agenda and minutes for the Math PLC group during the month of November 2016 is depicted in Figure 6. This group also uses a Google Doc format in which teachers take turns recording the minutes. This figure shows math teachers engaging in discussions about teacher collaboration about increasing the depths of knowledge for mathematical questions and formative assessments.

2016-2017 HVT Math PLC Agendas & Minutes

<ul style="list-style-type: none"> ● Robert Kaplinsky video 	<ul style="list-style-type: none"> ● Collaboration on DOK questions
11/29 <ul style="list-style-type: none"> ● Formative assessments 	11/30 <ul style="list-style-type: none"> ● Collaboration on Formative assessments
<p>Monthly Minutes: 11/1 - IM 1,11, and 111 teachers discussed publishing and unpublishing the District Tests to ensure the security of the test. After test security, the overall test statistics was discussed and this was followed by the report on individual problems. 11/8 - Our discussion was about the reason or reasons why our students are not better mathematicians. We brainstormed and listed many reasons. 11/9 - The discussion turned into what we can do to make our students better mathematicians. 11/15 - Discussion today centered around students knowing how to do specific problems as opposed to learning the concept that the problems involve. 11/16 - Collaboration on "increasing depth of knowledge".</p>	
<p>11/29 - Discussion on Formative Assessment; what is it? In what ways do we formally assess? How much time do we have to devote to formal assessment? What are some good times to formally assess? 11/30 - Ideas and suggestions for formal assessment</p>	

Figure 6: Mathematics PLC Agendas and Minutes for November of 2016

The Social Studies PLC had a different way to share agendas and collect minutes during their PLC time. They used a Google Form, which the minute taker would fill in as the PLC was taking place. Figure 7 depicts the amount of time spent on each CI step during the school year. Social Studies teachers collaborated 84% of the time and analyzed data 44% of the time during PLCs.

Cycle of Inquiry Minutes (Check ALL that Apply)

25 responses

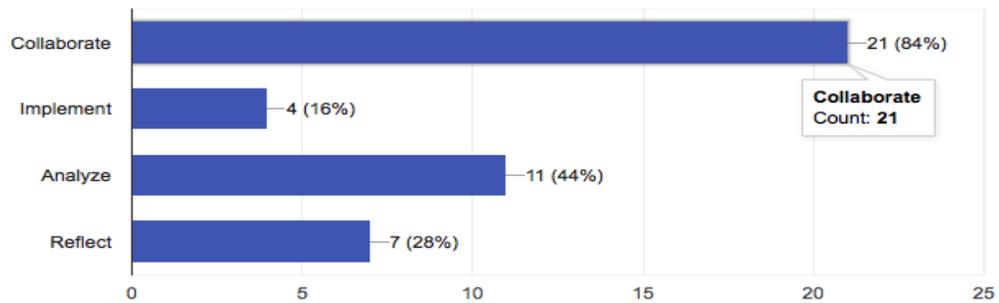


Figure 7: Minutes Spent in Social Studies PLC during 2016-2017 School Year

Social Studies minute takers would list the information they discussed during PLCs on the Google Form. Figure 8 shows a sample of the discussions they had which included discussing common assessments and inter-rater reliability, grading document-based questions together, and sharing new technology activities.

Describe the information discussed in PLC

25 responses

Discussed common assessments, including Econ DBQ, potential problems with the rubric. Worked on inter-rater reliability.

Common Assessments for US, DBQ Grading

Curr. Changes in Econ, US History End of Course Calendar, DBQ Conversion Chart, World History Spreadsheet for End of Course Common Assessments, Tech Conference Schedule and Expectations, and Open House Roles

Course Discussion on DBQ about Feedback from Justin.

DBQ Updates by Justin, Added a new criteria for citation of documents. We also asked to REMOVE the conversion chart to help show more accurate grades.

- Grading DBQ and Adjustments to DBQ Calendar, Sharing Making a Google Docs about Writing Hints in Social Studies- we will add the link to each Schoology Course

-Update to PLC Calendar for December: App to Use, Calendar Planning for end of semester and next semester. Curri. Planning

Shared new QUIZLET LIVE!!! We are all going to try to do a new App for Formative Checks, Discussion of DBQ Grades, Shared Observation Tips and Feedbacks, Created a Lesson Plan CREST Template on Google Docs for Dept to share for observations!

Figure 8: Social Studies PLC Minutes

PLCs and CREST

A vital aspect of PLC time at Hodgson was incorporating CREST focus areas into lesson activities. To ensure teachers use CREST when planning for a lesson, teachers created a lesson plan format they would use to indicate the CREST focus areas. Figure 9 is a sample of a completed lesson plan highlighting the CREST Focus areas.

Hodgson Vo-Tech Lesson Plan		
Teacher Name: Randi Pro	Course: Economics	Date: November 15, 2017
Standards: Economics Standard Two 9-12a: Students will develop an understanding of how economies function as a whole, including the causes and effect of inflation, unemployment, business cycles, and monetary and fiscal policies.		
CCSS: Literacy (9-10): Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information. Writing (9-10): Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.		
Unit Essential Question: Through what measures can the economic health of a nation be determined?	Lesson Essential Question: What about how was monetary and fiscal policy used during the Great Depression to achieve economic stability?	
Class Composition: 27 Students (2 IEPs: Cutillo, Rose)	Technology & Materials Used: <ul style="list-style-type: none"> • Chromebooks • Quizlet Live! • Great Depression Webquest 	
Lesson Description: This lesson is a case study on the Great Depression. Students will first be exposed to a Quizlet Live game as a preview of the information they already know about unemployment as well as what they may not know about the Great Depression. Students will work as teams to complete the game. From here students will conduct research on the Great Depression via a webquest online. After gathering their information, students will be required to write a short essay on their findings.		
<p style="text-align: center;">Lesson Activities</p> <p>Bellringer (5 mins): What was the great depression?</p> <p>Quizlet Live (10 mins):</p> <ul style="list-style-type: none"> • Students race to complete the game as a team <p>Great Depression WebQuest - Research (30 mins):</p> <ul style="list-style-type: none"> • Students will work through the webquest to answer the questions on the graphic organizer <p>Great Depression WebQuest - Essay (40 mins):</p> <ul style="list-style-type: none"> • Students will use their research to complete a short essay on their findings. <p>CNN10 (10 mins): Students will watch the daily news and complete their CNN10 graphic organizer.</p>	<p style="text-align: center;">CREST</p> <p>Collaborative Learning: Students will be randomly assigned to be part of a team for the Quizlet Live game.</p> <p>Risk Free Environment: Students and the teacher have created a culture of understanding that is ok to make mistakes and ask questions to foster a risk free learning environment.</p> <p>Essential Questions: What about how was monetary and fiscal policy used during the Great Depression to achieve economic stability?</p> <p>Summarizing: Students must use their research to complete a short essay on their findings about the Great Depression.</p> <p>Technology Integration: Students will use their Chromebooks to complete their research and then submit their essay via Schoology.</p>	<p style="text-align: center;">Student Activities</p> <ul style="list-style-type: none"> • Bellringer • Quizlet Live Game • Great Depression Webquest <ul style="list-style-type: none"> o Research o Essay • CNN10

Figure 9: Hodgson Lesson Plan with CREST Focus Areas

To determine if teachers are using specific CREST focus areas in their lessons, I collected examples of activities teachers created to support CREST. These examples included ways teachers planned for student collaboration, how they created risk-free environments, types of essential questions and summarizers they used and

technology applications. Figure 10 is an example of a summarizer used in a Social Studies class. The teacher displayed this image on the screen and started the countdown timer while the students summarized the six economic goals.

Let's Summarize...
Economic Goals

6 minute timer
6:00

Economic Goal
Summary
Stations

There are 6 posters with goals listed, walk around the room and add notes to each goal. Write down **AT least three** things we learned! There can be repeats!

Figure 10: Social Studies Summarizing Activity

In English class, a teacher used two CREST focus areas in conjunction to highlight technology and student collaboration. Using a Google Doc, the teacher had all students in the class annotate a poem. Through the sharing ability of a Google Doc, students were able to discuss and brainstorm the details of the poem and ultimately the poem's theme and message. Figure 11 displays how the students used the Google Doc to highlight passages of the poem and make comments in the right hand column.

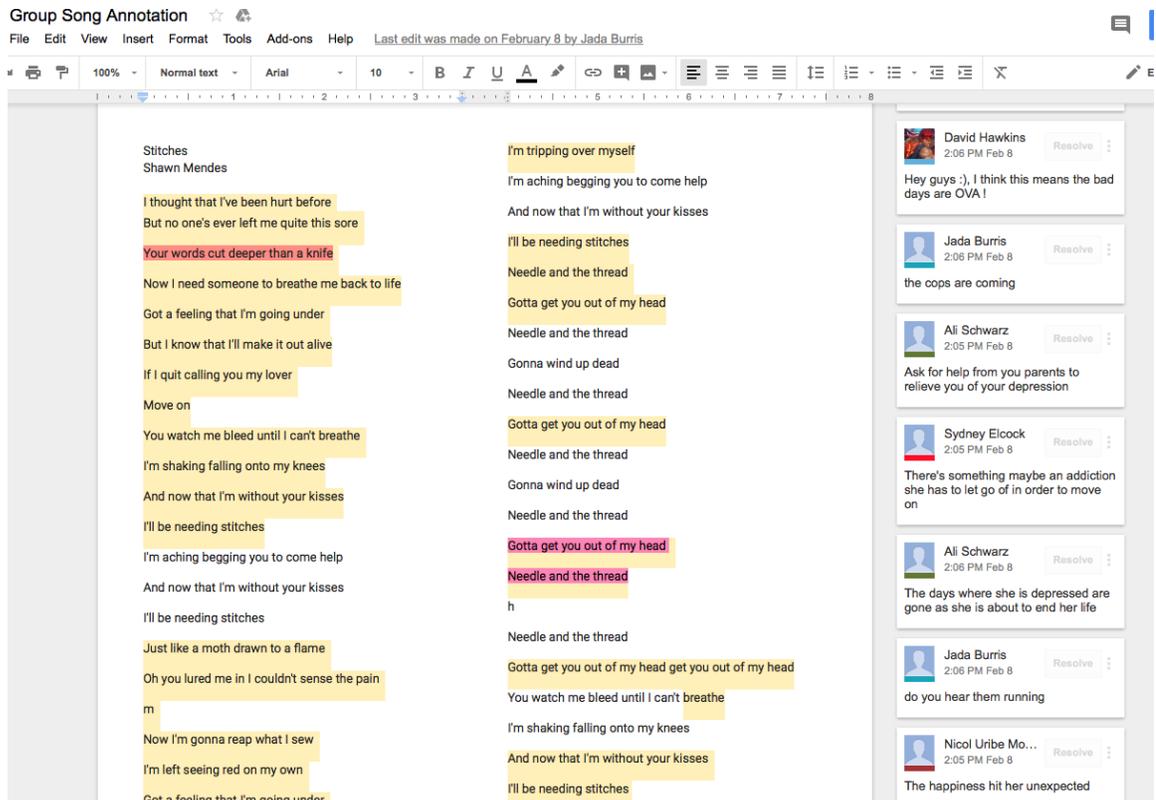


Figure 11: Google Doc Collaboration Activity

During a science observation, I took a picture of a teacher's essential question for a biology lesson (Figure 12). The teacher displayed an over-arching essential question with supporting questions that would scaffold the learning. If students build their understanding of the "driving questions" they will be able to answer the essential question.

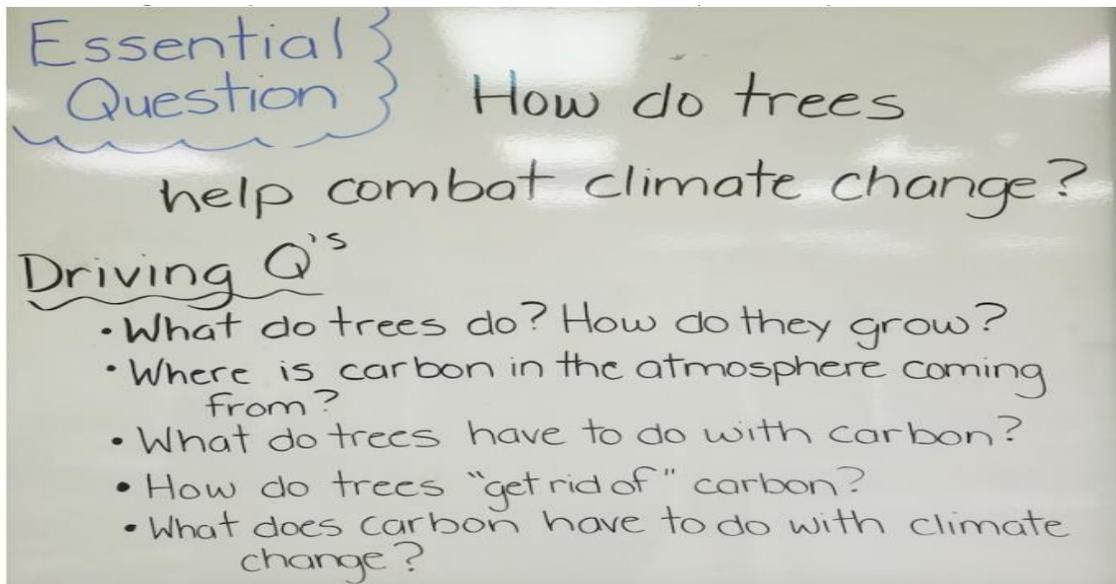


Figure 12: Science Essential Question

These are a few examples of CREST Focus areas being implemented in lesson activities at Hodgson. The CREST walkthrough form data indicates the amount of CREST focus areas being implemented in lessons at Hodgson.

PLCs and PLC-R Questionnaire

At the end of the school year, teachers completed the PLC-R Questionnaire, which focuses on the 6 dimensions of PLCs. For each dimension, the questionnaire lists multiple statements to address each dimension. The teacher would rank the statement on a scale from 1 = strongly disagree to 4 = strongly agree. All 41 teachers completed the questionnaire, and the results were overwhelmingly positive across all 6 dimensions (See Figure 13).

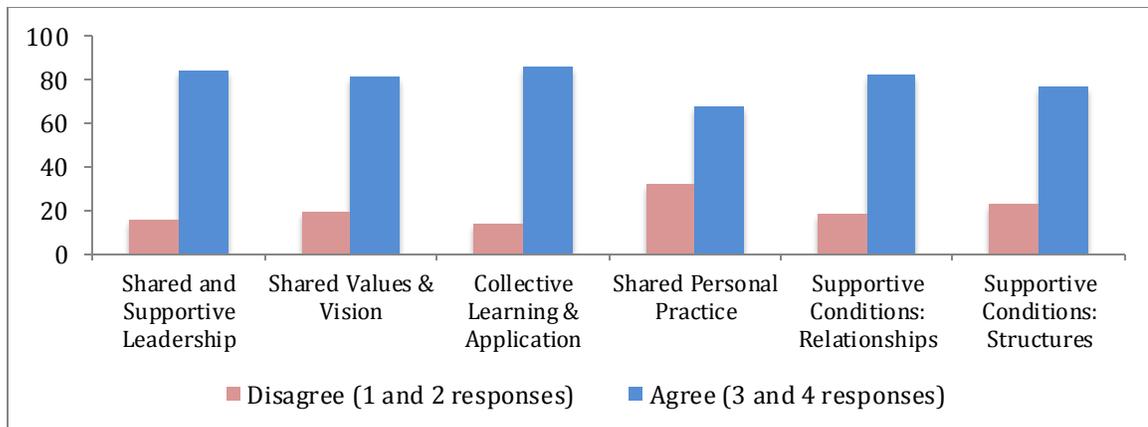


Figure 13: Percentage of teacher responses for 6 Dimensions of PLCs

Shared and Supportive Leadership ranked among the dimensions receiving the highest number of positive responses. At least 89% of the teachers saw the supervisor incorporating advice, being proactive addressing areas of need, sharing responsibilities, and participating democratically with staff by sharing power and authority.

In the Shared Values and Vision Dimension, 82% of the teachers thought a collaborative process existed for developing a shared vision and in developing a shared sense of values. In contrast, 33% of the teachers did not agree that stakeholders were actively involved in creating high expectations that serve to increase student achievement, and 27% did not feel school goals extended beyond test scores and grades.

The Collective Learning and Application dimension had the overall highest positive response average with at least 85% of the teachers agreeing with all but one of the statements. Teachers indicated that they share values when making decisions about teaching and learning, and that school data is used to reach this shared vision.

The Shared Personal Practice Dimension received the fewest number of positive responses. 85% of the teachers reported that they informally share ideas and

suggestions for improved student learning, and individuals and teams have the opportunity to apply learning and share results of all their practices. However, 49% of teachers did not feel they had opportunities to observe peers and offer encouragement, and 41% of teachers regularly shared student work to guide overall school improvement.

The data from the Supportive Conditions Dimension indicated that 94% of the teachers thought that caring relationships exist among staff and students. There was a concern among 25% of the teachers that outstanding achievement was not recognized and celebrated regularly.

The Supportive Conditions Dimension data revealed some differing responses. At least 85% of the teachers agreed that communication systems promoted a flow of information among staff members, and that resource people provided expertise and support for continuous learning. However, more than 30% of teachers felt that the school schedule did not promote collective learning and shared practice, that more appropriate technology and instructional materials were not made available to staff, and did not think that the school facility was clean, attractive, and inviting.

CREST

Developing an instructional focus that would support teachers in aligning instruction with the CCSS, was a daunting mission. However, researching the common core practices and observing the overall student environment at Hodgson, the CREST focal areas rose to the surface. Creating a clever acronym such as

CREST was intentional to help teachers and students remember these best practices easily.

Developing the walkthrough guide about CREST focal areas was vital in supporting the implementation of our instructional focus. Teachers were given the walkthrough guide to review for their clarification about the indicators. Once the walkthrough guide was reviewed with teachers, Hodgson administrators commenced with walkthroughs. There were a total of 140 walkthroughs conducted, split between the five content areas of English, Mathematics, Science, Social Studies, and Spanish. There were a total of 41 teachers who each received approximately three walkthroughs, which ranged from five to ten minutes in duration.

The outcomes of the walkthrough guide had mixed results across the five focal areas of CREST. Collaboration was observed the majority of the time during the walkthrough observations. All or most groups of students were completing the assigned tasks 75% of the time while collaborating with other students. Collaborative work in which partners or groups displayed positive communication was observed 31% of the time, while students were observed working with a partner or group only relied on each other to accomplish a task 29% of the time.

Teachers and students had positive communications and interactions during the class period, which promotes a risk-free environment. As indicated by the walkthrough data, a risk-free environment was observed at varying levels. Teachers provided positive feedback and encouragement to their students the most at 55% of the time, while the least observed was teachers celebrating student success at 26% of

the time. Examples of student success would be praise given to a student; student work displayed in the classroom or positive emails or phone calls home to parents.

The data indicated that EQs were posted in classrooms most of the time. The EQ was posted 69% of the time. However, the EQ was only observed being referred to and posted 24% of the time. A negative observation indicated that EQs helped drive instruction during a lesson only 26% of the time.

The summarizing strategies were observed the least of all CREST components. The types of summarizing strategies for making connections to content information or demonstrating evidence of student learning were observed 21% of the time. The data indicated that 19% of the time teachers mostly did not engage students in a summarizing strategy when there was an appropriate time to do so.

The data indicated that technology was being utilized by students the majority of the time. Students were using a computer during some part of a lesson 65% of the time, and teachers were incorporating Schoology assignments, assessments and discussions 35% of the time.

Developing a comprehensive PD plan to roll out CREST attributes and inform teachers about these practices was important. Teachers participated in PD during a three-hour session at the beginning of the school year, and also during PLC meetings throughout the school year. For each PD presentation, I created activities for each focal area and provided research to support each area. Teachers watched instructional videos, read articles, and participated in discussions about these practices. These PD presentations provided the evidence and examples of CREST practices that teachers could use when planning lessons. Time was given during PLCs throughout the

school year to work on lessons that highlighted CREST attributes. Appendix E gives a complete overview of both PD presentations that include teacher activities and facilitator notes.

Growth Mindset

At the beginning of the school year, students participated in GM presentations that provided information about GM and how those beliefs could positively influence their academic career. These presentations also described the differences between a FM and GM. Students who have a FM are reluctant to engage in learning opportunities that might cause them to risk performing poorly or admitting deficiencies (Dweck, 2010). Before each presentation to the students, a survey was administered to gauge their understanding of the GM concepts, and the same survey was given to students at the end of the school year. The survey used the Implicit Theories of Intelligence Scale developed by Carol Dweck (1999), which included an 8-item analysis. The survey was designed so students would agree or disagree with four statements describing a GM, and four statements describing a FM. If they agreed with a GM statement, that would indicate their beliefs in GM. This survey was taken from the Mindset Works® (2016) website, and each student rated statements from 1 = strongly disagree to 6 = strongly agree.

There was almost no difference in the mean scores from the beginning of the year to the end of the year. The scores for the GM statements were fairly high at the beginning of the year with students either agreeing or somewhat agreeing with all four statements. However, the overall mean actually decreased slightly from 4.7 at the beginning of the year to 4.6 at the end of the year. With presentations to students

at the beginning of the year and all faculty members having participated in PD on GM for two years, it was expected that the end of year mean for the FM statements would decrease and that students would disagree with those statements. However, the overall mean for FM only decreased slightly from 4.0 to 3.9.

ELA Assessments

District unit assessments for both ELA and Mathematics were created to measure CCSS standards. There was a general trend of increased scores from the first semester to the second semester in ELA courses. ELA honors courses shared a higher level of growth than regular ELA courses in each unit assessment. ELA 1 Honors, ELA 1 and ELA 2 Honors all showed growth from first to second semester. ELA 2 showed decreased averages across all units except one.

Figure 14 shows class averages for all ninth grade ELA courses. ELA 1 Honors increased average scores for units 1, 3, and 4 from first to second semester with the most significant in unit 3 from 75% to 87%. There was a slight decrease in class average for unit 2. Student growth is shown in ELA 1 from first to second semester in unit assessments 1, 2, and 3. Unit 4 shows a decrease in average scores from 70% to 68%.

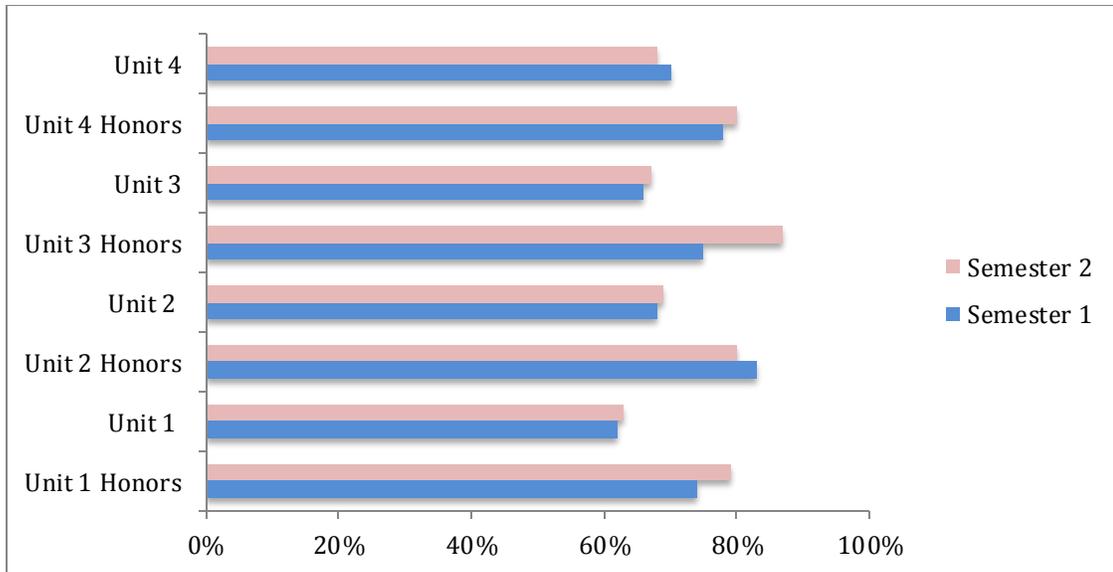


Figure 14: ELA 1 Honors and ELA 1 Unit Assessment Average Scores

Class averages from first to second semester increased in all unit assessments in 10th grade Honors (Figure 15). The most significant growth was on unit 3 assessment from 73% to 81%. However, ELA 2 shows the least amount of growth in class averages on unit assessments. Also, units 1 and 2 show growth, while units 3 and 4 display a decrease in average scores from first to second semester.

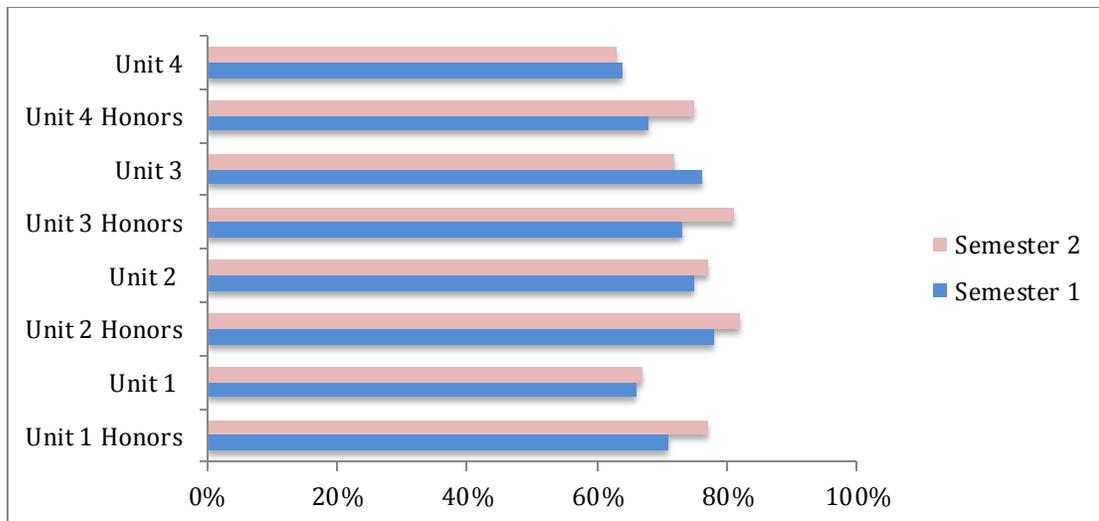


Figure 15: ELA 2 Honors and ELA 2 Unit Assessment Average Scores

To develop a better understanding of student growth per CCSS, I analyzed the English Language Arts (ELA) unit assessments. I used the item analysis from three unit assessments to determine growth. I compared these assessments from first to second semester. Each assessment gauges a multitude of standards. However, not all standards are assessed each time. This is due to the curricular structure of the course and when specific standards are addressed and emphasized to students. The CCSS are divided into four anchors which include:

- *Anchor Standards for Language: Conventions of Standard English, Knowledge of Language and Vocabulary Acquisition and Use (L).*
- *Anchor Standards for Reading: Key Ideas and Details, Craft and Structure, Integration of Knowledge and Ideas, Range of Reading and Level of Text Complexity. Within the reading standard there is subdivision of Reading Standards for Literature (RL) and Reading Standards for Informational Text (RI).*

- *Anchor Standards for Speaking and Listening: Comprehension and Collaboration and Presentation of Knowledge and Ideas (SL).*
Anchor Standards for Writing: Text Types and Purposes, Production and Distribution of Writing, Research to Build and Present Knowledge and Range of Writing (W).

Figure 16 shows the average growth of correct responses from first to second semester per CCSS assessed on the ELA Unit 1 assessment. Although the scores indicate there is growth, students are not achieving the standards at a high rate. Overall, the most significant growth per standard was on Reading Literature (RL). Students that determined a central idea of a text (RL.9-10.2) grew the most from 51% to 73% of students answering correctly. Adversely, there was a decrease in growth in the Language and Reading Informational Text standards. Both standards decreased by 6% or less.

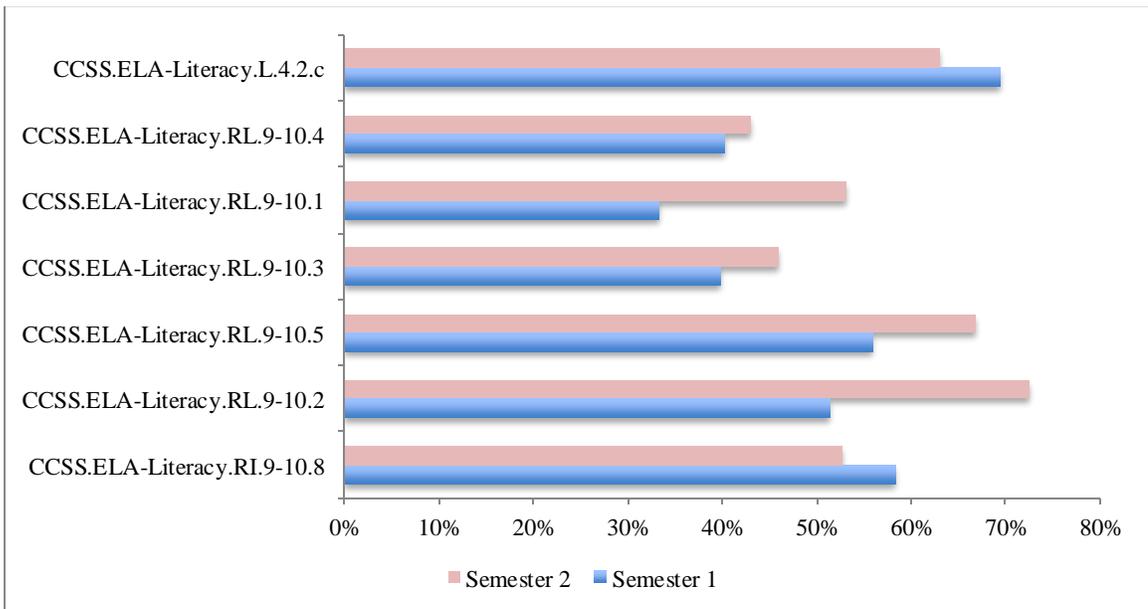


Figure 16: ELA Unit 1 Assessment Growth per CCSS

The average growth of correct responses on the ELA Unit 2 assessments from first to second semester per CCSS is shown in Figure 17. In general, the scores have increased from Unit 1 to Unit 2. However, students are still scoring below 60% on five of the eight standards assessed. The Reading Informational Text standard had the most substantial growth overall. Specially, RI.9-10.8 had the most significant increase from 28% to 49% which required students to evaluate the argument in a text and determined if the reasoning is valid and the evidence is relevant. The Language standard shows a decrease in scores with the most significant being the L.9-10.3 from 78% to 71%. Standard L.9-10.3 requires students to apply knowledge to understand how language functions in different contexts and comprehend more fully when reading or listening.

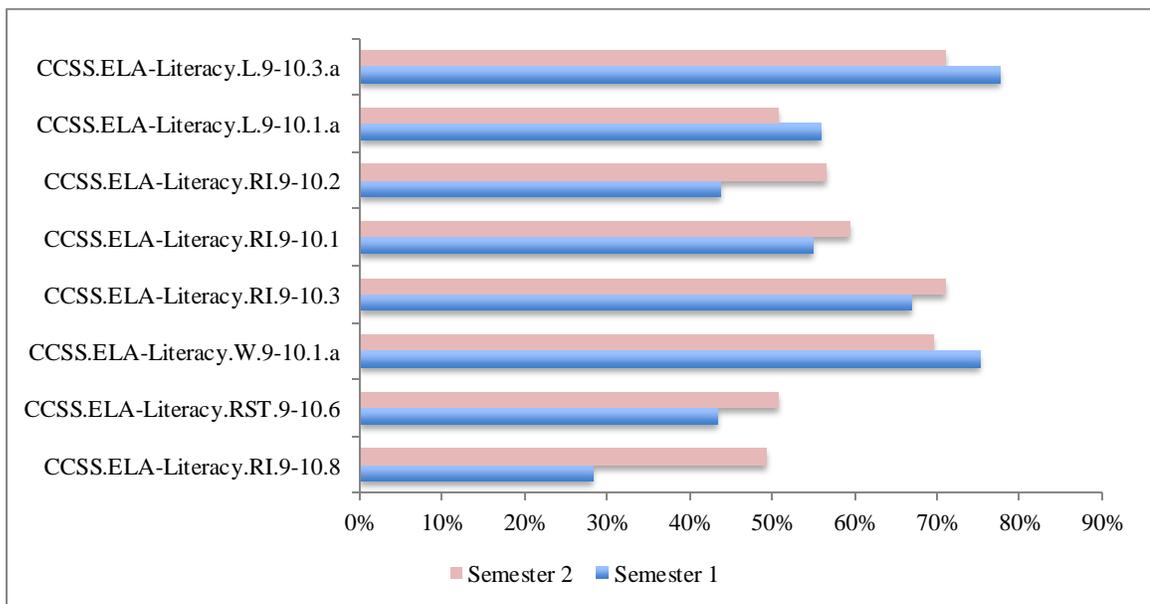


Figure 17: ELA Unit 2 Assessment Growth per CCSS

The average growth of correct responses on the unit 3 assessments from first to second semester per the CCSS is depicted in Figure 18. All standards increased in growth from first to second semester. The Reading Literature standards had the greatest growth overall with the highest being RL 9-10.2 from 42% to 64%.

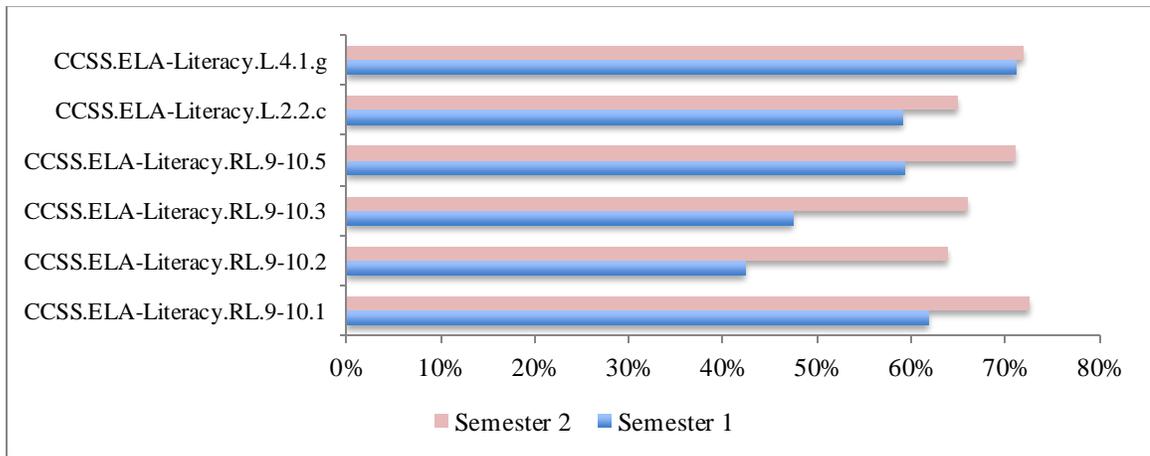


Figure 18: ELA Unit 3 Assessment Growth per CCSS

Mathematics Assessments

Since Integrated Math I (IM I) and Integrated Math II (IM II) courses are scheduled consecutively during the first and second semester of the school year, it was difficult to provide unit assessment scores to compare. The only comparisons that could be used were the IM II scores. Ninth grade advanced placement students took IM II the first semester. In Figure 19, class averages are compared from those advanced placement students during first semester to the general population of students during second semester. The first semester class average data is higher in all unit assessments. Unit 5 has the largest decline in class averages of 77% first semester to 61% second semester. No clear indication of student growth was represented with this data.

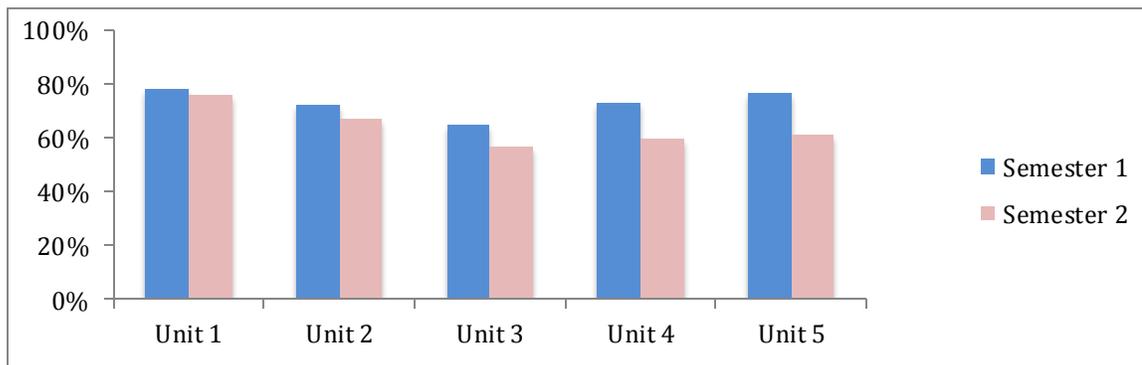


Figure 19: Integrated Math II Unit Assessment Averages

To develop a better understanding of the mathematics standards and growth, I looked at the Integrated Math I (IM I) final exam test score averages per standard. Since students only take this course once a year, I looked at the score comparison from fall of 2016 and fall of 2017. This course highlights the mathematics standards of Linear Functions, Linear Inequalities and Systems, Exponential Functions and Quadratic Functions. The scores indicated that students performed better on all standards except Exponential Functions, which decreased from 74% to 71% (Figure 20).

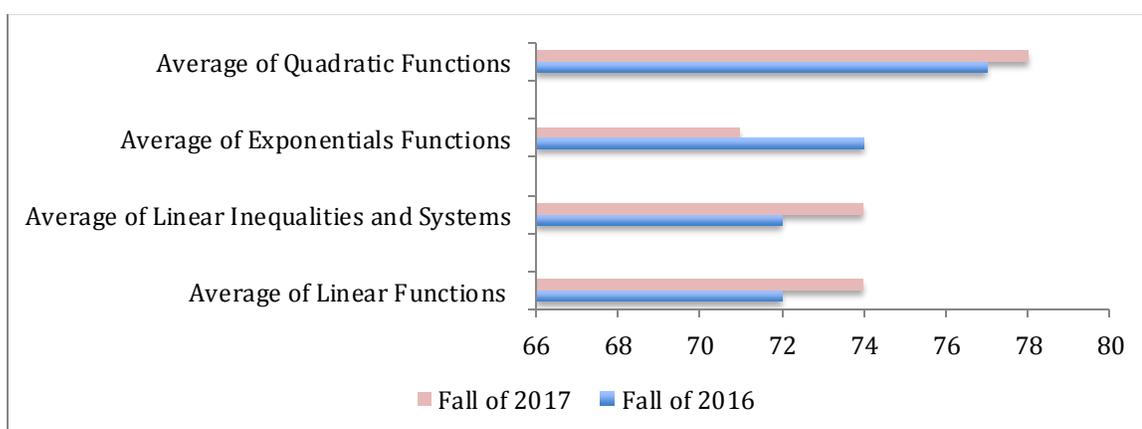


Figure 20: Integrated Math I Final Exam Average Scores per Standard

Chapter 5

REFLECTIONS ON IMPROVEMENT EFFORT

There were three goals that were the driving force for this ELP. In my capacity as assistant principal at Hodgson, I attempted to: (a) facilitate and plan for high-functioning PLCs that supported teachers in their quest to implement CCSS and improve student achievement; (b) create and institute an instructional focus that supported CCSS, created a positive classroom environment, and encouraged technology integration; and (c) to promote and educate students about the benefits of employing a GM.

Lessons Learned

PLCs and Collaborative Inquiry (CI)

Teachers are engaging in the process of CI as determined by the PLC agendas and minutes in all content areas. In analyzing the minutes, teachers are spending time during PLCs on all four stages of CI – Collaborate, Implement, Analyze and Reflect. Teachers use PLC time to discuss and implement common assessments, grade and analyze those assessments and reflect about the outcomes. Teachers are collaborating and sharing ideas to improve instruction and ultimately student achievement. In the future, I will require teachers to use a standard format of recording agendas and minutes. The Social Studies PLC had recorded the amount of time spent in each CI process, which was informative to my analysis of their participation in CI. I would

like all PLC groups to indicate the types of activities they are participating in so I can determine if CI is being implemented correctly.

PLCs and PLC-R Questionnaire

Overall, feedback about PLC meeting time was positive. According to the PLC-R Questionnaire, the most positive results came from the Collective Learning and Application dimension. Teachers reported they worked together to gather knowledge, skills, and strategies to collaborate in a collegial and respectful environment. They shared the same values through analyzing data to improve teaching and learning. Teachers believed that these relationships were built on trust and respect for taking risks, and that staff members supported honest and respectful examination of data.

These positive outcomes might be due to the time teachers spent in PLCs working on analyzing data through collaborative inquiry or collaborating on best practices around the instructional focus CREST. Also, teacher leaders were prepared and informed to support PLC objectives with their teacher groups through consistent support and meetings with myself about their specific content area needs and goals.

It was shown in the Shared and Supportive Leadership dimension that 31% of teachers felt they were not involved in discussing and making decisions about most school issues. This demonstrates a need for administrators to include teachers in discussions and decision-making, and be sure to publicly acknowledge the role of these teachers in this process. Conversely, this dimension indicated that 95% of teachers felt they had access to key information about the school. Therefore, combining these and empowering teachers to engage in key decisions with

information that is readily available will support unity and common goals among teachers. Additionally, administrative feedback that identifies how teaching and learning has improved due to these decisions and data analysis will show teachers that what they are doing is successful and worthy.

The Shared Personal Practice dimension was the overall lowest dimension. Teachers felt they had limited opportunities to observe peers, offer encouragement, and regularly share student work to guide school improvement. The PLC objectives for this school year did not include peer observations and feedback. New and improved ways to recognize and celebrate outstanding achievement can be discussed and developed within the PLC's. Sharing this responsibility with teachers during PLC time will allow more teachers to be recognized and celebrated for their outstanding work.

The relationships and structures domains of the Supportive Conditions dimension had specific areas of concerns. Almost 30% of teachers felt they were not part of embedding change into the culture of the school. These types of decisions must be discussed and nurtured with teachers and students, and discussions must address current culture at the school and what changes should be made. Currently, we have a student liaison group that meets with the administration once a month to discuss current issues. In the future, having teachers participate in these meetings would bring their perspective and ideas to building positive school culture.

Teachers identified the school schedule as a roadblock to more effective PLC's. This problem is not easily addressed. There are many challenges when scheduling 1200 high school students with a multitude of requirements for graduation

and therefore, creating common planning periods for content area teachers is difficult. Scheduling teachers to have common planning periods in which they could engage in PLCs during the school day would be optimal. School administrators must work to be creative and innovative to provide opportunities during the day for teachers to collaborate.

Teachers cited the need for more appropriate technology and materials. Administrators should work within their budgets to provide necessary resources for the PLCs. Inviting the technology specialist to become an active member of PLCs would provide teachers a resource for technology questions. This immersion into the needs and views of teachers would turn the technology specialist from a simple problem solver into a resource person.

CREST

Collaboration was observed to be taking place in classrooms 96% of the time with all or most students working together in partnerships or groups on lesson activities. This observation was encouraging regarding the effort made by teachers to create lesson activities for students to work in partnerships or groups to accomplish a task. This was a significant observation because teachers have many different tasks, including assessments, which they must accomplish with students. Having teachers reflect about their lessons they have created to require students to work together might provide insight to their process and how to sustain this focus. Teachers can work during PLC meetings to support one another in creating collaborative opportunities for students in their classes.

There was a range of activities observed when students were collaborating such as interpreting or constructing information and determining the structure of concept elements. A flaw of this subsection was the inability for the observer to type in a lesson activity observed other than those listed. When discussing the walkthrough tool with the other observers, they indicated the listed choices were limited and did not describe some activities. Due to the way the walkthrough tool was electronically formatted, the observer must choose an option for each section and therefore, some collaborative activities did not match perfectly.

In regards to classrooms having a risk-free environment, teachers and students had positive communication and interactions during the class period. With the training teachers and students have received about GM, it was promising that the observers witnessed positive feedback and encouragement and respectful student-student relationships and student-teacher relationships. The lowest indicator was teachers celebrating student success. This might be because the observer saw a lesson while students were working on a project or activity, and not necessarily the culminating or graded work.

Teachers posted EQs in their classroom but were not referenced during a lesson. This was a significant observation due to the importance of EQs in regards to keeping students focused and aware of what they are learning. Also, EQs must be written to be significant to students learning. If the EQs are not meaningful to the lesson content, then the use of the question is lost on the students and ultimately holds no real effect on their learning.

The summarizing strategies were observed the least of all the components of the CREST walkthrough tool. A flaw of observing summarizing might be because these strategies traditionally take place at the end of a lesson. If an observer was not in the class at the end of the lesson, it would be missed. However, a teacher's agenda would indicate if a summarizing strategy was planned.

Teachers and students have made a transition to using technology during lessons. This was a positive outcome due to the district and school push for teachers to transition their lessons and activities into the Schoology platform. It was evident that teachers were shifting their lesson planning towards using Schoology and that computers were available for teachers and students to use.

Growth Mindset

The GM student survey did not show growth from the beginning to the end of the school year. After looking into the survey results and the previous research studies, I realized I needed to indicate to students the implicit reason for the survey. I did not explain to students before they took either survey that the questions were asking their beliefs on their ability to learn information and the effort they spend.

In a study by Blackwell, Dweck and Trzesniewski (2007) students presented with information about the brain and effort increased their math achievement. Blackwell, et.al (2007) describe their approach to enhance student motivation through teaching students about Incremental Theory, the ability of the brain and intelligence to be malleable. The GM student presentations were an attempt at informing students about the functions of the brain frontal lobe and why employing a GM will help their achievement in all aspects of their life. Hodgson teachers have received PD about the

use of GM terminology to help develop these concepts with students. The CREST walkthrough guide was used to determine if teachers are creating an environment that students are willing to take risks to answer questions and volunteer. This is also a measurement of GM and how a student is willing to keep trying when faced with adversity.

In some cases, students may think they work best when they have to struggle and problem solve, but also think they work best when they complete work that is easier and faster to finish. Providing an example for students to read about a struggling student might provide an avenue for their own self-reflection about effort and mindset. Also, the end of year survey was given very close to the last day of school and students may not have concentrated as sincerely as if they had completed it earlier.

ELA and Mathematics Assessments

I am not able to draw specific correlations to the impact of CREST on our students' achievement on Unit assessments in ELA and Mathematics. The overall trends from the assessments show growth from beginning to the end of the school year. The lack of pre- and post-unit assessment data limits the scope of both the ELA and Mathematics assessment analysis.

For the ELA assessments, I was able to indicate the growth of specific groups of standards and the overall general improvement of scores from first to second semester. The Reading Literature (RL) and Reading Informational Text (RI) standards showed the most growth while the Language standards depicted the least growth or decrease in scores. RL standards require students to "read closely to

determine what the text says explicitly, cite evidence to support conclusions drawn from the text” (NGA Center & CCSSO, 2010). They also require students to determine central ideas, analyze their development, and, summarize the supporting details and ideas” (NGA Center & CCSSO, 2010). RI standards require students to read informational text to “cite textual evidence to support analysis of what the text says explicitly and draw inferences” (NGA Center & CCSSO, 2010). Another high achieving aspect of RI indicated by the data was the ability for students to “delineate and evaluate the argument and specific claims in a text” (NGA Center & CCSSO, 2010).

The mathematics study was also limited due to the lack of pre- and post-unit assessment data. However, there was significant growth when analyzing the data from the 2016 school year to the 2017 school year. Students obtained on average, higher scores on the standards of Linear Functions, Linear Inequalities and Systems, and Quadratic Functions. Students scored lower on the Exponential Functions standard.

I had limited access to scores because we were transitioning to online assessments. Since this transition is still in progress, there are gaps in the information gathered. Therefore, only broad generalizations can be discussed or scores of test with different students could be compared. Moving forward, I will have more access to scores because NCCVT has transitioned more assessments to the online format.

What Needs to Be Redesigned

PLCs

Moving forward as the PLC supervisor, I will first adjust my approach to organizing and managing PLC meeting time to empower and cultivate teacher leadership. Using the Teacher-Leadership Standards to define the attributes and roles teacher leaders play in school is critical (2013). I will use these standards to guide my conversations and provide training to teachers.

Wilson (2016) stated “leaders must have a clear idea of the purpose of PLCs within their schools and how the work of such communities will be manifested on a continual basis as a means to promote success” (p.58). It is important for teacher leaders to understand the over-arching goal of the school’s initiatives, such as their instructional focus or high-stakes testing program (Wilson, 2016). In order to achieve this change, a building administrator must foster the teacher leader as a “leader of change,” helping them to understand the mission and goals of the school and how that pertains to their PLC initiatives.

Second, I want to provide opportunities for teachers to peer observe and reflect about common practices. The PLC-R questionnaire indicted that teachers felt they had limited opportunities to observe peers, offer encouragement, and regularly share student work to guide school improvement is an area of weakness. The PLC objectives for this school year did not include peer observations and feedback. Teachers will help one another with the implementation of CREST and aligning lessons to CCSS if they are able to observe and provide feedback. Providing opportunities for teachers to observe their peers during the school day is essential, and

the administrative team must explore ways to relax the inflexibility of the school day and teacher schedules. Creating a new position, which allows a person to be PLC “specialist”, could help solve these problems. This specific teacher’s schedule would be reduced and their responsibility would be to cover classes for other teachers involved in peer-related PLC activities. Other responsibilities might include analyzing school data to create PLC focus areas, or facilitating PLC meetings.

Third, I want to focus on celebrating the successful outcomes of PLC meeting time. These outcomes include their incorporation of CREST and teacher work on aligning lessons to CCSS. Teachers indicated they wanted to celebrate PLC accomplishments they are achieving throughout the school year. Creating those opportunities would increase the importance of the work and elevate the collective value of PLCs. I also want to create administrative awards for those teachers who show elevated work or success.

Fourth, I want to create a standard form and procedure to record PLC agendas and minutes. Each PLC group recorded agendas and minutes in slightly different ways. I determined that the Social Studies PLC group had the most in-depth information and structure to their minute taking procedure. I want to use their examples as a standard to develop a procedure for taking agendas and minutes for all PLC groups.

Last, one of the most powerful aspects of creating successful and effective PLCs is the influence of the building administrator (e.g., Principal or Assistant Principal). The administrator can transform the school organization into a learning community through actively nurturing the entire staff’s development. These learning

communities are a group effort with teachers and administrators contributing to and sharing in new information, making decisions, and taking ownership of school values and priorities.

CREST

Creating and incorporating an instructional focus was a large endeavor. CREST was developed to promote and help teachers deliver instruction to support CCSS. The English and Mathematics Unit assessments showed limited growth and a lack of evidence that questions if CREST is impactful to students achieving the CCSS. These five attributes did not raise student achievement in a significant way. The reasons for this might be the lack of time spent on CREST professional development with teachers or the CREST attributes lack of developing student's abilities that support CCSS. If we determine to continue with CREST as our school-wide instructional focus, we will take more time to develop CREST attributes and skills with teachers.

One area of the instructional focus that needs work is developing quality EQs that drive instruction. Essential questions drive the lesson towards a goal for students to understand, "or establishing a direction for learning" (Marzano et al., 2001, p. 92). In the district curriculum, high-quality EQs are provided if teachers choose to use them. These EQs are overarching, higher-order questions that encompass a large portion of content. It is the teacher's prerogative to create an EQ they feel fits the lesson better. It was evident that teachers were creating many of their own EQs, possibly to create mini-lessons to scaffold content information. At times, teachers formulated more basic EQs to match the mini-lesson. The quality of EQs must be

addressed with teachers so that higher-order EQs can move students from remembering or understanding information to applying, creating, or analyzing information.

Another CREST attribute that needs to be evaluated is teacher's use of summarizing strategies. The College and Career Readiness Anchor standards for reading indicate that students should "determine central ideas or themes of a text and analyze their development, summarize key support details and ideas" (CCSS ELA, 2012). Teachers need to invest time to create lessons that incorporate summarizing strategies. This could be worked on during PLC meeting time, and the strategies could be distributive summarization or at the end of a lesson. Teachers need to plan for a summarizing strategy to ensure students are identifying and describing the main concepts learned, and also to collect data to assess students' understanding of content information.

CREST Walkthrough Guide

I created this walkthrough guide to help administrators observe CREST attributes. However, I do not believe this guide clearly measured CREST practices. One flaw of the walkthrough guide was the limited choices made available to the observer. This was specifically noticed in the summarizing strategies section. Overall, summarizing was observed the least. Providing more specific summarizing strategies to choose from might increase these statistics. Summarizers such as a ticket out the door, 100 word summary, Schoology discussion post, think-pair-share, or thumbs up, thumbs down are a few examples of strategies to be included on the form.

Growth Mindset (GM)

At Hodgson, developing and employing a GM has been a school-wide initiative for many years. We thought by bringing this important information directly to students, their attitudes might change to support GM beliefs. However, the results from the survey showed no change. Should Growth Mindset be a school initiative in which students are provided information about the aspects of GM with limited follow-up with the students? Will students become more determined and develop grit if told about the brain functions and GM? These are unanswered questions we will need to address for the following school year. Time spent teaching students about CCSS and CREST attributes rather than GM might be more valuable. The survey data indicates that the time spent on GM was irrelevant and insignificant.

If Hodgson administration determines GM continues to be a school initiative, a more concerted effort to promote GM values with students must be made by our staff and the administration. First, we need to have more presentations or seminars with students on the importance of understanding GM concepts. Second, we plan to continue with our school-wide push to promote GM bulletin boards, signs, and inspirational sayings. Third, PD will incorporate reminders for teachers about the importance of creating a risk-free environment to promote a GM classroom environment. These types of environments include respectful and positive relationships, a comfortable atmosphere for sharing ideas, concerns, and questions, and celebrations of student's success after struggles. Last, I will develop a more in-depth way to administer the survey so that all students are aware of the purpose and to ensure more reliable results.

Chapter 6

REFLECTIONS ON LEADERSHIP DEVELOPMENT

Growth as a Scholar

My growth as a scholar starts with the amount of scholarly work I have completed during the doctoral program and also in my role as assistant principal. I realized very quickly that any important decision I make about creating or implementing a school program must be vetted in research. The first class I took was Dr. Farley-Ripple's Research in Education Decision Making class. She helped hone my skills to read and analyze empirical studies with efficiency and clarity. I learned how to break down a research study and pull out the most important pieces of information, such as the methodology and the results. Through the knowledge of this course and others such as Dr. Buttram's Program Evaluation in Education and Dr. Farley Ripple's Education Policy and Governance, I have learned, practiced, and become more informed about the importance of understanding the current trends, statistics and studies of instructional practices, CCSS, PLCs, and school policies.

Through this program I have been able to institute change within my school. I have researched information to make informed decisions about instruction, CCSS, and PLCs. Before I started this program, I wasn't making an effort to research information about decisions I might make, or programs and initiatives I started. Now I understand the significance of this practice and have the skills to research empirical

studies about specific topics to make conversant decisions. This is such an important process to institute a new or growing program and gain the support of teachers.

My growth as a scholar also stems from the technology I have learned and incorporated during the program. Dr. Hofstetter's classes helped push me to embed technology into my practices as a school leader. He provided me opportunities to research technology applications, practice in my school and reflect about the process. This was extremely helpful to my growth and also my experience level and knowledge about current trends in educational technology.

Growth as a Problem Solver

My growth as a problem solver was cultivated in Dr. Wilson's Superintendent's Internship Class. During this class, I was required to identify an overarching district problem, research the problem, and provide a quality solution. With the transition to CCSS and preparing students to take the SAT, I focused my attention on assessment data. How would we get teachers to analyze assessment data in a formal way that would be effective? I looked to the research and discovered the Collaborative Inquiry model. This model gave teachers a concise way to analyze data, derive a plan, create lessons or activities, implement those activities, and reflect on the process.

I presented this plan to the other district administrators to receive feedback and provide the PD to teachers to implement the Collaborative Inquiry model. I was able to develop my knowledge of the other schools and the decision making that goes into making a district-wide decision or initiative. Additionally, I was able to bring

these skills back to my current position to address problems and make informed decisions that help all stakeholders.

Growth as a Partner

My growth as a partner has been a tremendous reward as a result of completing the doctoral program. Due to the nature of the classes, I have ended up working with wonderful educators with whom I have learned a great deal. First, I have met and worked with other doctoral candidates from schools around the Tri-State area. These educators have enlightened me to new and innovative ideas, such as ways to run an after-school program or how to provide effective and impactful feedback. They have also motivated me to increase my expectations for myself. I have become a better educator having known and learned from my fellow peers.

Second, I have forged partnerships with district administrators that have taught me about specific practices, rules, and regulations I did not know before I started the program. I have had the pleasure to work with Mrs. Villa, NCCVT Instructional Specialist, on many occasions. I have learned from her the process of writing portions of the consolidated grant. We have talked at great length about how to move teachers towards using instructional best practices and the importance of analyzing assessment data. My partnership with Mrs. Villa has enabled me to speak fluidly with teachers about PD decisions and the process behind the decision making.

Third, the guidance and knowledge from my principal, Dr. Lamey, has been extremely influential to my growth as a partner. We started together at Hodgson as a team and work together to make decisions on a daily basis. He brings to our conversations years of expertise about many different situations. Through these

conversations and decision-making sessions, I have learned that all aspects of a situation must be evaluated and explored before making a decision. Research needs to be conducted and the needs of all stakeholders reviewed before moving forward with a decision.

Final Thoughts

Transformational leadership is the process that changes and transforms people and is “concerned with emotions, values, ethics, standards and long-term goals. [It] involves an exceptional form of influence that moves followers to accomplish more than what is usually expected of them. It is a process that often incorporates charismatic and visionary leadership” (Northouse, 2013, p. 207).

I believe I have become a transformational leader due to my strong internal values and the knowledge I have learned through my experiences in this doctoral program. I use my outgoing personality and caring attitude to motivate staff members. I continually want to cultivate a climate about educational best practices that support all students to achievement at a greater level. I want to create long-term goals about student achievement that all teachers buy into and promote in their classrooms. Through the research I have completed in the doctoral program, I have better developed these transformational leadership skills. I am grateful and happy I have made this journey through self-discovery and developed new knowledge that will make me a better educator and school leader.

REFERENCES

- Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development, 78*(1), 246-263.
doi:10.1111/j.1467-8624.2007.00995.x
- Brainology's Mindset Assessment Profile Tool. (2016, January). Retrieved from <https://mindfulbydesign.com/wp-content/uploads/2015/10/Mindset-Profile-Tool-Single-Page1.pdf>
- Donohoo, J., & Velasco, M. (2016). *The transformative power of collaborative inquiry: Realizing change in schools and classrooms*. Thousand Oaks, CA: Corwin, a SAGE Company.
- DuFour, R., DuFour, R., Eaker, R., & Many, T. (2006). *Learning by doing*. Bloomington, IN: Solution Tree.
- Dweck, C. S. (2010). Even geniuses work hard. *Educational Leadership, 68*(2), 16-20.
- Hirsch, C. R. & Fey, J.T. (2015). *Core-plus mathematics: contemporary mathematics in context*. Columbus, OH: McGraw Hill Education.
- Hord, S. M., Roussin, J. L., & Sommers, W. A. (2010). *Guiding Professional Learning Communities*. Thousand Oaks, CA: Corwin.
- Hord, S. M. (1997). *Professional learning communities: what are they and why are they important?* Austin, TX: Southwest Educational Development Laboratory.
- May, A. (2016, January). SAT to replace Smarter in 11th grade. Retrieved February 07, 2017, from <http://www.doe.k12.de.us>

McGraw-Hill Education. (2015). Retrieved January 28, 2018, from <http://www.mheducation.com/>

New Castle County Vo-Tech School District. Retrieved February 08, 2017, from <http://www.nccvt.k12.de.us/>

NGA Center and CCSSO. (2017). *Common core state standards initiative*. Retrieved from <http://corestandards.org>

Northouse, P. (2013). *Leadership: Theory and Practice* (6th ed.). Los Angeles, CA: Sage.

Professional Learning Community. (2014, March 3). Retrieved from <http://edglossary.org/professional-learning-community/>

Schooling, P., Toth, M., & Marzano, R. (2013). The critical importance of a common language of instruction. Retrieved from <https://www.learningsciences.com/wp/wp-content/uploads/2017/06/Common-Language-of-Instruction-2013.pdf>

Shanahan, T. (2012, July1). What Is Close Reading? Retrieved from <http://www.cd1.org/articles/what-is-close-reading/>

Springboard. (2010). New York, NY: College Board.

State of Delaware, The Official Website of the First State. (2017). *NCC Vo-tech District Profiles*. Retrieved from <http://profiles.doe.k12.de.us/SchoolProfiles/school/SchoolAccountability.aspx?checkSchool=66&districtCode=38>

Teacher Leader Model Standards. (n.d.). Retrieved October 10, 2017, from <http://www.education.udel.edu/wp-content/uploads/2013/07/Exploratory-Consortium.pdf>

- Thornton, M. (2015). Creating space for risk. Retrieved from <http://www.edutopia.org/blog/creating-space-for-risk-michael-thornton-cheryl-harris>
- Turner, B. (2013, March 28). State Launches Common Ground for the Common Core. Retrieved February 08, 2017, from <http://www.rodelfoundationde.org/state-launches-common-ground-for-the-common-core/>
- Wilson, A. (2016). From professional practice to practical leader: Teacher leadership in professional learning communities. *International Journal of Teacher Leadership*, 7(2), 45-62.

APPENDIX A
IMPLEMENTING PURPOSEFUL PROFESSIONAL LEARNING
COMMUNITIES

Introduction

As assistant principal of Hodgson Vocational Technical High School (Hodgson), I supervised and facilitated professional learning communities (PLCs) throughout the 2016-2017 school year. My responsibility as the supervisor of PLCs was to oversee the purpose and planning of PLC meeting time to ensure that it was cohesive, relevant, and impactful. PLC time at Hodgson is used for three key activities comprising of professional development for teachers, teacher collaboration and evaluating data in order to make informed decisions on how to improve student achievement.

To develop a well-informed view of how to implement successful PLCs, I looked at literature about PLCs to help guide my planning and approach. The purpose of the literature review was to gain a better understanding of how effective PLCs function. I selected literature based on the relevance to the question: Which PLC structures and leadership capabilities are needed for relevant and purposeful meetings to take place that will impact student achievement?

Throughout my research, I found common themes relating to creating and implementing purposeful PLCs. These themes include: providing teachers the

definition of a PLC, attributes of PLCs, the role of the building administrator, cultivating teacher leadership, cycle of inquiry, and collaboration.

Providing Teachers the Definition of a PLC

In my role as supervisor of PLCs meetings at Hodgson, I wanted a clear understanding of their description and designation in a school environment. This definition will be a guideline to help me develop successful and rewarding PLCs. DuFour, DuFour, Eaker, and Many (2006) state “a PLC is composed of collaborative teams whose members work interdependently to achieve common goals linked to the purpose of learning for all” (p. 3). They also state that collaboration among teachers should be a systematic practice that drives teachers to work together to change and affect classroom practices that will lead to high achievement for students, themselves, and the school (DuFour et.al., 2006) I chose DuFour’s definition of a PLC because I shared his belief that committed educators who are willing to collaborate through inquiry to increase student achievement was the way to move the school towards providing a better education for our students.

Attributes of PLCs

As with any school-wide initiative, attention must be given to specific and important attributes for the organizational arrangement of PLCs. Hord, Roussin, and Sommers (2010) note that these attributes include: supportive and shared leadership, intentional collective learning, shared values and vision, supportive conditionals, and shared personal practice.

A supportive and shared leadership requires the school leaders to transform a school organization into a learning community through their support and collegial relationships with teachers. According to Hord et al. (2010), "Supportive leadership of principals is one of the necessary human resources for restructuring staff into school-based professional communities" (p. 21). The principal's job is to provide opportunities for teachers to learn continuously and collaboratively.

The aspect of an intentional collective learning environment supports opportunities and conversations amongst teachers about students, teaching, learning, and identifying problems. "Participants in such conversations learn to apply new ideas and information to problem solving and therefore are able to create new conditions for students" (Hord et al., 2010, p21). As teachers and principals inquire about students, teaching, and each other, a community is created that promotes appreciation and understanding of each other's work.

Having shared values and vision helps identify what is important to an individual and to an organization. It is paramount for students to remain the highest priority for teachers and leaders. According to Hord et al., (2010), "Staff are

encouraged not only to be involved in the process of developing a shared vision, but to use that vision as a guidepost in making decisions about teaching and learning in the school” (p. 22). However, creating a vision to attain student achievement that resonates with the stakeholders is important for getting all of them to subscribe to the plan and move forward with it.

Supportive conditions ensure optimal conditions for teachers to make decisions, problem solve, and develop lessons during PLC meeting times. These include logistical conditions such as scheduling a time to meet as well as having an availability of resources, policies that foster autonomy, and collaboration with effective communication. They also include members’ individual capacities such as being receptive to feedback, showing respect among colleagues, having appropriate levels of expertise, and a willingness to work toward improvement.

Finally, shared personal practice emphasizes that peer reflection and observations are significant to collectively increasing student achievement through PLC meeting time. When teachers have an opportunity to observe other teachers and discuss their observations, the community of teachers improves (Hord et al., 2010). This process is predicated on the mutual respect and trustworthiness amongst teachers. Teachers can observe their peers, script notes, and meet with each other to reflect on and discuss the classroom lessons (Hord et al., 2010). “The process is based on the desire for individual and community improvement and is enabled by the mutual respect and trustworthiness of staff members” (Hord et al., 2010 p. 24).

The Role of Building Administrator

The impact of the building administrator when instituting school-wide programs is extensive and significant, especially when factors such as student achievement, teacher collaboration, and analysis of data are involved (Hord, 1997). This is especially true regarding school accountability and high-stakes testing. Teachers and administrators understand the power of data has on improving student achievement. According to Farley-Ripple and Buttram (2014), “Leaders’ decisions impact who participates (in PLCs), when and how often, and what data are available – therefore significantly and directly influencing the design of the organizational routine” (p. 50). Facilitating PLCs with appropriate organization and grouping teachers together in ways that will be impactful is very important. Teachers need to work in cohesive groups to grapple with data that is relevant to their content areas and instruction.

Cherkowski (2016) found that “shifting a school toward cultivating a culture of professional learning is more complex and nuanced than merely implementing structures and processes for increasing teacher learning” (p. 537). Teachers must feel a sense of buy-in with their work in PLCs. The administration needs to place a high value and a lot of emphasis on the on-going professional learning and data analysis that is happening in PLCs. This work should also be referenced, displayed, and celebrated to continue the positive culture of the PLC meeting time. “School administrators, in particular, help develop professional communities through their attention to individual teacher development and by creating and sustaining networks of conversation in their schools around issues of teaching and learning” (Leithwood et

al., 2004, p. 66). It is imperative that PLC agendas, topics, conversations, and analyses be constant and meaningful throughout the school year.

Hord et al. (2010) believed that “the principal plays a strong directing role at the initiation of the PLC, then steps back to support leadership opportunities and leadership development of the staff” (Hord et al., 2010, p. 59). Administrators and teacher leaders need to plan and facilitate PLCs during the school year. These leaders work to facilitate the plans with regularity, take minutes to record their efforts, and report about the outcomes. The teachers should be grouped within their content areas, and therefore, the plans for each group might differ. These plans are made intentionally to support each department’s specific initiatives and goals.

The supervisor’s role has a profound effect on PLCs through his or her actions during the school year (Hord et al., 2010). The supervisor of the PLC’s role at Hodgson is to assist in planning and attending PLC meetings to support teacher’s efforts, understand their concerns, and provide the resources needed for successful meetings. A supervisor who is engaged, projects the importance of the PLC, and provides a sense of importance to the individual PLC members and their roles in making a difference in student education. Members of the PLC will gain a sense of pride in their work as they successfully arrive at the ultimate goal of the PLC.

When the PLC principal shifts from serving as the director and authority source to an individual who rolls up his or her sleeves and participates with the teaching staff, the principal has the opportunity to become a learner as opposed to solely a facilitator (Hord et al., 2010, p. 59).

Additionally, Cherkowski (2016) believed it was essential for school administrators to “talk to teachers about what matters most to them” so they could get to know the teachers as people. This relationship building was critical for opening the conversation about the possibility of improving how teaching and learning are carried out in school” (p. 540). Administrator’s attendance at PLCs is crucial for teachers to feel the importance and support from the building administration. Additionally, having follow-up conversations with teachers about the positive work and outcomes from the PLCs is very impactful.

An impactful group must work collaboratively. This requires trust, respect, having a common vision, and being receptive to feedback. This work results in a positive change in beliefs and habits of individuals within the group. These changes will be acknowledged and accepted as a new model of excellence. The acceptance of this new model of excellence will affect the group leader, administrator, and the district. The district will want their other schools to adopt the successful PLC program. The students will experience a rise in grades and test scores. The community will have positive responses to the school’s success. These responses may range from having more parents getting involved in their student’s education to families having an overall sense of community pride in the school. This success will cause the state to recognize and celebrate the individual school and district. This will, in turn, motivate the teachers in the school to work harder and more purposefully to continue to improve the educational outcomes for students.

Cultivating Teacher Leadership

Cultivating teacher leadership is essential for PLCs to be successful. The Professional Standards for Educational Leaders illustrate in Standard Six that effective educational leaders “develop the capacity, opportunities and support for teacher leadership” (p. 14). Charner-Laird, Ippolito, and Dobbs (2016) studied teacher leadership and found that “utilizing the knowledge, expertise, and commitment of teacher leaders within the work can support the changes necessary in schools, classrooms and districts” (p. 996). They also noted that the teacher leader had the most impact on the group’s ability to complete work that impacts student achievement. “Participants highlighted the active work of the teacher leader as paramount to moving their work forward strategically in ways that respond to the dynamics and desires of those within each team” (Charner-Laird et al., 2016, p. 992).

The Teacher Leadership Standards define the attributes and roles teacher leaders play in a school. Developed by the teacher leadership exploratory consortium, these standards describe the collaborative engagement with school administrators to enhance effective teaching to support student achievement. The standards are divided between seven domains of leadership. These domains include:

- *Domain I: Foster a collaborative culture to support educator development.*

Leaders provide tools and guidelines to foster collaborative work among teachers. Through this collaboration, teachers will address problems and make significant decisions that foster change. Leaders also develop and facilitate a culture of respect and confidence among teachers, so that continued work on instruction and learning can flourish.

- *Domain II: Accessing and using research to improve practice and student learning.* Teacher leaders are knowledgeable about current research that promotes student learning. Leaders support data inquiry and evaluation to determine what shifts and changes are needed to improve teaching and learning.
- *Domain III: Promoting professional learning for continuous improvement.* Teacher leaders organize and facilitate professional development to support changing trends and emerging technology within school communities.
- *Domain IV: Facilitating improvements in instruction and student learning.* Teacher leaders are modeling best practices of teaching based on student results and current research. Leaders share this information with colleagues to enhance their instructional practices.
- *Domain V: Promoting the use of assessments and data for school and district improvement.* Teacher leaders use school-based data to create formative and summative assessments that target areas of need. Leaders develop a risk-free climate among the teachers that promotes and encourages critical reflections about student improvement and instruction.
- *Domain VI: Improving outreach and collaboration with families and community.* Teacher leaders work with community members and parents to promote a positive school culture and communication.
- *Domain VII: Advocating for student learning and the profession.* The teacher leader understands educational policies and changes that occur at the state and

national levels. The leader is supportive of the overall educational system and is an advocate for higher student achievement.

Wilson (2016) illustrated that “leaders must have a clear idea of the purpose of PLCs within their schools and how the work of such communities will be manifested on a continual basis as a means to promote success” (p.58). It is important for teacher leaders to understand the over-arching goal of the school’s initiatives, such as their instructional focus or high-stakes testing program (Wilson, 2016, p. 58). In order to achieve this change, a building administrator must foster the teacher leader as a “leader of change,” helping them to understand the mission and goals of the school and how that pertains to their PLC initiatives.

Wenner and Campbell (2017) discussed that “positive outcomes can be seen as principals afforded teacher leaders autonomy to do their work, or when principals played a large role in creating an environment that supported teacher leaders’ work” (p.162). It is imperative that principals support the efforts and ideas of the teacher leaders. This will provide the encouragement needed for leaders to be effective and feel valued in their efforts.

Cycle of Inquiry

PLC meeting time was developed so teachers can analyze student and school data and make informed decisions that support student achievement and enhance school culture. According to DuFour et al. (2006), “Collective inquiry enables team members to develop new skills and capabilities that in turn lead to new experiences and awareness” (p.4). Teachers’ increased awareness renovates and changes

attitudes, beliefs, and habits, which over time transform the culture of the school (DuFour et al. 2006).

Using a cycle of inquiry during PLC time gives teachers a structure to analyze data so they can make informed decisions about instruction and curriculum in order to increase student achievement. Woodland (2016) stated that “PLCs are a form of evidenced-based collective inquiry that aims to bridge the research-practice divide to transform what is learned through systematic collective inquiry into practice” (p. 516). PLCs can increase teachers’ ability to thoroughly collect and analyze multiple types of student data and decrease teacher isolation while decision making. Using evidence from student performance, teachers will draw on their own experience and shared knowledge. According to Woodland (2016), “teachers will discuss, evaluate and modify expectations, instructional routines, materials and assessments to ensure that all students are able to access and participate in the best possible classroom experiences” (p. 507).

Understanding the use of data to support school initiatives is important in creating risk-free discussions amongst teachers. Farley-Ripple and Buttram (2014) noted that “Teachers need support to connect what they see in the data to decisions about curriculum and instruction” (p. 50). It is imperative to be transparent with teachers about the reasons data is used. Teachers need to understand the process and outcomes so they feel safe when drawing conclusions based on data.

Collaboration

Teaming Up Teachers

“The collaborative team is the fundamental building block of a PLC” (DuFour et al., 2006, p. 89). Teaming up teachers to work in high-functioning groups to accomplish complex tasks is extremely important. Teams can meet in different group structures to address specific goals or student grade levels. To illustrate, DuFour (2006) noted there are three types of group structures. *Vertical Teams* are teams of teachers from different grade levels that meet to determine essential outcomes for students in each grade. They determine how they work together to achieve these goals. *Electronic Teams* use “technology to create powerful partnerships with colleagues across the district, the state, or the world” (DuFour et al., 2006, p. 94). This can be done through websites or Google group sites to share and discuss students, discipline, culture, or other educational issues. *Logical teams* are content-driven and comprised of specialist teachers who become a team to pursue similar goals. An example of this would be a department-based team, such as math or English teachers meeting together.

Leithwood et al. (2004) found that,

by using the term “professional learning community,” we signify our interest not only in discrete acts of teacher sharing, but also in the establishment of a school-wide culture that makes collaboration expected, inclusive, genuine, ongoing, and focused on critically examining practice to improve student outcomes (p. 67).

Wilson (2016) notes that the collective knowledge and collaboration that exists in PLCs are features, which contribute to the overall success of schools. Therefore,

collaboration is essential to developing successful groups of teachers meeting in PLCs.

Finding Time to Collaborate

Carving out time in a school schedule for teachers to meet during the day is sometimes difficult. Building administrators need to be creative and dynamic when finding time for teachers to meet in PLCs. Standard Seven of the *Professional Standards for Educational Leaders* maintains that effective leaders must provide workplace conditions that encourage and support teacher collaboration and collegiality. These conditions will foster effective professional development for teachers to learn and grow as professionals. As highlighted by DuFour et al. (2006), schools can explore a multitude of options when planning teacher meeting time, including:

- *Common Preparation Time*: Build time for teachers of similar disciplines to meet during the school day into the master schedule.
- *Parallel Scheduling*: Establish time in the schedule for all students to attend classes taught by a specialist, such as physical education, music, or art. During that time, teams of teachers can meet to collaborate.
- *Adjusted Start and End Time*: Gain collaborative time for meetings by starting the workday earlier or by extending the workday each week.
- *Shared Classes*: Combine students across different courses or grade levels to free up time for teachers to meet collaboratively. Teams of teachers would switch the responsibility each week to provide meeting times for all teachers.

- *Group Activities, Events, and Testing*: Student activities such as watching a video, testing, or other non-instructional activities could be monitored by non-teaching staff members. This would give teachers time to meet and collaborate.
- *Banking Time*: Bank additional minutes at the beginning or end of a school day to provide extra time for teachers to meet after students have left early on a specified day.
- *In-service and Faculty Meeting Time*: Use teacher-meeting time wisely, and have teachers meet in small groups to collaborate rather than doing so in large faculty meetings.

Committed Educators

As a model, PLCs can provide teachers with a venue for in-depth discussions and the opportunity to delve into a shared area of inquiry. However, “the creation of PLC structures does not necessarily ensure their success, nor will the discussions during meeting times necessarily be deep or generative” (Charner et al., 2016, p. 992). Although meeting time is carved out and teachers understand the goals of the PLC, it does not ensure successful outcomes. As Cherkowski describes (2016), the *Adult Learning Theory* supports adult learners toward transformative learning. This kind of learning is necessary for creating a culture of continuing and sustainable PLCs in schools. Teachers adjusting to a change in the way they are learning or collaborating are paramount to the success of PLCs. “This means attending to how adults make meaning from their previous experiences, opportunities for reflecting on

how what they are learning relates to their prior experiences and understandings” (Cherkowski, 2016, pg. 537).

DuFour believed that PLCs must have committed educators who work collaboratively through inquiry and action research to increase student achievement. These efforts must be cultivated and supported by teacher leaders and building administrators. “School leaders potentially can wield direct influence scheduling time for collaboration, deciding who participates in these collaborations, assigning instructional specialists to work with groups of teachers and actively participating in and monitoring collaborative work in a supportive capacity” (Farley-Ripple et al., 2014, p. 50). Through proper organization of teachers and their time, successful collaboration can exist.

Ning, Lee, and Lee (2015) found that if teachers had an attitude of positive collectivism with their team, more beneficial teacher collaboration would exist. Developing teacher teams that are respectful and open to each other’s opinions and ideas is essential to positive collaborating. Creating teams in which “team collegiality and collectivism is most important is a significant predictor of team collaboration” (Ning et al., 2015, p. 351).

Summary

The research reviewed offers information on how to facilitate and implement purposeful PLCs. PLCs are used to support the process of inquiry and teacher collaboration. The role of the administrator in facilitating and implementing purposeful PLCs is complex and multifaceted.

It is essential that the administrator oversee the planning of PLC time to ensure that it is cohesive, relevant, and impactful. Administrators and teachers must reach a shared vision of the goals of PLC meeting time. Then using that vision, the administrator can provide opportunities for teachers to collaborate and evaluate data to make informed decisions on how to improve student achievement.

The administrator must demonstrate and participate in supportive and shared leadership, which in turn will provide opportunities for teacher leaders to develop and facilitate PLC meeting agendas. Teacher leaders should cultivate collaborative meetings in which teachers can build trusting relationships. These relationships are the catalyst to developing honest discussions about student data and pedagogy. Additionally, this will allow for risk-free peer observations to analyze instructional practices that support student achievement.

The administrator has the responsibility to provide supportive conditions for the PLC. This includes designating a meeting place and time, ensuring an availability of team members, and having accessibility to resources. The grouping of teachers into individual PLCs is very important. Correct grouping allows for members to communicate with each other and share their ideas and vision on how to improve a student's education.

It is the ultimate initiative that the administrator provides a sense of importance to individual PLC members and their roles in making a difference in teaching and learning by referring to, displaying, and celebrating PLC team accomplishments. For PLCs to be successful efforts of committed educators who

work collaboratively through inquiry, teacher leaders and building administrators must cultivate and support all aspects.

References

- Charner-Laird, M., Ippolito, J., & Dobbs, C. (2016). The roles of teacher leaders in guiding PLCs focused on disciplinary literacy. *Journal of School Leadership*, 26(6), 975-1001.
- Cherkowski, S. (2016). Exploring the role of the school principal in cultivating a professional learning climate. *Journal of School Leadership*, 26(3), 523-543.
- DuFour, R., DuFour, R., Eaker, R., & Many, T. (2006). *Learning by doing*. Bloomington, IN: Solution Tree.
- Farley-Ripple, E., & Buttram, J. (2014). Developing collaborative data use through professional learning communities: Early lessons from Delaware. *Studies in Educational Evaluation*, 42, 41-53. doi:10.1016/j.stueduc.2013.09.006
- Hord, S. M., Roussin, J. L., & Sommers, W. A. (2010). *Guiding professional learning communities*. Thousand Oaks, CA: Corwin.
- Hord, S. M. (1997). *Professional learning communities: what are they and why are they important?* Austin, TX: Southwest Educational Development Laboratory.
- Leithwood, K., Louis, K. S., Anderson, S., & Wahlstrom, K. (2004). Review of research: How leadership influences student learning. New York, NY: Wallace Foundation.
- Ning, H., Lee, D., & Lee, W. (2015). Relationships between teacher value orientations, collegiality, and collaboration in school professional learning

communities. *Social Psychology of Education*, 18(2), 337-354.

doi:10.1007/s11218-015-9294-x

Teacher Leader Model Standards. (2013). Retrieved October 10, 2017, from
<http://www.education.udel.edu/wp-content/uploads/2013/07/Exploratory-Consortium.pdf>

The 2015 Professional Standards for Educational Leaders. (2015). Retrieved October 20, 2017, from <https://nassp.org/professional-learning/online-professional-development/archived-webinars/the-2015-professional-standards-for-educational-leaders?SSO=true>

Wenner, J. A., & Campbell, T. (2017). The theoretical and empirical basis of teacher leadership. *Review of Educational Research*, 87(1), 134-171.

doi:10.3102/0034654316653478

Wilson, A. (2016). From professional practice to practical leader: Teacher leadership in professional learning communities. *International Journal of Teacher Leadership*, 7(2), 45-62.

Woodland, R. H. (2016). Evaluating PK-12 professional learning communities. *American Journal of Evaluation*, 37(4), 505-521.

doi:10.1177/1098214016634203

APPENDIX B

COLLABORATIVE INQUIRY PROFESSIONAL DEVELOPMENT

Introduction

Hodgson Vocational Technical High School's (Hodgson) administration is committed to providing opportunities for teachers to meet in professional learning communities (PLC). The purpose of this document is to describe the process of selecting the inquiry model to use at Hodgson, what Collaborative Inquiry means and the PD plan to inform teachers about Collaborative Inquiry. As the assistant principal, I supervise all PLC aspects such as meeting times, agendas, and professional development plans. There are 41 teachers that meet in five content-area PLC groups: English, Math, Social Studies, Science, and Spanish. A teacher leader leads each PLC group, and I meet with teacher leaders every six weeks to collaborate and organize these PLC meetings. The teacher leaders facilitate the PLC meetings, offer PLC topic ideas, and provide feedback. Schoology, an online school platform, is used to store all PLC meeting minutes and teacher resources.

Determining a Model

During the summer of 2016, I researched two cycles of inquiry models for use during PLC meeting time. These models were selected because both were teacher-centered and focused on identifying problems through data analysis and developing solutions. The two models that I presented to our administrative team were Teacher Inquiry and Collaborative Inquiry.

The process of Teacher Inquiry allows teachers to become the classroom researcher. Teachers identify a problem, formulate ideas to improve or combat the problem, implement these strategies, evaluate the effectiveness and reflect on the outcomes of their efforts. This type of inquiry can be cultivated during PLC meeting time with colleagues to discuss common areas of need. But as indicated by Dana and Hoppey (2009), teacher inquiry is a systematic, deliberate study of one's own professional practice.

Collaborative Inquiry transforms the way teachers work together to achieve relevant goals. The inquiry approach recognizes teacher values as the driver for school improvement and “provides a systematic approach for teachers to explore issues and determine resolutions through shared inquiry, reflection and dialogue” (Donohoo & Velasco, 2016, p4). This goal is achieved by teachers working together on a shared vision while meeting in PLCs. Collaborative inquiry encompasses teacher inquiry with the added emphasis on teacher collaboration and professional learning communities.

The Collaborative Inquiry Model

After examining each approach, our administrative team decided the Collaborative Inquiry (CI) model would work best for our teachers. First, the teachers meet in PLCs in content teams where teachers teach the same courses at the same time. These content area mini-groups engaged in course related CI. Second, teachers gave common unit assessments and final exams, which would be a catalyst for identifying common problems to be addressed. This would also provide the teachers with opportunities to share teaching strategies and best practices. Third, we

wanted the teachers to collaborate and work together towards common goals, and the district and school have promoted teacher collaboration for many years. This model formalized and educated teachers on how to effectively identify problems, collaborate on solutions, and reflect on the outcomes during PLC meeting time.

The teacher CI model is viewed as a cyclical process that provides teachers with opportunities to discuss and improve their instruction and student achievement. Coburn and Stein (2010) there are four stages in the CI cycle:

Stage 1: Identifying the problem.

The first stage consists of identifying an area of need through analyzing student data. Through collaboration, teachers develop a shared vision in which they select learning goals that will address the specific areas of need. They develop an inquiry question that will focus their goals and actions. Teachers can review current research and instructional best practices to help formulate a plan that addresses the area of need.

Stage 2: Collecting evidence.

In the second stage, teachers work collaboratively to develop shared goals and obtain additional professional knowledge. Teachers determine the type of evidence to gather to ascertain what, where, and how students have learned as a result of specific actions taken. Teachers also engage in professional learning to build a collective understanding of the instructional approach. This professional learning might include lessons study, peer observations, co-planning, coaching, and peer mentoring. Schools

can support this professional learning by providing subject-specific support such as content and teaching resources, and allowing extra time for teachers to meet.

Stage 3: Analyzing evidence.

During the third stage, the teachers examine, record, and share evidence of student learning through observations of student work. This data is analyzed to determine trends and to reflect on possible next steps to address the outcomes of the evidence.

Stage 4: Reflecting, sharing and celebrating.

During the final stage, collaborators come together to reflect, share, and celebrate their new understandings. Teachers collaboratively assess student work, review student feedback, and share results. Based on the data, the group then decides the extent to which the inquiry question has been addressed, and determines whether the area of student need has shown growth or improvement. Reflecting on the process and results is a major component in this stage. Teachers will plan their next steps for inquiry by identifying additional student learning needs. Finally, teacher groups share the instructional practices they employed to address the need. They will discuss and celebrate their findings and determine solutions to curricular and/or instructional challenges.

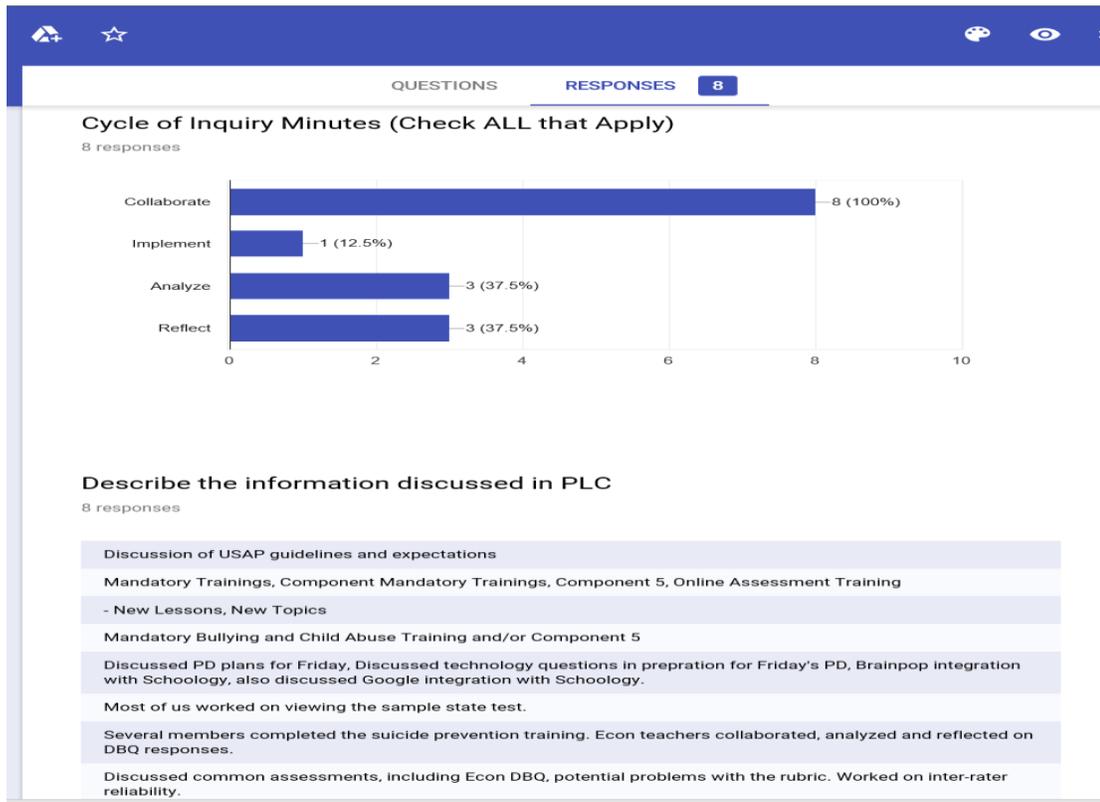
Providing opportunities for teachers to engage in CI will lead to effective teacher development, and create a decision-making problem-solving PLC environment enabling teachers to influence and sustain long-term change.

Training the Teachers

Once the administrative team decided to employ the CI model, the next step was meeting with the PLC teacher leaders to determine how to train the teachers. Trainings would cover the aspects of the model and teacher expectations. Donohoo and Velasco's (2016) resource and facilitators guide was an important resource for us. The PLC teacher leaders and I decided to modify this guide to provide professional development to the teachers during seven PLC meetings starting in October of 2016. The form used to take minutes during PLCs was updated to include the inquiry cycle stages. This provided an area for the note taker to record characteristics and details about each stage of inquiry.

Attachment 1 displays a screenshot of an example of the Social Studies PLC minutes recorded in a Google form for the CI information during PLC meetings. Attachment 2 describes the professional development provided to teacher leaders to facilitate during PLCs. The intention of this PD presentation is to guide and instruct teachers through the steps of CI model to be used during PLCs. PowerPoint slides and activities required for teachers who participated in PLC meeting time are included.

Attachment 1



Collaborative Inquiry Professional Development Plan

Day One

What is Collaborative Inquiry?

Day One – Collaborative Inquiry

- A process in which participants come together to examine their own educational practice systematically and carefully using techniques of research. This may include two teachers or a group of several educators interesting in addressing a school, department division or classroom issue.
- Teams work together to narrow the question, gather and analyze evidence, determine action steps and share their findings and recommendations.

PLC teacher leaders who facilitated the training reviewed the definition of CI and emphasized that it is a powerful process that recognizes the role of teachers in school improvement.

Why Collaborative Inquiry?

- This is a self-directed approach to professional growth and learning. This approach has been well documented as a rewarding professional learning experience for those who engage in the process.

Teacher leaders reviewed the literature that supports CI, which includes:

- Reeves (2010) encourage teachers to take an active role in expressing and testing hypotheses.
- Stoll (2010) describes collaborative inquiry as a means in which learning communities “deconstruct knowledge through joint reflection and analysis, reconstructing it through collaborative action and co-constructing it through collective learning from their experiences” (p.474).

Stages of Collaborative Inquiry

- Stage 1 – Problem Framing (Collaborate)
 - The team determines a shared vision, develops an inquiry about a particular link between professional practices and student results and formulates a theory of action.
- Stage 2 – Collecting Evidence (Implement)
 - Collaborative inquiry teams determine what type of data to collect, how to collect the data and where to collect it.
- Stage 3 – Analyzing Evidence (Analyze)
 - Teams learn how to make meaning of data by identifying patterns and themes and formulating conclusions
- Stage 4 – Celebrating, Sharing & Reflecting (Reflect)
 - Teams come together to celebrate and share their new understandings

Teacher leaders described and informed teachers about the characteristics of the four stages of CI. Teachers discussed ways they have discussed and analyzed data in the past in comparison with the CI model.

Day Two

Stage One - Collaborate

Day Two – Determine the need

1. Individual teachers identify student learning needs on sticky notes placed on chart paper. Teachers group areas of need into categories to identify common issues. Then teachers prioritize the needs.
2. Team members create a shared vision of a preferred future by having them consider the top priority identified. Teachers write a vision statement.

Teacher leaders asked teachers to identify their needs and record them on sticky notes and place on chart paper. The entire group then organized the notes into categories to prioritize themselves according to the needs they would address. Then these collaborative teams determined a shared vision based on the needs indicated.

Day Three

Stage One - Collaborate

Day Three – Writing a purpose statement

1. state the issue explored
2. the team will write the statement together
3. use words that convey intent about the exploration of the issue such as 'discover', 'understand', 'explore' or 'describe'
4. mention the participants in the inquiry
5. distribute sample purpose statements

Teacher leaders gave teachers examples of quality purpose statements to use when collaboratively crafting their own quality purpose statement. Teachers worked together to craft a purpose statement.

Day Four

Stage one - Collaborate

Day Four – Writing an Inquiry Question

1. Provide samples of strong and weak inquiry questions.
2. Teachers will work in teams to create an inquiry question.
3. Use neutral exploratory language.
4. Begin with words such as how or what.
5. Specify the focus for your teams inquiry.

Once the purpose statement was written, teachers formulated an inquiry question that addressed the purpose statement. Teachers were given examples of quality questions of inquiry to guide them through the process.

Day Five

Stage Two - Implement

Day Five – Data Collection Plan

Inquiry Question: _____

	WHAT evidence is going to be collected?	HOW is the evidence going to be collected?	When is the evidence going to be collected? By Whom?
Data Source 1			
Data Source 2			
Data Source 3			

Stage Two - Implement

Day Five – Types of data teams can use

Conducting a Survey	Administering Questionnaires	Focus Group Interviews
One-on-one Interviews	Observation	Video Recordings
Tests	Description of Tasks Assigned to Students	Report Cards
Attendance Records	Student Work	Results from Large Scale Assessments
Minutes from PLCs	Lesson Plans	Portfolios
Self Assessments	Meeting Logs	Mark Books

Teacher leaders reviewed with teachers the types of data they could use to address their questions of inquiry. Charts were provided for teams to fill in the data they will collect.

Day Six

Stage Three - Analyze

Day Six – Five Steps to Analyzing Data

1. **Organize the Data:** Data should be dated, labeled and legible. Make copies of data to mark up.
2. **Reading the Data:** Read several times to determine big themes or patterns. Divide the data up among team members to record impressions and then share.
3. **Describing the Data:** Review the evidence. Avoid interpretation and share factual statements only. Compose 3 – 5 factual statements about the data.
4. **Classifying the Data:** Concepts in the data are examined and compared to one another. Determine categories to organize similar concepts.
5. **Interpreting the Data:** Considering the following questions...
 - a. What does the data tell us about the problem?
 - b. What are the assumptions we make about students and their learning?
 - c. What are some things we could do to deal with this?
 - d. What are the strengths and weaknesses you see based on the data?

Teacher leaders reviewed with teachers the five steps to analyzing data. The process will require teams to organize, read, describe, classify and interpret the data they collected. Stage three and four will take place in future meetings when teachers are looking at specific data they collected.

Day Seven

Stage Four - Reflection

Day Seven – Reporting Out

Teams will reflect upon the process and outcomes. They will collaboratively compose a report about their findings in which they will share with other teachers.

Reflection Report	
Inquiry Question:	
Method:	
Findings:	
Next Steps:	
Recommendations:	

Once the data is analyzed and trends or themes were determined, teachers will compose a reflection report about their findings. They will provide information about their question of inquiry, the method used in collecting the data, their findings, and next steps. Teacher teams will report out their reflections to other teachers.

References

- Ciampa, K., & Gallagher, T. L. (2016). Teacher collaborative inquiry in the context of literacy education: Examining the effects on teacher self-efficacy, instructional and assessment practices. *Teachers and Teaching: Theory and Practice*, 2016,22(7), 858-878. doi:10.1080/13540602.2016.1185821
- Coburn, C. E., & Stein, M. K. (2010). *Research and practice in education: Building alliances, bridging the divide*. Lanham, MD: Rowman & Littlefield.
- Ermeling, B. A. (2010). Tracing the effects of teacher inquiry on classroom practice. *Teaching and Teacher Education*,26, 377-388.
doi:10.1016/j.tate.2009.02.019
- Dana, N. F., & Yendol-hoppey, D. (2009). *The reflective educator's guide to classroom research*. Thousand Oaks, California: Corwin Press.
- Donohoo, J., & Velasco, M. (2016). *The transformative power of collaborative inquiry: Realizing change in schools and classrooms*. Thousand Oaks, CA: Corwin, a SAGE Company.
- Reeves, D. (2010). *Transforming professional development into student results*. ASCD, Alexandria, VA.
- Stoll, L. (2010). Connecting learning communities: Capacity building for systemic change. In Second International Handbook of Educational Change (eds. Hargreaves et al.). Springer International Handbook of Education.

APPENDIX C

USING SCHOOLGY IN PROFESSIONAL LEARNING COMMUNITIES

Introduction

Starting in 2013, the New Castle County Vocational Technical School District (NCCVT) adopted the learning management system (LMS) called Schoology, which is a comprehensive technology platform that provides multiple online tools for teachers to use with students. These tools offer teachers the opportunity to create personalized learning programs to engage students in various exercises and assessments. Schoology is used to create a blended learning atmosphere in classrooms in which teachers use both traditional techniques and online learning to deliver curriculum. “Blended learning combines classroom learning with online learning, in which students can, in part, control the time, pace and place of their learning” (Tucker, 2013). Schoology can also be used to bring groups of teachers together in which they can house and share resources, participate in discussion posts, and provide updated information.

Hodgson Vocational Technical High School (Hodgson) teachers started using Schoology in 2013 when small groups of teachers volunteered to try the platform with students. The use of Schoology started slowly because of the limited computers available for teachers to use. During this time, computers were housed in three computer labs around the building. The NCCVT started purchasing computer carts

during the years of 2013-2016, and 16 rolling computer carts were purchased for Hodgson teachers to use and share. Each cart housed 24 laptop computers.

The NCCVT school district also participated in a consortium of the Brandywine, Indian River, NCCVT, and Colonial school districts (BRINC). This consortium was funded through the Race to the Top grant Delaware received in 2012, and was formed to ensure “technology brought about instructional changes that would close achievement gaps and increase college and career readiness” (US Department of Education, 2015). BRINC gave four teachers from Hodgson the opportunity to volunteer to receive a rolling computer cart for their classroom if they participated in professional development training about blended learning and the use of Schoology. BRINC teachers gained more knowledge and expertise as they completed the training and used the carts regularly with students. As the years progressed, the BRINC consortium continued to take volunteer teachers into the program and provide them with computer carts to use in their classrooms. At the end of the school year in 2015, a total of 16 teachers had received training and computer carts.

At the beginning of the 2016 school year, Hodgson had a total of 32 computer carts, and teachers were using Schoology and blended learning techniques. BRINC teachers had their own carts, while other teachers shared carts. The Hodgson administration decided to promote the use of Schoology during professional learning communities (PLCs) to develop teachers’ skills and knowledge and become more comfortable with the platform.

Schoology allows teachers to create group sites in which they are able to share and access teaching recourses, lesson plans, and activities. Content departments

started creating groups in Schoology, and these groups allowed teachers to collaborate with each other and contribute resources. Teachers would post messages to their group sites about upcoming events or assessments and the calendar tool made it possible for teachers to schedule meetings and reminders. Teachers could also participate in discussion posts on current issues or share ideas. Attachment 1 provides screen shots of Schoology uses for groups of teachers.

Attachment 1

Schoology Home Page

The screenshot shows the Schoology interface for user Christine Colihan. The top navigation bar includes 'Home', 'Courses', 'Groups', and 'Resources'. The left sidebar contains navigation options like 'Recent Activity', 'Mastery', 'Calendar', 'Messages', 'People', 'Subscriptions', 'Manage Users', 'Assessment Reports', 'Import', 'Export', 'Advisees', 'App Center', 'eSchoolPLUS', 'Home Access Center', 'Remind', and 'UDLib/SEARCH'. The main content area is titled 'Recent Activity' and shows a list of posts:

- A post from 'Dr. Brewer and 3 others' about installed apps.
- A post from 'Dr. Brewer' regarding the 'RIGHT-TO-KNOW' Faculty sign-off form.
- A post from 'Dr. Pro' about a picture day for underclassmen and faculty on August 31st.
- A post from 'Christine Colihan' about a link to step-by-step instructions for mapping curriculum.
- A post from 'Christine Colihan' about a new SAT Teacher Suite program.

The right sidebar shows an 'Overdue' list with various tasks and their completion dates, such as 'Mentor Training Verification' on September 30, 2016, and 'Completed Professional Growth Form' on November 18, 2016.

The Schoology homepage is the activity hub for the teacher. This is the first page a teacher sees when logging onto Schoology. The teacher will pull down the Groups tab in the top margin to visit their specific group page. On the left-hand column are different activities and resource access points. The home page displays places to view the calendar, see updates, view messages, explore applications and import/export information.

Schoology Department Groups

Math Homepage

The screenshot shows the Schoology interface for the 'Hodgson Math' group. At the top, there is a navigation bar with 'Home', 'Courses', 'Groups', and 'Resources'. The user 'Christine Collhan' is logged in. The group page features a header with the group name and school, a notification bell, and a rich text editor for posting. A left sidebar contains navigation options like 'Discussions (13)', 'Albums', 'Members (23)', and 'Resources'. A central post by Christine Collhan, dated Mon Aug 21, 2017, includes a link to a Google Doc titled 'Unit Planning 101'. A right sidebar shows 'Upcoming' events and '23 Members'.

Each department has a homepage and only members of the group can view this page. In the middle of the page there is a box in which any member of the group can post a message or update. These members will receive a notification that a message was posted. This enables quick and clear communication among the members. The left hand column lists the tools provided to the group including discussion posts, resources, and applications. The calendar feature is located on the right side of the page.

Spanish Homepage

Hodgson Spanish
Hodgson High School

Notifications

Group Options

Updates

- Discussions (8)
- Albums
- Members (9)
- Resources
- Backchannel Chat
- BigBlueButton Confer...
- UDLib/SEARCH

Access Code
W85BD-MKDJZ [Reset](#)

Information [Edit](#)

[Leave this group](#)

Upcoming [Add Event](#)

No upcoming assignments or events

9 Members

Olga Beaver
Hola chicos-I wanted to share the rubrics Delcastle uses. Since I'm plannin gon utilizing the schoology gradebook feature, I just typed the rubric. I only did it for Spanish I speaking and writing.
See you soon!
Fri Jun 10, 2016 at 12:45 pm [Comment](#) · [Like](#)

Mrs. Green
Hola departamento - Please find my MP 4 data for Spanish level 2 - Reflexive Verb Unit below.
Out of a class of 16 students:
10 / 16 students scored a 90% or higher on their summative writing.
4 / 16 scored between a 80% - 89% B.
1 / 16 scored between a 70% - 79% C.
1 / 16 scored lower than a 60%
Mon Apr 25, 2016 at 1:22 pm [Comment](#) · [Like](#)

Mrs. Green
Hola departamento! Yo cheque el video y repase las preguntas! Me encanta todo! La persona que necesitamos borrar de las preguntas es "Maria". La edad de ella no esta incluida. Carla tiene 23, Juan tiene 53 y Patricia tiene 18. Gracias por compartir! Es algo diferente!
Wed Feb 3, 2016 at 12:53 pm [Comment](#) · [Like](#)

Mrs. Green
Hola amigos - please find our PLC meeting minutes attached. I will also be posting them to our group! Tengan un magnifico fin del dia!
[Jan_2016-1.docx](#) 18 KB | [VIEW](#)
Thu Jan 7, 2016 at 12:55 pm [Comment](#) · [Like](#)

The homepage offers the group the ability to post messages and attachments.

This is another example of posted messages in which Hodgson Spanish teachers were sharing assessment data and PLC minutes.

Schoology Resource Page

Social Studies

The screenshot shows a Schoology group page for 'Hodgson Social Studies'. On the left is a sidebar with group options like Updates, Discussions (8), Albums, Members (11), Resources, Backchannel Chat, BigBlueButton Confer..., UDLib/SEARCH, and an Access Code (F53RZ-BV6WZ). The main area is titled 'Resources' and shows a list of 18 items. The items include: 'Spreadsheet for Grades SS 2016-2017.xlsx' (added by Kimberly Berkey), 'PLC Minutes' (added by You), 'PLC Attendance' (added by You), 'Social Studies Resources' (added by You), 'CREST Resources' (added by You), 'RTI Resources' (added by You), 'Get Your Tech On 2015 - PBS for Teachers' (added by You), 'Big Huge Labs - Make posters and much more!' (added by You), and 'ContempCourse.jpg' (added by Kimberly Berkey). Each item has a checkbox, a star icon, and a share icon.

The resource page accumulates items teachers' use and share during PLC time. In the example above, Social Studies teachers gather resources in virtual files about social studies activities, assessment data, PLC minutes, and HVT's instructional focus on Collaborative Learning, Risk-Free Classroom environment, Essential Questions, Summarizing and Technology Application (CREST). This is also an area to attach links or pictures for teachers to share.

Schoology Member Page

English

The screenshot displays the Schoology interface for the 'Hodgson ELA' group. The top navigation bar includes 'Home', 'Courses', 'Groups', and 'Resources'. The user's name, 'Christine Colihan', is visible in the top right. The main content area is titled 'Members' and features a search bar and tabs for 'All', 'Members', and 'Admins'. A list of 13 members is shown, each with a profile picture, name, and a crown icon. The members listed are Mrs. Balocco, Dr. Brewer, Angela Brown, Ralph Cicconi, Christine Colihan, Mrs. Harris, Jerry Lamey, Mr. Pollock, Michael Scott, Sue Scott, Christopher Vella, Jillian Yetter, and Daniel Omangi. To the right of the member list is an 'Access Code' box containing 'MHTZG-DZX3K' and a 'Reset' button, with a checkbox for 'Require approval'. The sidebar on the left contains various group options such as 'Updates', 'Discussions (8)', 'Albums', 'Members (13)', 'Resources', 'Backchannel Chat', 'BigBlueButton Confer...', 'UDLib/SEARCH', and 'Information'. The bottom of the page shows '1-13 of 13' members and navigation links for 'Previous' and 'Next'.

The membership page lists the members of the group. The crown displayed next to each name indicates the member's ability to add any updates, resources, calendar items and discussion posts. All department members have crowns because they all contribute to the group.

Schoology Discussion Posts

Science

The screenshot shows the Schoology interface for the 'Science' group. The top navigation bar includes the NCCVT logo, a search bar, and links for Home, Courses, Groups, and Resources. The user's name, Christine Colihan, is displayed in the top right. The main content area is titled 'Hodgson Science Discussions' and features a 'Notifications' button. Below the title are 'Add Discussion' and 'Reorder' buttons. A list of seven discussion topics is shown, each with a speech bubble icon, a title, the number of posts, the creator's name, and the creation date and time. The topics are: 'PLC - Technology Update (4/12/17)' (5 posts, Rachael Smith, Wed Apr 5, 2017 at 1:55 pm), 'PLC - Student Data Analysis to Assessment Question or Cluster by 3/23' (5 posts, Rachael Smith, Mon Mar 20, 2017 at 10:34 am), 'PLC - Revised Assessment Question or Cluster by 2/16' (6 posts, Rachael Smith, Wed Feb 1, 2017 at 11:11 am), 'PLC - Lesson Alignment to Assessment Question or Cluster by 2/23' (1 post, Rachael Smith, Wed Feb 1, 2017 at 11:49 am), 'Grade-Level Discussion #4 - Addressing our Instructional Focus 2.2.17' (2 posts, Christine Colihan, Fri Jan 27, 2017 at 1:53 pm), 'Grade Level Discussion 3 - Student Praise - 12.15.16' (4 posts, Christine Colihan, Wed Dec 14, 2016 at 6:10 pm), and 'Grade Level Discussion #2, 10.27.16' (0 posts, Christine Colihan, Tue Oct 25, 2016 at 3:44 pm). A left sidebar contains group options, updates, discussions (16), albums, members (16), resources, backchannel chat, BigBlueButton Confer..., UDLlib/SEARCH, an access code (C4BX9-MXQFD) with a reset button, and information/edit options. A 'Leave this group' link is at the bottom of the sidebar.

The discussion page lists all discussion posts the group has participated and responded to in the past. This example displays the Science group's discussion topics and the amount of posts made by science teachers.

References

- US Department of Education. (2015). Retrieved from <https://sites.ed.gov/progress/2015/11/delawares-brinc-districts-collaborate-to-personalize-learning-for-all-students/>
- Tucker, C. R. (2013, March). The Basics of Blended Instruction. Retrieved January 15, 2017, from <http://www.ascd.org/publications/educational-leadership/mar13/vol70/num06/The-Basics-of-Blended-Instruction.aspx>

APPENDIX D

PROFESSIONAL LEARNING COMMUNITIES EFFECTIVENESS

ANALYSIS

Professional Learning Communities (PLCs) were implemented in the state of Delaware through the Race to the Top (RttT) initiative in 2008. PLCs were implemented in schools to provide time for educators to meet regularly to share expertise, analyze data to make informed decisions and work collaboratively to improve teaching skills and the academic performance of students (Professional Learning Community, 2014). Hodgson Vocational Technical High School (Hodgson) teachers have participated in professional learning communities (PLCs) since 2008. The organization of teacher groups, times of teacher meetings, and the intended outcomes of these meetings have evolved over time. The purpose of this document is to describe PLC objectives and activities, my role as PLC supervisor, and, to discuss the results of a PLC survey given to teachers at the end of the school year.

PLC Objectives

During the 2016-2017 school year, teachers met in content specific groups each week on Wednesday and Thursday mornings from 7:35 – 8:05. These content teacher groups include English Language Arts, Mathematics, Science, Social Studies and Spanish. Hodgson's mission for PLCs is to support student achievement through inquiry and purposeful, professional development (PD). Therefore, teachers spent time in PLCs on three specific objectives. The first objective addressed Hodgson's

instructional focus, CREST. CREST stands for Collaborative learning, Risk-free environment, Essential Questions, Summarizing strategies and Technology integration. The second objective requires teachers to participate in a cycle of Collaborative Inquiry (CI). The third objective is spending time to work in collaborative teacher groups to develop lessons that address core content curriculum while embedding CREST practices.

My Role as PLC Supervisor

In my role as supervisor of PLCs, I manage and tend to all PLC activities. First, I selected each content area PLC teacher leader. These teachers facilitated and managed the meeting time. I determined these leaders based on their ability to be organized, open minded, energetic, compassionate about teaching, knowledgeable about their content area and willingness to be a leader.

Once the leaders were selected, I met with them as a group during the first week of school. During this meeting, we discussed PLC expectations and objectives for the school year. The PLC expectations include meetings starting and ending on time, taking attendance, arranging a minute-taking method with the group, and, facilitating PD. The objectives included PD on the implementation of CREST, teacher collaboration to create lesson plans that incorporate CREST focus areas, share resources, and engage in collaborative inquiry (CI).

The teacher leaders and I also had an open discussion about concerns they had about managing their groups. Concerns they conveyed included: teachers who do not

attend or arrive late and teachers who might disagree with a goal or initiative. Essentially, their over-arching concern was being a leader with not supervisory power to require teachers to be compliant with expectations and activities during PLCs. We discussed the protocol for problems that might arise. If a problem or concern would occur, the teacher leader would give me a brief overview of the problem. In turn, I would step in to provide guidance about a specific problem or task or speak with individual teachers privately.

As the school year went along, I met with individual teacher leaders every six weeks. During these meetings, the teacher leader would discuss their reflections on past activities and how the group is functioning, upcoming PD plans they would be facilitating and the process of collaborative inquiry taking place during meetings. During these meetings, we have also focused on their leadership roles and how I can support them in regards to facilitating meetings, delivering information or providing expectations for teachers. Each leader's content area has different agendas for their groups since they have different curricular needs and assessments. Assessments are given across the content areas at different times during the school year. Therefore, due to differing schedules, one PLC group might be engaging in inquiry while another group might be collaborating to create lesson plans.

I would attend a PLC meeting each Wednesday and Thursday. This schedule enabled me to observe each content area at least once a month during their PLC meeting time. This provided teachers an opportunity to ask me questions and discuss the activities they have worked on or accomplished. I wanted teachers to feel my

interest and enthusiasm for their continued efforts. I would arrive to the meeting early to model the importance to be on time and ready for the task at hand.

I created multiple PD presentations addressing our instructional focus, CREST and CI to be delivered to teachers during our opening teacher day and subsequent PLC meetings. The presentations I provided have specific facilitator notes for teacher leaders with instructions. Table 1 gives a detailed overview of Hodgson’s PLC plan for the 2016-2017 school year. The PLC plan gives specific times the CREST and CI presentations would occur.

Table 1: PLC Plan at Hodgson for 2016-2017 school year

Month	Description of Activities
August	8/23 – PD Opening Day- CREST PD slides presentation for all content teachers 8/24 – PD Day - Meeting with PLC Teacher Leaders
September	9/7, 9/8 – Component V goal setting 9/14, 9/15, 9/2, 9/22, 9/28, 9/29 - Collaborative Inquiry PD
October	10/3 – Individual meetings with PLC Teacher Leaders Collaborative Inquiry OR Teacher collaboration around CREST, lesson creation, resource sharing
November	Collaborative Inquiry OR Teacher collaboration around CREST, lesson creation, resource sharing
December	12/5 - Individual meeting with PLC Teacher Leaders Collaborative Inquiry OR

	Teacher collaboration around CREST, lesson creation, resource sharing
January	1/11, 1/12, 1/18,1/19,1/25,1/26 - CREST PD Part II
February	Collaborative Inquiry OR Teacher collaboration around CREST, lesson creation, resource sharing 2/27 - Individual meeting with PLC Teacher Leaders
March	Collaborative Inquiry OR Teacher collaboration around CREST, lesson creation, resource sharing
April	4/3 – Individual meetings with PLC Teacher Leaders Collaborative Inquiry OR Teacher collaboration around CREST, lesson creation, resource sharing
May	Reflection on CREST Focus Areas, lesson planning Reflection on Collaborative Inquiry 5/24 – Celebration PLC meeting with all content teachers 5/25 – PLC Teacher Survey completion

PLCs and CREST

An important aspect of PLC time at Hodgson was incorporating CREST focus areas into lesson activities. To ensure teachers use CREST when planning for a lesson, teachers created a lesson plan format they would use to indicate the CREST focus areas. Figure 21 is a sample of a completed lesson plan highlighting the

CREST Focus areas.

Hodgson Vo-Tech Lesson Plan		
Teacher Name: Randi Pro	Course: Economics	Date: November 15, 2017
Standards: Economics Standard Two 9-12a: Students will develop an understanding of how economies function as a whole, including the causes and effect of inflation, unemployment, business cycles, and monetary and fiscal policies.		
CCSS: Literacy (9-10): Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information. Writing (9-10): Write informative/explanatory texts to examine and convey complex ideas, concepts, and information clearly and accurately through the effective selection, organization, and analysis of content.		
Unit Essential Question: Through what measures can the economic health of a nation be determined?	Lesson Essential Question: What about how was monetary and fiscal policy used during the Great Depression to achieve economic stability?	
Class Composition: 27 Students (2 IEPs: Cutillo, Rose)	Technology & Materials Used: <ul style="list-style-type: none"> • Chromebooks • Quizlet Live! • Great Depression Webquest 	
Lesson Description: This lesson is a case study on the Great Depression. Students will first be exposed to a Quizlet Live game as a preview of the information they already know about unemployment as well as what they may not know about the Great Depression. Students will work as teams to complete the game. From here students will conduct research on the Great Depression via a webquest online. After gathering their information, students will be required to write a short essay on their findings.		
Lesson Activities Bellringer (5 mins): What was the great depression? Quizlet Live (10 mins): <ul style="list-style-type: none"> • Students race to complete the game as a team Great Depression WebQuest - Research (30 mins): <ul style="list-style-type: none"> • Students will work through the webquest to answer the questions on the graphic organizer Great Depression WebQuest - Essay (40 mins): <ul style="list-style-type: none"> • Students will use their research to complete a short essay on their findings. CNN10 (10 mins): Students will watch the daily news and complete their CNN10 graphic organizer.	CREST Collaborative Learning: Students will be randomly assigned to be part of a team for the Quizlet Live game. Risk Free Environment: Students and the teacher have created a culture of understanding that is ok to make mistakes and ask questions to foster a risk free learning environment. Essential Questions: What about how was monetary and fiscal policy used during the Great Depression to achieve economic stability? Summarizing: Students must use their research to complete a short essay on their findings about the Great Depression. Technology Integration: Students will use their Chromebooks to complete their research and then submit their essay via Schoology.	Student Activities <ul style="list-style-type: none"> • Bellringer • Quizlet Live Game • Great Depression Webquest <ul style="list-style-type: none"> ◦ Research ◦ Essay • CNN10

Figure 21: Hodgson Lesson Plan with CREST Focus Areas

To determine if teachers are using specific CREST focus areas in their lessons, I collected examples of activities teachers created to support CREST. These examples included ways teachers planned for student collaboration, how they created risk-free environments, types of essential questions and summarizers they used and technology applications. Figure 22 is an example of a summarizer used in a Social Studies class. The teacher displayed this image on the screen and started the countdown timer while the students summarized the six economic goals.

Figure 22: Social Studies Summarizing Activity

In English class, a teacher used two CREST focus areas in conjunction to highlight technology and student collaboration. Using a Google Doc, the teacher had all students in the class annotate a poem. Through the sharing ability of a Google Doc, students were able to discuss and brainstorm the details of the poem and ultimately the poem's theme and message. Figure 23 displays how the students used the Google Doc to highlight passages of the poem and make comments in the right hand column.

Figure 23: Google Doc Collaboration Activity

During a science observation, I took a picture of a teacher's essential question for a biology lesson (Figure 24). The teacher displayed an over-arching essential question with supporting questions that will scaffold the learning. If students can build their understanding of the "driving questions" they will be able to answer the essential question.

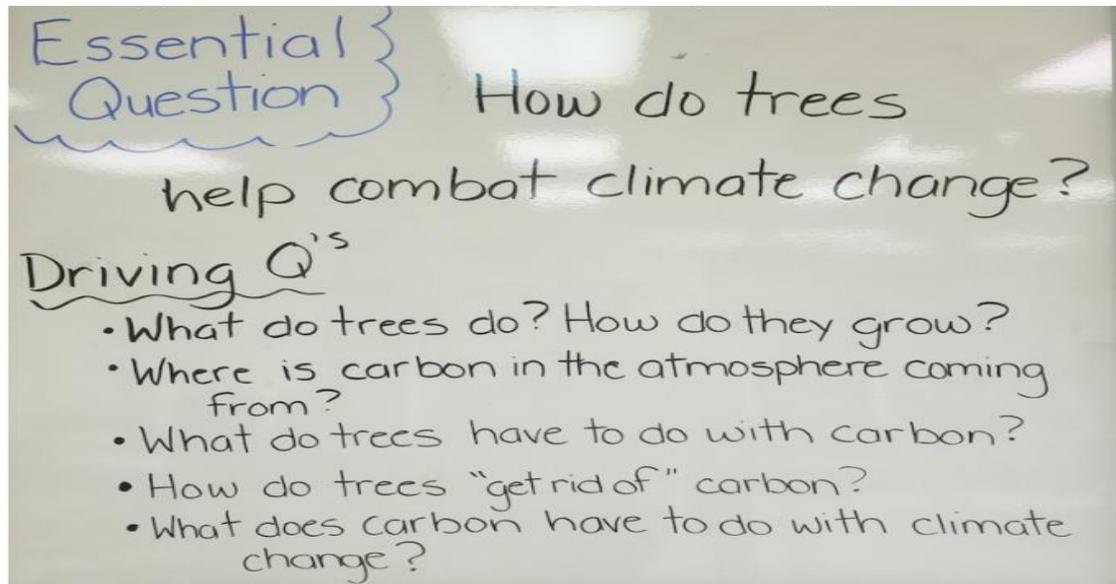


Figure 24: Science Essential Question

PLCs and Collaborative Inquiry

Creating high-functioning PLCs was an essential initiative at Hodgson to provide time for teachers to share resources, work collaboratively, lesson plan, and review data.

A primary goal of PLCs at Hodgson was for teachers to engage in CI. To determine if teachers practiced CI during PLC time, I analyzed PLC agenda items and minutes. Each PLC group has the freedom to determine their mode of minute taking. The minutes provided insight into the time spent on CI activities. In general, all content areas participated in CI process during the course of the school year. This includes

teachers giving common assessments, discussing the outcomes of those assessments and determining or creating new activities to support student achievement.

The agenda items and minutes for the Science PLC during the month of October 2016 are depicted in Figure 25. Teachers took turns taking the minutes using a Google Doc. Google Docs provide teachers the opportunity to share a document. This also gives me the avenue to read and make comments about their activities and agenda items as depicted in Figure 5 in the right hand column. These minutes show the teachers' work on common assessments, discussing the incorporation of literacy activities to support student achievement on PSAT and SAT, and practice uploading documents into Schoology.

MONTH: October

NOTE-TAKER: Paris Crockett

Paris - Very thorough and informative - Thank you!

DATE	AGENDA	MEETING NOTES
10/4/16 Attendance: https://goo.gl/reQKos	Common Assessments -9th and 10th grade and discuss the assessments given -Integrated and Chemistry prepare/plan for the assessments to be given at the end of the month	Teachers discussed their plan for for giving the common assessment. Most teachers have either given the assessment or plan on giving it in the next couple of days.
10/5/16 Attendance: https://goo.gl/reQKos	Common Assessments -9th and 10th grade and discuss the assessments given -Integrated and Chemistry prepare/plan for the assessments to be given at the end of the month	Teachers discuss and grade common assessments. We discussed using PLC time to grade these common assessments. Fridays PD will have time to look at preparing students for the SAT.
10/11/16 Attendance: https://goo.gl/reQKos	Cancelled Due To PSAT	
10/12/16 Attendance: https://goo.gl/reQKos	-Continue work started on PD, 10/6 --Revise or create NGSS literacy lessons that prepare students for SAT's.	We discussed how the PSAT went for students in terms of literacy. Apparently, there were some science related questions on the PSAT. We plan on bringing articles to the group as examples for students to prepare for the SAT in terms of literacy. The challenge is finding reading material that is relevant and on their level.
10/18/16 Attendance: https://goo.gl/reQKos	-NGSS Literacy/SAT Alignment -Teachers are going either review current readings or find new readings to make a more NGSS-like and SAT-aligned lesson.	Teachers discussed various ways to incorporate literacy into their lessons. Resources such as UDLib/ Search, SAT practice tests, Current Science articles.
10/19/16 Attendance: https://goo.gl/reQKos	-NGSS Literacy/SAT Alignment -Teachers are going either review current readings or find new readings to make a more NGSS-like and SAT-aligned lesson.	Teachers got together in the faculty lounge to review how to scan multi-page documents into the scanner. Instruction on how to upload literacy documents into Schoology followed.

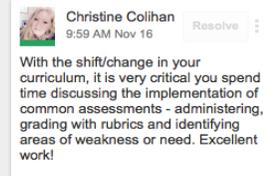


Figure 25: Science PLC Agendas and Minutes for October 2016

Another example of agenda and minutes for the Math PLC group during the month of November 2016 is depicted in Figure 26. This group also uses a Google Doc format in which teachers take turns taking the minutes. This figure shows math teachers engaging in discussions about teacher collaboration about increasing the depths of knowledge for mathematical questions and formative assessments.

2016-2017 HVT Math PLC Agendas & Minutes

<ul style="list-style-type: none"> • Robert Kaplinsky video 	<ul style="list-style-type: none"> • Collaboration on DOK questions
11/29 <ul style="list-style-type: none"> • Formative assessments 	11/30 <ul style="list-style-type: none"> • Collaboration on Formative assessments
<p><u>Monthly Minutes:</u> 11/1 - IM 1,11, and 111 teachers discussed publishing and unpublishing the District Tests to ensure the security of the test. After test security, the overall test statistics was discussed and this was followed by the report on individual problems. 11/8 - Our discussion was about the reason or reasons why our students are not better mathematicians. We brainstormed and listed many reasons. 11/9 - The discussion turned into what we can do to make our students better mathematicians. 11/15 - Discussion today centered around students knowing how to do specific problems as opposed to learning the concept that the problems involve. 11/16 - Collaboration on "increasing depth of knowledge".</p>	
11/29 - Discussion on Formative Assessment; what is it? In what ways do we formally assess? How much time do we have to devote to formal assessment? What are some good times to formally assess? 11/30 - Ideas and suggestions for formal assessment	

Figure 26: Mathematics PLC Agendas and Minutes for November of 2016

The Social Studies PLC had a different way to share agendas and collect minutes during their PLC time. They used a Google Form, which the minute taker would fill in as the PLC was taking place. Figure 27 depicts the amount of time spent on each CI step during the school year. Social Studies teachers collaborated 84% of the time and analyzed data 44% of the time during PLCs.

Cycle of Inquiry Minutes (Check ALL that Apply)

25 responses

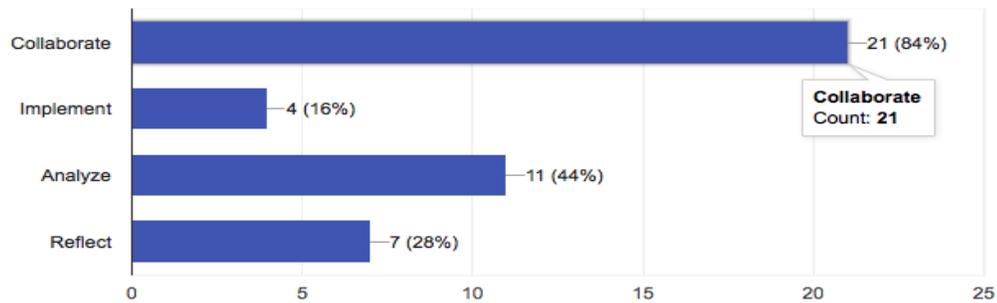


Figure 27: Minutes Spent in Social Studies PLC during 2016-2017 school year

Social Studies minute takers would list the information they discussed during PLCs on the Google Form. Figure 28 shows a sample of the discussions they had which included discussing common assessments and inter-rater reliability, grading document-based questions together, and sharing new technology activities.

Describe the information discussed in PLC

25 responses

Discussed common assessments, including Econ DBQ, potential problems with the rubric. Worked on inter-rater reliability.

Common Assessments for US, DBQ Grading

Curr. Changes in Econ, US History End of Course Calendar, DBQ Conversion Chart, World History Spreadsheet for End of Course Common Assessments, Tech Conference Schedule and Expectations, and Open House Roles

Course Discussion on DBQ about Feedback from Justin.

DBQ Updates by Justin, Added a new criteria for citation of documents. We also asked to REMOVE the conversion chart to help show more accurate grades.

- Grading DBQ and Adjustments to DBQ Calendar, Sharing Making a Google Docs about Writing Hints in Social Studies- we will add the link to each Schoology Course

-Update to PLC Calendar for December: App to Use, Calendar Planning for end of semester and next semester. Curri. Planning

Shared new QUIZLET LIVE!!! We are all going to try to do a new App for Formative Checks, Discussion of DBQ Grades, Shared Observation Tips and Feedbacks, Created a Lesson Plan CREST Template on Google Docs for Dept to share for observations!

Figure 28: Social Studies PLC Minutes

PLC Assessment Questionnaire - Revised

The Professional Learning Communities Assessment – Revised (PLC-R) questionnaire measures staff perceptions of school practices related to six dimensions of PLCs. This questionnaire was published in 2010 through the Southwest Educational Development Laboratory (SEDL) who merged with the American Institutes for Research (AIR) in 2014. The authors of this questionnaire are Dianne F. Olivier and Kristine Kiefer Hipp. Information about the development and administration of the PLCA-R is available in chapter 4 of “Assessing and Analyzing Schools as Professional Learning Communities”. The survey consisted of statements associated with the six dimensions of PLCs. These PLC dimensions are: 1) shared and supportive leadership, 2) shared values and vision, 3) collective learning and application, 4) shared personal practice, 5) supportive conditions – relationships, and, 6) supportive conditions – structures. The respondents use a 4-point scale to indicate the degree to which they agree or disagree with each statement. Teachers scored each statement with 1 – Strongly Disagree, 2 – Disagree, 3 – Agree and 4 – Strongly Agree.

The six dimensions of PLCs are discussed in both Hord (2003 & 2010) and Hipp and Hoffman (2010). These six dimensions provide clear aspects of what academically successful PLCs look and act like in a school.

Shared and Supportive Leadership refers to the role and influence of the building administrator to actively foster PLCs. This happens when the administrator cultivates shared goals with teachers, inviting them to participate in the decision making process and influence them to take ownership of school targets and priorities.

Shared Values and Vision refers to the commitment administration and teachers have collectively worked towards supporting student achievement. Having shared values and vision helps identify what is important to an individual and to an organization. It is important for all stakeholders to subscribe to the vision created to obtain student achievement.

Collective Learning and Application signifies the importance for teachers and administrators to identify problems collaboratively around students, teaching and learning. As teachers and principals inquire about students, teaching, and each other, a community is created promoting appreciation and understanding of each other's work.

Shared Personal Practice denotes the importance of peer reflections and observations to significantly increase student achievement during PLC meeting time. When teachers have an opportunity to observe other teachers and discuss their observation, the community of teachers improves and best practices are developed.

Support Conditions – Relationships and Structures denotes the impact of providing ideal conditions for teachers to make decisions, problem solve and develop lessons to improve student achievement during PLC meetings.

PLC Assessment Questionnaire Results

Hodgson teachers completed the PLC Assessment Questionnaire (Attachment 1) on May 25, 2017. All 41 teachers who participated in PLCs at Hodgson completed the survey. Each graph in the results section displays the overall teachers who agree or disagree with each statement on the Questionnaire. The general outcomes yield positive results from all 6 dimensions of PLCs as seen in Figure 29.

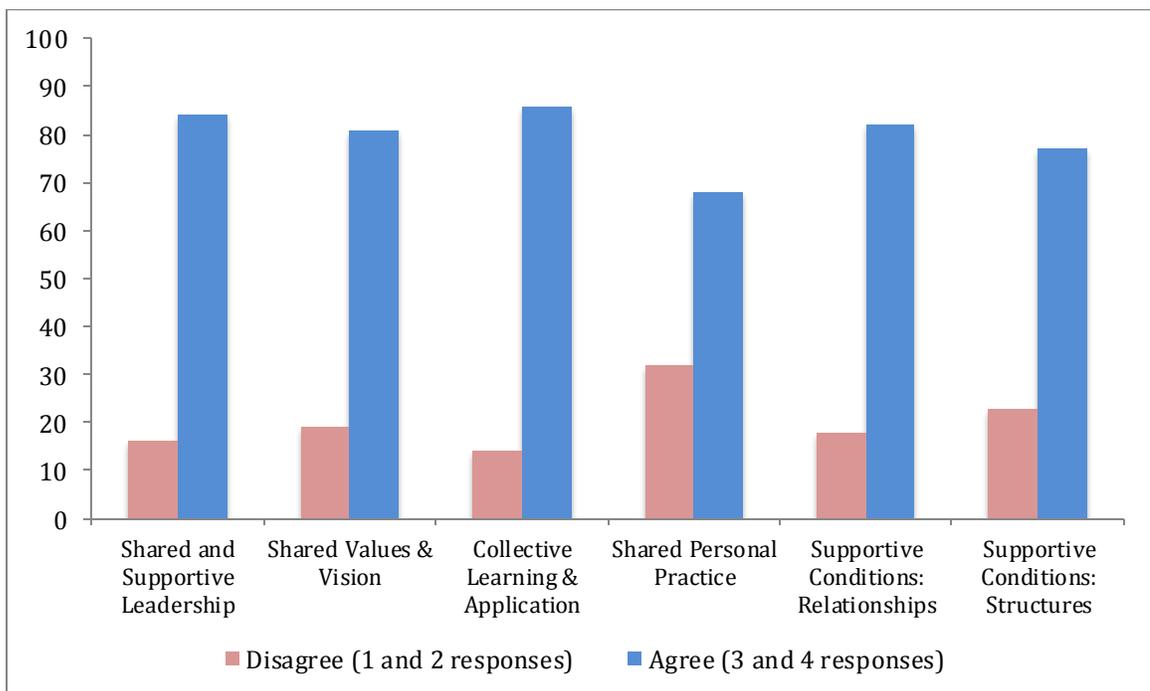


Figure 29: Percentage of teacher responses for 6 Dimensions of the Professional Learning Community.

Shared and Supportive Leadership ranks among the dimensions receiving the highest number of positive responses. As indicated in Figure 30, at least 89% of the teachers see the supervisor incorporating advice, being proactive addressing areas of need, sharing responsibilities, and participating democratically with staff by sharing power and authority. However, 31% of the teachers do not feel they are involved in

discussing and decision-making and 25% of teachers feel that leadership is not promoted or nurtured among staff members.

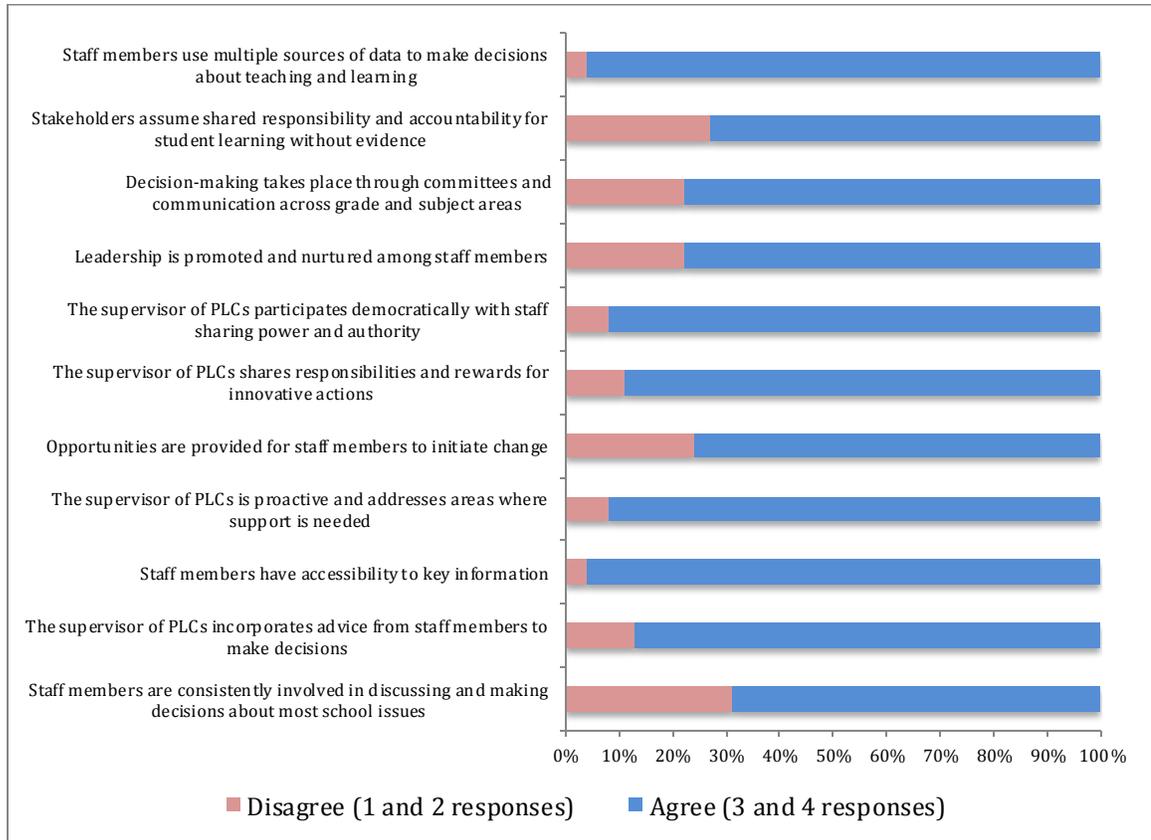


Figure 30: Percentage of Teacher Responses of Shared and Supportive Leadership Dimension

In the Shared Values and Vision Dimension, at least 82% of the teachers think a collaborative process exists for developing a shared vision and in developing a shared sense of values. They support norms that guide decisions about teaching and learning. In contrast, 33% of the teachers do not agree that stakeholders are actively involved in creating high expectations that serve to increase student achievement and 27% do not feel school goals extend beyond test scores and grades (See Figure 31).

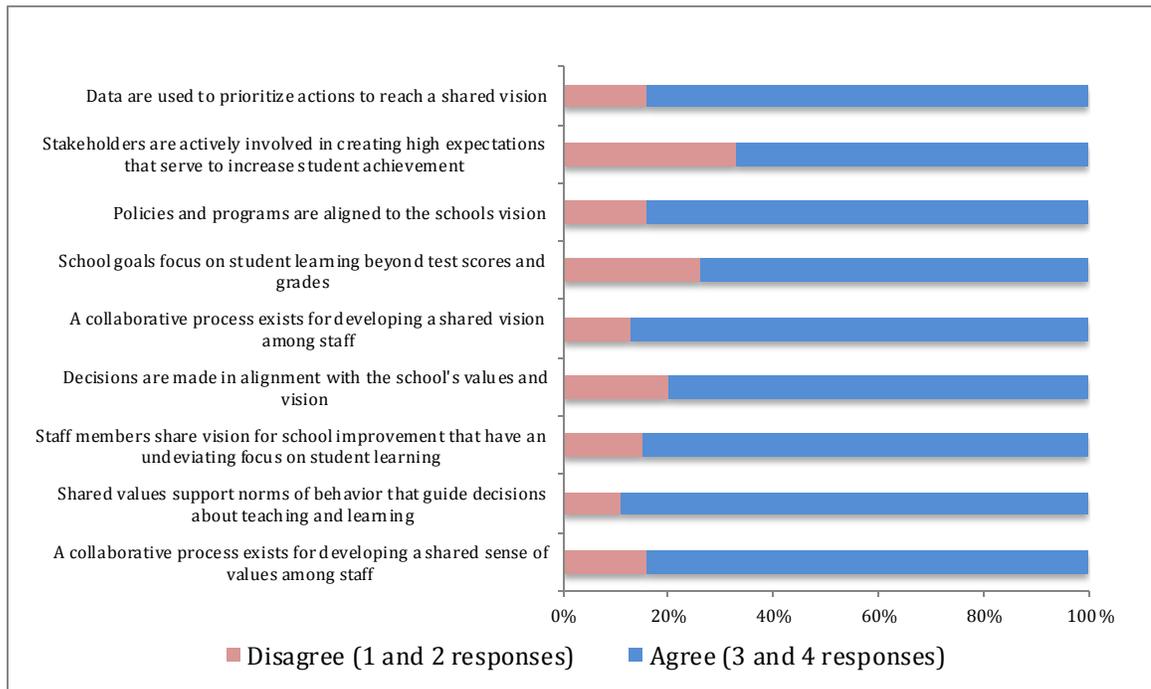


Figure 31: Percentage of teacher responses of Shared Values and Vision Dimension

Collective Learning and Application dimension had the overall highest positive response average with at least 85% of the teachers agreeing with all but one of the statements as seen in Figure 32. Teachers indicated that they share values when making decisions about teaching and learning and school data is used to reach this shared vision.

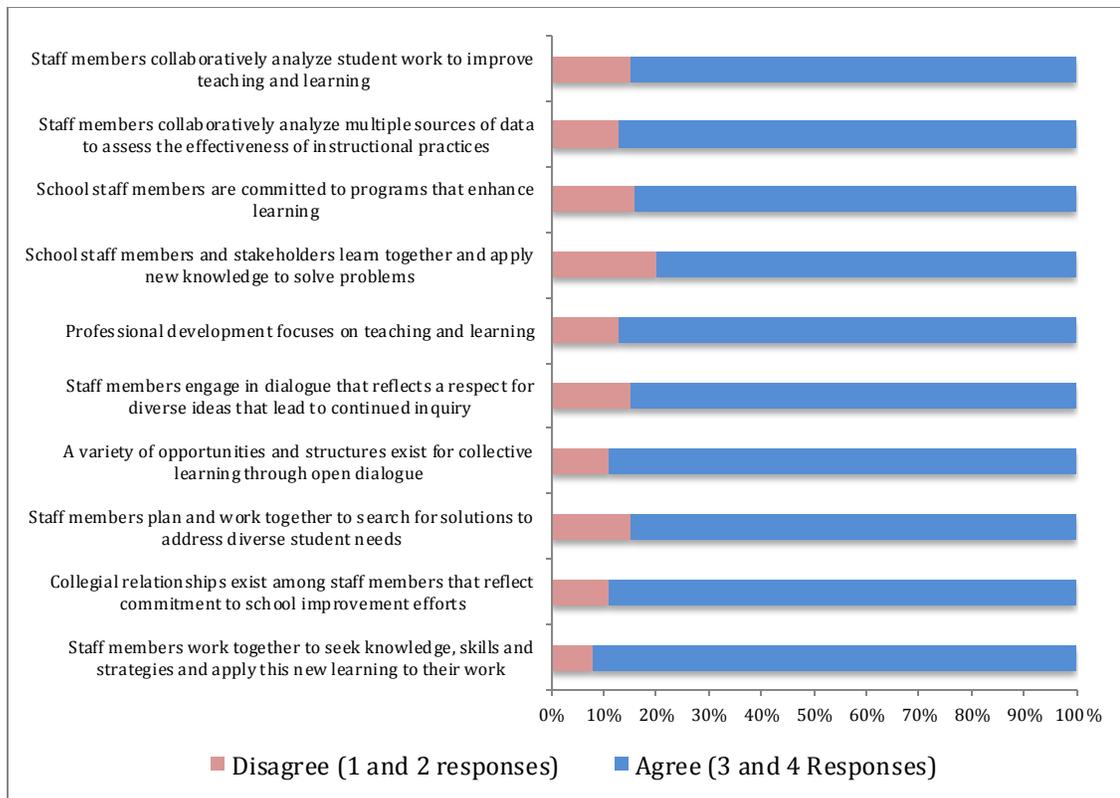


Figure 32: Percentage of Teacher Responses of Collective Learning and Application Dimension

The Shared Personal Practice Dimension received the fewest number of positive responses. Figure 33 shows only two of the seven statements received 80% or higher. Eighty-five percent of the teachers reported that they informally share ideas and suggestions for improved student learning and that individuals and teams have the opportunity to apply learning and share results of all their practices. However, 49% of teachers do not feel they have opportunities to observe peers and offer encouragement and 41% of teachers regularly share student work to guide overall school improvement.

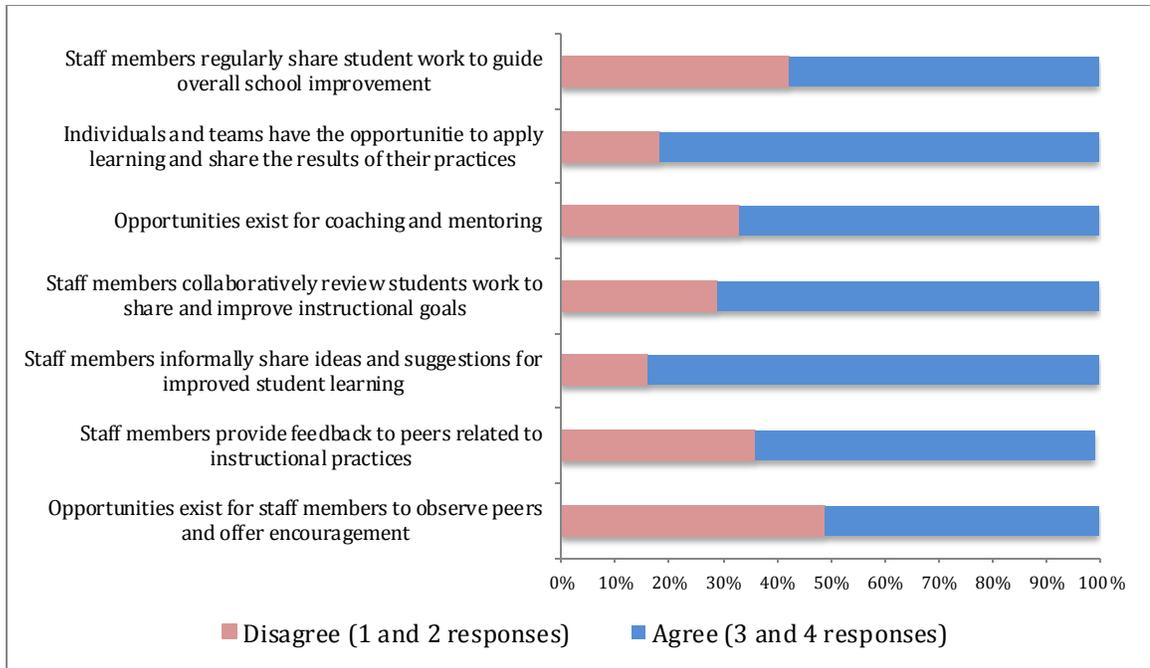


Figure 33: Percentage of Teacher Responses of Shared Personal Practice Dimension

The data from the Supportive Conditions Dimension indicated that 94% of the teachers think that caring relationships exist among staff and students as seen in Figure 34. There is a concern among 25% of the teachers that outstanding achievement is not recognized and celebrated regularly.

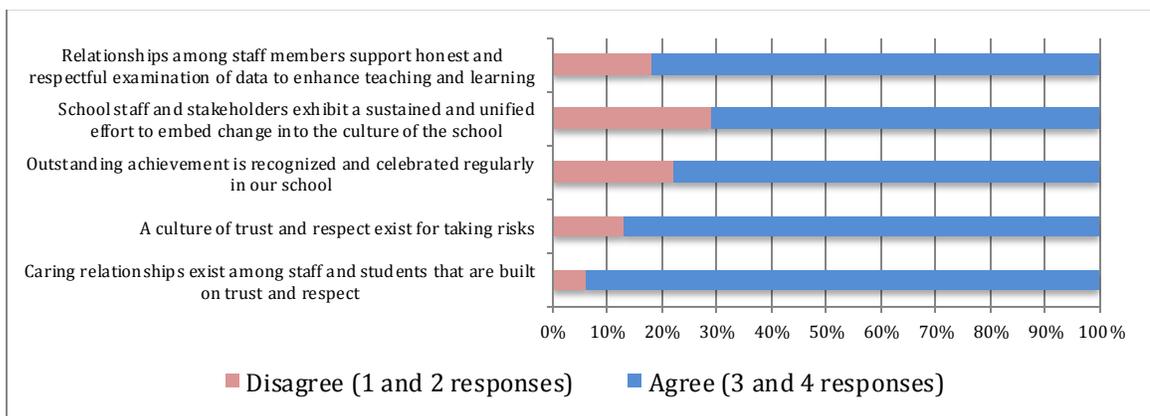


Figure 34: Percentage of Teacher Responses of Supportive Conditions: Relationships Domain

The Supportive Conditions Dimension data revealed some differing responses. Figure 35 indicates that at least 85% of the teachers agree that communication systems promote a flow of information among staff members, and that resource people provide expertise and support for continuous learning. However, more than 30% of teachers, feel that the school schedule does not promote collective learning and shared practice, that more appropriate technology and instructional materials are not made available to staff, and disagree that the school facility is clean, attractive and inviting.

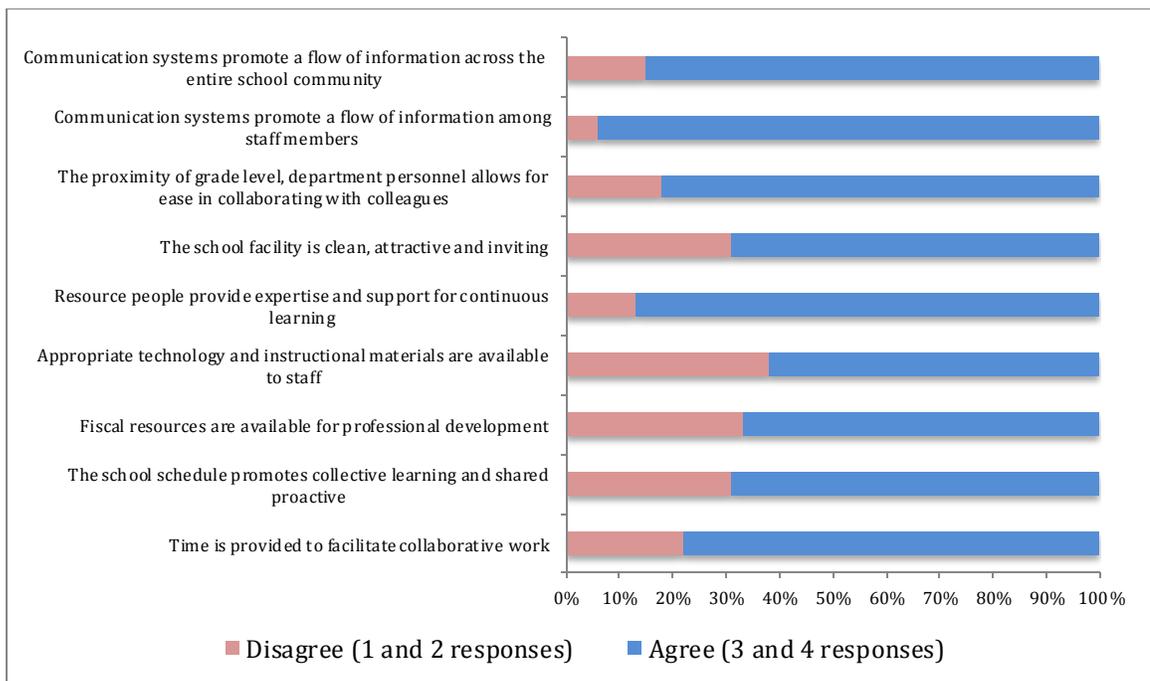


Figure 35: Percentage of teacher's responses of the Supportive Conditions: Structures Dimension

Discussion

In the discussion section, both positive and negative results will be discussed. Overall, teachers have positive feelings about the six dimensions of PLCs. As seen in Figure 36, the mean responses are positive and range between 2.9 and 3.4. Teachers have the most positive responses with the dimension of Collective Learning and Application. The least number of positive responses is with the Shared Personal Practice dimension.

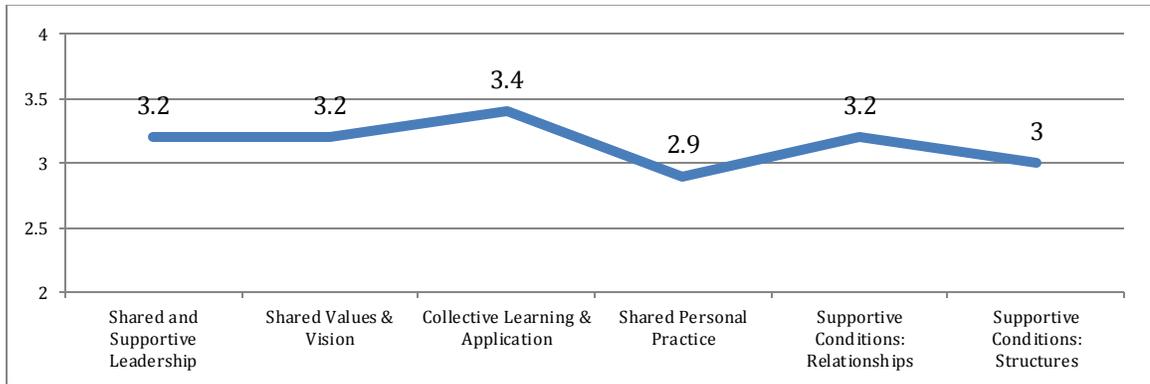


Figure 36: Mean Responses for the Six PLC Dimensions

The most positive results came from the Collective Learning and Application dimension. Teachers feel they work together to gather knowledge, skills and strategies to collaborate in a collegial and respectful environment. They share the same values through analyzing data to improve teaching and learning. They believe that these relationships are built on trust and respect for taking risks, and that staff members support honest and respectful examination of data. These positive outcomes are due to teachers spending the majority of their time in PLCs working on analyzing data through collaborative inquiry or collaborating on best practices around the instructional focus CREST. Also, teacher leaders were prepared and informed to

support PLC objectives with their teacher groups through consistent support and meetings with myself about their specific content area needs and goals.

It was shown in the Shared and Supportive Leadership dimension that 31% of teachers feel they are not involved in discussing and making decisions about most school issues. This specifies a need for administrators to include teachers in discussions and decision-making, and be sure to publicly acknowledge the role of these teachers in this process. Conversely, this dimension indicated that 95% of teachers feel they have access to key information about the school. Therefore, combining these and empowering teachers to engage in key decisions with information that is readily available will support unity and common goals among teachers. Additionally, administrative feedback that identifies how teaching and learning has improved due to these decisions and data analysis will show teachers that what they are doing is successful and worthy.

The Shared Personal Practice dimension was the overall lowest dimension. Teacher's feelings of limited opportunities to observe peers, offer encouragement, and regularly share student work to guide school improvement is an area of weakness. The PLC objectives for this school year did not include peer observations and feedback. Providing opportunities for teachers to observe their peers during the school day is essential. The administrative team must explore ways to relax the inflexibility of the school day and teacher schedules. Creating a new position, which allows a person to be PLC "specialist", could help solve these problems. This specific teacher's schedule would be reduced and responsibility would be to cover classes for teachers involved in peer related PLC activities. Other responsibilities

might include creating PLC topic and focus areas through analyzing school data or facilitating PLC meetings.

New and improved ways to recognize and celebrate outstanding achievement can be discussed and developed within the PLC's. Sharing this responsibility with teachers during PLC time will allow them to be acknowledged on the positive activities taking place. This will lead to more teachers being recognized and celebrated for their outstanding work. Continuous recognition and celebration by the school administration displays the importance of successful PLC achievements.

The relationships and structures domains of the Supportive Conditions dimension had specific areas in which teachers had concerns. Almost 30% of teachers felt they were not part of embedding change into the culture of the school. These types of decisions must be nurtured and discussed with teachers and students. These discussions must address current culture at the school and what changes should be made. Currently, we have a student liaison group that meets with the administration once a month to discuss current issues. In the future, having teachers participate in these meetings would bring their perspective and ideas to building positive school culture.

Additionally, a significant percent of teachers identified the school schedule as a roadblock to more effective PLC's. This problem is not easily addressed. There are many challenges when scheduling 1200 high school students with a multitude of requirements for graduation and therefore, creating common planning periods for content area teachers is difficult. Scheduling teachers to have common planning periods in which they could engage in PLCs during the school day would be optimal.

School level administrators must work to be creative and innovative to provide opportunities during the day for teachers to collaborate.

Teachers cited the need for more appropriate technology and materials. Administrators should work within their budgets to provide needed resources for the PLCs. Inviting the technology specialist to become an active member of PLCs would provide him a better understanding of teacher needs. This immersion into the needs and views of teachers would turn the technology specialist from a simple problem solver into a resource person.

One of the most powerful aspects of creating successful and effective PLCs is the influence of the building administrator (Principal or Assistant Principal). Table 2 is an action plan to address the feedback of teachers about PLCs. The administrator can transform the school organization into a learning community through his or her ability and active nurturing of the entire staff's development. These learning communities are a group effort with teachers and administrators contributing and sharing in new information, decision making and taking ownership of school values and priorities.

Table 2: Hodgson Action Steps about the Six Dimensions of PLCs

Dimension of PLC	Action Steps
Shared and Supportive Leadership	1) Create opportunities for teachers to contribute ideas for school-wide plans 2) Create a teacher-principal liaison group to discuss school goals and cultivate ideas 3) Acknowledge teachers for their contributions

Shared Values and Vision	1) Provide and deliver to teachers a comprehensive school-wide instructional focus that supports student achievement.
Collective Learning and Application	1) Celebrate accomplishments to emphasize the achievement of students and teachers
Shared Personal Practice	1) Give opportunities for teachers to conduct peer observations. 2) Designate time for teachers to reflect on the observations and receive feedback.
Supportive Conditions - Relationships	1) Use PLC time to cultivate relationships and participate in team building exercises. 2) Recognize outstanding achievement and effort about PLC objectives.
Supportive Conditions - Structures	1) School scheduling is analyzed in hopes to provide opportunities for common planning time for teachers. 2) Providing teachers the resources they need to be successful – such as student computers, instructional materials and time to plan. 3) Renovate school structures, classrooms to provide friendly environment for staff and students.

Conclusion

The PLC assessment questionnaire gave an over view of the 6 dimensions of PLC meeting time. In general, Hodgson teachers have positive feelings about the time they spend meeting. The areas of weakness will be addressed and feedback will be provided to the teachers about this survey. An important outcome of this survey is the continuous transparency and communication needed to keep teachers informed about the goals and priorities of the school. More importantly, giving teachers a

voice and input into creating those objectives is paramount to continue a positive school culture and support student achievement.

References

- Hipp, K.K., & Huffman, J. B. (2010). *Demystifying professional learning communities: school leadership at its best*. Lanham, MD: Rowman & Littlefield Education.
- Hord, S. M., Roussin, J. L., & Sommers, W. A. (2010). *Guiding Professional Learning Communities*. Thousand Oaks, CA: Corwin.
- Hord, S.M. (2003). Professional learning communities: communities of continuous inquiry and improvement (pp. 1-62, publication). Austin, Texas: Southwest Educational Development Laboratory. Retrieved March 8, 2017, from <http://www.sedl.org/pubs/change34/plc-cha34.pdf>
- Olivier, D. F., Hipp, K. K., & Huffman, J. B. (2010). Assessing and analyzing schools. In K. K. Hipp & J. B. Huffman (Eds.). *Demystifying professional learning communities: School leadership at its Best*. Lanham, MD: Rowman & Littlefield.
- Professional Learning Community. (2014, March 3). Retrieved March 24, 2015, from <http://edglossary.org/professional-learning-community/>

Professional Learning Communities Assessment – Revised

Directions:

This questionnaire assesses your perceptions about your principal, staff, and stakeholders based on the dimensions of a professional learning community (PLC) and related attributes. This questionnaire contains a number of statements about practices which occur in some schools. Read each statement and then use the scale below to select the scale point that best reflects your personal degree of agreement with the statement. Shade the appropriate oval provided to the right of each statement. Be certain to select only one response for each statement. Comments after each dimension section are optional.

Key Terms:

- Principal = Principal, not Associate or Assistant Principal
- Staff/Staff Members = All adult staff directly associated with curriculum, instruction, and assessment of students
- Stakeholders = Parents and community members

Scale: 1 = Strongly Disagree (SD)
 2 = Disagree (D)
 3 = Agree (A)
 4 = Strongly Agree (SA)

STATEMENTS		SCALE			
	Shared and Supportive Leadership	S D	D	A	S A
1.	Staff members are consistently involved in discussing and making decisions about most school issues.	0	0	0	0
2.	The principal incorporates advice from staff members to make decisions.	0	0	0	0
3.	Staff members have accessibility to key information.	0	0	0	0

4.	The principal is proactive and addresses areas where support is needed.	0	0	0	0
5.	Opportunities are provided for staff members to initiate change.	0	0	0	0
6.	The principal shares responsibility and rewards for innovative actions.	0	0	0	0
7.	The principal participates democratically with staff sharing power and authority.	0	0	0	0
8.	Leadership is promoted and nurtured among staff members.	0	0	0	0
9.	Decision-making takes place through committees and communication across grade and subject areas.	0	0	0	0
10.	Stakeholders assume shared responsibility and accountability for student learning without evidence of imposed power and authority.	0	0	0	0
11.	Staff members use multiple sources of data to make decisions about teaching and learning.	0	0	0	0
COMMENTS:					
		STATEMENTS		SCALE	
	Shared Values and Vision	S	D	A	S
		D			A
12.	A collaborative process exists for developing a shared sense of values among staff.	0	0	0	0
13.	Shared values support norms of behavior that guide decisions about teaching and learning.	0	0	0	0

14.	Staff members share visions for school improvement that have an undeviating focus on student learning.	0	0	0	0
15.	Decisions are made in alignment with the school's values and vision.	0	0	0	0
16.	A collaborative process exists for developing a shared vision among staff.	0	0	0	0
17.	School goals focus on student learning beyond test scores and grades.	0	0	0	0
18.	Policies and programs are aligned to the school's vision.	0	0	0	0
19.	Stakeholders are actively involved in creating high expectations that serve to increase student achievement.	0	0	0	0
20.	Data are used to prioritize actions to reach a shared vision.	0	0	0	0
COMMENTS:					
	Collective Learning and Application	S	D	A	S
		D			A
21.	Staff members work together to seek knowledge, skills and strategies and apply this new learning to their work.	0	0	0	0
22.	Collegial relationships exist among staff members that reflect commitment to school improvement efforts.	0	0	0	0
23.	Staff members plan and work together to search for solutions to address diverse student needs.	0	0	0	0
24.	A variety of opportunities and structures exist for collective learning through open dialogue.	0	0	0	0

25.	Staff members engage in dialogue that reflects a respect for diverse ideas that lead to continued inquiry.	0	0	0	0
26.	Professional development focuses on teaching and learning.	0	0	0	0
27.	School staff members and stakeholders learn together and apply new knowledge to solve problems.	0	0	0	0
28.	School staff members are committed to programs that enhance learning.	0	0	0	0
29.	Staff members collaboratively analyze multiple sources of data to assess the effectiveness of instructional practices.	0	0	0	0
30.	Staff members collaboratively analyze student work to improve teaching and learning.	0	0	0	0
COMMENTS:					
	STATEMENTS	SCALE			
	Shared Personal Practice	S D	D	A	S A
31.	Opportunities exist for staff members to observe peers and offer encouragement.	0	0	0	0
32.	Staff members provide feedback to peers related to instructional practices.	0	0	0	0
33.	Staff members informally share ideas and suggestions for improving student learning.	0	0	0	0
34.	Staff members collaboratively review student work to share and improve instructional practices.	0	0	0	0

35.	Opportunities exist for coaching and mentoring.	0	0	0	0
36.	Individuals and teams have the opportunity to apply learning and share the results of their practices.	0	0	0	0
37.	Staff members regularly share student work to guide overall school improvement.	0	0	0	0
COMMENTS:					
	Supportive Conditions - Relationships	S D	D	A	S A
38.	Caring relationships exist among staff and students that are built on trust and respect.	0	0	0	0
39.	A culture of trust and respect exists for taking risks.	0	0	0	0
40.	Outstanding achievement is recognized and celebrated regularly in our school.	0	0	0	0
41.	School staff and stakeholders exhibit a sustained and unified effort to embed change into the culture of the school.	0	0	0	0
42.	Relationships among staff members support honest and respectful examination of data to enhance teaching and learning.	0	0	0	0
COMMENTS:					
	Supportive Conditions - Structures	S D	D	A	S A
43.	Time is provided to facilitate collaborative work.	0	0	0	0
44.	The school schedule promotes collective learning and shared practice.	0	0	0	0

45.	Fiscal resources are available for professional development.	0	0	0	0
46.	Appropriate technology and instructional materials are available to staff.	0	0	0	0
	STATEMENTS	SCALE			
		S D	D	A	S A
47.	Resource people provide expertise and support for continuous learning.	0	0	0	0
48.	The school facility is clean, attractive and inviting.	0	0	0	0
49.	The proximity of grade level and department personnel allows for ease in collaborating with colleagues.	0	0	0	0
50.	Communication systems promote a flow of information among staff members.	0	0	0	0
51.	Communication systems promote a flow of information across the entire school community including: central office personnel, parents, and community members.	0	0	0	0
52.	Data are organized and made available to provide easy access to staff members.	0	0	0	0
COMMENTS:					

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APPENDIX E

DEVELOPMENT OF HODGSON'S INSTRUCTIONAL FOCUS - CREST

Introduction

During the 2015-2016 school year, Hodgson Vocational Technical High School (Hodgson) was charged to create an instructional focus that would support the Common Core State Standards (CCSS) and college and career readiness for all students. Hodgson's instructional focus is based on five strategies and concepts to support teacher best practices and improve student achievement. These concepts are: Collaborative Learning, Risk-Free Classroom Environment, Essential Questions, Summarizing and Technology Application (CREST). The superintendent, Dr. Vicki Gehrt, gave the school administrative team the freedom to create a focus that helped meet the needs of students at Hodgson, but also supported district initiatives. Therefore, the purpose of this document is to describe the creation and meaning behind CREST, the professional development plan to introduce and implement CREST with teachers and the use of a walkthrough guide during the school year to look for CREST focus areas.

It is important for teachers and students to have an instructional focus that highlights best practices supported by research and CCSS. Schooling, Toth, and Marzano (2013) believed that "A common language/model of instruction provides a

framework for a way to talk about instruction that is shared by everyone in the state, educational service agency region, and at the district or school level” (p. 1). Having common language for teachers and administrators to discuss effective teaching is essential to providing quality feedback. Also, an instructional focus helps guide the analysis of data collected around the identified framework.

Additionally, the Superintendent requires all schools to identify instructional strategies that all teachers use to increase student achievement. These strategies should be based on district-approved initiatives and supported by the CCSS. First, when determining the focus areas of CREST, we looked to the New Castle County Vocational Technical School District (NCCVT) instructional services for the areas they promoted and supported, as well as our sister schools who had adopted an instructional platform called Learning Focus Strategies (LFS) (Thompson, Gann, Gardner, Riedl, & Thompson, 2009). LFS emphasizes the use of collaboration, essential questions, and summarizing strategies in all lessons. According to Thompson et al. (2009), the key concepts for educators to provide a successful framework for students are: (a) collaboration, and (b) communication of learning expectations with essential questions and continuous checks for understanding through the use of distributive summarization (p. 4).

Second, when determining the CREST focal points, we looked to the instructional strategies emphasized within the CCSS. We wanted the strategies and best practices at Hodgson to support student success with CCSS implementation. The CCSS helps ensure students are ready for success after high school through clear and

consistent guidelines in Literacy and Mathematics, and were designed to develop critical-thinking, problem-solving, and analytical skills (NGA Center & CCSO, 2017). The Literacy and Mathematics CCSS emphasize the importance of collaborative practices, summarizing skills, and use of technology (e.g. digital media). Attachment 1 lists the CCSS standards that support these focus areas of CREST.

Finally, our school wanted to instill the beliefs of a Growth Mindset within our students so they achieve more in school and life through hard work, determination, and grit. In order to help us instill this growth mindset in students, creating a risk-free classroom environment was essential and added to our instructional focus. As Thornton (2015) explained, “risk combined with abundant opportunity and the safety of being treated as a cherished individual is what we should allow in our classrooms”. Hodgson teachers and administrators have studied the importance of teaching students about having a growth mindset since 2012. Hodgson teachers have participated in multiple professional development (PD) opportunities about Growth Mindset. Based on their training, teachers are now able to create classroom climates in which students feel safe, and are willing to take risks and make mistakes when learning new concepts.

After taking into account our district’s support for LFS, the CCSS, and Growth Mindset practices, we determined that the five areas of CREST were the most important and critical for Hodgson teachers to implement to provide opportunities for students to be successful.

CREST Focus Areas

Collaborative Learning

Collaborative learning is a broad term that highlights the need for students to work together, express or explain their understanding of concepts, develop products, and/or solve problems (Begg, 2009). Collaboration and small group discussions are important for students to rehearse their explanations, justifications, and analyses of their solution strategies as they prepare for questioning and challenge from the whole class (Begg, 2009).

There are five defining elements of cooperative/collaborative learning that teachers should consider when planning a lesson for students to collaborate. These are: (a) positive interdependence, (b) face-face promotion interaction, (c) individual and group accountability, (d) interpersonal and small group skills, and (e) group processing and reflection (Marzano, Pickering, & Pollock, 2001). Positive Interdependence is a sense that the group will “sink or swim” together. Face-to-Face promotion interaction requires students to be positive, help one another, and congratulate successes and efforts. Individual and group accountability gives each member of the group a purpose in which they all contribute to achieve the primary goal. Interpersonal and small group skills develop the communication and feelings of trust, leadership, decision-making and conflict resolution. Group processing and reflection provides the group an opportunity to establish how the group is functioning and what to do better in the future (Marzano et al, 2001). Teachers will use these five elements when planning collaborative activities for students.

Both the English Language Arts (ELA) and Mathematics CCSS stress the importance of student discussion and questioning each other's thinking in order to clarify or improve their own understanding. For example, the CCSS standards for speaking and listening explicitly state that students should be "prepared for and participate effectively in a range of conversations and collaborating with diverse partners, building on others' ideas and expressing their own clearly and persuasively" (NGA Center & CCSO, 2017).

The CCSS Mathematical Practice also supports collaboration among students. CCSS Mathematical Practice 3 requires students to construct viable arguments and critique the reasoning of others. The principle states that students must "justify their conclusions, communicate them to others and respond to arguments of others" (NGA Center & CCSO, 2017). Mathematically proficient students should compare the effectiveness of two plausible arguments, and if there is a flaw, explain what it is (NGA Center & CCSO, 2017).

Risk-Free Classroom Environment

The second component of CREST is creating a Risk-Free Classroom environment for students. Providing a positive classroom climate for students to explore content information with no fear of making a mistake is critical to learning. Blackwell (2012) discusses the importance of nurturing a risk-tolerant peer culture and states that "as the teacher, you need to set the tone and establish clear expectations about how your students treat each other". Blackwell gives five guiding practices to developing this type of environment: (a) Never call out or embarrass a student publicly; (b) Don't over-praise students publicly for their attributes alone; (c)

Commend them for accepting challenges, staying on task, persisting and being resourceful as well as volunteering, helping others and being kind; (d) Encourage and model empathy; and (e) Never compare students in regards to their attributes or talents. These best practices that Blackwell illustrates are ways to guide teachers to create risk-free environments in their classrooms.

Sharma (2015) investigated learning activities and tools that can be used to develop student risk-taking dispositions within a classroom culture. In this study, students worked in heterogeneous groups to solve statistical problems. Group norms encouraged students to work together and be responsible for the learning of everyone in the groups (i.e., the group was not finished until all groups members could explain and defend their answer). Students were required to report out their answer as a group by standing in front of the class and responding to any questions.

Sharma (2015) found that the group problem solving discussions provided students who were less confident or able with opportunities to explain, question, agree, disagree, and test their thinking in a less threatening context before engaging in whole-class discussions. Student interviews revealed that classroom culture was an important factor in how students responded. Some students even indicated that they were more willing to take risks and make mistakes because the teacher's instructions took the pressure off them. Sharma (2015) also found that classroom discourse was important to teaching students how to critically question or challenge a fellow student in a respectful way.

Essential Questions

The third component of CREST is Essential Questions, which drive the lesson towards a goal for students to understand, “or establishing a direction for learning” (Marzano et al., 2001, p. 92). “Essential questions refer to what is needed for learning core content and to help students make sense of complicated ideas, knowledge and know-how” (Wiggins, 2007). These questions underscore the most important concepts of the lesson and support lesson activities. Essential questions also help students stay focused on the importance of the information presented and used during a lesson.

Summarizing

The fourth component of CREST is Summarization strategies. CCSS indicates the importance for teachers and students to take time to summarize information during a lesson to help internalize and make sense of the information. The College and Career Readiness Anchor standards for reading indicate that students should “determine central ideas or themes of a text and analyze their development, summarize key support details and ideas” (CCSS ELA, 2012). To summarize is to “restate the essence of a text or an experience in as few words as possible or in a new, yet efficient, manner” (Wormeli, 2005, p. 2). Summarizing helps students learn to determine and consolidate essential ideas that are worth noting and remembering, and it also requires students to analyze information at a deeper level to determine the most important concepts (Marzano et al., 2001, p. 31). Summarizing strategies also helps teachers gauge student understanding of key concepts during a lesson.

Technology Application

Technology Application emphasizes the importance of incorporating technology for students to use during classroom activities. When properly used and executed, “technology will help students acquire the skills they need to survive in a complex, highly technological knowledge-based economy” (Edutopia, 2008).

Technology application focuses on three areas to support our instructional focus: (a) active engagement with content information using technology; (b) access hardware that includes computers, Smartboards, and personal cell phones; and (c) use a technology platform called Schoology which provides teachers and students a place to store important information and resources about each class.

Providing opportunities for students to collaborate is an important aspect of technology application at Hodgson. Students are able to use Schoology and Google Apps to collaborate seamlessly. Schoology offers a place for students to participate in discussion posts, online assessments, complete projects and differentiated activities, watch or upload videos and communicate with the teacher or fellow students. Students write discussion posts based on questions posed by the teacher. The teacher can create separate groups for students to discuss only with those members about a specific topic. Another way students can collaborate with technology is using Google Apps. Students can work together to create a Google Doc or Slide using the “shared” feature. Students work in real time on an assignment documents while at separate computers. Additionally, students can use Facebook and Twitter to communicate about current issues and projects.

Finally, students having access to real-world experts through technology application that supports the learning taking place in the classroom. There are a multitude of online apps and websites that support all content areas. Examples of educational websites used by students include Gizmo's for Science, Khan Academy to support Math, Storyboard.com for English-Language arts, PBS.org for Social Studies, and Edpuzzle.com for Spanish.

The Professional Development (PD) Plan

During an August PD day before the start of the school year, I introduced teachers to CREST as our new instructional focus. The introduction included an overview and reasons why these areas were selected as our instructional focus. Teachers received in-depth information during this three hour PD session. Attachment 2 is the slides presentation I used during this session.

Hodgson teachers used PLC time to explore the CREST concepts more deeply. I also created an additional PD plan that would use 6 PLC sessions to review the CREST focus areas during second semester (see Attachment 3). The presentations highlighted CREST focal points and included detailed instructions for the PLC teacher leaders to use in regards to the activities planned and expectations for teachers.

Other training activities included watching videos, reading scholarly articles, researching information, discussing their lesson planning and activities in-depth, and participating in teacher discussion posts on Schoology and uploading resources into their Schoology group accounts to share with other teachers. The ultimate goal of these presentations was for teachers to review CREST, discuss the importance and

implement best practices. Also, teachers were expected to bring evidence of collaborative activities and student work to subsequent PLCs to determine the effectiveness of the strategies they used.

Additionally, I included a CREST walkthrough guide for teachers to review during the August PD day. The walkthrough guide described what administrators expected to see in classrooms regarding the five instructional foci (Attachment 4). The guide was used to gather data about the implementation of CREST. As administrators, being transparent with teachers was important for clarity about what we would be looking for during walkthroughs.

In summary, providing teachers a way to learn CREST attributes during an opening PD day and PLC time was a process to develop their understanding of best practices that support CCSS. This PD provided time for teachers to discuss CREST focal points and reflect on their own practices and lessons. After meeting with teacher leaders of each department, they were able to lead these presentations using the facilitator's notes.

References

- Begg, A. (2009). Learning tasks: More than content. In R. Averill & R. Harvey (Eds.), *Teaching secondary school mathematics and statistics: evidence-based practice* (pp. 11-21, Volume One). Wellington: NZCER Press.
- Blackwell, L. (2012, December 17). The power of mistakes: Creating a risk-tolerant culture at home and school. Retrieved from <http://blog.mindsetworks.com/blog-page/home-blogs/entry/the-power-of-mistakes-creating-a-risk-tolerant-culture-at-home-and-school>
- Common Core State Standards Initiative. (2012). College and career readiness anchor standards for reading. (2012). Retrieved from <http://www.corestandards.org/ELA-Literacy/CCRA/R/>
- Edutopia Team. (2008). Why integrate technology into the curriculum? The reasons Are many. Retrieved from <https://www.edutopia.org/technology-integration-introduction>
- NGA Center and CCSSO. (2017). *Common core state standards initiative*. Retrieved from <http://corestandards.org>
- Sharma, S. I. (2015). Promoting risk taking in mathematics classrooms: The importance of creating a safe learning environment. Retrieved from <http://researchcommons.waikato.ac.nz/handle/10289/9550>
- Thompson, M., Gann, J., Gardner, C., Riedl, C., & Thompson, S. (2009). *Unlocking the secrets of the learning-focus strategies model* (Vol. 7). Boone, NC: Learning-Focused.

- Thornton, M. (2015). Creating space for risk. Retrieved from <http://www.edutopia.org/blog/creating-space-for-risk-michael-thornton-cheryl-harris>
- Schooling, P., Toth, M., & Marzano, R. (2013). The critical importance of a common language of instruction. Retrieved from <https://www.learningsciences.com/wp/wp-content/uploads/2017/06/Common-Language-of-Instruction-2013.pdf>
- Wiggins, G. (2007, November 17). Authentic education – What is an essential question? Retrieved from http://www.authenticeducation.org/ae_bigideas/article.lasso?artid=53
- Wormeli, R. (2005). *Summarization in any subject: 50 techniques to improve student learning*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Vega, V. (2013). Technology integration research review: Evidence-based programs by subject. Retrieved from <http://www.edutopia.org/technology-integration-research-evidence-based-programs>

CCSS Standards that Emphasize Collaboration

CCSS.ELA-LITERACY.CCRA.W.6 – Use technology, including the Internet, to produce and publish writing and to interact and collaborate with others.

CCSS.ELA-LITERACY.CCRA.SL.1 – Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others' ideas and expressing their own clearly and persuasively.

CCSS.ELA-Literacy.SL. 9-10 – Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups and teacher-led) with diverse partners on grades 9-10 topics, texts and issues, building on others' ideas and expressing their own clearly and persuasively.

CCSS.ELA-Literacy SL.9-10.1 A – Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well reasoned exchange of ideas.

CCSS.ELA-Literacy.SL. 9-10.1 B – Work with peers to set rules for collegial discussions and decision-making, clear goals and deadlines and individual roles as needed.

CCSS.ELA-Literacy.SL. 9-10.1.C – Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas, actively incorporate others into the discussion; and clarify, verify or challenge ideas and conclusions.

CCSS.ELA-Literacy.SL.9-10.1.D – Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement and when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented.

CCSS that Emphasize Summarization

CCSS.ELA-Literacy.RL.9-10.1 – Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.

CCSS.ELA-Literacy.RL.9-10.2 – Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.

CCSS.ELA-Literacy.RH.9-10.2 – Determine the central ideas or information of a primary or secondary source; provide an accurate summary of how key events or ideas develop over the course of the text.

CCSS.ELA-Literacy.W.9-10.F – Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or significance of the topic).

CCSS that Emphasize Technology

CCSS.ELA-Literacy.CCRA.W.8 – Gather relevant information from multiple print and digital sources, assess the credibility and accuracy of each source and integrate the information while avoiding plagiarism.

CCSS.ELA-LITERACY.CCRA.SL.9-10.5 – Make strategic use of digital media (e.g., textual, graphical, audio, visual and interactive elements) in presentations to enhance understanding of findings, reasoning and evidence and to add interest.

Attachment 2

Part I CREST Presentation for August PD Day

Slide1



Hodgson Vocational-Technical High School
Instructional Focus

CREST

Collaborative Learning, Risk-Free Classroom Environment,
Essential Questions, Summarizing and
Technology Integration

Supporting Best Practices to Increase Student Achievement!

Slide 2

PART I



Collaborative Learning

Why?

- Students are paired for the purpose of engaging their thinking
- Processing information with a partner increases learning and retention
- Allows for quick monitoring of student and their learning

Research Shows...

- Increases Student Achievement
- Helps students apply new knowledge
- Talking about learning activates the frontal lobe of the brain that processes judgement, planning, problem solving and connections to memory.

Facilitator Notes - Review the information on the slide.

Slide 3

PART II

Risk-Free Classroom Environment



- Do I encourage students' questions and curiosity?
- Does my classroom environment encourage students to take risks?
- Am I aware of how culture and gender influence students' interaction and communication styles?
- Am I encouraging the children to listen and respond to the remarks of their peers during large and small groups discussions?
- Am I providing sufficient opportunity and time for the children to work independently, in pairs and in small groups?

Facilitator Notes: Use these questions as ways to spark the thinking around Risk-Free Classroom Environments. As teachers we should all be thinking about the environment we create for students. Then you will read an article on the next slide and discuss in small groups.

Slide 4

Read and Analyze...

(Don't Worry - it's a short reading :)



[Creating a Risk-Taking Classroom Environment](#) - click on this link to display the reading. This reading link is also located in your Content Schoology Group under Resources/ CREST Resources/Risk-Free folder.

- Demonstrate and Model Risk-Taking**
- Model Failure**
- Provide Risk-Taking opportunities**
- Minimize the Pain of Making an Error**

Facilitator Instructions: The four areas to focus on in the article are listed at the bottom of the slide. Divide up the group to read one of the four tips to create a Risk-Free Environment. Have the person or pair discuss how they currently tackle this issue in their classroom. Have them share out the information they read and write an example (discussion post - next slide) of something they do to address Risk in the classroom.

Slide 5



Schology Discussion Post

Answer the discussion post question in your content schology group about student's taking risks in your class.

Celebrate
failure;
it means you
took a risk.

ARTISTBYNAME

"BE BRAVE.
TAKE RISKS.
NOTHING CAN
SUBSTITUTE
EXPERIENCE."

PAULO COELHO

Facilitator Notes: Complete the discussion post

Slide 6



Part III

Essential Questions

When is a question *Essential*?

- causes genuine and relevant inquiry into the big ideas and core content
- stimulates vital, on-going rethinking of big ideas, assumptions, and prior lessons
- provokes deep thought, lively discussion, sustained inquiry, and new understanding as well as more questions
- sparks meaningful connections with prior learning and personal experiences
- requires students to consider alternatives, weigh evidence, support their ideas, and justify their answers
- naturally recurs, creating opportunities for transfer to other situations and subjects

****Discuss with a shoulder partner - Do the essential questions you use each day hit the 6 key components listed above? Explain why or why not?**

Facilitator Notes: Review with the group the 6 key components of essential questions. Have teachers discuss their own essential questions and how they work in their own classroom?

Slide 7


CREST

Understanding the Importance

[Structure Learning with Essential Questions](#)
(1:39)

Discussion:

How is it effective to ask a question rather than stating the objective of a lesson?

How often do you review or go over the Essential question with students?

Should students be reminded daily of the essential question(s)? Why or Why not?



KEEP CALM
AND
FOCUS ON
ESSENTIAL QUESTIONS

KeepCalmAndPosters.com

Facilitator Notes: Watch the video and lead a discussion with your group using the discussion questions listed on the slide. Please make sure that your group understands the importance of posted and reviewing the essential question with students daily. The question should drive the instruction and therefore should be addressed.

Slide 8

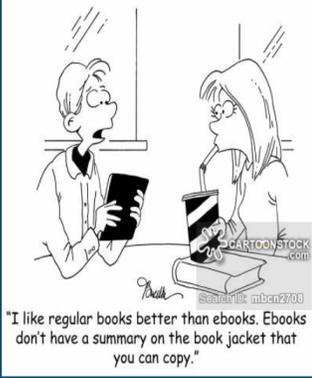

CREST

Summarizing

Part IV

Why use summarizing?

- It helps students learn to determine essential ideas and consolidate important details that support them.
- It enables students to focus on keywords, phrases or skills of content learned that are worth noting and remembering.
- It helps the teacher gauge student understanding.
- Summarizing can be used in all content areas to require students to describe the major concepts of the lesson.
- Summarizing can be used anytime during a lesson.



"I like regular books better than ebooks. Ebooks don't have a summary on the book jacket that you can copy."


CREST

Facilitator Notes: Review with teachers the reasons why summarization is important. Feel free to lead a discussion about summarizing (if you feel comfortable). List the different summarizers teachers use in lessons.

Slide 9

Summarizing Activity

Directions:

- Goto your content schoology group.
- Click on CREST Resources and then click on Summarizing.
- With a partner, look through the list of summarizing strategies.
- Determine the strategies you have used with students and discuss how well it went, do you use the strategy often or only for specific material?
- Identify **2** summarizing strategies you are going to try in the next week or so. Discuss where you think these strategies will fit in your upcoming lessons.
- Be prepared to discuss the summarizers you used in an upcoming PLC meeting.

OR - Click on this link for the [Summarizing Strategies](#)

Facilitator Notes: I attached a word document which lists many different types of summarizers under the CREST resources/Summarizing.

Slide 10

Technology Integration

Blended Learning: discuss as a group or collaborative pairs what you believe **Blended Learning** is in regards to technology, lesson planning and teaching.

Watch the Video about Blended Learning listed below:

[Blended Learning - Making it work in your classroom](#)

Answer the discussion post in your schoology group in regards to this video and respond to one colleague's response.

Facilitator Notes: Have teachers discuss their definition of Blended Learning. Encourage BRINC teachers that want to jump in to describe what they have learned. BRINC teachers, Christine Abbott and Brooke Vreken, describe Blended Learning as... Blended Learning uses technology in the classroom in a meaningful way. It is more than simply putting worksheets on Schoology and going "paperless".

Then watch the video. Have teachers answer the discussion post and respond to one other post. Obviously, there are pitfalls to blended learning that may come up - that's fine if they do. Blending Learning is something we are working towards...eventually. It is understood that technology is **NOT AVAILABLE** for all teachers to incorporate on a regular basis. They need to try their best when the activity fits for technology integration. (Baby Steps!)

Slide 11

CREST Review...



Collaborative Learning, Risk-Free Classroom Environment, Essential Questions, Summarizing, Technology Integration

CREST attributes are best practices that all teachers should try to incorporate in their lesson activities, planning and classroom culture.

CREST will be the caveat for Hodgson's walkthrough tool. Continue to the next page for the Walkthrough tool.

Slide 12

CREST Walkthrough Tool



Remember...

Walkthroughs are meant to inform and capture instructional practices taking place throughout the classrooms.

Walkthroughs are NOT a "Gotcha" and will be used to gather data of what is effectively happening and not happening in our classrooms. This data will be used to inform and plan future professional development.

Walkthrough data will be provided to the faculty every few months to be as transparent as possible about what the administration is seeing in classrooms.

The walkthrough tool is on Data Service Center. When a walkthrough is completed, the teacher will receive immediate feedback via email.

Click on this link to view the walkthrough tool: [CREST Walkthrough Tool](#)

Click to add speaker notes

Attachment 3

Part II CREST PD Presentation for PLCs during Second Semester

Slide 1



Slide 2

The slide has a dark teal background with a light green horizontal bar at the bottom. In the top right corner, there is a small version of the globe icon and the word "CREST" below it. On the left side, the word "Hello!" is written in a white, bold, sans-serif font. Below it, there are three paragraphs of white text: "This slide presentation is the Second installment of our Instructional Focus - CREST.", "These teaching strategies and suggestions will engage students in learning and extend their thinking about important concepts from your discipline.", and "Try these out...discuss and share with others how it goes...". On the right side, there is a photograph showing a person's hand in a grey sweater holding a blue pen and writing on a notepad. A white mug is visible in the background of the photo.

Slide 3



Collaborative Learning

You cannot help someone get up a hill without getting closer to the top yourself.

-General H. Norman Schwarzkopf

Slide 4

 **Collaborative Learning**

When should I use collaborative pairs?

1. When students need to process or reinforce new information learned
2. When students need to summarize information

How to get the MOST out of collaboration!

1. Start small and model expected behavior to students
2. Limit the time in pairs and use a posted clock so students can monitor their time
3. Teach and Model "Quiet" talking
4. Talk/Teach about respect for fellow classmates

ACTIVITY - Look over this online article about 7 different ways to collaborate: [Active Learning - 7 Techniques for Collaboration](#)

Think-Pair Share: Once you have read this article, think about different collaboration techniques you use in your classroom with students, discuss these with a partner, then share out with the group.

Facilitator Notes: The article is located on schoology, under the CREST Resources tab then the Collaborative Learning tab. You can also click on it to bring it up.

Slide 5



CREST

Collaborative Learning

Examples of Collaboration

- Numbered Heads
- Think- Pair-Share
- Pairs Checking
- Three Step Interview
- Pairs Compare
- Pairs Rally Coaching

Tips for Effective Collaborative Learning

1. Students need to be taught how to work in pairs or groups
2. Provide clear expectations for partner or group work
3. Model for students how collaborative pairs work.
4. Plan for Collaboration
5. Give pairs or groups guiding questions
6. Check for Understanding – Numbered Heads works well!



Think
Pair
Share

Facilitator Notes
Review the Tips for Successful Collaboration with Teachers.
I placed a word document under the CREST resources/collaboration tab called "Collaboration Strategies" in your schoology group site about the list of six examples in the blue square above. **Mandatory Activity:** divide teachers up to review one of the strategies and report out about the strategy, whether they have used this strategy, would they use it in the future. **Optional Activity:** Have a discussion about how they incorporate collaboration into their lesson planning.

Slide 6

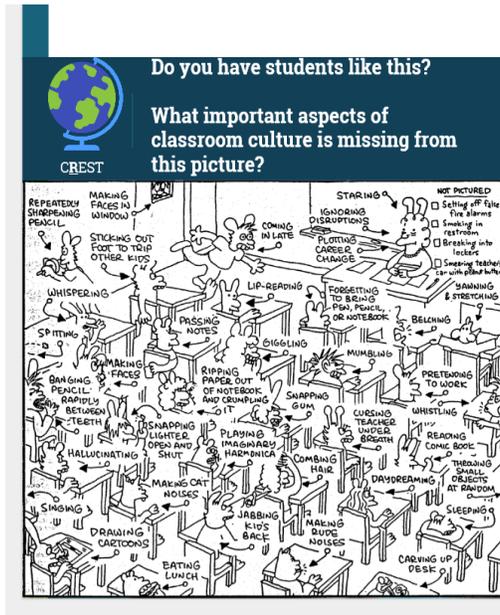


2

Risk-Free Environment

Motivation is the art of getting people to do what you want them to do because they want to do it.
-Dwight D. Eisenhower

Slide 7



History Class

Have you ever had a day where nothing you have planned goes right? What did you do?

Strategies for Learning

How does classroom culture relate to student engagement and discipline?

Building a Culture of Respect

What do you do to build respect in your class?

Facilitator Notes:
Look at the cartoon... Important aspect missing...technology, cell phones, smartboards,...
Watch videos and use the discussion questions with teachers after each video.

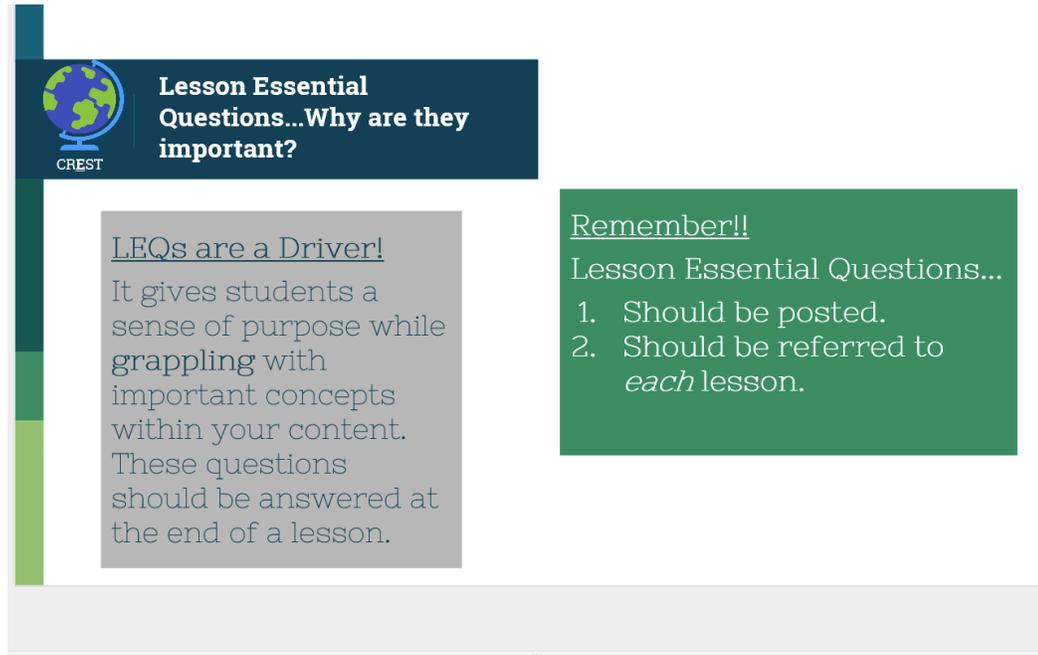
Slide 8

3

Essential Questions

Post it...Speak it...Refer to it...

Slide 9

The slide features a dark blue header with a globe icon and the text "Lesson Essential Questions...Why are they important?". Below the header, there are two main text boxes: a grey one on the left and a green one on the right. The grey box contains text about LEQs as a driver, and the green box contains a "Remember!!" section with two bullet points.

 **Lesson Essential Questions...Why are they important?**
CREST

LEQs are a Driver!
It gives students a sense of purpose while grappling with important concepts within your content. These questions should be answered at the end of a lesson.

Remember!!
Lesson Essential Questions...
1. Should be posted.
2. Should be referred to *each* lesson.

Remind teachers about why Essential Questions are important

Slide 10

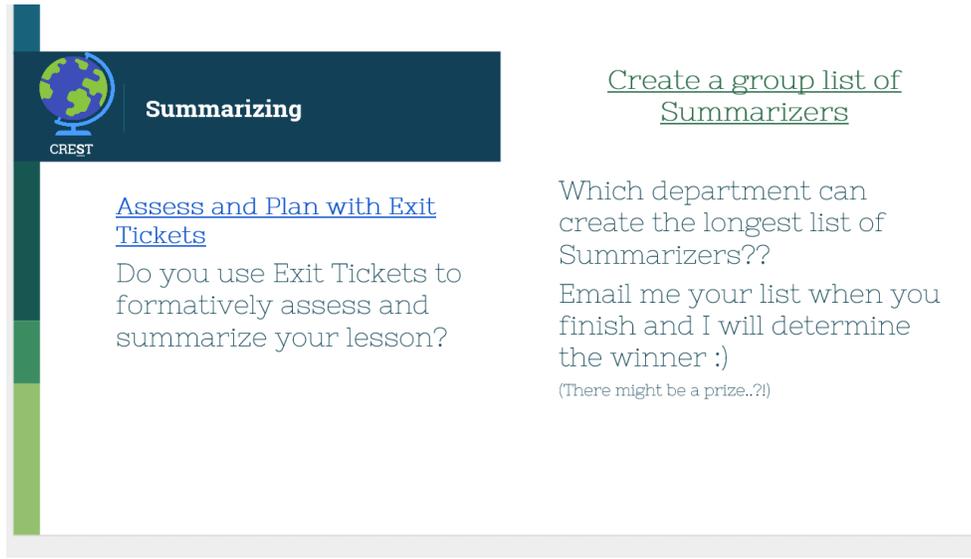
The slide features a large blue number '4' on a dark blue background. To the right of the number, the word 'Summarizing' is written in a large, bold, dark blue font. Below the title, there is a green italicized sentence.

4

Summarizing

Summarizing helps students remember the important concepts from the lesson.

Slide 11

The slide features a dark blue header with a globe icon and the word "Summarizing". Below the header, there are two columns of text. The left column contains a link to "Assess and Plan with Exit Tickets" and a question about using exit tickets. The right column contains a challenge to create a list of summarizers and a request for an email submission.


CREST

Summarizing

[Assess and Plan with Exit Tickets](#)

Do you use Exit Tickets to formatively assess and summarize your lesson?

Create a group list of Summarizers

Which department can create the longest list of Summarizers??

Email me your list when you finish and I will determine the winner :)

(There might be a prize..?)

Watch Video - Discuss
Generate a list of summarizers teachers use - can you create the longest list...there will be a winner amongst the departments!
Place the list in your resources tab of Schoology

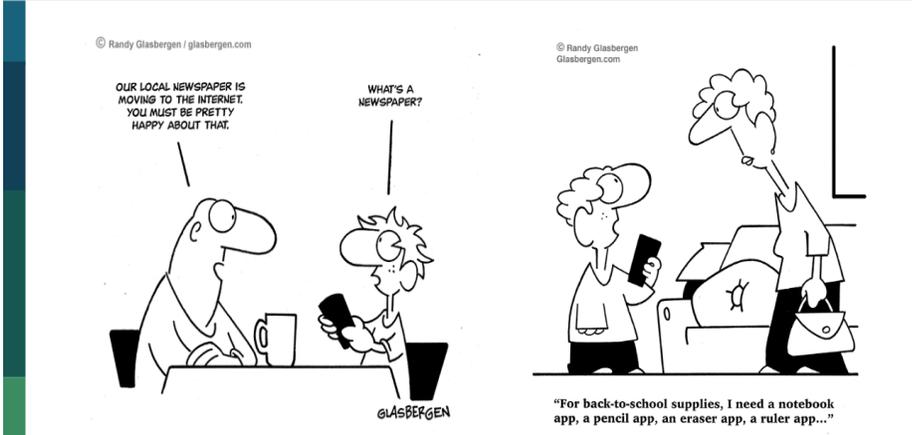
Slide 12



Technology Integration

"Technology is just a tool. In terms of getting the kids working together and motivating them, the teacher is most important." - Bill Gates

Slide 13



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© Randy Glasbergen / Glasbergen.com

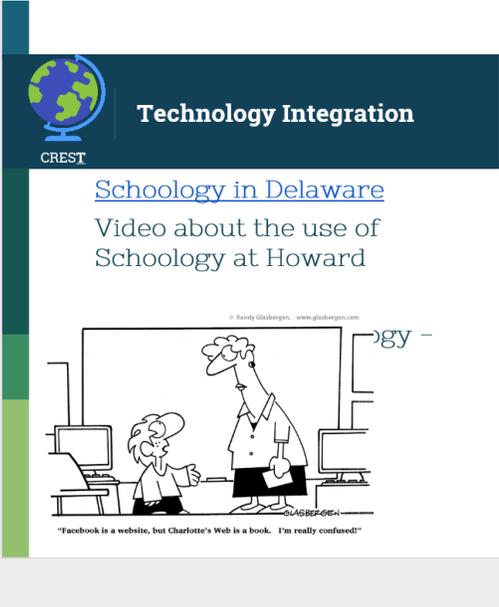
GLASBERGEN

GLASBERGEN

How do we meet the technology needs of our students? How do we use Technology as a tool to increase student achievement?

Facilitator Discussion Questions: Are we meeting the needs of our students with Technology? What needs to be done to better our technology use at Hodgson?

Slide 14



Technology Integration

CREST

[Schoolology in Delaware](#)

Video about the use of Schoolology at Howard

© Randy Glasbergen. www.glasbergen.com

GLASBERGEN

"Facebook is a website, but Charlotte's Web is a book. I'm really confused!"

Teacher Websites

- [HSTRY - Interactive Activities](#)
- [Online Interactive Student Worksheets](#)
- [FREE TECHNOLOGY FOR TEACHERS](#)

Check out all of the amazing resources available on this website.

- [EDUTOPIA BEST OF 2015 EDITION](#)

Check out the best educational posts, videos, and tech trends of 2015.

- [NATIONAL EDUCATION TECHNOLOGY PLAN](#)

The National Education Technology Plan is the flagship educational technology policy document for the United States. The 2016 Plan, articulates a vision of equity, active use, and collaborative leadership to make everywhere, all-the-time learning possible.

- [TWIDDLA](#)

Twiddla is a real-time collaboration whiteboard that allows an unlimited number of people to come together at one time to share or edit documents, images or websites.

- [CHOOSITO](#)

Students can use Choosito! to find quality links tailored to their reading level. Teachers can customize search filters for students, create a "custom library" of search results, and much more!

Facilitator Instructions - Watch Schoolology Video. Next, look over the resources I added to this page. Have a member create a resource tab in your schoolology group site. Have teachers research sites. Add as many technology links/resources you can with a short explanation. Start with the ones I included on this website.



SO...

CREST Strategies and Ideas are best practices to use and incorporate into your lessons on a regular basis to support the CCSS.

Thank You for taking the time to discuss these important issues and collect valuable resources to use in the future.

Go HVT!

CREST Walkthrough Guide

Hodgson Vo-Tech 2016-2017

Guiding Indicators for Collaborative Learning –

_____ Partner or group work with: - **MUST SELECT ONE**

_____ ALL students accomplishing the assigned activity

_____ MOST students accomplishing the assigned activity

_____ FEW students accomplishing the assigned activity

_____ Teacher gives/gave clear instructions for partner/group activity – **Select all that apply**

_____ Partner or group work displays positive communication

_____ Partner or group work that engages students in activities in which they must rely on each other to accomplish the assigned task.

_____ Partner or group work in which students: **Select all that apply**

_____ Interpret information

_____ Classify

_____ Summarize

_____ Infer

_____ Construct

_____ Partner or group work in which students: **Select all that apply**

_____ Distinguish relationships between concepts

_____ Determine structure of concept elements

_____ Deconstruct point of view, bias or values

_____ Check inconsistencies within a process or product

_____ Critique/judge the effectiveness of a procedure or product

_____ No collaboration taking place at this time but was Necessary or Unnecessary

MUST SELECT ONE

Guiding Indicators for a Risk-Free Classroom Environment – select all that

apply

_____ Respectful, positive student-teacher relationships

_____ Respectful, positive student-student relationships

_____ Students are comfortable sharing ideas, questions, concerns or needs

_____ Students volunteer and answer questions without being prompted by the teacher

_____ Teacher provides positive feedback and encouragement – **Select all that**

apply

_____ Teacher encourages students to have a growth mindset

_____ Teacher celebrates student success

Guiding Indicators for Lesson Essential Questions – select all that applies

_____ Essential Question probes for deeper meaning of content information

_____ Essential Question is open-ended and meaningful

_____ Essential Question helps drive instruction during the lesson

Guiding Indicators for Lesson Essential Questions – MUST SELECT ONE

_____ Essential Question is posted and referred to during the lesson.

_____ Essential Question is posted but not referred to during the lesson

_____ No essential question is posted.

Guiding Indicators for Summarizing Strategies – select all that apply

_____ Teacher provides a summarizing strategy

_____ with connections to content information or skills

_____ demonstrating evidence of student learning

_____ at the beginning or middle of a lesson

_____ The summarizing strategy engages – **select all that apply**

_____ ALL students to participate with the summarizing strategy

_____ MOST students to participate with the summarizing strategy

_____ FEW students to participate with the summarizing strategy

_____ No summarizing strategy observed but was *Necessary or Unnecessary* **MUST SELECT ONE**

Guiding Indicators for Technology Integration– select all that apply

In a blended learning lesson, check all of the following indicators that apply:

- _____ Students are using a computer to support the content area
 - _____ Upcoming computer use is indicated on the agenda or lesson plan
 - _____ Computer use supplements a planned activity
-

Students are using any of hardware –**Select all that apply**

- _____ Computers
 - _____ Cell phones
 - _____ Document cameras
 - _____ Smartboard
 - _____ iPads
 - _____ Other: _____
-

Number of students working on any of the above devices **- MUST SELECT ONE**

- _____ ALL
- _____ MOST
- _____ FEW

Students are using/applying the following technology applications or skills –**Select all that apply**

_____ Google – Docs/Slides/Forms

_____ Microsoft Outlook

_____ Research information on the internet

_____ Watch and listen to video

_____ Schoology Discussion post

_____ Schoology Assessment

_____ Schoology Assignment

_____ Write papers

_____ Demonstrate skill/knowledge

_____ Games

_____ Online App, please specify _____

_____ Other, please specify _____

No use of technology at this time but was Necessary or Unnecessary (Pick One) –

MUST SELECT ONE

Overall Comments:

APPENDIX F

CREST WALKTHROUGH DATA ANALYSIS

Introduction

This document will analyze the walkthrough data collected by Hodgson Vocational Technical high school (Hodgson) administrators from November 1, 2016 through May 25, 2017. The purpose of this document is to investigate the usage of the Collaborative learning, Risk-Free classroom environment, Essential Questions, Summarizing strategies, and Technology applications (CREST) focal points as observed through administrative walkthroughs. The problem statement for my Executive Leadership Project states that teachers need to adapt their instruction to meet the Common Core State Standards (CCSS), which in turn, will improve student achievement. CREST was created to guide the development and enhancement of teachers' instruction to increase student achievement. Data from classroom walkthroughs gave Hodgson administrators a clearer picture of how CREST focus areas were being used in academic classrooms.

In the 2015-2016 school year, Hodgson was charged by district leadership to create an instructional focus that would support the CCSS and college and career readiness for all students. CREST is based on five strategies and concepts to support teacher best practices and improve student achievement. During professional development (PD), teachers were trained in the five focus areas and given time during

their professional learning communities (PLCs) to develop CREST-based lesson plans and activities.

In September 2016, I developed a comprehensive walkthrough tool based on the focus areas of CREST (Attachment 1). Hodgson's administrators used the CREST walkthrough tool to observe the implementation of CREST from November 2016 through May 2017. During the PD sessions about CREST, teachers were made aware of each walkthrough indicator and how walkthrough data would be shared. A total of 140 walkthroughs were completed and split between the five content areas: English, Mathematics, Science, Social Studies, and Spanish. There were a total of 41 teachers who each received approximately three walkthroughs. The length of each walkthrough ranged from five to ten minutes. To make the collection of data more efficient and reliable, the walkthrough tool was uploaded into an electronic form in which administrators could mark their observations on a tablet or cell phone. Once a walkthrough was completed, the results were digitally sent to each individual teacher through email.

Results

The results section of this paper is organized into five parts representing each focal area of CREST. For each focal area, a detailed overview will be given of the indicators observed.

Collaborative Learning Results

The Collaborative Learning section of the walkthrough tool was divided into four subsections. The first determined if the students were working collaboratively and whether all, most, or few accomplished the activity. The second section addressed the

clarity of teacher’s instructions, the student-to-student communication during the activity, and if student collaboration was necessary to accomplish the task. The third addressed the hierarchies of activities proven to lead to the master of subject matter students participated in while in the group. The fourth addressed whether or not the partner or group work led to students demonstrating higher level thinking skills.

As shown in Figure 37, all or most groups of students were completing the assigned tasks the 75% of the time while collaborating with other students.

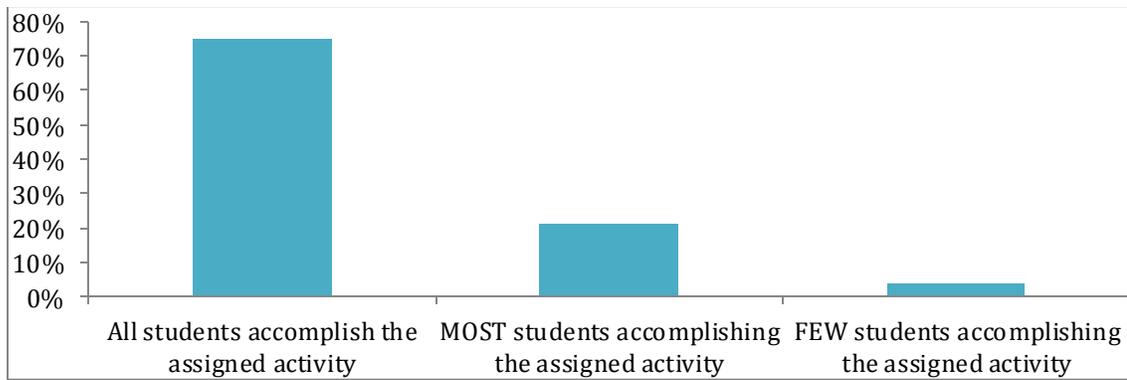


Figure 37: Percent of Students Completing Assigned Activities in Groups

As shown in Figure 38, collaborative work in which partners or groups displayed positive communication was observed 31% of the time, while students were observed working with a partner or group only relied on each other to accomplish a task 29% of the time.

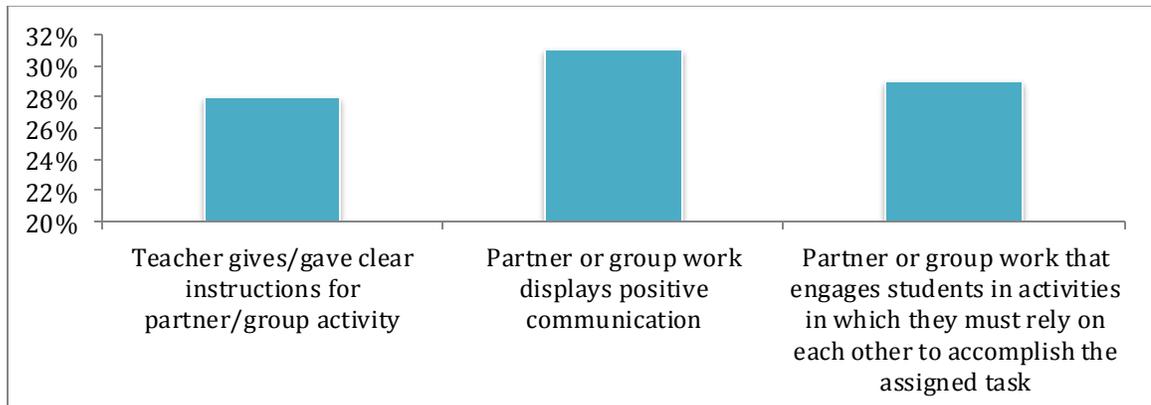


Figure 38: Percent of Collaborative Activities Observed

Figure 39 displays the types of collaborative activities students were observed being engaged in. The observers indicated these activities when collaboration was taking place in the classroom. Determining the structure of concept elements was observed the most at 30% of the time.

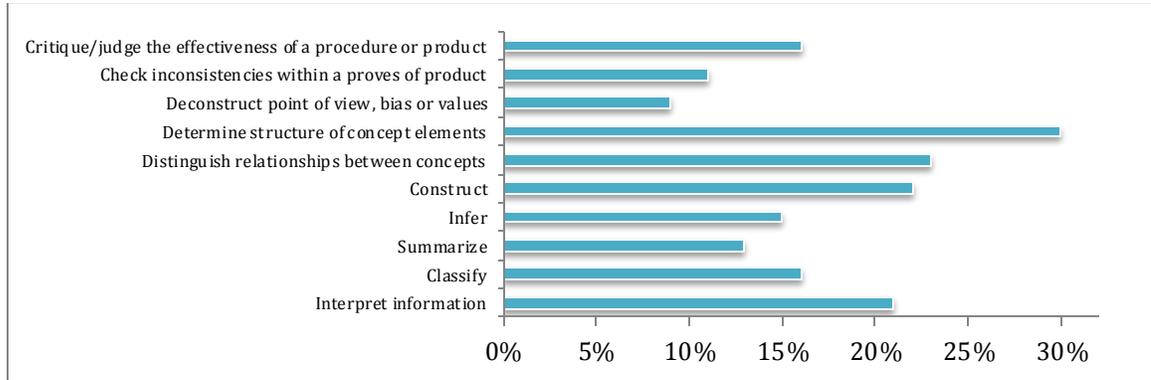


Figure 39: Percent of Types of Collaborative Activities Observed

The fourth subsection indicates the amount of times collaborative activities were either necessary or unnecessary during a lesson. In Figure 40, the data shows that 17% of the time, teachers could have required students to engage in collaborative activities with that specific lesson. However, the Not Applicable indicator illustrates that 66% of the time, collaboration was taking place during the walkthrough.

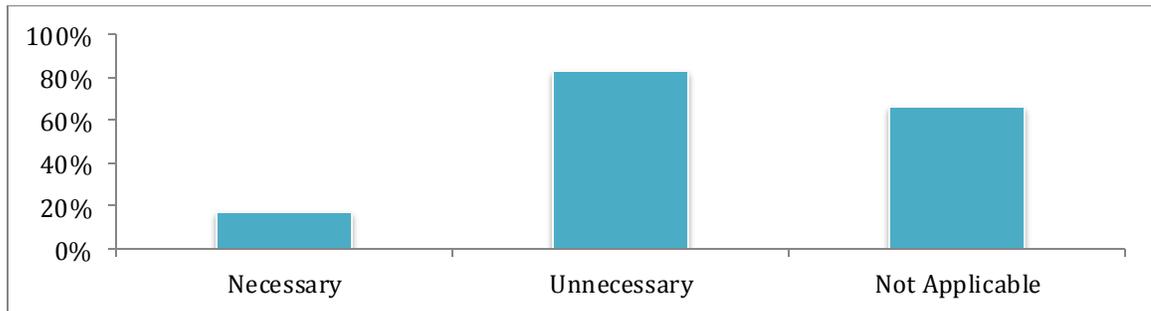


Figure 40: Percent of Collaborative Activities that were Necessary or Unnecessary

Risk-Free Classroom Environment Results

As indicated by the walkthrough data, a risk-free environment was observed at varying levels. Figure 41 shows that teachers provided positive feedback and encouragement to their students the most at 55% of the time, while the least observed was teachers celebrating student success at 26% of the time.

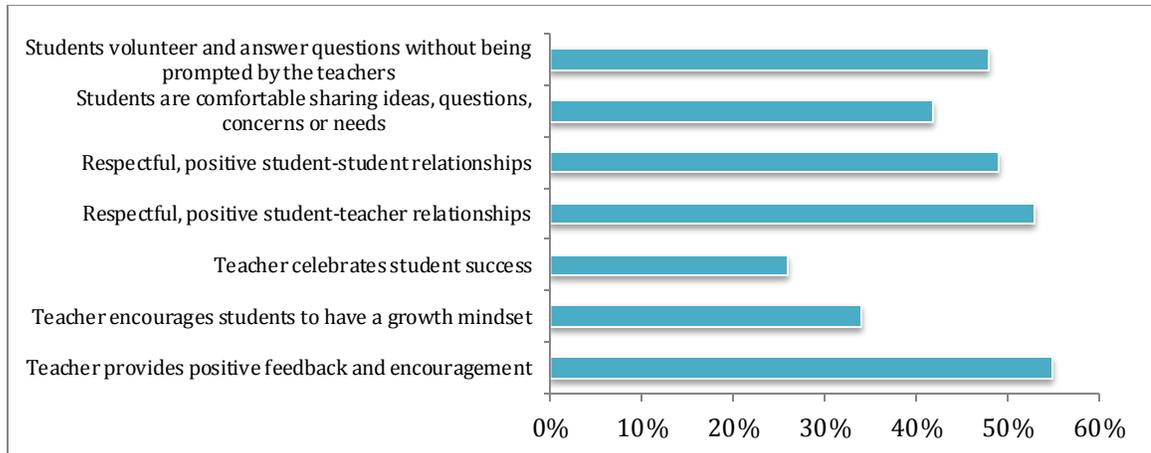


Figure 41: Percent of Guiding Indicators for Risk Free Classrooms

Essential Question Results

The Essential Question (EQ) section of the walkthrough tool is divided into two subsections. The first subsection determines the type of EQ the teacher and students' use during the lesson, and the second subsection observes whether the EQ is posted and referred to during the lesson by the teachers. Figure 22, the first subsection, shows that the EQ probed for deeper meaning of content information 55% of the time, while the EQ helped drive the instruction during the lesson 26% of the time.

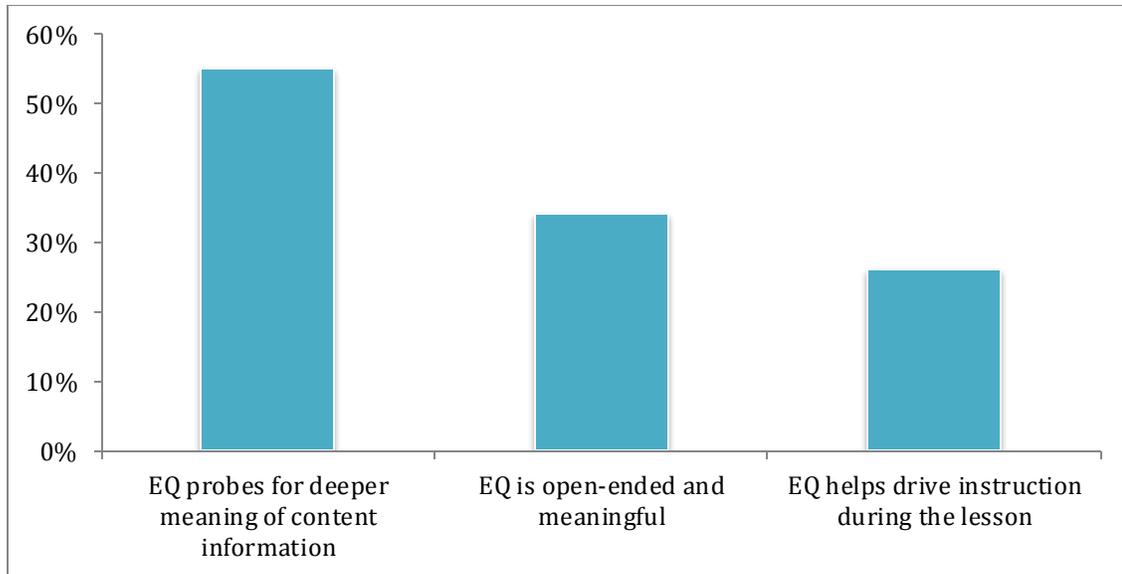


Figure 42: Percent of Type of EQ Is Used During a Lesson

The second subsection depicts the percentage of time the EQ was observed posted and/or referred to during a lesson. The data indicated in Figure 43 shows that the EQ was posted 69% of the time. However, the EQ was only observed being referred to and posted 24% of the time.

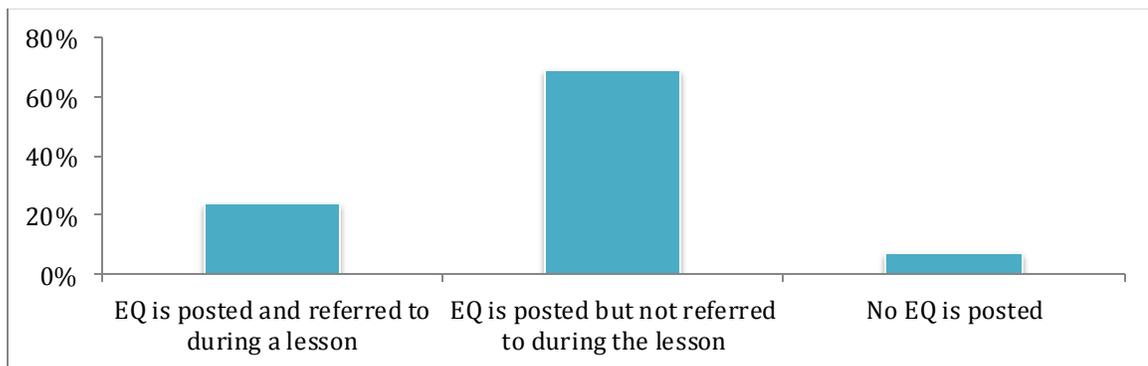


Figure 43: Percent of Time the EQ was Posted and Referred To During a Lesson

Summarizing Strategies Results

The Summarizing Strategies section of the walkthrough tool is divided into three subsections: (a) the type of strategy used and the time during the lesson this strategy took

place, (b) the amount of students participating in the strategy, and (c) whether a summarizing strategy was necessary during the lesson. The summarizing strategies were observed the least of all the components of the CREST walkthrough tool.

In the first subsection shown in Figure 44, summarizing strategies were observed to require students to make connections to content information or demonstrating evidence of student learning 21% of the time.

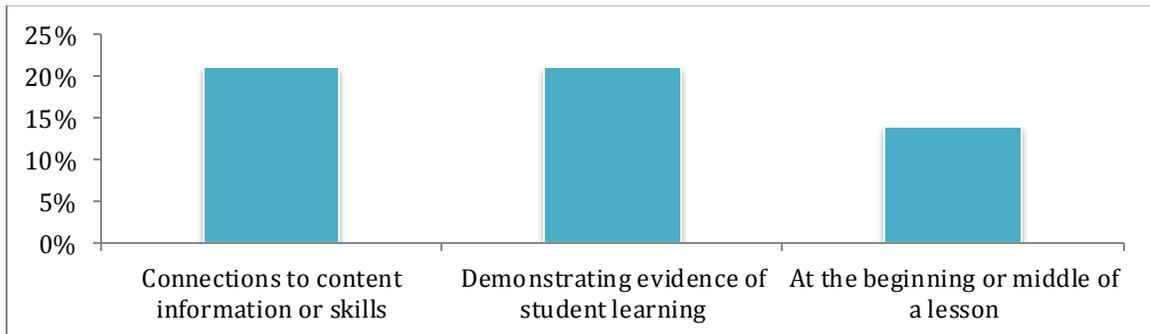


Figure 44: Percent of Type of Summarizing Strategy Observed

The second subsection determines that amount of participation with summarizing strategies were observed (see Figure 45). It was observed that all students participated in the summarizing strategy only 31% of the time.

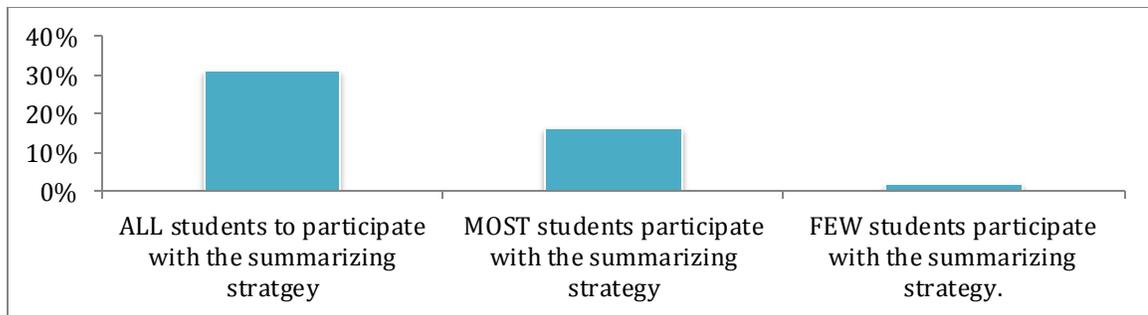


Figure 45: Percent of Students Participation in Summarizing Strategy

The third subsection (see Figure 46) depicts whether a summarizing strategy was necessary during the lesson. It was determined that a summarizing strategy was needed only 19% of the time.

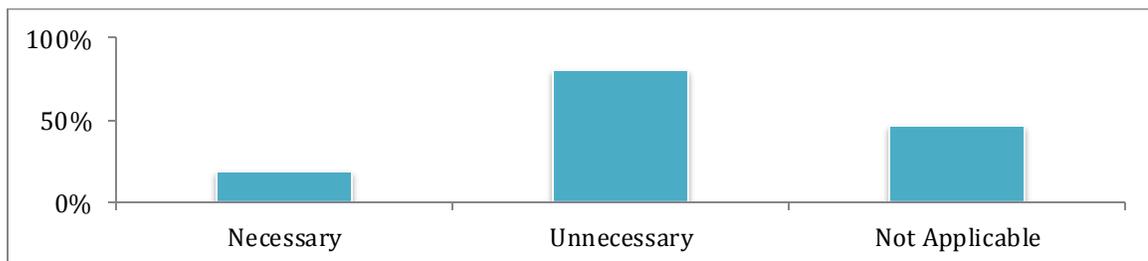


Figure 46: Percent of Summarizing Strategies that were Necessary or Unnecessary

Technology Integration Results

The Technology Integration section of the walkthrough tool is divided into two subsections. The first section indicates whether students were using or going to use a computer/technology during the lesson. The second subsection is a check-off list of technology hardware and application that students were observed to be using during the walkthroughs.

The first subsection indicates the amount of times it was observed that students were using a computer/technology or would be during the lesson at some point, which was 65% of the time (see Figure 47).

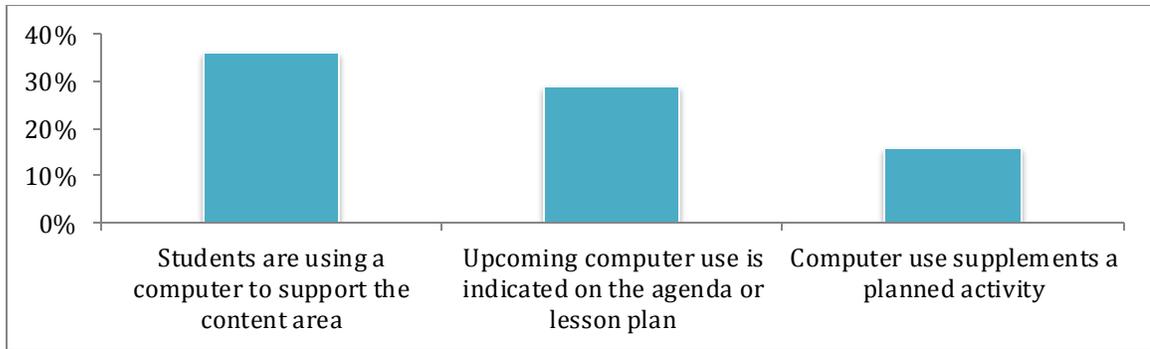


Figure 47: Percent of Computer Use Observed

The second subsection is a check-off list of the types of technology observed being used by students (see Figure 48). It was observed that students were using computers 52% of the time. Specifically, Schoology was being utilized a total of 71% for discussions, posts and assignments.

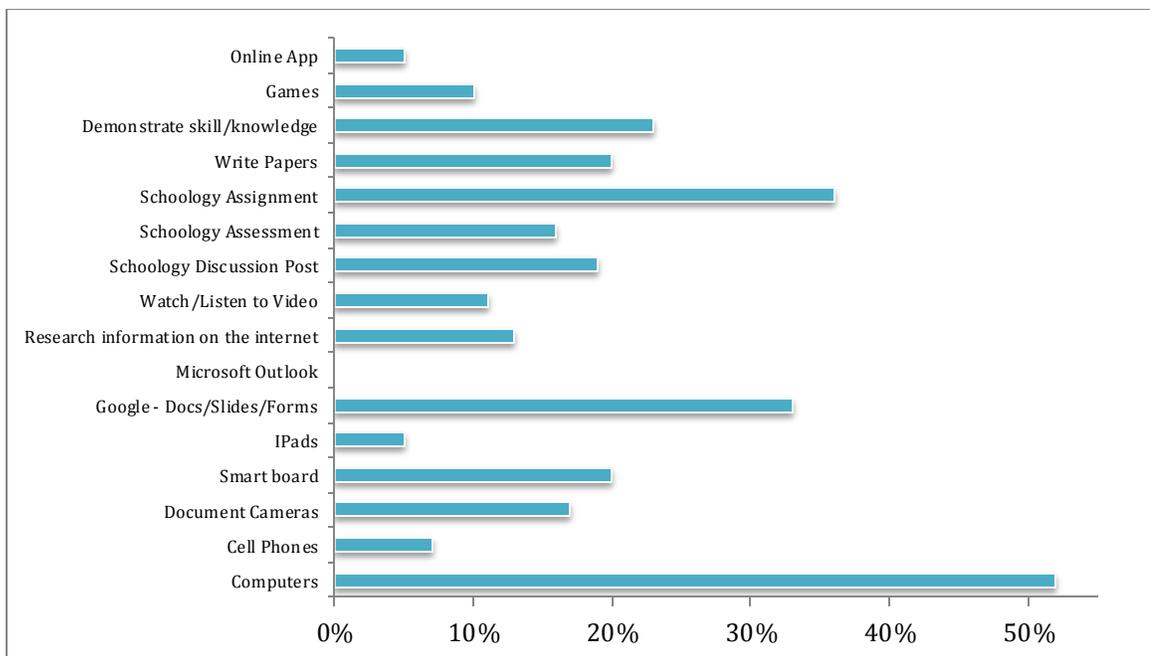


Figure 48: Percent of Type of Technology/Application Used During Observed Lesson

Discussion

In the discussion section, both positive and negative results of the CREST walkthrough tool will be discussed. Each focal area of CREST will be discussed

individually. It should be noted that walkthroughs lasted 5 to 10 minutes which means only a small portion of a lesson is observed. Therefore, the observer might miss a specific CREST focal area that would take place later in the lesson. This is especially true when visiting a classroom at the beginning, middle, or end of a class period. For example, walkthroughs conducted at the start of a lesson are more likely to observe the LEQ being addressed or a teacher giving clear instructions for a collaborative activity, while walkthroughs conducted at the end of a class are more likely to see a summarization strategy. Evidence of a risk-free environment or the posting or use of LEQ's in the classroom could be observed at any time during the lesson.

Additionally, lessons observed also involved portions of time dedicated to logistical procedures such as taking attendance or reviewing assessment results which were not recorded on the walkthrough tool. Thus, the percentage of observed CREST focal areas may be affected because of the timing of the walkthrough procedures, as well as the structure of the class activities.

Collaborative Learning Discussion

Collaboration was observed the majority of the time during the walkthrough observations. This was a significant observation since teachers have many different tasks, such as assessments, that they must accomplish with students. This statistic is encouraging to the effort made by teachers to create lesson activities for students to work in partnerships or groups to accomplish a task.

As indicated by the data, collaboration was taking place in classrooms 96% of the time with all or most students working together in partnerships or groups on lesson

activities. Teachers were observed facilitating positive communication among students and lesson activities that engaged students in activities in which they must rely on each other. The time a walkthrough took place might have hindered these results in terms of a teacher giving specific directions or goals for the group activity.

There was a range of types of activities observed when students were collaborating such as interpreting or construction information and determining the structure of concept elements. A flaw of this subsection was the inability for the observer to type in a lesson activity observed other than those listed. When discussing the walkthrough tool with the other observers, they indicated the listed choices were limited and did not describe some activities. Due to the way the walkthrough tool was electronically formatted, the observer must choose an option for each section. Therefore, some collaborative activities did not match perfectly since the form forced the observers to select an option.

Risk Free Environment Discussion

In this section, observers could select as many indicators of risk-free environment they observed. Teachers and students largely had positive communication and interactions during the class period. With the training teachers and students have received about Growth Mindset, it is promising that the observers witnessed positive feedback and encouragement and respectful student-student relationships and student-teacher relationships. The lowest indicator was teachers celebrating student success. This might be because the observer saw a lesson while students were working on a project or activity, and not necessarily the culminating or graded work.

Essential Questions Discussion

The data indicates EQs were posted in classrooms most of the time. This is a significant observation due to the importance of EQs in regards to keeping students focused and aware of what they are learning. A negative observation was that few LEQs observed were open-ended or meaningful. If the EQ is not meaningful to the lesson content, then the use of the question is lost on the students and ultimately holds no real effect on their learning.

In the district curriculum, high-quality EQs are provided if teachers choose to use them. These LEQs are overarching, higher-order questions that encompass a large portion of content. It is the teacher's prerogative to create an EQ they feel fits the lesson better. It is evident that teachers are creating many of their own EQs. This might be because teachers create mini-lessons to scaffold content information. At times, teachers formulate more basic EQs to match the mini-lesson. The quality of EQs must be addressed with teachers so that higher-order EQs can move students from remembering or understanding information to applying, creating, or analyzing information.

Summarizing Strategies Discussion

The summarizing strategies were observed the least of all the components of the CREST walkthrough tool. The types of summarizing strategies for making connections to content information or demonstrating evidence of student learning were also the least observed. Another negative aspect was the amount of students engaging in summarizing when a strategy was employed. A flaw of the walkthrough tool for this section was the limited choices made available to the observer in regards to differing summarizing strategies. Providing more specific summarizing strategies to choose from might increase

these statistics. Summarizers such as a ticket out the door, 100 word summary, Schoology discussion post, think-pair-share, or thumbs up, thumbs down are a few examples of strategies to be included on the form.

Additionally, teachers need to invest time to create lessons that incorporate summarizing strategies. This could be worked on during PLC meeting time, and the strategies could be distributive summarization or at the end of a lesson. Teachers need to plan for a summarizing strategy to ensure students are identifying and describing the main concepts learned and also to collect data to formatively assess students understanding of content information.

Technology Integration Discussion

The data indicated that technology use was being utilized by students the majority of the time. Most students were using a computer during some part of a lesson, and teachers were incorporating Schoology the most. This is a positive outcome due to the district and school push for teachers to transition their lessons and activities into the Schoology platform. It is evident that teachers are shifting their lesson planning towards using Schoology and that computers are available for teachers and students to use. However, it was noted that technology use was dictated by the availability of resources. Even though many teachers were observed using computers, not every teacher had access to a classroom set of computers at all times. In many cases, teachers shared a computer cart and had to create their lessons around the availability of that cart.

One of the most powerful aspects of completing walkthroughs and deciphering the data is the changes that can be made to support the execution of CREST with

teachers. Table 3 illustrates my plan moving forward to support teachers as they implement CREST in their classrooms.

Table 3: Improvement Plan to Implement CREST Attributes

CREST Focal Area	Action Steps
Collaborative Learning	<ol style="list-style-type: none"> 1) Revisit collaboration techniques during PLC meeting time 2) Develop internal list of collaboration techniques to be shared with all teachers 3) Develop better indicators of collaborative activities for the walkthrough form 4) Create an area on walkthrough form to add strategies not listed
Risk Free Environment	<ol style="list-style-type: none"> 1) Review with teachers and students the concepts of Growth Mindset 2) Continue to promote the importance of positive classroom environments in which all students feel they can contribute and participate 3) Develop more indicators to describe a risk free environment
Essential Questions	<ol style="list-style-type: none"> 1) Provide PD around writing effective LEQs 2) Devote PLC meeting time to writing and sharing LEQs with fellow content area teachers 3) Complete more walkthroughs focused on LEQ quality and referencing
Summarizing Strategies	<ol style="list-style-type: none"> 1) Provide PD for teachers about incorporating and implementing effective summarizing strategies 2) Develop internal list of summarizing strategies to be shared with all teachers 3) Devote PLC meeting time to collaborating and sharing with content area teachers about summarizing strategies 4) Revisit the walkthrough tool to add more summarizing strategies and an area to add strategies not listed
Technology Integration	<ol style="list-style-type: none"> 1) Increase resources for all teachers to have use of computers 2) Develop after school program for teachers to learn the nuances of Schoology and Google apps

Conclusion

The CREST walkthrough tool was a productive start to evaluating the effectiveness and implementation of CREST focal areas. As discussed above, the walkthrough form needs modifications to include all aspects that might be observed during a walkthrough. Most importantly, many aspects of CREST were highlighted which indicates that teachers take the instructional focus seriously and are supporting these best practices in their classrooms. As a result of the findings, teachers will receive more PD and time during PLCs to work and collaborate on CREST focal areas.

CREST Walkthrough Guide

Hodgson Vo-Tech 2016-2017

Guiding Indicators for Collaborative Learning –

_____ Partner or group work with: - **MUST SELECT ONE**

_____ ALL students accomplishing the assigned activity

_____ MOST students accomplishing the assigned activity

_____ FEW students accomplishing the assigned activity

_____ Teacher gives/gave clear instructions for partner/group activity – **Select all that apply**

_____ Partner or group work displays positive communication

_____ Partner or group work that engages students in activities in which they must rely on each other to accomplish the assigned task.

_____ Partner or group work in which students: **Select all that apply**

_____ Interpret information

_____ Classify

_____ Summarize

_____ Infer

_____ Construct

_____ Partner or group work in which students: **Select all that apply**

_____ Distinguish relationships between concepts

_____ Determine structure of concept elements

_____ Deconstruct point of view, bias or values

_____ Check inconsistencies within a process or product

_____ Critique/judge the effectiveness of a procedure or product

_____ No collaboration taking place at this time but was Necessary or Unnecessary

MUST SELECT ONE

Guiding Indicators for a Risk-Free Classroom Environment – select all that apply

_____ Respectful, positive student-teacher relationships

_____ Respectful, positive student-student relationships

_____ Students are comfortable sharing ideas, questions, concerns or needs

_____ Students volunteer and answer questions without being prompted by the teacher

_____ Teacher provides positive feedback and encouragement – **Select all that apply**

_____ Teacher encourages students to have a growth mindset

_____ Teacher celebrates student success

Guiding Indicators for Lesson Essential Questions – select all that applies

_____ Essential Question probes for deeper meaning of content information

_____ Essential Question is open-ended and meaningful

_____ Essential Question helps drive instruction during the lesson

Guiding Indicators for Lesson Essential Questions – MUST SELECT ONE

_____ Essential Question is posted and referred to during the lesson.

_____ Essential Question is posted but not referred to during the lesson

_____ No essential question is posted.

Guiding Indicators for Summarizing Strategies – select all that apply

_____ Teacher provides a summarizing strategy

_____ with connections to content information or skills

_____ demonstrating evidence of student learning

_____ at the beginning or middle of a lesson

_____ The summarizing strategy engages – **select all that apply**

_____ ALL students to participate with the summarizing strategy

_____ MOST students to participate with the summarizing strategy

_____ FEW students to participate with the summarizing strategy

_____ No summarizing strategy observed but was *Necessary or Unnecessary* **MUST**

SELECT ONE

Guiding Indicators for Technology Integration– select all that apply

In a blended learning lesson, check all of the following indicators that apply:

- Students are using a computer to support the content area
 - Upcoming computer use is indicated on the agenda or lesson plan
 - Computer use supplements a planned activity
-

Students are using any of hardware –**Select all that apply**

- Computers
 - Cell phones
 - Document cameras
 - Smartboard
 - iPads
 - Other: _____
-

Number of students working on any of the above devices **- MUST SELECT ONE**

- ALL
 - MOST
 - FEW
-

Students are using/applying the following technology applications or skills –**Select all that apply**

- Google – Docs/Slides/Forms
- Microsoft Outlook

_____ Research information on the internet

_____ Watch and listen to video

_____ Schoology Discussion post

_____ Schoology Assessment

_____ Schoology Assignment

_____ Write papers

_____ Demonstrate skill/knowledge

_____ Games

_____ Online App, please specify _____

_____ Other, please specify _____

No use of technology at this time but was Necessary or Unnecessary (Pick One) – **MUST**

SELECT ONE

Overall Comments:

APPENDIX G

GROWTH MINDSET PROFESSIONAL DEVELOPMENT

& PRESENTATIONS FOR STUDENTS

Introduction

Hodgson Vocational Technical High School (Hodgson) adopted Dweck's (2010) theories of Growth Mindset (GM) to encourage students to work hard, invest in themselves, and be resilient. We have included GM as part of our instructional focus, CREST. The R of CREST represents a "risk free environment" and focuses on developing classroom expectations and structures employing the concepts and theories of GM. The administration of Hodgson provided training in these concepts to both teachers and students. This training is described in the following document, which reviews the professional development for teachers and multifaceted presentations to students.

Professional Development for Teachers

Prior to working with students, Hodgson administrators provided growth mindset professional development for our teachers. These sessions educated teachers about the positive outcomes of having a growth mindset, providing growth mindset feedback to use with students and developing a classroom environment in which students feel safe to take risks and make mistakes.

GM education for staff is salient to changing the thinking that one's intelligence level is not fixed and can change (Hochanadel, & Finamore, 2015). Our first exposure to

GM started in 2013 through a Delaware state professional development program called Vision 2015.

Timeline of Teacher Professional Development

2013-2014 School Year

A group of 8 teachers representing all academic areas at Hodgson participated in six full days of state professional development throughout the school year. This professional development was called Vision 2015 Teacher Committee Focusing on Growth Mindset. During these seminars, teachers and administrators worked as a team to brainstorm ideas and create plans to develop a school-wide GM initiative for Hodgson teachers and students. The plans included off-site GM training, GM feedback, and praise challenges.

2014-2015 School Year

All teachers at Hodgson participated in GM professional development at the beginning of the school year. Information shared with teachers included brain growth and development, Dweck's (201) GM research, and information about speaking and responding to students using GM terminology and feedback. Additionally, teachers participated in GM discussions during professional learning communities (PLCs) and practiced GM feedback with students. Teachers then brought anecdotal evidence of these conversations and reflective feedback to their PLCs and shared best practices on how they incorporated more GM conversations into their daily interactions with students.

2015-2016 School Year.

At the beginning of the school year, all teachers at Hodgson participated in a full-day professional development session with Mindset Works®. Teachers worked

collaboratively on how they would create a classroom environment that promotes GM. During the seminar, teachers created questionnaires, rules, and simulations to implement in their classrooms to develop student awareness of GM attributes. To provide additional training for novice teachers, we conducted small group seminars in which they explored GM concepts and how they would implement these into their classroom culture. All teachers took a GM survey at the end of the school year.

Timeline of Student Professional Development

2016-2017 School Year

The 2016-2017 school year was fully devoted to educating and supporting our students understanding of GM concepts. All ninth and tenth grade students were participants in GM presentations at the beginning of the school year. Before each presentation, students completed a GM survey to gather information about their beliefs regarding GM. The goal of these small group meetings was to inform students of GM concepts and how it can help students enhance their achievement. Additionally, we incorporated GM bulletin boards, signs, and student videos around the school building, as well as including inspirational sayings during the morning announcements. Students also completed a GM survey in June of 2017.

Student Growth Mindset Activities

We started incorporating student presentations to better educate our students about GM. This training helped the overall understanding of employing a GM, along with how students could enhance their achievement. Our GM work with students included information on how the teenage brain functions, definitions of GM, other types of mindsets, and how GM can enrich a student's academic and life goals.

Why Growth Mindset?

Students who value effort, persevere when faced with adversity, and believe their intelligence is malleable have a GM. We believe this is a major component to the success of our students and overall school performance. “Individuals who believe they can develop their intelligence over time” are defined as having a GM (Blackwell, Tresniewski, & Dweck, 2007, p. 247). In contrast, individuals who believe they are born with a certain amount of intelligence, with no chance of increasing or growing, have a fixed mindset. These two mindsets lead to different school behaviors. A student with a GM would approach challenging work as an opportunity to learn and grow. They relish thought-provoking work and realize that mistakes are natural and part of the learning process. Students with a GM are more likely to remain involved, try new strategies, and use all resources available for learning (Dweck, 2010). Students who have a “fixed mindset” are reluctant to engage in learning opportunities that might cause them to risk performing poorly or admitting deficiencies (Dweck, 2010).

A key component of the GM is “grit”. In an interview with Perkins-Gough (2013), Duckworth defines “grit” as “passion and perseverance for long-term goals despite setbacks, failures, and competing pursuits” (p.14). Duckworth continues that mindset is a key determinate of developing grit. The GM stance of “I can get better if I try harder should help make a person tenacious, determined, and hardworking” is a true indicator of grittiness (Perkins-Gough, 2013, p19).

O'rourke, Haimovitz, Ballweber, Dweck, and Popovich (2014) evaluated the significance of understanding how the brain grows and the use of praise on effort. This study analyzed student behaviors consistent with GM while playing an educational video

math game. They found significantly changing the incentive structure and providing specific GM feedback promoted GM behaviors.

Researchers have also investigated how teachers' mindsets affect their interactions with students. The internal mindsets of teachers about their leadership ability are a critical component related to their effectiveness and success as a leader (Chase, 2010). For example, teachers who adopt a GM approach to grouping provided opportunities for students to engage in multiple ways while completing math problems (Boaler, 2002). If a teacher fosters a GM with students and their interactions, positive changes can occur with motivation in classroom settings (Blackwell et al., 2007). A teacher's positive interactions with students that promote GM ideals can influence students to believe that with hard work and determination they will be successful.

GM Presentations to Students

To provide knowledge and understanding to our student population about employing a GM, we conducted Growth Mindset Student Presentations with all ninth and tenth grade students. These talks were organized by their Career Area programs. Typically, we presented to two career programs at a time in our elevated classroom which has auditorium style seating with a large presentation station. For example, we would speak to Nurse Tech and Culinary Arts students during the same presentation. I created an interactive slide presentation with embedded videos and GM images. Our principal, Dr. Lamey, and myself presented the information with enthusiasm and personal stories to emphasize the importance of GM.

At the beginning of each presentation, we gave a GM survey (Table 4) to allow students to gauge their understanding of the concept. This survey was taken from the

Mindset Works® (2016) website. After they completed the survey, we started the presentation. Attachment 1 describes each slide’s purpose during the presentation as well as activities completed by students.

Table 4: Student Mindset Survey

Do you Agree or Disagree?	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
No matter how much intelligence you have, you can always gain more.	1	2	3	4	5	6
You can learn new things, but you cannot really change your intelligence ability.	1	2	3	4	5	6
I like work best when it makes me think and problem solve.	1	2	3	4	5	6
I like work best when I can complete it well without too much trouble.	1	2	3	4	5	6
I don’t mind making mistakes and learn from them.	1	2	3	4	5	6
I like my work to be perfect.	1	2	3	4	5	6
When work is challenging, it forces me to work more intensely.	1	2	3	4	5	6
When work is challenging, I sometimes feel like giving up.	1	2	3	4	5	6

Growth Mindset Presentation to Students

Slide 1 - Introduction



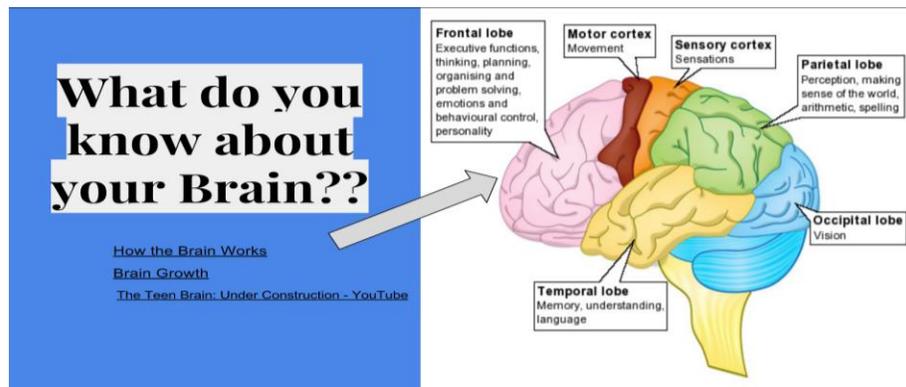
We asked students to think for one minute about the meaning of GM. The understanding our students had ranged from no or limited understanding to complete understanding of its definition. We asked for volunteers to give a definition of GM. Following this definition, we explained why it's important to have a GM. This purpose was to help students better understand how GM can help them in school and their life.

Slide 2 – Expectations



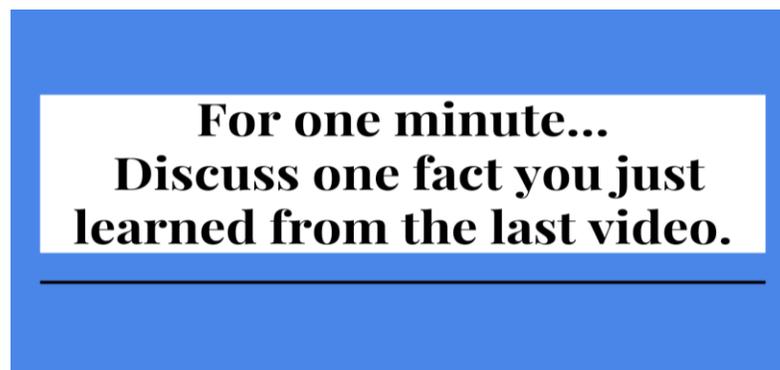
We discussed the students' expectations about their behavior and participation during the presentation. We also stressed the importance of keeping an open mind about GM and how this can help them in school and life.

Slide 3 - What do you know about your Brain?



This portion of the presentation gave scientific background information about how the brain grows and changes during a person's lifetime. We showed students five short videos about how the brain works, neuroplasticity, the teenage brain, and GM. Descriptions of each video are listed below the link.

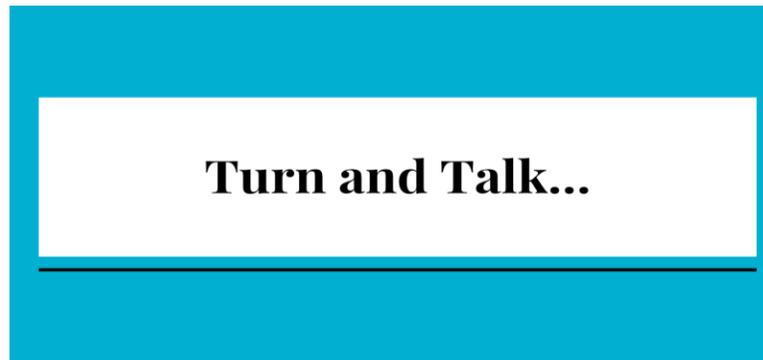
Slide 4 – Videos



Video 1 - How the Brain Works

After watching the first video (Sentis, 2012a), students were asked to discuss, with a partner, two facts that were new to them. Each partnership was responsible to provide at least one new fact if randomly called on.

Slide 5 – Video



Video 2 – Neuroplasticity

After watching the second video (Sentis, 2012b), students were asked to raise their hands if they play a sport, play an instrument, improved in a subject/course after studying. Then, they discussed with a partner a time when they made a mistake and realized they would try to never make that mistake again. They students gave examples of mistakes they would try to avoid making again. Then we discussed how neuroplasticity is connected to practicing, habits and making mistakes.

Video 3 - The Teen Brain: Under Construction

Before watching the third video (Seeker, 2013), students were asked to think about the differences between teenagers and adults. Students wrote differences on post-it notes and placed them on a large poster paper in the front of the room. Students then put check marks on all the notes they agreed with. Once this activity was completed, we watched the third video. Afterward, students wrote post-it notes with new differences

they learned between adults and teenagers and added them to the poster board. By grouping all the post-it notes together, we were able to come up with a list of teenage attributes. This activity helped identify the differences and changes teenagers are experiencing and how the brain's chemistry affects their behaviors.

Slide 6 – Recap

Let's Recap...

The Brain is made up of Neurons - 100 billion all connected to each other

Neuroplasticity - the brain's ability to grow and change. This happens when you learn new information, practice a skill or make a mistake.

The **FRONTAL LOBE** which controls thinking, planning, organizing, judgement and self control is not fully developed until the age of 25.

I may not be able to do this now, but with time and effort I'll be able to!

To reinforce the brain information from the presentation, we reviewed the makeup of the brain, how the brain grows through neuroplasticity, and the power of the frontal lobe.

Slide 7 – GM Introduction Video



We then transitioned to GM research by Dr. Carol Dweck and how it is related to brain growth. The fourth video addressed the differences between fixed and growth mindsets and the crucial role that people's mindsets play in determining their success

(Ragan, 2016). The reinforcing student activity was the completion of a chart depicting the differences between growth and fixed mindsets.

Slide 8 - Review of Growth Mindset Verses Fixed Mindset

Growth Mindset...

FIXED MINDSET		GROWTH MINDSET
<ul style="list-style-type: none"> • SOMETHING YOU'RE BORN WITH • FIXED 	SKILLS	<ul style="list-style-type: none"> • COME FROM HARD WORK. • CAN ALWAYS IMPROVE
<ul style="list-style-type: none"> • SOMETHING TO AVOID • COULD REVEAL LACK OF SKILL • TEND TO GIVE UP EASILY 	CHALLENGES	<ul style="list-style-type: none"> • SHOULD BE EMBRACED • AN OPPORTUNITY TO GROW. • MORE PERSISTANT
<ul style="list-style-type: none"> • UNNECESSARY • SOMETHING YOU DO WHEN YOU ARE NOT GOOD ENOUGH 	EFFORT	<ul style="list-style-type: none"> • ESSENTIAL • A PATH TO MASTERY
<ul style="list-style-type: none"> • GET DEFENSIVE • TAKE IT PERSONAL 	FEEDBACK	<ul style="list-style-type: none"> • USEFUL • SOMETHING TO LEARN FROM • IDENTIFY AREAS TO IMPROVE
<ul style="list-style-type: none"> • BLAME OTHERS • GET DISCOURAGED 	SETBACKS	<ul style="list-style-type: none"> • USE AS A WAKE-UP CALL TO WORK HARDER NEXT TIME.

We reviewed important concepts about growth mindset with the students.

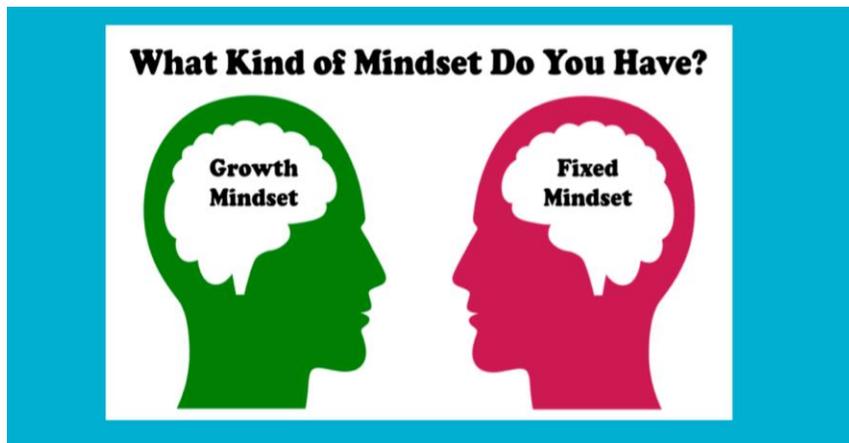
Students took notes and completed a worksheet designed to differentiate between Fixed and Growth Mindsets (Figure 2).

Figure 2

Differences Between Fixed and Growth Mindsets		
FIXED MINDSET		GROWTH MINDSET
	SKILLS	
	CHALLENGES	
	EFFORT	
	FEEDBACK	
	SETBACKS	

Mindset Reference Sheet – Students used Slide 8 to fill in important information about each area of mindset. This page is used as a reference sheet for students to refer to about the differences between fixed and growth mindset.

Slide 9 - What kind of mindset do you have?



We asked students to spend a few moments thinking about their mindset.

Students then turned and talked with a classmate to share their own mindsets.

Additionally, students were asked to discuss how they might change their actions and beliefs so that they better represent a GM.

Slide 10 – We want you to have a Growth Mindset

A blue rectangular slide. At the top, it says "We Want You To Have A Growth Mindset". Below this, there is a list of five bullet points: "-Try your Hardest!", "-Be Determined", "-Persevere", "-Practice, Practice, Practice", and "-Remember that your Brain can Grow and you can become Smarter!!". To the right of the list is a cartoon illustration of a pink brain with a face, arms, and legs, lifting a barbell. At the bottom left of the slide, it says "Arthur's Story - Don't Give Up".

At the conclusion of the presentation, we reviewed the important aspects of employing a growth mindset. We discussed with students the importance of trying the hardest each day to make the most of their educational experience. The last activity with students was watching a video about a man persevering in his quest to lose weight (Diamond Dallas Page, 2012).

References

- Blackwell, L. S., Trzesniewski, K. H., & Dweck, C. S. (2007). Implicit theories of intelligence predict achievement across an adolescent transition: A longitudinal study and an intervention. *Child Development, 78*(1), 246-263. doi:10.1111/j.1467-8624.2007.00995.x
- Boaler, J. (2002). *Experiencing school mathematics: Traditional and reform approaches to teaching and their impact on student learning*. Mahwah, NJ: Lawrence Erlbaum Association.
- Brainology's Mindset Assessment Profile Tool. (2016, January). Retrieved August 13, 2016, from [Mindset Assessment Profile Tool](#)
- Chase, M. A. (2010). Should coaches believe in innate ability? The importance of leadership mindset. *Quest, 62*(3), 296-307.
- Diamond Dallas Page. (2012, Apr 30). Never, ever give up. Arthur's inspirational transformation! Retrieved from <https://www.youtube.com/watch?v=qX9FSZJu448>
- Dweck, C. S. (2010). Even geniuses work hard. *Educational Leadership, 68*(2), 16-20.
- Hochanadel, A., & Finamore, D. (2015). Fixed and growth mindset in education and how grit helps students persist in the face of adversity. *Journal of International Education Research, 11*(1), 47-50.
- O'Rourke, E., Haimovitz, K., Ballwebber, C., Dweck, C. S., & Popovic, Z. (n.d.). Brain points: a growth mindset incentive structure boosts persistence in an educational game [Scholarly project]. Retrieved from <http://grail.cs.washington.edu/wp-content/uploads/2015/08/orourke2014bpa.pdf>

- Perkins-Gough, D. (2013). The significance of grit: A conversation with Angela Lee Duckworth. *Educational Leadership*, 71(1), 14-20.
- Ragan, T. (2016, Nov 6). Growth mindset introduction: What is it, how it works, and why it matters. Retrieved from <https://www.youtube.com/watch?v=75GFzIkMRY0&t=100s>
- Sentis. (2012a, Aug 12). How the brain works. Retrieved from https://www.youtube.com/watch?v=XSzsI5aGcK4&list=PLwrHA9rJu3ybuh85eQ6CTLIC67iQpbY8_
- Sentis. (2012b, Aug 12). Neuroplasticity. Retrieved from https://www.youtube.com/watch?v=ELpfYCZa87g&list=PLwrHA9rJu3ybuh85eQ6CTLIC67iQpbY8_
- Seeker. (2013, December 8). The teen brain: Under construction. Retrieved from <https://www.youtube.com/watch?v=f9Ya0mHsIgM>
- West, M. R., Kraft, M. A., Finn, A. S., Martin, R. E., Duckworth, A. L., Gabrieli, C. F., & Gabrieli, J. D. (2015). Promise and paradox: measuring student's non-cognitive skills and the impact of schooling. *Educational Evaluation and Policy Analysis*, 38(1), 148-170.

APPENDIX H
STUDENT SURVEY ANALYSIS OF GROWTH MINDSET

Introduction

At the beginning of the 2016-2017 school year, Hodgson Vocational Technical High School (Hodgson) students were participants of Growth Mindset (GM) presentations. These presentations took place in the library from September 12, 2016 through September 14, 2016 and were facilitated by Hodgson administration. This document will analyze results from a student survey about GM administered at the beginning and end of the school year.

The administration wanted to deliver the information about GM content to small groups as a way to interact with the students and have discussions about important points and concepts. Since Hodgson is a vocational school, students spend a portion of their day in a grade-level career and technical education program. Students were pulled from this program to attend the meeting so all students could come from the same grade level. Table 5 gives a schedule of times for students to attend the talks. Teachers were emailed this schedule so they would attend with their students on the designated day and time.

Table 5: Schedule of Growth Mindset Presentations to Students

	9/12/16	9/13/16	9/14/16
9 th grade 8:00 – 8:45	Carpentry Auto Tech Auto Body	Cosmetology Nurse Tech Early Childhood Education	Culinary Arts Computer Networking
9 th grade 8:45 – 9:30	Dental Assisting Industrial Millwright Masonry	Electrical Trades Plumbing	Technical Drafting Health Information Technologies
10 th grade 9:45 – 10:30	Carpentry Auto Tech Auto Body	Cosmetology Nurse Tech Early Childhood Education	Culinary Arts Computer Networking
10 th grade 10:30 – 11:15	Dental Assisting Industrial Millwright Masonry	Electrical Trades Plumbing	Technical Drafting Health Information Technologies

At the beginning of each presentation to the students, a survey (Attachment 1) was administered to gauge their understanding of the GM concept. This same survey was given to students at the end of the school year on June 6, 2017. The survey was designed with four statements describing a GM, and four statements describing a fixed mindset (FM). Table 6 displays the mean data from the GM statements. Table 7 displays the mean data from FM statements. Students gave each statement a rating from 1 = strongly disagree to 6 = strongly agree.

Table 6: Growth Mindset Mean Scores

Name	Description	Beginning of Year Mean	End of Year Mean
1. Gain Intelligence	No matter how much intelligence you have, you can always gain more.	5.5	5.5
2. Like Hard Work	I like work best when it makes me think and problem-solve.	4.0	4.1
3. Mistakes Are Okay	I don't mind making mistakes when completing challenging work.	4.9	4.3
4. Intense Work	When work is challenging, it forces me to work more intensely.	4.6	4.6
Average Score		4.7	4.6

Alpha Reliability of .47

Table 7: Fixed Mindset Mean Scores

Name	Description	Beginning of Year Mean	End of Year Mean
5. Can't Gain Intelligence	You can learn new things, but you cannot really change your intelligence ability	2.9	2.7
6. Like Easy Work	I like work best when I can complete it well without too much trouble.	5.1	5.1
7. Mistakes Are Not Okay	I like my work to be perfect.	4.9	4.7
8. Give Up	When work is challenging, I sometimes feel inadequate and giving up.	3.4	3.1
Average Score		4.0	3.9

Alpha Reliability of .36

Results

Even though students indicated that they had little understanding of GM before our presentations, the survey data indicated that they somewhat agreed or fully agreed with all four growth mindset statements with an average of 4.7 out of 6. The fixed mindset statements had a lower average score, with an average of 3.9 out of 6.

When comparing students' opinions about GM to FM at the beginning of the year, it was significant that they scored statement 1 ("No matter how much intelligence you

have, you can always gain more”) higher with a mean of 5.5. This indicates that students believe they have a GM. Also, they scored statement 5 (“You can learn new things, but you cannot really change your intelligence ability”) lower with a mean of 2.9.

Other statements, however, seemed to contradict each other. For example, statement 2 (“I like work best when it makes me think and problem-solve”) had a slightly above average score (mean = 4.0), while statement 6 (“I like work best when I can complete it well without too much trouble”) had higher score (mean = 5.1). The same was true for statement 3 (“I don’t mind making mistakes when completing challenging work”) and statement 7 (“I like my work to be perfect”). Both had a mean score of 4.9 out of 6. Students rated statement 4 (“When work is challenging, it forces me to work more intensely”) a higher (mean = 4.6), and rated statement 8 (“When work is challenging, I sometimes feel inadequate and giving up”) lower (mean = 3.4).

There was almost no difference in the mean scores from the beginning of the year to the end of the year. The scores for the GM statements were fairly high at the beginning of the year with students either agreeing or somewhat agreeing with all four statements. However, the overall mean actually decreased slightly to 4.6 at the end of the year. With presentations to students at the beginning of the year and all faculty members having participated in professional development on GM for two years, it was expected that the end of year mean for the FM statements would decrease and that students would disagree with those statements. The overall mean decreased slightly from 4.0 to 3.9.

Data Limitations

The survey questions had an alpha reliability score of 4.7 for the GM statements and only a 3.6 for the FM statements. This indicated that the scores were not very reliable, which was believed to be because the statements were not written to be specific enough to distinguish between growth and fixed ideas. In some cases, students may think they work best when they have to struggle and problem solve, but also think they work best when they complete work that is easier and faster to finish. Adjusting the survey to create questions that accurately measure a students' belief would provide evidence if students believe they have a GM. Also, the end of year survey was given very close to the last day of school and students may not have concentrated as sincerely as if they had completed it earlier.

Next Steps

To continue to improve students' development of a GM, HVT administration will continue to organize presentations to students at the beginning of each school year. Students will be reminded to be aware of their GM as opposed to a FM through school announcements, school bulletin boards, and a pep rally to celebrate students who display positive mindsets and their accomplishments. Teachers will be reminded during their PLC times and at faculty meetings to create risk-free environments in their classrooms. These types of environments include respectful and positive relationships, a comfortable atmosphere for sharing ideas, concerns, and questions, and celebrations of student's success after struggles. Additionally, a new survey will be created that provides more reliable and significant insight to student's mindsets.

Attachment 1

Student Mindset Survey

Do you Agree or Disagree?	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
No matter how much intelligence you have, you can always gain more.	1	2	3	4	5	6
You can learn new things, but you cannot really change your intelligence ability.	1	2	3	4	5	6
I like work best when it makes me think and problem solve.	1	2	3	4	5	6
I like work best when I can complete it well without too much trouble.	1	2	3	4	5	6
I don't mind making mistakes and learn from them.	1	2	3	4	5	6
I like my work to be perfect.	1	2	3	4	5	6
When work is challenging, it forces me to work more intensely.	1	2	3	4	5	6
When work is challenging, I sometimes feel like giving up.	1	2	3	4	5	6

APPENDIX I

ENGLISH LANGUAGE ARTS AND MATHEMATICS ASSESSMENT DATA

Introduction

New Castle County Vocational Technical School District (NCCVT) has made great strides in regards to incorporating Common Core State Standards (CCSS). To determine student mastery of these standards, NCCVT created common district assessments for ELA and mathematics. The purpose of this document is to provide an overview of ninth and tenth grade unit assessment scores in ELA and mathematics.

NCCVT Instructional Services created online unit assessments for ELA and math courses. These assessments are given through the online learning management system called Schoology. In ELA, online assessments are given to 9th and 10th grade students. Mathematics teachers executed these online assessments through Schoology in 9th grade courses only.

ELA Unit Assessments

The ELA curriculum in NCCVT is divided into grade level courses – ELA 1 for ninth grade students, ELA 2 for tenth grade students, ELA 3 for eleventh grade students, and ELA 4 for twelfth grade students. Each grade level also has an honors course. Student eligibility for Honors courses requires earning an A or B grade in their prior ELA course and recommendation from their teacher.

Each ELA course is divided into four units of study. Each unit provides a curriculum plan that covers a portion of the CCSS ELA Literacy standards for ninth

and tenth grade. All CCSS are covered in the four units of study throughout the course. During each course, ELA teachers are required to give online district unit assessment. The school schedule is divided into two semesters using a block-scheduling format with 90-minute courses. Each semester is the equivalent of 2 marking periods. The data provided is for the ninth-grade courses ELA 1 and ELA 1 Honors. The tenth-grade courses include ELA 2 and ELA 2 Honors.

There was a general trend of increased scores from the first semester to the second semester in ELA courses. ELA honors courses shared a higher level of growth than regular ELA courses in each unit assessment. ELA 1 Honors, ELA 1 and ELA 2 Honors all showed growth from first to second semester. ELA 2 showed decreased averages across all units except one.

Figure 49 shows class averages for all ninth grade ELA courses. ELA 1 Honors increased average scores for Units 1, 3, and 4 from first to second semester with the most significant in Unit 3 from 75% to 87%. There was a slight decrease in class average for Unit 2. Student growth is shown in ELA 1 from first to second semester in unit assessments 1, 2, and 3. Unit 4 shows a decrease in average scores from 70% to 68%.

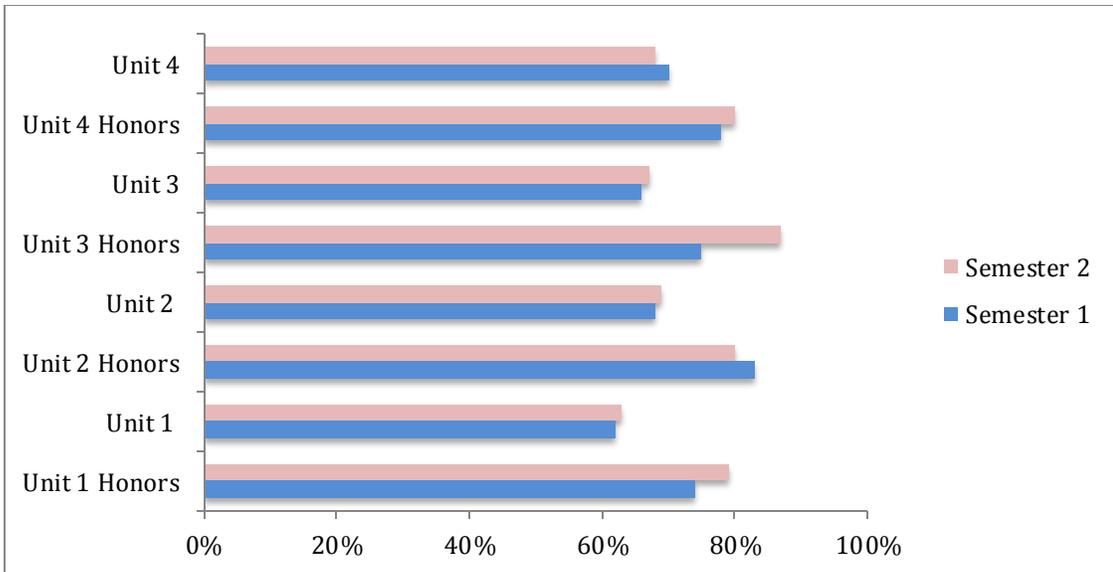


Figure 49: ELA 1 Honors and ELA 1 Unit Assessment Average Scores

Figure 30 shows that class averages from first to second semester increased in all unit assessments in 10th grade Honors. The most significant growth was on Unit 3 assessment from 73% to 81%. However, ELA 2 shows the least amount of growth in class averages on unit assessments. In Figure 2, Units 1 and 2 show growth, while Units 3 and 4 display a decrease in average scores from first to second semester.

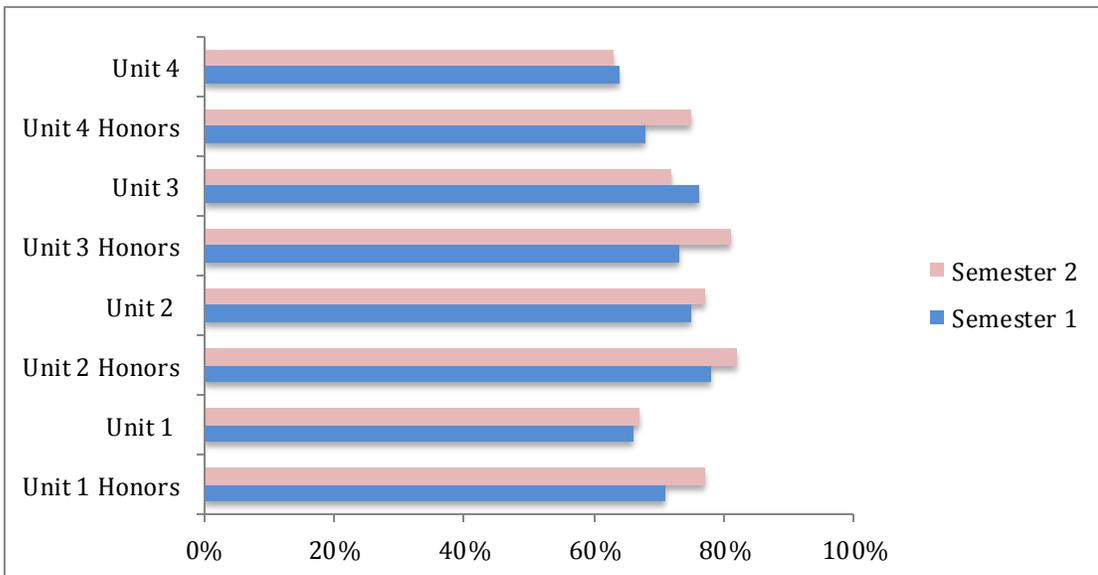


Figure 50: ELA 2 Honors and ELA 2 Unit Assessment Average Scores

To develop a better understanding of student growth per CCSS, I looked at the ELA 1 unit assessments. I used the item analysis from three unit assessments to determine growth. I compared these assessments from first to second semester. Each assessment assesses a multitude of standards. However not all standards are assessed each time. This is due to the curricular structure of the course and when specific standards are addressed and emphasized to students. The CCSS are divided into four anchors. The Common Core State Standards Initiative (2012) the anchor standards with key features include:

- *Anchor Standards for Language: Conventions of Standard English, Knowledge of Language and Vocabulary Acquisition and Use (L).*
- *Anchor Standards for Reading: Key Ideas and Details, Craft and Structure, Integration of Knowledge and Ideas, Range of Reading and Level of Text Complexity.* Within the reading standard there is subdivision of Reading Standards for Literature (RL) and Reading Standards for Informational Text (RI).
- *Anchor Standards for Speaking and Listening: Comprehension and Collaboration and Presentation of Knowledge and Ideas (SL).*
- *Anchor Standards for Writing: Text Types and Purposes, Production and Distribution of Writing, Research to Build and Present Knowledge and Range of Writing (W).*

Figure 1 shows the average growth of correct responses from first to second semester per CCSS assessed on the Unit 1 ELA 1 assessment. Although the scores indicate there is growth, students are not achieving the standards at a high rate. Overall, the most significant growth per standard was on RL. RL.9-10.2 grew the most from 51%

to 73% of students answering correctly. Adversely, there was a decrease in growth in standards L and RI. Both standards decreased by 6% or less.

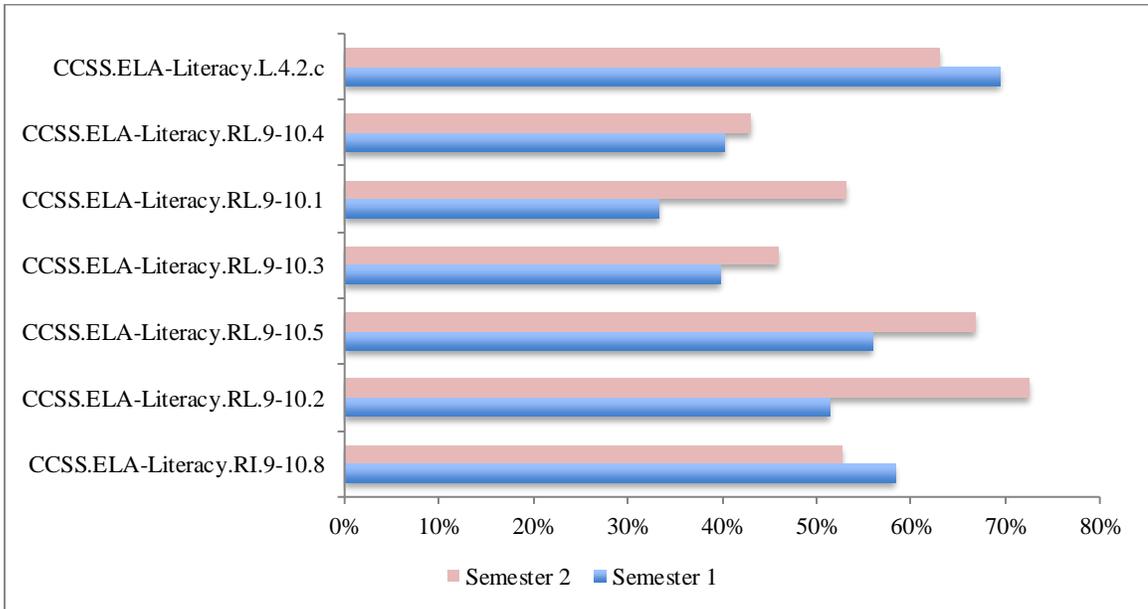


Figure 51: ELA 1 Unit Assessment Growth per CCSS

The average growth of correct responses on the ELA Unit 2 assessment from first to second semester per CCSS is depicted in Figure 52. In general, the scores have increased from Unit 1 to Unit 2. However, students are still scoring below 60% on five of the eight standards assessed. The RI standard had the most substantial growth overall. Specially, RI.9-10.8 had the most significant increase from 28% to 49%. The L standard shows a decrease in scores with the most significant being the L.9-10.3 from 78% to 71%.

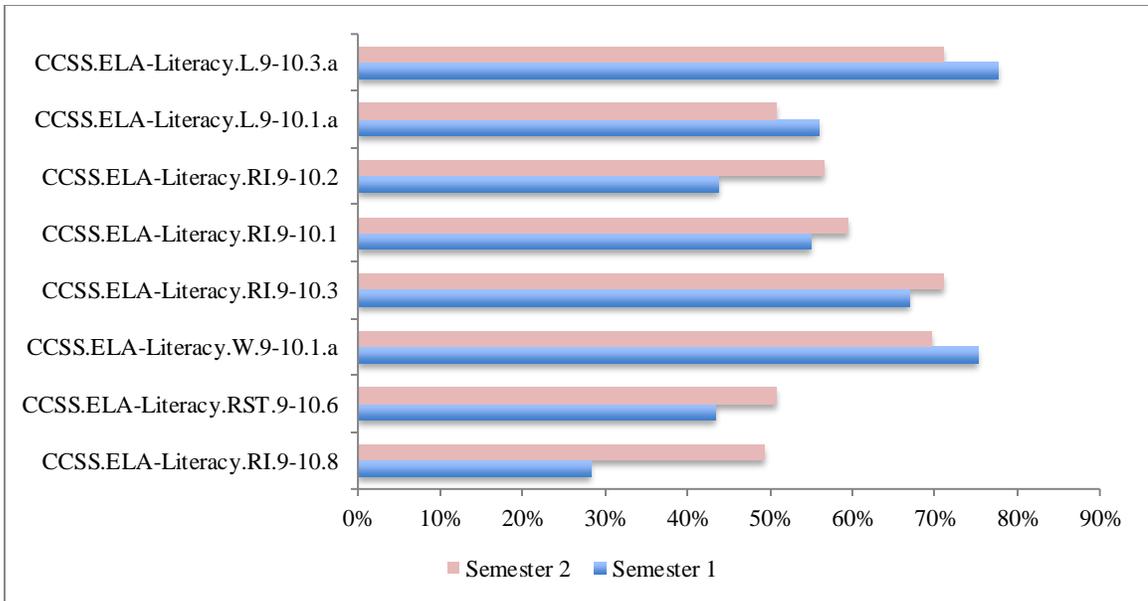


Figure 52: ELA Unit 2 Assessment Growth per CCSS

Figure 53 shows the average growth of correct responses on the Unit 3 assessment from first to second semester per the CCSS. All standards increased in growth from first to second semester. The RL standards had the greatest growth overall with the highest being RL 9-10.2 from 42% to 64%.

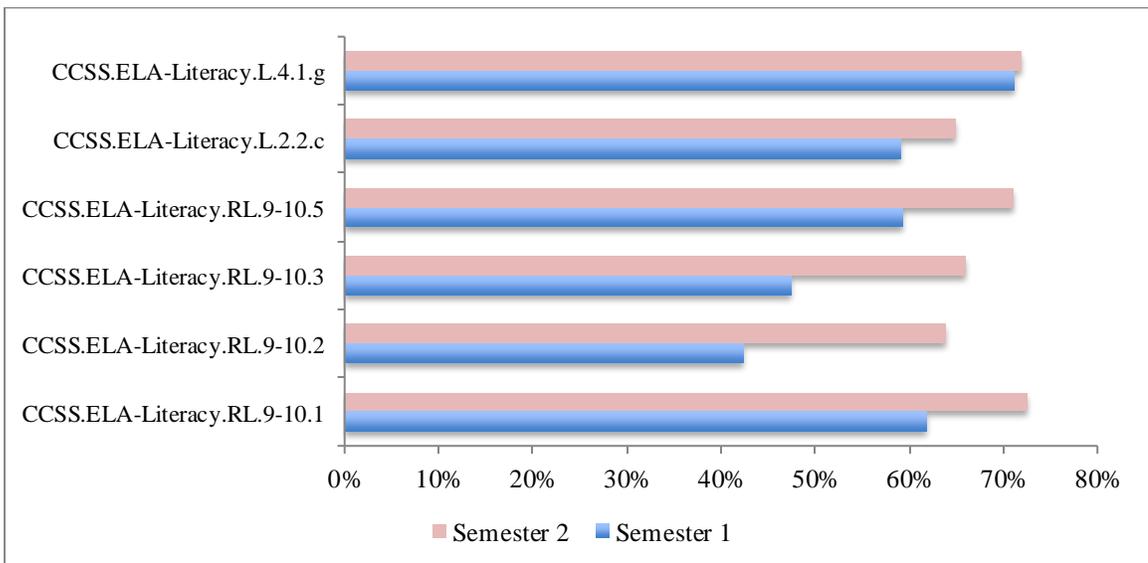


Figure 53: ELA Unit 3 Assessment Growth per CCSS

For the ELA assessments, I determined there was growth of specific groups of standards and the overall general improvement of scores from first to second semester. The RL and RI standards showed the most growth while the L standards depicted the least growth or decrease in scores. RL standards require students to “read closely to determine what the text says explicitly, cite evidence to support conclusions drawn from the text” (NGA Center & CCSSO, 2010). They also require students to determine central ideas, analyze their development, and, summarize the supporting details and ideas” (NGA Center & CCSSO, 2010). RI standards require students to read information text to “cite textual evidence to support analysis of what the text says explicitly and draw inferences” (NGA Center & CCSSO, 2010). Another high achieving aspect of RI indicated by the data was the ability for students to “delineate and evaluate the argument and specific claims in a text” (NGA Center & CCSSO, 2010).

Math Unit Assessments

The NCCVT math curriculum is divided into seven courses. All ninth-grade students take two math courses, one each semester. Incoming ninth grade students with advanced math skills begin in Integrated Math II. This placement is based on their previous middle school course and grade. As previously stated, the school schedule is divided into two semesters using a block-scheduling format with 90-minute courses. The math courses offered at Hodgson are Integrated Math I (IM I) and Integrated Math II (IM II) for ninth grade, Integrated Math III (IM III) for tenth grade, Statistics or Pre-Calculus for eleventh grade, and Calculus or Senior Math for twelfth grade.

IM I, and IM III courses are divided into 4 units of study. IM II is divided into five units of study. Each unit provides a curriculum plan that covers a portion of the

CCSS math standards for ninth and tenth grade. All CCSS are covered in the four or five units of study throughout course. Teachers are required to give online assessments at the end of each unit.

Due to the yearly math schedule, only IM I is offered during first semester each school year. Furthermore, the IM II course has two sections of 20 students each offered first semester since those are the advanced placement students. This makes it difficult to compare and determine growth using math averages. The IM III course had not been created and was not available in Schoology during the school year.

In Figure 54, class averages are compared from IM II from those advanced placement students during first semester to the general population of students during second semester. The first semester class average data is higher in all unit assessments. Unit 5 has the largest decline in class averages of 77% first semester to 61% second semester. No clear indication of student growth was represented with this data.

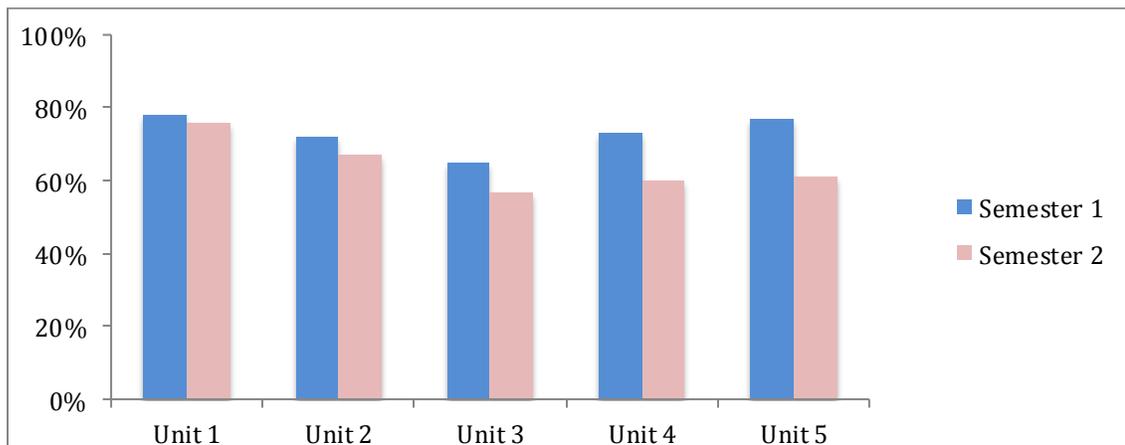


Figure 54: IM II Unit Assessment Averages

To develop a better understanding of the mathematics standards and growth, I looked at the IM I final exam test score averages per standard. Since students only take this course once a year, I looked at the score comparison from fall of 2016 and fall of

2017. This course highlights the mathematics standards of Linear Functions, Linear Inequalities and Systems, Exponential Functions and Quadratic Functions. The scores indicated that students performed better on all standards except Exponential Functions, which decreased from 74% to 71% (Figure 55).

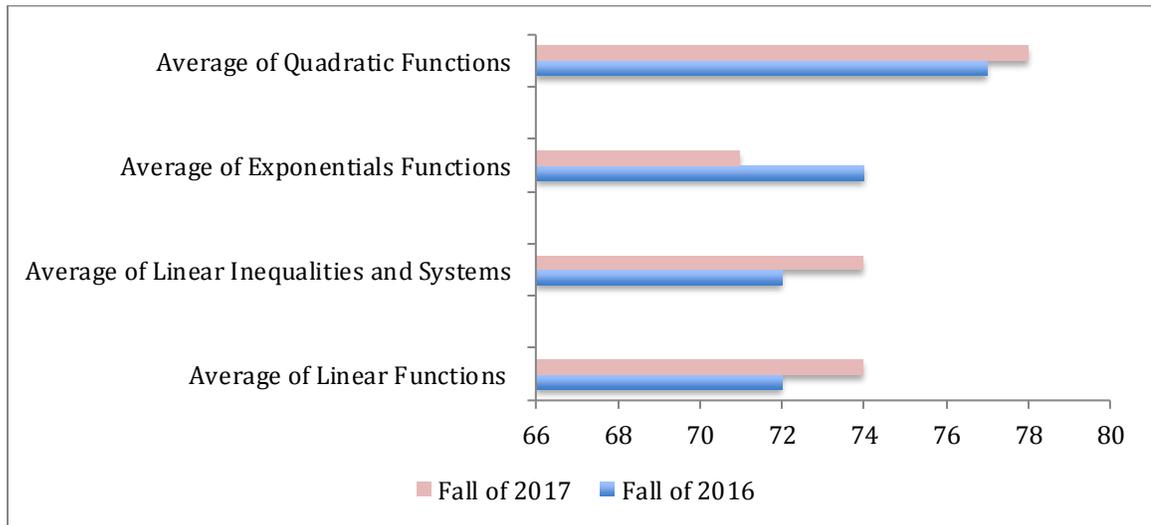


Figure 55: IM I Final Exam Average Scores per Standard

Overall Results

There is a general trend of increased scores from first semester to second semester in ELA courses. ELA honors courses shared a higher level of growth than regular ELA courses in each unit assessment. ELA 1 Honors, ELA 1 and ELA 2 Honors all showed growth from first to second semester. ELA 2 showed decreased averages across all units except one. The ELA 1 item analysis of standards indicated there was growth among many CCSS standards. Since CREST was implemented, there has been increased understanding of CCSS.

The math unit assessment scores did not provide insight to growth because the courses were comparing advanced placement students with the general population of

students. However, there was growth on the final exam of IM I when compared from 2016 to 2017.

Limitations

There are a many limitations of the data presented. The lack of pre and post unit assessment data limits the scope of this study. Hodgson teachers are not required to give a pre and post test to students for each unit. The data that is available is from first to second semester and therefore, different students are being compared. Requiring teachers to give pre tests for each unit would provide more insight to the growth of a student's knowledge and understanding of curricular standards.

NCCVT transitioned to online assessments to gather data in an efficient way to effectively make informed decisions about curriculum and instruction. Since this transition is still in the process of occurring, there are gaps in the information gathered. Therefore, only broad generalizations can be discussed.

Unit assessment data is important to determine if students are obtaining the knowledge necessary to meet CCSS and curricular standards. These assessments determine if students have met these goals to move to the next course of study. These courses ultimately lead to students obtaining the knowledge to graduate. Collecting the data will be an on-going process to determine student achievement. Teachers and administrators must use this data to make informed decisions about lesson planning and instructional activities to provide opportunities for students to be successful.

References

NGA Center and CCSSO. (2017). *Common core state standards initiative*. Retrieved from <http://corestandards.org>

Common Core State Standards Initiative. (2012). College and career readiness anchor standards for reading. (2012). Retrieved from <http://www.corestandards.org/ELA-Literacy/CCSS>

APPENDIX J
IRB APPROVAL LETTER



RESEARCH OFFICE

210 Hulihan Hall
University of Delaware
Newark, Delaware 19716-1551
Ph: 302/831-2136
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DATE: May 25, 2017

TO: Christine Colihan, E.Ed
FROM: University of Delaware IRB

STUDY TITLE: [1072573-1] Purposeful Professional Development to Support Best Practise to Implement Common Core State Standards and Increase Student Achievement

SUBMISSION TYPE: New Project

ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: May 25, 2017

REVIEW CATEGORY: Exemption category # (1)

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will put a copy of this correspondence on file in our office. Please remember to notify us if you make any substantial changes to the project.

If you have any questions, please contact Nicole Farnese-McFarlane at (302) 831-1119 or nicolefm@udel.edu. Please include your study title and reference number in all correspondence with this office.

cc: