

**USING A LEARNING MANAGEMENT SYSTEM TO SUPPORT BLENDED
PROFESSIONAL LEARNING AT POLYTECH HIGH SCHOOL**

by

Ryan W. Fuller

An executive position paper submitted to the Faculty of the University of
Delaware in partial fulfillment of the requirements for the degree of Doctor of Education

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ABSTRACT

At Polytech High School, a need exists for combining online instruction with face-to-face instruction. Blended learning, which combines online and face-to-face instruction in a purposeful way, can be more effective than either online or face-to-face instruction on its own. This leadership project focused on the implementation of Schoology, a Learning Management System (LMS), and the development of blended learning practices through professional learning with staff. Using effective blended models of instruction with staff first can more effectively help them support students' development of 21st century learning skills. This leadership work required evaluating the instructional technology system and working with the technology team to ensure successful operation of Schoology and a positive perception of this program within the school's culture. This work also included managing the instructional networks of the school. The primary instructional network at Polytech High School (PHS) is the Building Leadership Team (BLT). This team is focused on leading improvement in both management and instruction areas and can impact other networks including administrators, the technology team, teachers, and students. The heart of this leadership project is supporting the BLT by implementing blended learning. The implementation of Schoology started with section demonstrations and the development of a white paper to provide critical background knowledge about Schoology. Next, a one-year implementation plan charted goals for each instructional network. In order to better understand and implement effective blended learning models, a mixed methods evaluation was conducted that included the development of a research brief comparing online, face-to-face, and blended ways for students to earn credit in an elective health

course. This evaluation showed no significant differences in student achievement among the three instructional variants. A staff survey was completed to examine infrastructure, perceptions, support structures, current instructional practices, and future goals with instructional technology. This information was used to design “flipped” BLT meetings using Schoology to model a blended learning framework. A flipped book study was also implemented to support content area literacy development and align this learning with other building initiatives. Concurrent with this BLT course, one BLT teacher also piloted Schoology and Google Chromebooks with students. At the conclusion of several BLT sessions, a focus group was conducted to evaluate the implementation and support that the BLT received during this process, and to refine training that would impact all teachers across the building. Finally, a professional learning course was implemented for all staff to train them in Schoology and model blended learning practices across Polytech High School. This included curriculum modules and instructional videos to support all staff and a “train the trainer” six week blended learning course. The efficacy of Schoology as a learning tool has been established at Polytech High School through this process. The next steps include the development of a district technology committee to recommend infrastructure upgrades, device purchases, and additional training for staff.

Chapter 1

INTRODUCTION

As a high school building administrator and student of educational technology, I believe the purposeful use of instructional technology plays an important role in teaching and learning in today's schools. Preparing our students to use technology effectively and develop 21st century skills is now a requirement for college-bound students and a prerequisite for post-secondary success; however, the changes related to the explosion of internet access, internet capable devices, digital information, and online learning programs are happening faster than schools are able to adapt (National Governors Association, 2010). This digital transformation of society creates challenges for schools. It also creates incredible opportunities. Solving these challenges and leveraging these opportunities can only occur if schools purposefully implement changes to their instructional technology system with a clear vision for the future. More importantly, schools must strategically integrate these various technologies into professional learning (PL) for teachers if these practices are to be successfully integrated into classrooms. Therefore, my professional learning initiatives for this project were directed at preparing Polytech High School's instructional technology system, as well as teachers, to leverage a Learning Management System (LMS) in a way that improves student-learning outcomes and aligns to the district's strategic goals. This instructional technology system can be simply defined as a way in which technology operates to get students to the internet for teaching and learning. This plan also aligns with a Delaware Department of Education initiative in which the LMS Schoology is being purchased for all staff and students in the state.

Before beginning this work at PHS in February 2015, I was an administrator in the Caesar Rodney School District (CRSD) for four years. My responsibilities included coordinating the implementation of the federal Race to the Top grant. This position, and my work within the instructional technology domain, helped me develop a strong foundation for understanding instructional technology and professional learning with staff. In addition to the project management, funding oversight, and data analysis responsibilities associated with this grant, there was a movement in the district to develop blended learning across the district and invest Race to the Top dollars in a way that would lead to sustainable change in technology infrastructure and professional practices for teachers. Examples of this work included setting up a “Single Sign-On” for students, supporting bandwidth and wireless upgrades, developing new district websites, adopting Google Apps for Education, implementing Schoology, and purchasing thousands of Chromebook computers. This work at Caesar Rodney significantly influenced the work I now do at PHS. One artifact, the Blended Learning Research Brief (Appendix C) was produced for Caesar Rodney High School as a way to learn about blended learning effectiveness, frameworks, and policies. The remainder of my work occurred exclusively at Polytech High School.

In the summer of 2015, the State of Delaware subsidized the purchase of Schoology for all K-12 teachers in the state. Schoology is a Learning Management System (LMS) that has numerous potential uses. One particular feature of an LMS such as Schoology is that it can serve as a bridge between online and face-to-face learning and provide a consistent platform for blended learning opportunities where content is delivered partially online and partially face-to-face. Through a cost-sharing agreement,

this LMS became available to all teachers and students at PHS. Based on my prior experience working with instructional technology in the Caesar Rodney School District, as well as classroom observations at PHS, discussions with staff, and an instructional technology survey, I found that Polytech High School was not prepared to implement Schoology and leverage this tool to support blended learning. Because of this, I began working to improve the instructional technology system at PHS and design and deliver professional learning through Schoology around blended learning frameworks. By doing this I hoped to prepare teachers to leverage this newly available technology in their classrooms.

The instructional technology system, the technology used to support learning, was in need of a redesign. Fifty-six percent of respondents to the instructional technology survey (Appendix D) did not believe technology operated effectively and efficiently. Many staff did not fully utilize existing learning programs, and the supply and operation of devices did not match the learning needs of our students. Further, the professional learning in the district was largely face-to-face and did not adequately combine face-to-face and online elements to maximize learning potential.

The survey results led me to conclude that a long-term approach would be needed to improve the instructional technology system. It also made me realize that I would need to develop a professional learning plan that focused on the implementation of Schoology as well as the development of a positive perception of the LMS within the formal and informal learning networks of the school. In this case, a learning network is any group or team that collaboratively learns and is interdependent (Digenti, 1999). Learning networks can be large or small, but must share a common goal of “mutual learning and improving

an organization through feedback, insights, information sharing, and collaborative activities” (p.53). Examples of these instructional networks at PHS are the administrative team and the technology team.

To address this problem, I developed a coordinated planning approach with the technology team to analyze the instructional technology system and design an improved model for professional learning for students. This focused on the end user. Second, I divided the school into instructional networks, with goals and tasks for each throughout the course of this project to support staff. This gave me the ability to positively influence and manage the implementation and perceptions of Schoology and blended learning within those networks. One of my primary goals throughout this professional learning process was managing, and ethically influencing, these instructional networks with a single shared vision for success.

The heart of this leadership project was a focus on developing an intentional, systematic, and long-term professional learning initiative to introduce the Schoology LMS and to train teachers how to use blended learning frameworks. I did this by first developing a targeted blended professional learning experience with the Building Leadership Team (BLT). I hoped that by training the BLT first, the team would serve as a resource to their colleagues as PHS rolled out the Schoology LMS and blended learning frameworks for all students and faculty. Additionally, by beginning this professional learning initiative with the BLT, I could refine training and materials before using it with the whole faculty.

The BLT plays a significant role in the management structure of PHS. The BLT meets bi-weekly and is composed of 12 section leaders and administrators. The agenda is

developed collaboratively around the improvement of both management and instructional initiatives. The results of these Monday meetings are shared with teachers across the building on Tuesday mornings. The BLT, the tasks the members tackle, and their perceptions of the tasks, have broad influence across PHS and can significantly impact teaching and learning priorities. A successful rollout of the Schoology LMS had to start with the BLT. The central role of the BLT is represented in Figure 1 below.

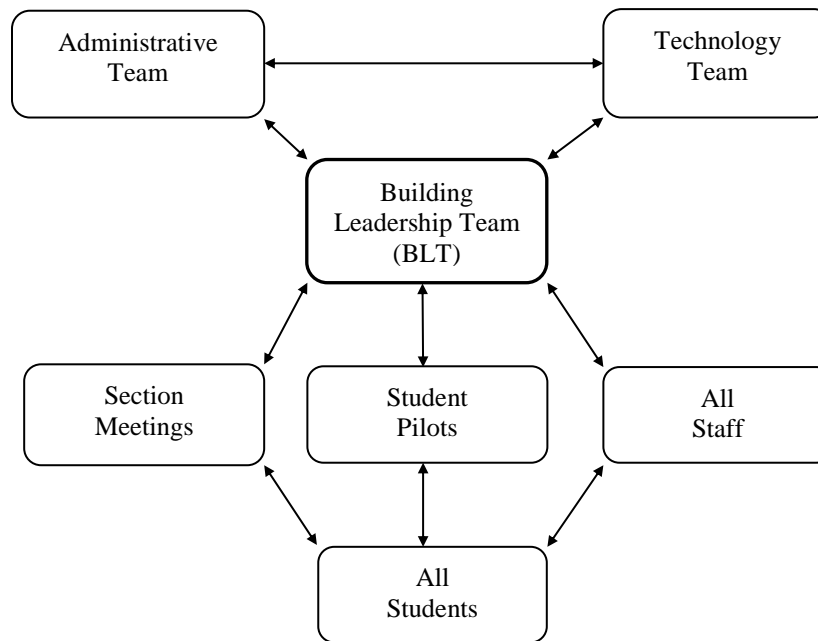


Figure 1. The Role of the BLT in Polytech High School.

To implement this professional learning plan, I worked closely with the technology team to initiate the changes to the instructional technology system that would support widespread use of Schoology. I also worked with the administrative team to model effective blended learning practices and to develop Schoology modules with clear objectives and goals for the work of the BLT, while also introducing essential Schoology skills and tools. Essentially, administration became the “teachers” of the professional learning course, and the BLT members became the “students.” This collaborative process

allowed the BLT to observe how Schoology tools and skills could be incorporated into their own classroom practice. The BLT, as the primary instructional network, would then have influence over the other instructional networks in the school.

Additionally, two BLT teachers piloted Schoology with their own students to test the changes to the instructional technology system and demonstrate the LMS's potential for larger scale implementation. The two teachers received intensive support from the Technology and Administrative teams and reported the progress and success of the student pilots to the BLT.

After participating in the pilots and professional learning experiences, the BLT would then be asked to collaboratively determine the training needs around Schoology and blended learning frameworks for all staff during professional learning days. This allowed the teacher-leaders to learn actively, contribute meaningfully, and ensure their voices were heard throughout implementation.

The artifacts below demonstrate the steps I took as a district and building administrator to leverage technology for teacher and student learning.

1. Blended Learning and Schoology, An Introductory Guide to the Features and Benefits

(White Paper): Before the setup and implementation of Schoology, I developed a white paper on blended learning principles and the Schoology LMS for the staff at Polytech High School. The white paper included content-specific vocabulary staff needed to understand the LMS and its tools, a description of static and interactive learning resources that the LMS supports, and clear directions for logging into and exploring the system. The rollout of Schoology was planned for August 2015. The

- white paper was used to develop background knowledge for the BLT and section meetings before the LMS rollout. (See Appendix A)
2. Schoology Implementation Plan: The implementation plan and concept map has two parts. The first part includes the plan that was requested by the State of Delaware on a statewide template. Since the state developed a cost-share model, an implementation plan was required to demonstrate Polytech School District's implementation process. The second part of the plan is a one-page summary document developed for district administration, the technology team, and the BLT. This document simplifies the implementation plan for each instructional network in PHS. The networks included the administration, the BLT, student pilots, all staff, and the Technology Team. (See Appendix B)
 3. Blended Learning Research Brief: To better understand blended learning frameworks and their effectiveness and efficiency, I developed and implemented a mixed-methods evaluation of three instructional variants of an original credit summer school health course at Caesar Rodney High School: a fully online course, a fully face-to-face course and a blended learning course. This research brief examines student performance data, cost analysis data and qualitative data gathered from students from each of the instructional variants in this study. However, in this brief I also apply what I learned to Polytech High School, and address broader implications around the Delaware Department of Education's definition of a credit. This policy issues can significantly impact the adoption of blended learning practices in the future. (See Appendix C)

4. Instructional Technology Survey: Prior to the widespread use of Schoology, a cloud-based program, there was a need to examine the instructional technology system. Therefore, I developed and delivered a survey to all staff at the end of the 2014-2015 school year on topics such as infrastructure, capacity, perceptions, supportiveness, current instructional practices, and future technology goals. The results of this survey are reported in this artifact. (See Appendix D)
5. BLT Introductory Training: The BLT is the primary instructional network in the school. At the beginning of the 2015-2016 school year, using data analyzed from the staff survey, I created the BLT professional learning course. The course was focused on using Schoology to manage the BLT meetings as well as develop the Schoology skill level of participants with specific and scaffolded tasks that gradually become more advanced throughout the course. This training leveraged parts of a state-designed professional learning course to focus on Schoology skill development as well as collaboration and accountability for BLT members. This training also transformed the BLT by blending the instruction and management topics around a “flipped” blended framework whereby team members previewed information online in Schoology before the next face-to-face session. (See Appendix E)
6. BLT “Flipped” Book Study: An additional instructional focus at Polytech High School is content area literacy. *Cracking the Common Core: Choosing and Using Texts in Grades 6-12* by Lewis, Walpole, & McKenna (2014) was used to support learning new content area literacy strategies. Schoology was used to “flip” the learning and incorporate the book into the existing professional learning course. BLT members were broken into groups and assigned chapters to lead the discussion with

- the rest of the BLT by posting resources in Schoology. I supported these BLT members by posting resources, accessing training, and allowing administrative access to the Schoology course. (See Appendix F)
7. BLT Focus Group: At the conclusion of seven sessions developed in Schoology, I carried out a focus group composed of BLT members with a goal to evaluate the support, training, and implementation of Schoology thus far. The focus group data were transcribed, coded, and analyzed to reveal trends around Schoology use. The conclusions in this artifact include next steps for the expanded use of Schoology by staff and students at PHS. (See Appendix G)
 8. Polytech Full-Staff Professional Learning Course: During the 2015-2016 school year, I created a staff professional learning course in Schoology to support building management and instructional initiatives. This staff professional learning course provided a platform to coordinate and support the expanded use of Schoology and blended learning with existing building initiatives as directed by the BLT. The starting point in this course was providing staff the ability to implement these lessons in a building-wide enrichment class on topics such as school safety, bullying, and internet safety. The course expanded to include instructional videos to guide professional learning for staff in Schoology and other initiatives. (See Appendix H)

This executive position paper is organized into six chapters. Chapter One provides an overview of the problem as well as a description of supporting sources. Chapter Two addresses the societal context of online learning, the organizational context at Polytech High School, the need for change in the organization, why these changes are necessary, and how they will lead to improved outcomes. Chapter Three focuses on the overall

improvement strategies and the steps that were taken to improve professional learning using Schoology and the incorporation of blended learning practices with the instructional networks within the school. In Chapter Four I discuss the results of my professional learning work including the limitations of this qualitative work. In Chapter Five, I discuss my reflections on the outcomes and provide recommendations for the continuation of this work at Polytech High School. Finally, since the primary goal of this leadership project is professional growth through reflection, Chapter Six is dedicated to my learning and development through this process.

Throughout this work, I utilized Guskey's (1999) professional learning framework to develop an embedded, ongoing, and systemic professional learning plan as well as the SAMR model, developed by Puentedura (2015), as a way to measure the enhancements or transformation that results from the incorporation of technology.

Chapter 2

PROBLEM ADDRESSED

One of the greatest learning experiences of my career thus far was being a district administrator working with the federal Race to the Top grant. My role included designing, delivering, and implementing professional learning on many initiatives as well as grant management. The single most important thing I learned from being in that position is that no amount of planning, funding, meetings, or data analysis can replace quality professional learning experiences for shaping and improving classroom practices and learning outcomes.

Preparing teachers, improving their professional practice, and helping them to leverage quickly changing technology are the greatest challenges that Polytech High School faces. We are now at a point where anyone can learn anything with the right access, time, motivation, and effort due to the fast pace of technology development (Vander Ark, 2012). The question is: how will we begin to leverage this at PHS to guide learning? The professional learning I designed for this project was my answer to this question. The quality of an educational system cannot exceed the quality of its teachers (OECD, 2010).

Cultural Context

Collins & Halverson (2009) summarize key shifts from the one-room schoolhouse of the agrarian age, to the giant suburban schools of the industrial age, to the personal digital learning of the idea economy. These are shifts that Polytech teachers now face in their transition to the idea economy and are summarized in Table 1.

Table 1

Educational Shifts from an Agricultural to Industrial to Idea Economy

Factor	From Agricultural	To Industrial	To Idea
Responsibility	Parents	State	Individuals and Parents
Expectations	Social Reproduction	Success for All	Individual Choice
Aspirations	Practical Skills	Discipline Knowledge	Learning How to Learn
Content	Books	Textbooks	Learning Objects
Pedagogy	Apprenticeships	Didacticism	Interaction
Learning Location	Home	School	Anywhere
Relationships	Personal Bonds	Authority Figures	Social Networks

Table 1 provides a glimpse at some of the key shifts that will take place as we move to an idea economy. In this new paradigm, learning is increasingly digital, social, mobile, on-demand, personally adaptive, and personally directed. Therefore, educators must ask themselves: to what extent is the new economy and digital learning being planned for and supported in our schools?

Students' success in the idea economy relies on developing teachers who can prepare them to meet these demands. This is my primary reason for focusing this work on an LMS and professional learning. Quite simply, I believe these changes in how students are learning are happening so fast that many schools are not able to quickly adapt to the changes. Without careful planning by educational leaders, there is the potential that staff members will be unaware of important technology tools and pedagogies, will feel

unsupported in the use of these tools and instructional methods, and will lack the ability to develop transformational best practices using the new tools and methods. Without an integrated professional learning program, there is a strong possibility that teachers could continue to act as the sole source of information in the classroom, forcing students to “power-down” their learning because it does not match the informal learning they are used to outside of school. These changes are at the heart of this proposal because these shifts are not a passing phase, but a long-lasting transformation of the educational environment.

Organizational Context

Description of Polytech High School

Polytech High School is in one of three county-wide vocational districts in the State of Delaware serving all of Kent County. PHS serves grades nine to twelve and offers many of the same programs as a comprehensive high school, including Advanced Placement courses and athletics. As a technical high school, all students participate in a career pathway or program of study. Enrollment into PHS involves a lottery system where students utilize State of Delaware school choice.

The Mission/Vision Statement for PHS is “to provide the highest quality learning experience through the incorporation of applied learning and the integration of academic and technical content” (Mission/Vision Statement, n.d., para 1). The Polytech School District vision is that all students will develop skills necessary for self-improvement and further learning, entry or advancement into their chosen career field, adaptability in later employment in recognized occupations, and post-secondary education. The district serves

one full-time comprehensive high school and an adult education complex offering a variety of day and evening adult education programs.

Some of the hallmark programs that represent the core of the Polytech school system include home visits for every incoming freshman, the Polytech Advisement Support System (PASS) student advisement program, and a thirty-minute enrichment period each day. Lastly, as a graduation requirement, seniors are required to complete a senior project.

The motto for PHS focuses on the “Power of Knowledge for Work and College.” As part of enrollment, every freshman in the school rotates through all four career pathway programs and then chooses a career pathway. The four career pathway programs are:

1. Industrial Technology Academy
2. Professional Services Academy
3. Health/Medical Services Academy
4. Modern Technology Academy

Within these career pathway programs are numerous certifications and post-secondary credit opportunities which students can earn. These certifications and post-secondary opportunities are the result of numerous community partnerships that have allowed PHS to be uniquely positioned to prepare students for immediate employment within the community as well as college admission.

PHS also has 71 unique industry certifications in the four different pathways. Examples include (a) A+ Network Specialist; (b) Training for Early Care and Education; (c) Delaware Cosmetology Certificate; (d) Certified Nursing Assistant.

PHS has 47 articulation agreements across the four pathway programs with five post-secondary institutions. These include Delaware State University, Wilmington University, University of Delaware, Goldey-Beacom College, and Delaware Technical and Community College. Typically, in the students' senior year, they can participate in the classes to earn college credits. Many students graduate with multiple college credits.

Student Characteristics

PHS has a diverse student body that comes from the five districts in Kent County (Caesar Rodney, Capital, Lake Forest, Milford, and Smyrna). As mentioned previously, PMS has four grade levels. These grade level enrollments are illustrated in Table 2.

Table 2

PHS Student Enrollment for 14-15 (DDOE, 2015)

Grade Level	Enrollment
9 th	316
10 th	306
11 th	302
12 th	268
Total	1192

On average, PHS enrolls just over 300 new students through a lottery process. Receiving over 500 applications for these slots is typical. Selected students are provided an enrollment slot while other students are placed on a waiting list with an enrollment number. The application and enrollment process may have some impact on the achievement data shown in Table 3 since this process attracts families willing to go the extra steps to complete the rigorous application process. As a result, the students who

attend PHS are motivated and attracted to the pathway programs, post-secondary credit opportunities, and employment connections within the county.

Table 3 shows PHS's overall enrollment by ethnicity. When compared to the state averages, there are some differences that are most noticeable in the percent of African-American students and those students identified as white. The state has higher overall percentages of African-American students (+12.5%) and lower percentage of white students (-21.6%).

Table 3

PHS Enrollment by Race/Ethnicity 2014-2015 (DDOE, 2015)

Student Group	PHS Average	State Average 14-15
African American	18.7%	31.2%
American Indian	0.7%	0.4%
Asian	1.3%	3.6%
Hispanic/Latino	6.0%	15.3%
White	68.2%	46.6%
Multi-Racial	4.9%	2.8%

Table 4 represents additional student characteristics including important demographic information. The demographics include PHS's percentage of English language learners, low-income, and special education students that are all lower than the state averages.

Table 4

PHS Student Characteristics 2014-2015 (DDOE, 2015)

Characteristic	Percentage	State Averages 14-15
English Language Learners	0.3%	6.0%
Low Income Students	15.7%	35.0%
Special Education Students	9.1%	13.9%

Staff/Teacher Characteristics

PHS has 114 staff members. The staff can be divided into the following categories represented in Table 5.

Table 5

PHS Staff by Category 2014-2015 (DDOE, 2015)

Staff Category	Number of Staff
Teachers	87
Librarians	1
Instructional Support	4
Pupil Support	11
Administrators	11
Total	114

There are 87 teachers at the high school. Four instructional support staff include reading specialists and special education coordinators. There are no instructional

technology staff members, but there are both administrators and pupil support staff who work in the technology department. This is an important distinction for the district because there is no one working in direct support of the pedagogical development of teachers who want to use technology as an effective tool for instruction.

Table 6 highlights the education level of educators in the district. Almost two-thirds of the teachers have a master's degree. Table 7 shows the average teaching experience of staff for PHS.

Table 6

PHS Staff Education Level 2014-2015 (DDOE, 2015)

Education level	Percentage of Staff
Doctorate	4.0 %
Masters	65.0 %
Bachelors	31.0 %

Table 7

PHS Staff Teaching Experience 2014-2015 (DDOE, 2015)

Years of Teacher	Percentage of Staff
<4 years	14%
5-9 years	18%
10-14 years	17%
15-19 years	28%
20-24 years	10%
25-29 years	8%
30 years or more	5%

The staff of PHS is roughly split into thirds. About 32% of the staff have fewer than 10 years of experience, about 45% have 10-20 of years of experience, and 23% have greater than 20 years of experience.

Student Achievement Data

PHS is a high-achieving high school. When compared to the state averages for graduation rate, Smarter Balanced Assessments (SBAC), and SAT proficiency, PHS exceeds all of these averages. The graduation rate at PHS for the 2013-2014 school year was 97.2%. By comparison, the state average was 84.4% for the same time period. Table 8 shows PHS's achievement data compared to state averages in SBAC Math and Reading, and SAT verbal, math, and writing.

Table 8

Student Proficiency Comparisons to the State Average in 2014-2015 (DDOE, 2015)

Assessment	Polytech Score	State Score 2014-2015
SBAC ELA Grade 11	77.8 %	52.0 %
SBAC Math Grade 11	29.8 %	23.0 %
SAT Math	468	443
SAT Verbal	467	441
SAT Writing	442	419

Overall, Table 8 shows that PHS exceeds the state averages in every area. However, these scores also demonstrate that 21.2 % of students in ELA and 70.2 % of students in Math are still below proficiency and that more work can be done to increase

student proficiency and increase the raw score for the SAT. I believe that effectively leveraged technology with an LMS may increase student achievement.

Organizational Role

From August 2010 until February 2015, I was the supervisor of the federal Race to the Top grant for the Caesar Rodney School District. My role was to develop, implement, coordinate, and monitor the effects of the grant funds and programs across the district and measure their impact on student outcomes. During that time, I was also able to develop structures and routines that supported the improvement and expanded use of technology for student learning. The improvements started with organizing strategic planning meetings and work sessions between the technology and instruction divisions. The primary results of this work were a coherent vision for the use of technology and the associated planning and funding processes that resulted in widespread improvements in the software and hardware used by students and teachers. Some specific improvements include increased bandwidth, wireless infrastructure upgrades, new websites, Facebook and YouTube access, student portals for online programs, consistent usernames and passwords for students, Google Apps enterprise, and widespread use of Google Chromebooks (n=1400). Lastly, at the time of my departure, I coordinated the implementation of the Schoology LMS with all staff and about 1500 students.

In February 2015, I officially started a new position at PHS with a goal to learn more about Career and Technical Education (CTE). My current role at PHS is to coordinate the Career and Technical education programs and supervise English and science instruction. As an additional responsibility, I am charged with analyzing and developing a plan to support blended professional learning using the Schoology LMS

system. The setup of Schoology began in the summer of 2015, and the primary work of this leadership project occurred during the 2015-2016 school year. My goal is to develop training to meet the unique needs of PHS using the four years of technology experience I gained as Race to the Top Supervisor at Caesar Rodney School District.

Problem Statement

From my time at PHS conducting observations, participating in discussions with faculty, staff, and administrators, and examining technology and instructional technology processes, I found there were similar barriers to effective blended learning instruction at PHS as there were in Caesar Rodney. These barriers include poor wireless reliability, limited student use of technology within the building, and an absence of coordinated usernames and passwords for instructional programs, student portals, and use of an LMS. Additionally, although there is a technology team, there are no people specifically tasked with *instructional technology* training. The technology support systems (availability of computers and their fast operation) were not supportive of many modern technology services or the use of key technologies such as a LMS. This combination of factors has led to a negative perception of technology by the staff and a lack of motivation to invest time and energy in learning new tools and using these tools with students. This negative perception is likely to extend to include the use of blended learning frameworks or an LMS.

According to Warschauer, Zheng, Niiya, Cotten, and Farkas (2014), the positive effects of blended learning may depend on several factors including the selection of the type of technology and technical supports, digital literacy considerations, and teacher training and social dynamics. Furthermore, Bebell and Kay (2010) suggest that “it is

impossible to overstate the power of individual teachers in the success or failure of 1:1 computing and blended learning” and there must be “massive investments in time and effort to adapt teaching materials and practices to 1:1 environments and blended environments” (p. 48). It is important to emphasize that increases in access to technology does not equate to increases in student learning. There must be a coordinated program that (a) provides a system of supports along with robust access; (b) uses technology only where appropriate; and (c) invests in professional learning for all staff members. Developing a coordinated program for blended learning with staff using a learning management system will be the focus of this project.

The Solution

At this time, little is understood about effective support tools and strategies for K-12 blended professional learning that could improve learning for all students at PHS. The primary goal of this leadership project will be to leverage an LMS (Schoology) to support blended professional learning for staff, starting with the Building Leadership Team (BLT). By implementing Schoology, developing an instructional framework within it, and choosing the appropriate instructional strategies for teacher professional learning, I hope to increase the quality, effectiveness, and efficiency of professional learning. A secondary long-term goal is to prepare staff to use the LMS, blended learning frameworks, and blended learning strategies with their curriculum to increase student outcomes, and better prepare students to engage meaningfully with technology when they leave PHS.

Blended Learning Research

In its simplest form, blended learning is the integration of face-to-face and online learning to improve learning outcomes (Staker & Horn, 2012), and the approach has the support of research. In a study by Means, Toyama, Murphy, Bakia, and Jones (2010) the authors analyzed the efficacy of online and blended learning approaches. The meta-analysis focused on 50 studies that compared online and blended learning environments to purely face-to-face environments. They found that in the studies focused on blended and face-to-face instruction, “blended instruction has been more effective, providing a rationale for the effort required designing and implementing blended approaches” (p. xvii).

Blended Learning and the Common Core State Standards

There are also specific Common Core State Standards (CCSS) related to the use of technology with students, including using “technology and media strategically and capably” to “thoughtfully enhance reading, writing, speaking, listening, and language use” (National Governors Association, 2010, p. 7). Furthermore, students should “tailor their searches, mix what they learn offline and online, and understand the strengths and limitations of various types of technology” (National Governors Association, 2010, p. 7).

Blended learning and LMSs are the cornerstones of a 21st century classroom and challenge traditional models of instruction. These modes of instruction help students develop both 21st century skills and meet the demands of CCSS (Christensen, Horn, & Staker, 2013). The Project for 21st Century Skills (2011) identified 21st century skills that can be supported by an LMS and blended learning practices. These skills “are recognized

as those that separate students who are prepared for more complex life and work environments in the 21st century after high school” (p. 37). The skills are referred to as the four C’s and include (a) Communication and technology literacy; (b) Creativity and innovation; (c) Collaboration and team work; and (d) Critical thinking and problem solving. Additionally, LMSs are currently used—and have been for many years—by the vast majority of colleges and universities across the country, making knowledge of these systems and the flow information within them a critical preparation skill for those students destined for post-secondary education.

Conley (2012) also notes the clear relationship between college readiness, learning and technology. He states that the goal is to “have students think of technology not as a separate part of the learning process, but an extension of it” (p. 85). He continues by adding that “it would behoove secondary schools to integrate sophisticated models of technology to solve problems and produce products. First we must grant convenient and continuous access to these tools, and with it, access to information” (p. 86).

Delaware, Blended Learning, and the Schoology LMS

Across the country, thirty states support fully online schools that can be used by districts and individual students for online and blended coursework (Watson, Pape, Murin, Gemin, & Vashaw, 2014). In Delaware, the state does not currently support a statewide online or blended learning program and has no plans to do so since a failed initiative in 2008. However, in the summer of 2014, the state of Delaware signed a contract with Schoology with an implementation date of July 1, 2015 for school districts. I have had experience with the program since the spring of 2014 as part of a consortium of districts that were awarded a personalized learning grant. The state contract will

include free use for all teachers and a subsidy for students, bringing the cost for districts down to \$1.50 per student. This is a more affordable rate than the previous system's cost of \$9.00 per student, and demonstrates the continuing trend in affordable access and a statewide commitment to these learning approaches. In my opinion, this cost efficiency represents a turning point for teachers and students in the state. PHS has purchased licenses for all staff and students for the 2015-2016 school year effectively starting the development of a blended learning program. This leadership plan will ensure there is a coherent strategy to train and support all staff members, thereby operationalizing blended learning to support classroom pedagogical shifts.

Improvement Goal

The current mode of professional learning at Polytech High School does not leverage 21st century tools or model effective blended learning frameworks and strategies. This professional learning initiative will focus on increasing teachers' understanding of blended learning frameworks by focusing on the content, process, and products of professional learning. By modeling and combining face-to-face meetings with online content in a blended format, the consistency, value, and effectiveness of professional learning will increase.

The content of professional learning will include information on building management as well as instructional initiatives. The process will focus on better storage and access to information, more effective record keeping and accountability for meetings, and increased participation and reflection from staff. The products of the professional learning supports will include better coordination and efficient operation of the Building Leadership Team and Professional Learning Communities (PLC's) across the building,

thereby allowing for a more consistent and effective school-wide operation and instructional focus. Indirectly, staff will see blended learning models, understand the frameworks and strategies, and begin to make logical extensions to classroom instructional practice.

To measure these technology shifts across the building, I used the SAMR model (Puentedura, 2015), which can be used to gauge the blended learning enhancements (Substitution, Augmentation) or transformations (Modification, Redefinition) across classrooms.

Chapter 3

IMPROVEMENT STRATEGIES

Waters, Marzano, and McNulty (2003) found, after 30 years and 70 research studies, that “there is, in fact, a substantial relationship between leadership and student achievement” (p. 3). Even though there are very few studies that can find a direct relationship between principals and student achievement, Hallinger, Bickman, and Davis (1996) found strong evidence that principals have a mediating effect between school and classroom variables such as instruction and school climate that do raise student achievement.

When I started at Polytech High School in February of 2015, I was asked to coordinate the implementation of Schoology and explore the possibilities of using the program to support blended professional and student learning. At that time, the state was taking steps to gather feedback from districts on whether Schoology should be adopted state-wide for teachers and students. I had experience using Schoology in my previous position in the Caesar Rodney School District (CRSD) as part of the BRINC consortium and was impressed with the learning management system’s potential. Here, BRINC stands for a consortium of four districts (Brandywine, Red Clay, Indian River, and New Castle County Vocational Technical School District) that won a \$600,000 personalized learning grant. Because of this experience, I felt uniquely suited for developing and implementing a professional learning plan that established the use of Schoology and a blended learning program at Polytech High School. My starting point for this work centered on developing the use of Schoology with administrators and teachers prior to widespread use of the LMS with students.

Improving education is a “people game.” Therefore, the improvement strategies I used throughout this EPP centered on people, as groups and individuals, in order to support them in developing the routines and behaviors needed to utilize Schoology and blended learning practices. I did this by focusing my efforts on influencing the key instructional networks in the school. At the center of all of these instructional networks is the Building Leadership Team (BLT), the administrative team, and the technology team.

As a new assistant principal, my first strategy was to understand the culture, the people, and the operation of technology, through observations and discussions, to more effectively implement Schoology. Next, I researched professional learning frameworks that could help me design effective professional learning around issues of instructional design, blended learning, and instructional technology integration. Finally, I was able to establish professional learning routines that developed background knowledge for staff, trained staff in the use of an LMS, and allowed them to apply and reflect on what they had learned.

Gathering Context-Based Information

In order to begin the implementation of Schoology, I immediately began to gather context-based information about PHS. As a new leader in the building, I needed to understand who the informal and formal leaders were, how decisions were made, and how existing initiatives were communicated, implemented, and monitored. This information gathering was accomplished by observing meetings, having discussions with staff, and understanding the written school policies and unwritten rules that governed professional behavior and communications in the building. I then used this information to craft a customized plan to use within the instructional networks in the school.

In addition to understanding the school culture, I gathered information specific to the instructional technology system in PHS. I gathered this information from my own use of the technology system as well as examining to what extent technology was used by staff in meetings, PLCs, and for professional learning. In this case, “the system” refers to the efficiency of logging in, getting to the internet, changing settings, and using programs for learning within the district. I wanted to understand the existing ways that staff collaborate, communicate, plan, and instruct with technology. I also needed to determine how students use technology in the building. I went into classrooms and gathered anecdotal information on how students research, create, present, and receive feedback on their work with technology. These informal classroom observations also focused on identifying staff members who were already purposefully and artfully integrating technology into instruction. I was looking for trainers, pilot teachers, and staff with influence in order to build a team. Finally, I needed to understand how accessible technology is to students. This data was especially important since Schoology is a cloud-based computer program that would require wireless connectivity and device access.

From February to May of 2015, I gathered this information that would eventually be used to develop the implementation plan for Schoology in the building. Since this initial information was based on my own perceptions and experiences, I developed and implemented an Instructional Technology Survey (ITS) in order to clarify staff perceptions around the instructional technology system in the school and their technology use. This is included as Appendix D in this ELP. This survey was sent to all staff at the end of the 2014-2015 school year with a focus on four key areas. These areas include: (1)

infrastructure and capacity, (2) accessibility, responsiveness, and staff perceptions of the technology system, (3) current instructional practices, and (4) future technology goals.

The information gathered from my first three months on the job, coupled with this survey, was invaluable. Once the school year ended, I had all the information I needed to plan for Schoology implementation. My summary finding from this initial research identified the absence of a coordinated instructional technology system (portals, trainers, program alignment) and training for teachers as primary barriers to implementing Schoology and blended learning. Further, the staff members had negative perceptions of the operation of the wireless network, device access by staff/students, and the support provided by the technology team. Also, from my own perspective, the technology team and instruction teams did not meet regularly to discuss instructional improvements through technology or commit to a written plan of action.

This information led directly to the development of Appendix B, the Schoology implementation plan, which is a graphic detailing how Schoology and blended learning practices would be supported in the 2015-2016 school year.

Developing Background Information about Schoology

Once the administrative team decided to sign the Schoology contract with the State in early April 2015, I knew we needed to prepare staff for the changes and expectations around Schoology and blended learning that would be waiting for them when they returned at the beginning of the next school year.

In order to meet administrators' and teachers' need for information about Schoology and blended learning, I developed a "Schoology White Paper," which is included as Appendix A in this ELP. At the same time, I also created a free account in

Schoology with a disposable email address to demonstrate Schoology to administration and staff before our system was set up by the State of Delaware. I wanted to be able to demonstrate the basic use of the system with staff before it went live. Within this Schoology account I added examples of a few learning objects I previously created from my CRSD implementation. Armed with these two resources, I then extended background knowledge of Schoology with the Building Leadership Team.

Background knowledge for the Building Leadership Team. The first group that I targeted was the Building Leadership Team (BLT). This team is the “pulse of the school” and is a collection of 12 section leaders—eight academic teachers and four CTE teachers. These leaders meet bi-weekly on Mondays, and the information from these meetings is then distributed to all teachers at section meetings on Tuesdays. The BLT also includes all the administrators in the building.

I developed a presentation on the Schoology tools and its benefits for the BLT on April 19, 2015. This presentation was the first time information about Schoology went out to the building leaders, and the first time BLT members were given the opportunity to ask questions about the learning management system. The presentation addressed both national technology trends as well as state and local initiatives that were impacting PHS. This discussion included issues around internet access, the explosive growth of mobile devices, and the technology and information access skills students need to be successful in college and the workplace. This was then followed by updates on the BRINC consortium, how technology integration needs are being addressed in Delaware, and state initiatives around Schoology and blended learning.

Once we discussed the opportunities and challenges of implementing Schoology, I then demonstrated the Schoology system using my temporary account to highlight its many features. These features included the ability to post documents, hyperlinks, pictures, and videos as “static” elements in the LMS. I then discussed the “dynamic” or interactive features in an LMS including the use of discussion boards, online assignment submissions, and automatically scored assessments. Regarding assessments, I focused on the developing integration between Schoology and the State of Delaware Student Information System (SIS) Eschool. This integration would allow a selected response assessment to be created, given to students, automatically scored, and “synced” automatically with their gradebook. This was a feature that many hoped would work, but few believed could be achieved. Admittedly, I, too, was skeptical of this feature becoming a reality due to the inherent technical complexities of this process and the willingness of a large SIS provider to adapt their business model.

At the end of the session, I reinforced with the BLT members that two key words needed to be incorporated into our vocabulary. The first was “blended learning” and that it was the purposeful and meaningful integration of the online information and social elements into face-to-face instruction. The second was “learning objects.” These were described as the base unit of online learning and that objects make lessons and lessons make units.

Background knowledge for staff. After this presentation occurred on April 19th with the BLT, I followed up the presentation with an email to every participant who attended and those unable to attend. This email included the Schoology White Paper (Appendix A) and the demonstration site login so that the BLT members could review or

share this information with their section staff at a convenient time. I also included an open invitation stating that I would be willing to present the same information directly to their sections if they wanted to schedule a time for me to come in. Some of the section leaders took advantage of this opportunity, and I eventually ended up presenting this information to the Modern Technology, Medical, and Professional Services Academies as well as Science, English, Health, and Spanish content areas. This personalized approach is one of the reasons I believe the implementation of Schoology became very successful. I was able to control the content and focus of the message that was sent out to PHS faculty and to ensure the presentation focused on the benefits of Schoology and blended learning to specific groups of teachers. Further, because this was one of my first presentations as an assistant principal, it allowed me to establish relationships with the section leaders and allowed the staff to get to know me, my background, and the support I could provide them if they agreed to use Schoology. One common theme in these meetings were complaints by staff about both the supply and operation of the existing technology in the building. On more than one occasion, they pointed out that the program seemed interesting, but because the LMS required computers, there were existing problems in the building that would have to be solved first.

Background knowledge for district leadership. Each summer, the Polytech Board of Education meets to preview changes in policy and new initiatives for the upcoming school year. On July 7, 2015, as part of a board retreat, I led a presentation to the board to discuss instructional technology. Along with the information the BLT members received in April of that year, I also was able to demonstrate the new online systems and Schoology tools that we would be piloting during the next school year.

In the month of June, I had created student and staff portals and worked with the technology department to set up both Google Apps for Education and Schoology enterprise systems. Because of my design of these access portals, the board was able to see the convenience that the portals afford staff and students. They were also able to see the collaboration that Google supports. Lastly, I presented all of the information for this overview in Schoology. They were the first to receive this information before staff and we were able to discuss the goals of these programs and the potential impact on PHS staff and student learning. One board member, whose daughter attended Caesar Rodney as an eighth grader, and is now attending Polytech as a ninth grader, was impressed to see these same tools now being incorporated at Polytech.

Influencing Instructional Networks as an Improvement Strategy

Implementing and supporting the setup and use of Schoology was multi-modal. When designing the implementation plan for Schoology, I quickly realized that there is no single network in the building. Polytech High School, like most schools, is a collection of smaller instructional networks. In this case an “instructional network” can be loosely defined as any group of people who are working together on a common goal. I realized that in order to effect change, I needed to “make the building smaller.” I also realized, that by breaking the building into separate networks, with separate goals, I could then apply my research on instructional frameworks to these networks. There is also clear support in the professional literature for this approach.

Supovitz, Sirinides, and May (2010) found four key factors that can positively influence teaching and learning when they are emphasized by principals. Three of these factors are (1) setting the mission and goals, (2) encouraging trust and collaboration, and

(3) actively supporting instruction. The last factor (4) is the influence that principals have on the informal leaders and instructional networks that shape the culture within school buildings. This is one of the most important aspects of my ELP work and the underlying strategy for positively influencing the people at PHS.

To aid the planning process and application of the learning within these instructional frameworks, I developed Appendix B, Part II, which is a one-page implementation diagram highlighting the five instructional networks. This plan evolved out of a larger and more convoluted Department of Education planning process (Appendix B, Part I) requiring any district that wanted to use Schoology, and participate in the cost-sharing agreement, to submit an implementation plan. I simplified this larger document into a one-page visual for use by the leadership team.

In order to begin implementing this large, complex, and multi-modal process, I began to chart goals and objectives for each instructional network for the 2014-2015 school year. The five instructional networks that were targeted included: (1) administration, (2) BLT, (3) staff, (4) student pilots, and (5) the technology team. Also, by breaking these teams into separate groups, it was possible to understand exactly who was in each instructional group, and what specific tasks they would accomplish. This also allowed resources such as stipends, computers, infrastructure upgrades, and supplies to be targeted at each group so that they could effectively complete their objectives. This one page diagram has become a particularly valuable resource when working with district administration to discuss the implementation of Schoology for each instructional network.

Vincent Van Gogh once stated that “great things are not done by impulse, but by a series of small things brought together.” This quote typifies the primary strategy by which change has occurred at PHS with regard to Schoology and blended learning practices. By breaking the school into smaller pieces, or instructional networks, I was able to effect a larger change in PHS as a whole.

Researching Instructional Frameworks

Throughout the processes of understanding the PHS context, developing background knowledge, and creating the implementation plan, I continued researching the professional literature. This enabled good decisions to be made throughout the initial phases of implementation and also plan for the professional learning that would occur around Schoology for the 2015-2016 school year. In order to develop this plan, I researched the literature on quality professional learning, instructional design, and blended learning frameworks. Below is a summary of this literature search and how I synthesized this information to develop my Schoology and blended learning professional development plan.

Professional learning framework. The first implementation framework I researched early on is rooted in professional learning and used to design quality professional learning that leads to systematic change. I truly believed that before the students were to use Schoology en masse, there needed to be a professional learning system to support staff. Using Guskey’s (1999) *Evaluating professional development*, I researched the four principles of effective professional development. These four principles included (1) a clear focus on learning and learners; (2) an emphasis on individual and organizational change; (3) small changes guided by a grand vision; and (4)

ongoing professional development. These principles have been extremely valuable when examining the appropriate steps for each instructional network.

For instance, when I created Appendix B, Part II, (the PHS specific implementation diagram) I placed each instructional network into separate rows to help me as a leader and each network focus on the networks' goals for learning and learners. This format allowed members of different networks to see when they would receive orientation training and advanced training, and which network would receive it first. For example, it made sense that administrators completed initial Schoology training prior to the BLT, and that the BLT would complete their training prior to all staff. These small changes, over the course of a year, supported the grand vision I had for the building in which all staff would develop competency in Schoology and understand blended learning practices. Since this plan was developed for the entire year, this also ensured that the professional learning was ongoing and not a one-time offering with limited classroom practicality.

Instructional design frameworks. The second group of professional literature that I researched was focused around instructional design. I adapted a framework based on the work of Dean, Hubbell, Pitler, and Stone's (2012) *Classroom instruction that works: Research-based strategies for increasing student achievement*, and Thompson's (2010) *Leadership for Learning Focused schools: Implementing with Support and Accountability*. These frameworks collectively led to an instructional design with three levels of learning for participants.

The first level of learning centers on the acquisition of new knowledge (Thompson, 2010). To create this environment and support learning based on my early

research, I focused on developing background knowledge about Schoology and blended learning practices with each of the instructional networks. Level 1 tasks included the development of the Schoology white paper, the temporary email account, and the meetings with sections throughout the building.

The second level of learning is refining knowledge through application, and I accomplished this by assigning collaborative and targeted tasks within the Schoology LMS. For instance, in the blended course I designed for the BLT, I required participants to present a chapter of the book study by embedding their presentation within Schoology.

Finally, level three involves extending staff knowledge of Schoology through purposeful, authentic, and meaningful use of Schoology within classrooms. This occurred throughout PHS when teachers began implementing Schoology on their own. I would meet with teachers who were interested in Schoology and provide them access to the Schoology and Google videos that I created. With their own effort invested in watching the videos, combined with their willingness to apply what they learned in the classroom, they were quickly able to use the tool with students. These individuals, and their authentic use of the LMS, helped to further support the use of Schoology with other staff. Up to this point, the use of Schoology has been a voluntary process that can only be improved through in-depth reflection and continued support. Level three requires motivation and commitment on the part of the learner.

Blended learning frameworks. Blended learning is a relatively new concept to K-12 schools and implementing an LMS effectively requires some knowledge of blended learning frameworks and practices. Therefore, I researched literature around blended learning. Examples of this research include white papers, district handbooks, and journal

articles on best practices. One such framework that I used in the design of the BLT professional learning course is based on the work of Catlin Tucker in her book *Blended Learning in Grades 4-12*. In her book, she mentions flipped instruction as the most common form of blended learning and the easiest to implement with students. In this case, “a flipped classroom refers to a model of instruction in which information that has been traditionally delivered in class via lecture is instead presented online and viewed at home by students as homework” (Tucker, 2012, p.198). In the case of Polytech High School, I chose this framework to use with staff first, as a way to model this framework prior to eventual student use.

Blended learning evaluation study. Appendix C includes the summary of “action” research performed at the CRSD as part of my ELP work. This brief was an evaluation of an original credit health course in the summer of 2013. This research was implemented to understand the potential efficiency and effectiveness of blended learning compared to online and face-to-face instruction with students. Because blended and online learning is being used with increasing frequency, there is a desperate need for quality research and implementation frameworks. The knowledge gleaned from this study was used to develop the model of flipped professional learning for the BLT in Appendix E. This included the use of pre-work checkpoints and a clear, blended learning course outline that provided specific tasks to the professional learning participants. Overall, this study did not result in any significant differences between the options offered, but did offer insights into the design and perceived value of blended learning approaches when compared to online and face-to-face instruction.

Instructional technology survey. Appendix D also provided me crucial information related to the implementation of Schoology at PHS. This artifact is related to the research, design, delivery, and analysis of an instructional technology survey delivered to all staff at PHS in the spring of 2015. The primary goal I had for implementing this survey was to identify important contextual factors in PHS that could impact the use of the LMS and blended learning practices.

On the last day of school in the spring of 2015, I sent a survey to all staff in order to better understand the infrastructure, perceptions, and current instructional practices in PHS. The findings in this survey were critical to the design of an all-staff professional learning course (see Appendix G.) Additionally, this information led to the formation of a technology team as a separate instructional network with its own goals and objectives. Information from this survey reinforced to me that a strong instructional technology system and support from the technology team is crucial to our staff's willingness to adopt Schoology and blended learning practices.

Instructional technology integration framework. As I analyzed the results of the instructional technology survey, I also researched a way to measure the instructional shifts that would result from the incorporation of Schoology and blended learning practices. One such model that I researched is the SAMR model. The SAMR model (Substitution, Augmentation, Modification, and Redefinition), developed by Puentedura (2015) and shown in Figure 2, can be used as a qualitative measure to gauge the shifts that happen as the result of technology integration in the classroom. The SAMR model presents an effective way to categorize the shifts in instruction around technology and

develop a language that can be used to describe the progress of the blended learning initiative.

In order to better understand the SAMR model, I will use the example of reading a book to explain these sub-components. In *Substitution*, technology simply replaces an existing process. Instead of reading the book and discussing it in class, the end user reads the book on a computer or tablet. The technology simply replaces the physical book.

There is no change to the end user behavior of reading a book.

Redefinition (Transformation)	<ul style="list-style-type: none">• Technology allows for creation of new tasks, previously inconceivable
Modification (Transformation)	<ul style="list-style-type: none">• Technology allows for significant task redesign
Augmentation (Enhancement)	<ul style="list-style-type: none">• Technology acts as a direct tool substitute, with functional improvement
Substitution (Enhancement)	<ul style="list-style-type: none">• Technology acts as a direct tool substitute, with no functional change

Figure 2. The SAMR model (adapted from Puentedura, 2015)

In *Augmentation*, the reader is reading the book online while highlighting and defining the words along the way. The technology, in this case, provides an embedded dictionary allowing the reader to access vocabulary, thereby enhancing the availability of information to augment learning. The highlighted statements can also be emailed as a bulleted list with page numbers for referencing. In this case, technology offers a functional improvement over just reading a book online. Both of these categories use technology to *enhance* the end user experience.

The next two categories in this model focus on a *transformation* with technology integration, typically allowing the end user to perform functions not possible without technology. *Modification* is the third category and allows the teacher to re-design how the task is performed to get to the learning goal. In this case, modification would be reading a book and discussing the book in an online forum. This discussion can be at the same time (synchronous) or at different times (asynchronous) for the participants. The participants', in this case, leverage technology to talk about the book across time and space. This significantly modifies how reading, learning and collaboration occurred in the course.

Redefinition is the highest level and is a transformation that occurs with the successful integration of technology. For example, instead of engaging in a book study where individuals read and discuss a single text, this activity could be redefined by technology if participants were asked to evaluate several other books on a particular subject, create an explanatory or argumentative analysis of the books, and then share that analysis through social media. Because this task could potentially involve a world-wide audience, feedback and collaboration can be improved, and the participant can utilize and hone social media skills that were inconceivable in the past.

Further, the SAMR model can be shared within the networks so participants can develop a language related to blended learning shifts and enable their reflection on their instructional growth. Lastly, I will be able to use this model to gauge the overall shifts that have occurred during the implementation of my ELP and determine the next steps for transforming teaching and learning with students. This will be particularly important when staff undertakes the six-week training in the 2016-2017 school year.

Developing and Implementing the BLT Professional Learning Course

The use of Schoology by the BLT was also a priority at the heart of this ELP. The goals for using Schoology with the BLT were for BLT members to be the “students” of the course and the administrators to be the “teachers” of the course. This modeled effective blended learning practices and engaged them in a “flipped” form of blended learning.

There were seven sessions designed in Schoology starting with the first session on August 17, 2015. At this first session, everyone was supported in logging in and navigating all the resources that were required to start the school year. They were also assigned pre-work tasks to be completed in advance of each of the subsequent sessions. Below, these learning activities are referred to as tasks and four were designed for each pre-work session. In each of the six pre-work sessions, I designed routine tasks that BLT members would be required to complete, along with specific and “need-based” application tasks that relied on the context and ability of the participants. These focused on developing their understanding of Schoology tools.

There were two routine tasks that formed the foundation of Appendix E. The first routine task for each of the pre-work sessions was the use of the State of Delaware fully-online Schoology course. I took steps to gain administrative access to this course and then break it into a “flipped” learning course with specific online elements to review in advance of the face-to-face meetings. This allowed all the participants to develop low-level background knowledge in advance of applying Schoology tools.

The second routine task was developed to model blended learning with a text as well as support professional learning around disciplinary literacy for BLT members. I

divided the text *Cracking the Common Core: Choosing and Using Texts in Grades 6-12* into instructional “chunks,” with specific pre-reading work that was to be completed prior to coming to each BLT meeting. Additionally, BLT member pairs were required to present one of these chunks at the beginning of each BLT meeting. They were also provided administrative access to the blended learning course in Schoology to post their presentation materials as an application task.

During the first few BLT meetings, traditional laptops were used to facilitate the face-to-face sessions with access to the online course components. Once the Chromebook cart was purchased for the student pilot, these were then used at each session in order to introduce BLT members to this new hardware and the increased speed and efficient access to materials that they provide.

The final piece of this BLT course included having the teacher responsible for the students’ pilot, share her experiences using the LMS with students. During the BLT meetings she shared how Schoology, Google and now Chromebooks have transformed how she plans and delivers instruction with the students. This provided the BLT members with specific examples of how the LMS could be used with students and the tools that teachers found most useful.

BLT Focus Group

At the conclusion of the six online and seven face-to-face sessions developed to support the development of Schoology use and blended learning, I conducted a focus group with selected BLT members (see Appendix F). The successes and challenges that were identified from this focus group helped me determine the next steps for supporting staff and students during our transition to full Schoology use.

The first trend I identified was the overall positive perception of Schoology and the convenience it offered for creating, sharing, storing and accessing instructional materials as “learning objects.” The second trend included the need for more training to better enable teachers to master these tools. At the time of the focus group, the demand for training had far exceeded the supply, leading to some frustration among staff due to a willingness to learn, but a perceived absence of support.

The third trend I observed was the staff’s desire to tie Schoology to existing building initiatives. The staff recognized that combining existing literacy initiatives with the Schoology roll-out would lead to more cohesiveness in professional learning at PHS. The focus group participants also identified two existing curricular elements and one administrative task that could be more effectively accomplished using Schoology. These include the Polytech Senior Project, Senior Seminar and the recording of PLC or section minutes.

The fourth trend that I identified was the barriers to successful building-wide adoption of Schoology. Staff needs around training, technology support, wireless infrastructure, and device access were all discussed as critical to the widespread and successful use of Schoology at PHS.

Implementing Schoology with Staff

After ensuring Schoology was set up and successfully used with the BLT, I then decided to take steps to begin training staff. Appendix G is entirely focused on the implementation of Schoology with all PHS staff.

To begin using Schoology with all staff, I created the Staff Professional Learning Course in Schoology and supported all staff in their first training to join the course. I then

used this course to deliver the three one-hour sessions with staff from September 2015 to December 2015. The first session focused on showing staff how to log on, demonstrated the use of Schoology, and provided them access to the eight-hour online course provided by the State. In the second session, I guided them through an in-depth tour of Google Apps for Education, how this could be used with students, and shared the instructional videos I made. The third session centered on having select teacher leaders showcase their use of Schoology since the beginning of the year. I did not present at that session; instead, I used a team of teachers who had voluntarily adopted and used Schoology. These teachers demonstrated how assessments can be designed, delivered, automatically scored, and entered into the gradebook through the Eschool integration.

After the first training session, I knew that I needed to provide a reason for staff to log in to Schoology and use the system. Because of this, I began adding faculty meeting agendas and in-service agendas to the site. We still emailed out the agenda, but Schoology was used to house the documents.

In order to support the background knowledge development with Schoology, I then created 21 instructional videos for the staff. These videos provided a way to disseminate information about Schoology and Google in the absence of face-to-face training. Further, as the requests for training began to mount, I could refer staff to these videos to get them started.

Implementing the Polytech Advisory Support System (PASS). The next step to using Schoology was to have all staff deliver the Polytech Advisory Support System (PASS) with the LMS. PASS is an advisory period where small groups of students are paired with staff to cover important information. PASS topics range from bullying and

child-abuse training to crisis prevention training. The goal for placing PASS in Schoology was to provide an application task, in the form of content delivery, which all staff needed to login to and use. This improved the functionality of the PASS instruction by adding interactive videos and a linear flow to the information that was far superior to an email with attachments and file-size limits. This entire process provided a concrete example of how Schoology could support convenient access to materials for staff.

Implementing the Polytech Senior Project (PSP) at PHS. The PSP class is a half-credit graduation requirement for all seniors at Polytech High School. All seniors are required to complete this senior project in the first and second marking periods of their senior year. This involves having students submit a proposal during the fourth marking period of their junior year to their Career and Technical Education (CTE) teachers.

After four successful PASS sessions, extensive use of Schoology by BLT members, and information that I gained from the BLT focus group, we decided to use Schoology to facilitate the Polytech Senior Project (PSP) and the Senior Seminar courses. This building initiative would allow PHS to take the implementation of Schoology a step further by having teacher teams develop the content for students. Unlike PASS, where staff simply accessed the material in Schoology and presented it to students, this content would be interactive and used by the students. For example, staff are now learning to “copy” a curriculum folder to the course that students can access, edit, and upload for teacher feedback. In order to facilitate this process, the principal and I began the work of building curriculum teams with “pay for product” contract agreements to develop these courses. This represented a new way to develop curriculum at PHS.

The ultimate goal of this Schoology initiative is to provide a consistent and streamlined senior project process for the 300 seniors in 21 different CTE areas served by 40 staff members. The use of Schoology will streamline the lesson plans, templates, instruction, assignment deadlines, rubrics, and grading processes throughout the building. This will be the first time Schoology is widely used in a consistent way with students as part of an organized blended curriculum.

Additional training. Another trend of the BLT focus group, in addition to combining Schoology with existing initiatives, is the need for additional training. This training is evolving as application tasks like the PSP and Senior Seminar are developed by curriculum teams, implemented by staff, and used by students. In order to meet this demand for training, I am currently developing a six-week professional learning folder that is going to be part of the staff professional learning course. The goal of this blended course will be to develop “trainers” as a resource person for each content area of the building. These trainers will then help support the development of curriculum and advanced tool use within each of those content areas.

The PHS Technology Committee

As a result of the successful BLT professional learning course, student pilots, and staff resources placed in Schoology, I recommended that the district form a technology committee to determine the next steps for instructional technology applications within the building. The information for this technology committee was stored in the staff professional learning course and shared in BLT/staff meetings to ensure a transparent process. The areas that were considered by the technology committee included infrastructure, programs and staff behaviors, student devices, staff devices, bring your

own devices, and additional training. To better understand these areas in other districts, four site visits were arranged for the technology committee with William Penn High School, Middletown High School, Cape Henlopen High School and Sussex Central High School. The technology committee recommendations and next steps will be shared in Chapter 4.

Chapter 4

IMPROVEMENT STRATEGIES RESULTS

Weiss (1998) identifies formative evaluations as critical to gauging the success of programs and are the most common type of evaluations used by school practitioners where the continuous improvement of programs is the goal. In my work at PHS, I sought to initially establish the use of Schoology over one year and continually gather information to adjust the implementation to match the specific needs of each instructional network. This information was gathered through Schoology analytics, classroom observations, walk-throughs, and document reviews. In this chapter I will provide the results of these implementation as I begin to chart the next steps for Schoology implementation and professional learning for staff.

There were three primary improvement strategies that were used to effect change at PHS. The first was gathering context-based information, the second was researching instructional frameworks, and the third was applying this information to influence the adoption of Schoology throughout the instructional networks within the building. The reason I formed these instructional networks was to elicit small changes in each network over one year that would lead to larger school-wide changes (Guskey, 1999). My short term goal was to develop the use of Schoology and encourage blending learning practices; the long-term goal is to positively affect student outcomes. The changes I will highlight here demonstrate the successful first steps.

First, I will review the analytics around Schoology use, how use has changed over time, and how Schoology practices were adopted and shared by staff. Second, I will use the SAMR model to analyze the effects of this usage by evaluating the two blended

courses that I designed to train staff. These courses are the BLT course and the all-staff professional learning course. Together, these two courses were the primary avenues for building teacher background knowledge about Schoology and blended learning. These courses also allowed for training, support, and gathering feedback from teachers as they worked with the LMS as a blended instructional frameworks. This process allowed me to influence the BLT and all-staff networks in a positive and successful way through blended professional learning.

Schoology Analytics

Throughout this implementation, I accessed the Schoology analytics, found easily within the system, to track usage of the system over time. Figures 3, 4, and 5 below are screenshots of the use of Schoology on July 21, 2015, November 17, 2015, and March 28, 2016. In the figures, the blue lines represent staff usage and the green lines represent student usage. The numbers across the top show the total visits, page views, average time per visit, comments, submissions, and files uploaded.

It is important to note that the numbers below are 30-day running averages of Schoology use. For instance, in Figure 3 below, there were 62 total visits and 1, 275 page views from June 22, 2015 until July 21, 2015. These numbers will fluctuate based on usage over those thirty days prior to the screenshot. For instance, during winter recess at PHS, the 30-day average dropped due to non-use.

I set up Schoology with the technology team at PHS in the summer of 2015. In Figure 3, which shows Schoology use on July 21, 2015, only administrators and technology staff had used the system during the previous 30 days. The green lines represent a student account that was created in collaboration with the technology team to

test how students would see and use the system. There were a total of 62 visits to the system at that point of implementation.

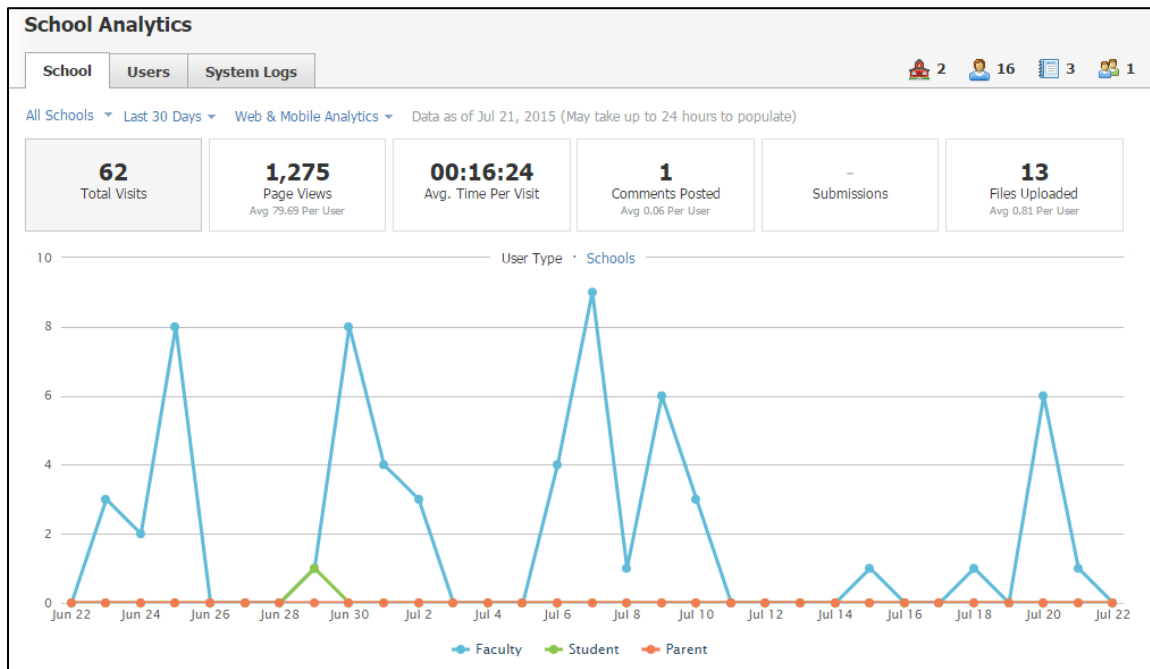


Figure 3: Schoology usage statistics screenshot from 7/21/15

Figure 4, a snapshot from November 17, 2015, can best be described as a turning point for Schoology use at PHS. During this period, the BLT members completed their fifth blended meeting of the year, and the staff had completed two, one-hour Schoology trainings. Staff had also delivered their second PASS session. Staff were free to use Schoology at their leisure and many began posting curriculum documents online for students to access. It is at this point that students began to access staff documents through Schoology at scale. According to Figure 4, there were between 100 to 150 student logins and up to 50 staff logins each day. This was approximately four months after implementation. It is important to note that the logins are not unique instances and can represent the same person logging in multiple times a day.

At this point in time, there were 27,925 page views and 2,594 visitors to the Schoology website during the previous 30-day timeframe. The data also shows active use by staff and students, as opposed to simply logging in and navigating. On the right and over those 30 days prior to November 17, 2015, there were 198 comments posted, 352 assignment submissions, and 266 files uploaded by staff for student access of learning materials. The average time for each visit was 9 minutes and 32 seconds.

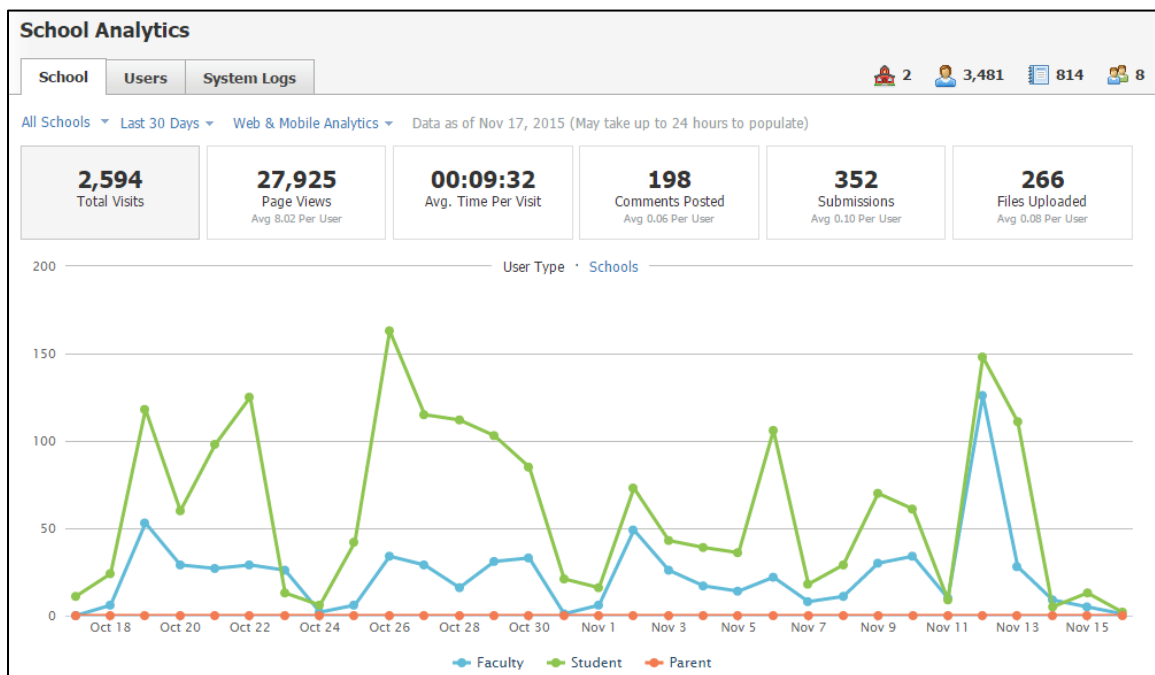


Figure 4: Schoology usage statistics screenshot from 11/17/15

On November 12, 2015, there is a noticeable jump in the staff and student logins that was supported by the administrative team. On this date, the teachers conducted the second Polytech Advisement Support System (PASS) session with all students focused on the positive and negative effects of social media. This session resulted in over 125 staff logins into Schoology to deliver this information. Again, these were not unique logins and can include multiple logins by the same person. This PASS session supported an application of the Schoology system by staff and was part of the design to expand the

use of Schoology in the building. The staff could either print off the materials stored in Schoology or use Schoology to deliver the information. It is significant that student usage of the system began to eclipse staff usage on a consistent basis at this point in the year. I believe that this initial use of Schoology and the delivery of PASS helped staff develop a comfort level in the system and better enabled them to begin to use Schoology with their own students in their classrooms.

Figure 5, from March 27, 2016, shows a regular pattern of Schoology use by both staff and students. In the 30 days outlined below, there are regular peak-usage times during weekdays and low usage on the weekends. However it is important to note that about 100 students (and a few staff) were accessing Schoology on each weekend day.

Approximately four months after the Figure 4 snapshot, the 30-day visits to Schoology rose to 14,372 (454% increase), with 178,889 page views (540% increase). This also includes 1,039 comments posted (424% increase), 3,668 assignment submissions (942% increase), and 1,592 files uploaded by staff (498% increase). The average time spent on the site also rose to 11 minutes and 37 seconds. Overall, there are about 600 daily logins by students and about 100 by staff.

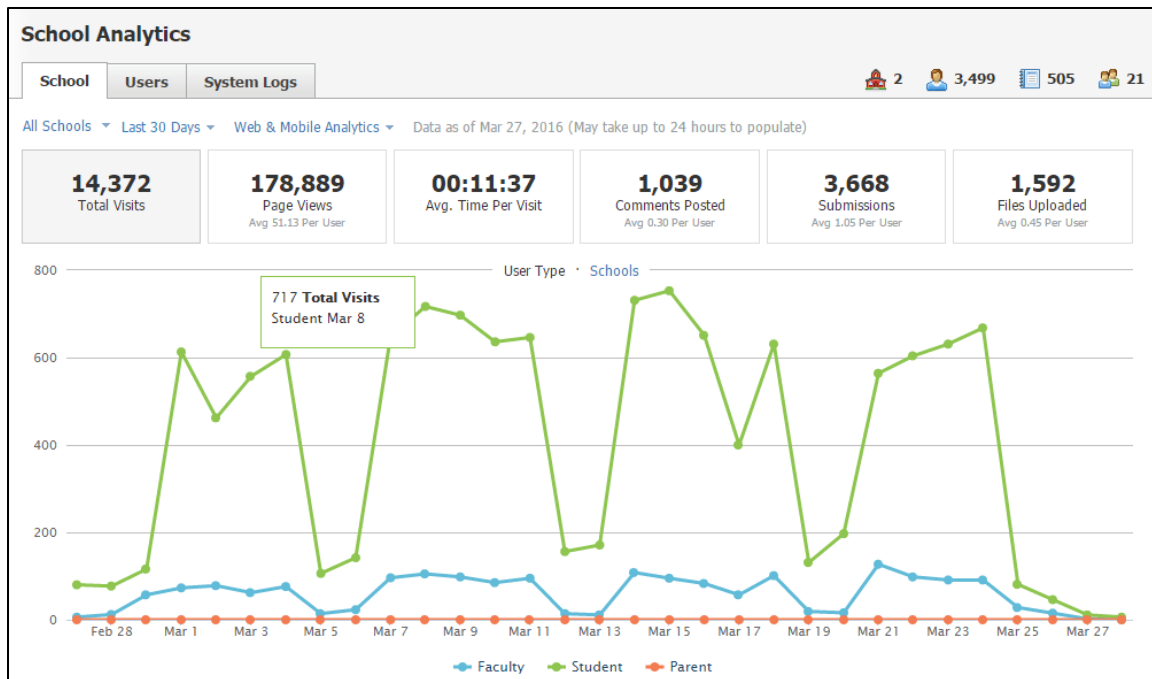


Figure 5: Schoology usage statistics screenshot from 5/27/16

The data above clearly highlights the growth in the use of the Schoology system at PHS as a voluntary process over time. In my opinion, this usage has far exceeded initial expectations. However, it is also important to highlight some of the instructional shifts that have occurred as part of this analysis. Next, I will use the SAMR model to describe the instructional shifts that have occurred with the BLT and staff courses. I will also highlight some specific examples of how the system is being used for collaboration and blended learning.

Analyzing Instructional Shifts Using the SAMR Model

The SAMR model (Puentedura, 2015), as described in Figure 2 above (p.38), can be used to analyze the instructional shifts that result with the introduction of technology. The four levels to the SAMR model include *substitution*, *augmentation*, *modification* and *redefinition*. Substitution and augmentation represent an *enhancement* to instruction and provide some functional improvement over an existing task when using technology.

Modification and redefinition represent a *transformation*, meaning the task was not even conceivable without the aid of technology.

I used the SAMR model to analyze the BLT and staff professional learning courses. These courses were the primary focus areas of my ELP project, and in my opinion, heavily influenced the staff's acceptance and use of Schoology. However, it is important to note here that the evaluation of the BLT course, PASS instructional modules, PSP course and other analyses were done by me, without the use of an independent evaluator. Since I was heavily invested in the development and outcomes of these courses and individual instructional modules, the analyses that follows is subject to my own bias and must be considered when determining the efficacy of these efforts.

BLT course. In 2014-2015, the BLT meetings did not use computers to support the face-to-face portion of meetings to access information. Additionally, there was no online portion of these meetings that allowed participants to access information ahead of time. When I added technology to the face-to-face meetings—a *substitution*, according to the SAMR model—this moved the paper-based meeting to an online format for accessing the agenda. When Schoology began to be used to gather feedback from participants through polls and discussion boards during BLT meetings, the level elevated to *augmentation*. Both of these changes represented an *enhancement*, with an added functional improvement provided by technology.

Modification of the BLT meetings occurred several ways. First, by adding the features of Google Documents, embedded in the organizational structure of Schoology, the BLT members were able to collaboratively edit multiple documents both inside and outside school. These documents included the BLT agenda, the BLT book study

document, and an Assessment Inventory grant provided by the Delaware Department of Education. For this grant, available here “<http://tinyurl.com/zepcnx7>,” the BLT was broken into small groups and then asked to write down all the assessments used in the building. Next, they were asked to develop questions about these assessments for a staff survey. In one hour of face-to-face work, supported with the organization and support of these tools, we were able to accomplish what would have otherwise taken many hours and meetings.

Below, I added a screen shot of the Schoology analytics to show how BLT members collaborated on important documents housed in Schoology. Figure 6 shows the number of “clicks” BLT members performed to access the BLT agenda, the *Cracking the Common Core* book talk, and the Assessment Inventory grant. The BLT course agenda has been accessed 455 times since the beginning of the school year. The *Cracking the Common Core* agenda was accessed 124 times during the six pre-work sessions. Finally, the Assessment Inventory grant was accessed 106 times to support a better understanding of the assessments used at PHS. These documents, and their use, demonstrate that the BLT is utilizing Schoology as a primary method of collaboration on school-wide initiatives.

In my opinion, these tasks represented a *modification* of the BLT course by altering several of the management and collaborative routines that would not have been possible without the aid of Schoology. Further, these tools provide a functional benefit, allowing for a more efficient use of the limited face-to-face time that is available during these meetings. This type of collaboration has transformed how the BLT operates.

BLT Agenda 15-16.docx https://docs.google.com/a/polytech.k12.de.us/docum	455
Cracking the Code Discussion.docx https://docs.google.com/a/polytech.k12.de.us/docum	124
IMS Link https://login.doe.k12.de.us/SSO/pages/home.aspx	0
Instructional Technology Updates https://docs.google.com/presentation/d/1FRBMkqfrqI	18
ALL Staff Collaboration Example.docx https://docs.google.com/a/polytech.k12.de.us/docum	36
Assessment Inventory.docx https://docs.google.com/a/polytech.k12.de.us/docum	106

Figure 6: BLT agenda, book talk agenda and Assessment Inventory grant access.

Staff Course. As the staff course developed over time and was used with staff, there was a similar progression to more advanced shifts when analyzed using the SAMR model. For example, the three initial trainings I developed for staff were placed in the Schoology LMS and staff were brought into computer labs for the training. This is an example of *substitution*, whereby the computers and programs replaced the paper-based, face-to-face meetings that typically occurred. As an additional example of substitution, I began to upload in-service agendas and faculty meeting PowerPoints to Schoology for staff to access.

PASS. As an example of *augmentation*, the administrative team designed PASS with Schoology, providing a fully developed curriculum for staff to deliver with embedded learning objects. This process increased both the efficiency and effectiveness of PASS with the aid of technology. The staff overwhelmingly supported this application after the first few sessions. In this case, the BLT focus group and the many emails from staff I received validated the effort required to develop the PASS materials. Below,

Figure 7 shows how many times staff accessed two documents from the most recent PASS session.

Drug/Alcohol Abuse IQ Challenge http://teens.drugabuse.gov/quiz/national-drug-alco	201
Attack Addiction http://attackaddiction.org/	134

Figure 7: PASS access by staff.

The Polytech Senior Project (PSP). Placing the PSP and Senior Seminar on Schoology, in my opinion, is a *modification* of this task leading to a *transformation* for the 40 teachers and 300 students using the program. For example, the technology has enabled the staff to develop new and more efficient online processes, like collaborative online grading, that could not have been accomplished before without Schoology.

This process begins with administrators and curriculum teams designing these courses in Schoology. Next, teachers copy and deliver the content directly to their student courses throughout the building. This is different from PASS in that students are now interacting with the content that is copied, supplemented, and delivered by teachers. The students now participate in discussions and submit their written proposals as an assignment that can be collaboratively scored by teams of staff members using online rubrics and feedback dialog boxes. This process, when fully implemented, will serve as an exemplar of how Schoology tools can be used to blend instruction in an effective way. Teachers like this process because it clearly communicates learning expectations and holds students accountable for submitting the assignments.

The second part of the staff professional learning course is the six-week blended training for select staff who will be receiving Chromebooks next year. When participants are enrolled in the 2016-2017 school year, it will *modify* professional learning by

developing “trainers” who can then work with other teachers through direct application in their classrooms. This is a modification because it is a blended course for PHS teachers. A part online and part face-to-face course cannot be accomplished effectively without the technology tools to organize the learners, online learning activities, and face-to-face meetings. This is the primary role of the Schoology LMS.

Instructional Technology Committee Impact

When this ELP process started, having an Instructional Technology Committee was not one of the goals. This committee arose out of the success of Schoology and the need to chart determine a clear path for expanded use of the LMS and blended learning practices, with teachers as decision makers. This became particularly important when the district communicated a commitment to investing in devices to support the use of Schoology for the 2016-2017 school year. Therefore, the first goal of this committee became to develop recommendations for the 2016-2017 school year around areas of device purchasing, system setup, and training. The long-term goal of the committee is to also make recommendations for the technology portion of the strategic planning process to begin in the 2017-2018 school year.

After several meetings and site visits to four area high schools, the technology committee recommended Chromebooks as the device to purchase. The technology committee also cited the need for a more training and supporting these devices including the design of the six-week course. This course will be implemented with the leads assigned to each Chromebook cart and be implemented as a blended course in the beginning of the 2016-2017 school year. Further, they have also recommended the use of technology coaches within each department.

Chapter 5

REFLECTIONS ON IMPROVEMENT EFFORT RESULTS

Overall, I believe that the implementation of Schoology has been successful for administrators, staff, and students at PHS, and that the increased access to this tool serves as an important foundation for future use of blended learning. I believe this can be attributed to the methodical planning and hard work that went into the three primary strategies used to guide this work. These three strategies were (1) gathering relevant background information on the people, practices, and technology at PHS; (2) researching instructional frameworks around blended learning; and (3) applying this contextual information and research to the instructional networks at PHS in order to support Schoology implementation and blended professional learning.

When I reflect on my improvement efforts, I believe focusing on the BLT professional learning course is a good place to start for evaluating the changes that have resulted from my improvement efforts in PHS. The BLT was the primary instructional network that I focused on during this project, and this group received the most attention and planning throughout the course of my ELP work. Additionally, since most of the implementation work happened with the BLT first, they were my primary feedback mechanism prior to training and supporting all PHS staff on Schoology and blended learning.

Summary and Reflections on the BLT Professional Learning Course

The design and implementation of this professional learning course with the BLT had five primary goals. Each of these goals, and whether they were fully achieved, are discussed below.

1. Model and support blended learning practices with Schoology. In my opinion, after reflecting on this goal, I realize that there were “shifts” that occurred within administrative team, and these were necessary to support Schoology implementation. The design and implementation of the BLT meetings in a blended format, required advanced planning and organization on our part. Often, this required more time than was allowable within our existing BLT planning meetings. Achieving this goal relied on my ability to schedule and plan the topics and tasks for the BLT course, and to facilitate the online pre-work and face-to-face components of each BLT session. In order to support these shifts for the administrative team, I developed a routine that enabled them to participate in the design process, but not necessarily the minutiae within Schoology. This enabled the administrative team feel comfortable navigating within Schoology and add content over time as their comfort level increased.

Throughout this process, difficulty arose since there was little time in these meetings for “training” and limited ways to directly apply these “new” features into their existing work routines outside of the BLT. At times, for the administrative team, this process seemed like one more thing to learn, manage, and support. Additionally, at many times, I was overwhelmed with this process. However, over time, the administrative team developed proficiency in Schoology and this helped distribute leadership for the initiative.

Overall, the time that I invested working with the administrative team, planning the BLT course components, and using this course with the BLT, has resulted in a successful perception of Schoology and has been a catalyst for the use of Schoology within the other instructional networks. The administrative team is now competent with

posting and developing learning objects in Schoology for PASS or other trainings.

Further, the BLT members also understand the unique potential of a learning management system to share up-to-date information that is universally accessible on any device. This ultimately resulted in Schoology being used to implement the PASS system across the building in between BLT meetings three and four. I also believe modeling and supporting this use by the administrative team is the primary reason the BLT focus group recommended placing the PSP and Senior Seminar materials in Schoology in the second semester of the 2015-2016 school year. There are now many more ideas being developed by both the administration and teachers on how to use Schoology to guide professional learning and direct student learning.

One element that could have been improved, and that was clearly identified during the BLT focus group, was the need to tie Schoology to existing school initiatives. At times Schoology seemed like an additional initiative layered on top of the others. I believe this to be the case since many administrators and teachers, when initially learning about Schoology and its tools, did not know how to apply these new features to their work. The “shift” in moving work routines to Schoology is not always easy. Initially, it did feel like a new initiative, until the administrators or teachers had their own epiphanies and would state “why don’t I create and share this in Schoology?” That was typically the point when I knew they understood how these tools work and could be meaningfully applied.

Another area that could have been improved was the completion of the pre-work tasks by the BLT members. Due to time constraints, comfort level, and lack of accountability, many BLT members stopped completing these tasks and reading the book

before these meetings. This was evidenced by the BLT focus group, the absence of discussion posts and assignments submitted in Schoology, and the impoverished face-to-face discussions about the content. It was evident many had not read the material. Additionally, many BLT members would also willingly share that they had not done the work. This problem will be discussed further in the next section.

2. Support literacy development with seven “flipped” book discussions. In the spring of 2015, the Delaware Department of Education performed a CCSS implementation audit at PHS. This audit involved evaluating documents and conducting focus groups to determine the extent to which the CCSS were being implemented. The result of this audit left PHS with a requirement to include more content area literacy in classroom instruction. In response, the CCSS implementation team at PHS developed a content area literacy implementation plan for the 2015-2016 school year.

Since this plan impacted the whole building, the BLT was used to guide its implementation. This first step became educating the BLT on additional literacy strategies and providing a consistent framework to discuss CCSS literacy improvement. We chose the book, *Cracking the Common Core* (Lewis, Walpole & McKenna, 2013), as the text for a flipped book discussion in each of the pre-work sessions.

In order to achieve this goal, I spent time breaking up the chapters, creating the chapter sign-up guide, and holding each group accountable to lead a presentation for their chapter. This also included having the members post their presentation materials to Schoology. The individual readings of each chapter followed a timeline and I wanted participants to come to the BLT sessions prepared to discuss the literacy strategies related to instructional improvement.

However, even though I tried to organize and contextualize this literacy initiative, there was confusion within the BLT and across the building. Since PHS already had a Common Ground implementation team focused on incorporating these CCSS literacy elements with all teachers, the BLT wondered why this book was only being used with them. Further, the BLT had many questions about whether this book would be used across the building and to what extent they should share the information within their section meetings with members who were not using the book. This was something that required a clear vision for success and I do not believe there was enough planning and communication within the administrative team to determine the appropriate next steps. The easy solution was to discontinue the use of the book after the BLT had finished it and to focus on the implementation of the CCSS Common Ground team recommendations.

Overall, the methods that I used to structure the flipped pre-work were successful, but the acquisition of literacy-related content and incorporation of literacy strategies into classroom instruction was not. Although BLT members were required to present a chapter of the book and apply Schoology tools in their presentation of the material, individual members of the BLT were not held accountable for reading all chapters which led to the failure of this literacy initiative.

However, I believe a flipped book study will work well in the future with the foundation and structure that I established this year. If there is a future initiative that requires the development of important knowledge, the BLT could participate in a book study where they read the book in the first half of the year in the same way, then the BLT leaders could lead a flipped book study with their section meetings during the second half

of the year. This type of distributed professional development could be easily coordinated within Schoology.

The pre-work sessions in the flipped book study did present a challenge, however. Overwhelmingly, the focus group felt that there was not enough time to complete the pre-work tasks, an important element of flipped learning. Furthermore, once BLT members learned that there was no mechanism to track learning or check progress, they stopped doing the pre-work entirely, despite getting paid to do so. Because there was no accountability in place to commit staff to the learning process, and reading the chapters independently, additional steps must be developed to ensure accountability. This may include developing specific discussion posts and assignment submissions within Schoology with administrative oversight to ensure completion.

3. Support Schoology knowledge development with specific learning goals.

This goal is focused on task three in all six pre-meeting work sessions and utilizes a self-paced, eight-hour blended learning course developed by the Delaware Department of Education. This was still a self-paced course with self-paced modules, but participants in the BLT course would be able to preview specific sessions as part of their “pre-work” and then discuss, extend, and refine their knowledge in the face-to-face BLT sessions. This structure effectively made the course a blended learning experience.

Goal three objectives were also used in conjunction with task 1 and task 4 in each of the BLT pre-work sessions. In these tasks, there were specific skills that I outlined for development that were first supported by the blended learning course, but then used in successive course activities to “apply” what they have learned. For example, the BLT

members would learn about submitting course assignments, and then post an assignment as the next BLT pre-work task.

The primary evidence for the changes from this approach in the BLT professional learning course were discussed in Appendix F, which is the focus group conducted with the BLT members. The focus group respondents overwhelmingly supported the way in which Schoology knowledge was developed in the BLT. They specifically referenced that they liked that the course was organized sequentially, the skills build upon one another, and that there were clear applications of the skills within the course. The BLT focus group members also stated that this approach would be a great way to teach the students how to use Schoology.

Overall, this was an effective way to develop background knowledge for BLT members in advance of the face-to-face BLT meetings, for those BLT members that completed the work. Many BLT members would readily admit during the BLT meetings or within the focus group, that they did not complete the pre-work learning objectives. Unfortunately, the only way to track progress was through discussion posts and small, multiple choice quizzes. In order to remedy this lack of accountability, the BLT will be responsible for developing their own accountability system for next year.

4. Design seven flipped Schoology sessions concluding December 7th, 2015.

Originally, I had planned to implement the state developed Schoology course and the flipped book study as separate blended courses. I changed this plan and combined them into a single course in order to be more efficient. Overall, there were seven face-to-face meetings designed and implemented since the beginning of the school year with six pre-work sessions and associated tasks.

As the usage of Schoology evolved to include more staff, I began to use the information from this first flipped professional learning experience with the BLT to plan a blended course for teachers in the 2016-2017 school year. This course will offer stipends to participants and support the introduction of the new Chromebook carts. In other words, the staff who receive the Chromebook carts will be required to commit to the training. This will ensure all the participants complete the training and pre-work activities as I develop them as trainers. This is needed since all the members of the BLT course did not complete the assigned pre-work sessions. There were many reasons that this occurred, as I learned from the focus group, but this completion needs to be improved when more staff take a blended course.

5. Instructional technology system improvements and student pilots.

I began the process of meeting this goal through the instructional technology survey at the end of the 2014-2015 school year. This data was used in conjunction with discussions, and observations of the instructional technology system to devise system wide improvements.

As a result of this ELP work, I have worked to set up these instructional technology improvements in collaboration with the instruction and technology teams. The goal is to provide robust access for all devices to organize information and use Schoology for learning. The system is now operational and has the support of the BLT, since they have been the first to see it, use it, and make extensions to the classroom learning environment.

This process started with the setup of student portals, Schoology, and Google Apps for Education. These tools provided convenient access to learning programs and

new ways to collaborate, communicate, and share information. The BLT was the first team learn, use, and share these tools throughout the building. I knew that if we could get these tools to operate effectively within the BLT, and teach the BLT how to use them, use would expand.

One important improvement occurred on October 28, 2015, when I added Chromebooks to BLT meetings. These devices quickly won the support of the BLT as a more effective tool for accessing these new cloud based tools.

In order to demonstrate the efficacy of this system with students, one teacher, who is a BLT member, used these tools with approximately 100 students in the pilot program with Chromebooks. Her positive perception served as testimonial to the support she received and the operation of the devices. She had broad influence with other members of the BLT. This approach positively influenced the perception of this “new” technology with other instructional networks in the building.

In my opinion, using the BLT participants as both the first to try new tools and a feedback mechanism for implementation is the primary reason there is continued usage and positive support throughout the building. I have worked hard, listening to concerns and being responsive their needs, to establish their trust and support for the use of Schoology and other new tools. When they went out to discuss these changes in their section meetings, they could both support the initiative with the right message from the BLT or provide feedback to me based on potential concerns. Because of the strong relationship with these members, they would often give me a “heads-up” on these concerns prior to the BLT meetings. This would allow me to bring two to three potential solutions to the problem and solicit their choice and feedback on the right solution. This

assisted the other BLT members in feeling they were supported and decision making was collaborative.

Summary and Reflection of the Staff Learning Course

This staff professional learning course is now an embedded fixture at Polytech High School. This tool has slowly replaced the need for shared drives and email allowing better access to training and curriculum resources for staff. Further, since the information is web-based, a content creator can immediately update the information through feedback loops within the instructional networks. This is in contrast to the multiple “draft” emails that are sometimes sent out when information changes during program implementation.

There are three recommendations that I will begin to develop and expand to benefit staff and students in the near future. The first is that I will work with the administrative team to identify more opportunities to consolidate professional learning activities and training into Schoology. The difficulty with implementing Schoology in these initial stages is running parallel systems. Often the materials must be posted in Schoology and then posted again on the shared drives or sent out via email. This is an inefficient use of time. In order to support this consolidation of materials, I will develop more training for administrators, BLT members, and other teacher leaders to increase their comfort level using the system.

My second activity is to expand the use of Schoology in section meetings on the Tuesdays after BLT meetings. As this point, only two of 12 section leaders have actively begun using Schoology as a replacement to share drives to record minutes and store documents in their meetings. There are a few limiting factors, such as access to devices for staff during these meetings and finding the time to train for this purpose. However, by

supporting this change, the school would be one step closer to a consistent implementation of the LMS. Once these section leads realize that information from the BLT can simply be “copied to” their own section course in two clicks, they will realize using the system will actually save them time.

The third and final recommendation that I will support, involves how the administration uses the tool for communications and curriculum development. Regarding communications, I will support the development of a Polytech High School Group for all staff. The administration can then send updates to the staff within Schoology over the summer and on a consistent basis. This will still send an email to staff, but moves people to use Schoology to access the information while providing a running list of what was sent, like a blog. Further, by using the “updates” feature, I would be able to embed videos, documents, hyperlinks, commenting capability, and staff polls. This could potentially replace the weekly Friday footnotes newsletter to staff. These interactive features will further model how staff can eventually communicate and interact with their students.

With regard to curriculum development, if all staff are enrolled in a group, the building could begin to develop group resources. For example, instead of share drives for each content area, they could have a group folder in Schoology such as “Math” or “Science.” These folders, within the school group, can then be used to store curriculum documents such as lesson plans, substitute plans, common assessments, and instructional resources. These learning resources can then be shared and used with students easily, thus making the long standing goals of collaboration and efficient development of learning tasks a reality for staff.

Leading Multiple Instructional Networks to Influence Change

There were three primary change strategies used to effect change in PHS. They were gathering background information, researching instructional frameworks, and utilizing instructional networks to support larger school-wide changes. However, out of these three strategies I believe that the most important was identifying and working with individual instructional network to impact the school as a whole.

The most critically important elements in influencing these networks was building **trust and providing for collaboration**. Trust and collaboration were paramount to the successful adoption of Schoology and blended learning practices. Without trust and a strong relationship, people would not follow my lead on this change initiative. However, by setting collaborative goals, and allowing choice within each instructional network, the staff understood why we were implementing Schoology, and that they had a voice in making this transition. Further, this process also ensured that staff had a say in how Schoology was implemented and that its implementation would meet the specific needs of PHS. The use of Schoology for the PASS system is one particular success that came from this collaboration.

Another successful strategy that I applied across the networks was **actively supporting instruction** with Schoology. In other words, I actively trained and supported staff, identified entry points for use, and mitigated problems as they arose. These efforts continue as I develop the six-week professional learning course for teachers who will receive Chromebook carts. I will also coordinate the development of the Polytech Senior Project as our first widely used Schoology course.

The final piece of the instructional network implementation puzzle has been **providing recognition and reinforcing effort** across the building. Initially, this started with the BLT members and the challenges associated with learning the new content and applying it. In order to tackle these challenges with the BLT, badges were used within the course to recognize and reward the effort associated with accomplishing specific pre-work tasks within the BLT course. These badges were initially used for small, completion-oriented tasks, such as submitting an assignment or posting to a discussion board. As the course unfolded, these badges were awarded for taking a sample assessment or completing the presentation of the book study at the beginning of the session. The teachers could then see these badges added to their profiles in Schoology. The teachers were excited to receive the badges and could see how this could be used in a classroom to track competencies and engage students.

Recognizing effort and rewarding people then expanded across the building as more individuals or groups became successful through their perseverance and mastery of Schoology. I would purposefully celebrate their successes publicly. All people want recognition for their efforts, especially when they invest large amounts of time learning something on their own. Anyone who committed to learning Schoology received my support and recognition publicly and widely. I would celebrate them when they were in the room and when they were not in the room with their peers in other instructional networks.

Ensuring the use of the program was voluntary, small, supported, successful, and scalable is something I developed over my four years of working with Race to the Top at Caesar Rodney. The success of many educational initiatives rests with individuals

making a conscious choice as to whether or not they want to apply learning. In other words, I knew the merits of Schoology and Google as collaboration tools, and if people did not want to use the program, they did not have to.

In my experience, this is often the best way to begin some initiatives so that they do not appear to be mandated, top-down, or heavy handed. This is also the same way that the pre-work routines went with the BLT. Through this work, I have found that it is best to support the initiative with early adopters and find success with a small team. These early adopters then provide the justification for more use and training with other staff members. Eventually, 100% of the staff will be on board, and then there will be the expectation of use with the tool. There has to be a time to adopt, train, support, and practice first.

The true methodology to making Schoology successful was to only work with people who wanted to use the program, share successes of the program regularly, take quality PL directly to staff outside of the BLT, inform the students to challenge existing instructional routines, and ensure student pilots were effective. The BLT was the keystone to this process as a formal mechanism for communications, but many informal networks existed that I influenced to support this work.

Limitations

This ELP work was extremely valuable for laying the foundation for improvements to the instructional technology system and developing blended learning practices for staff at PHS. However, it must be noted that there are two primary limitations to this work. First, as I mentioned in Chapter 4, there is a strong potential for bias. As the sole planner, developer, and the evaluator of this work, it is impossible to

separate my own thoughts, feelings, and desires for them to be successful from the actual measurable outcomes. This work is also qualitative in nature and therefore inherently subjective.

In the future, as Schoology use expands, I plan on remedying the potential for bias by expanding the training and use of the SAMR model throughout the school with administrators and staff. For the administrative team, the use of the SAMR model will be used to to develop consensus to better gauge the instructional shifts that are occurring, and to plan for future development. For individual classroom teachers, the use of the SAMR model will provide them a tool to measure their instructional shifts before and after training and reflect on their efforts to use technology as part of blended instruction.

The second limitation is the fact that Schoology implementation was supported at the state level. Therefore, it is impossible to determine how much of the increased usage of the tool can be directly attributed to my efforts or to the statewide efforts by DOE. PHS teachers are part of a larger statewide network that receives emails and training supported at the state level. Also, PHS teachers are members of many other statewide networks that began to use Schoology to design and deliver other forms of professional learning.

PHS teachers knew about the goals, training, and potential benefits of adopting an LMS from many sources, and committed to the training and use of the program after a relatively short period of time from a combination of my efforts and the state efforts. Schoology was quickly adopted by almost every district in the 2015-2016 school years and those districts began to devise training and implement the program with staff. Therefore, there was positive reinforcement and feedback mechanisms for PHS teachers

to understand and use the program through many peer networks. Therefore, when looking at the increased usage of Schoology, one cannot make any direct correlations between the professional learning at PHS with the increased use of the LMS.

Chapter 6

REFLECTIONS ON LEADERSHIP DEVELOPMENT

I began the ADPO program in August of 2012 when I was employed at the Caesar Rodney School District. Throughout the time period I was taking classes, I was also involved in managing and monitoring the Race to the Top grant for the district. This was an invaluable experience and laid the foundation for understanding the challenges of implementing change initiatives. Further, due to my personal passion and belief that society is changing as a result of technology, I was able to allocate district resources and implement a plan to re-imagine the CRSD instructional technology system. Much of my research and classwork in the ADPO program was directed at technology integration and implementation, and this research also led to my choice of blended learning as a means to help PHS faculty and staff provide students with the digital experiences they need to be successful in the 21st century.

When I began my role as assistant principal at Polytech High School, I encountered many of the same challenges in revising the instructional technology system as I did at CRSD. However, as a result of my experiences researching and implementing a new technology plan at the CRSD, I knew the steps to take, the challenges to overcome, and misconceptions that needed to be tackled. Serendipitously, as I started my time at PHS, the state was also beginning the process of adopting Schoology statewide. I knew from my research that the successful implementation of a learning management system is key to instituting an effective blended learning program that merges face-to-face and online learning. I also knew from my research that with increases in access to online

information in an increasingly mobile and social world, schools that unlock this potential will better prepare students for the future.

As I look to my future at PHS and write this last chapter to the ELP, I can see that I have changed as scholar, a problem solver, and a partner as a result of this process. I now believe, because of my experiences, that I am better equipped to help solve the challenges that schools face.

Change as a Scholar

As a scholar, I believe I learned a great deal about both blended learning and how to support a change initiative within a school system. For me personally, I have learned how to design, deliver, support, and monitor a blended learning program. This includes the development and use of blended learning for staff professional learning as well as the development of blended learning curriculum for use with students.

Further, by working as the “teachers’ teacher,” I have learned about supporting a change initiative within schools. Building upon my work with Race to the Top at Caesar Rodney, the development and use of Schoology at PHS has allowed me to refine my leadership skills to support the people who are making the changes. I have learned, above all, that change does not occur because of the programs, the policies, or the funding. Change occurs because people understand the need to change, and feel supported throughout the process. It is people who truly bring about change.

Additionally, I also believe this process changed me in three key areas as an academic professional. First, I believe I have become a better researcher and evaluator of information because of the great deal of educational scholarship I have had to analyze across the course of this initiative. Second, I believe I have become a better writer. Thank

you Dr. Bill Lewis for pushing me in the iterative process of writing more and more, and then condensing those thoughts through multiple edits. I always wanted to become a better writer.

Third, now that I am a better writer, I believe that I am a much better communicator in my administrative role at PHS. My emails have become shorter, pointed, and focused. I am now better equipped to process large amounts of information and condense it down to the essential and critical elements, and communicate those elements to others.

Change as a Problem Solver

I believe I have always been a good problem solver and decision maker, but after this process, I now have new tools to help me make better decisions in the future. I have learned how to conduct “action” research that allows me to gather information as a formative process through the use of evaluation tools. These tools include the ability to use focus groups, surveys, and document reviews, and they are invaluable to finding information and making good decisions in school settings.

Another problem-solving characteristic that I developed as a member of this ADPO program is perseverance. Many of the problems worth solving in school settings and in life are inherently complex, multi-dimensional, and take time. Developing and implementing the blended learning courses at PHS were inherently complex, required continuous learning, and inevitably took large amounts of time and planning to do well. I can honestly say that implementing a blended learning program requires more time than planning for face-to-face instruction. This is because much of that work is frontloaded in planning a logical design and sequence to make learning purposeful and effective.

Change as Partner

Learning and leading does not occur in a vacuum. The problem solving process is a collaborative one. As mentioned before, initiatives do not create change; people do, and the only way change can truly take effect is through partnerships. These partnership can be with teams and individuals. I have found that change works best when we all work together as a network to achieve a common goal.

My ability to develop a change strategy to impact individual instructional networks is something that I will use personally and professionally the rest of my life. Each network had a goal, a timeline, and supporting tasks. Further, every district and school can be broken into these instructional networks and they can be supported to set goals based on their specific needs. This can even be part of the team building process and choice that is so important in a collaborative environment. With both instructional networks and individuals, I was able to set collaborative goals, develop trust, earn respect, actively support instruction, and enlist other leaders to bring about large scale change. In a realistic senses, I was able to ethically influence these networks through my own perseverance, planning, and many, many individual conversations that ultimately shaped the collective thoughts of these network. As stated before, large scale change can only arise through many small changes.

One important aspect of school improvement within these networks is ensuring partners are involved and have a say in the change process. Whenever there is a decision to be made, I found it crucially important to have a transparent and collaborative process whenever it was possible. This becomes especially useful as a school leader when there is no clear path forward and there is difficult decision to be made. For example, next year,

one of my primary goals will be establishing some accountability for completion of training requirements in Schoology. After many discussions within the administrative team meetings, we have decided that the first topic of discussion for the BLT will be to decide how to hold each other accountable as the leaders in the building during our summer meeting. This will then translate to a discussion about all staff in the building, which they will then share at their first section meeting of the year.

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Appendix A
SCHOOLOGY WHITE PAPER



Blended Learning and Schoology:
An Introductory Guide to the Features and Benefits
Ryan Fuller
Assistant Principal
POLYTECH High School

Overview

Society and education are changing as a result of technology. Within the last few years, there have been advances that have enabled faster speeds, smaller sizes and decreased costs of internet-accessible devices. These trends are enabling people to find, share and combine information in new and exciting ways. School systems are doing their best to stay on top of these changes, recognizing that staff need training and students need these skills to thrive in the future workforce. In fact, Smith, Chavez and Seaman (2014) posit that historians will “look back at the years 2010-2020 and conclude that this decade changed the face of public education forever” (p. 25).

In many school systems, there is a slow and progressive “digital transition” that is occurring as investments are being made in internet bandwidth, wireless infrastructure, computers, management/learning programs and the professional training for staff. This change is also happening in Polytech High School.

Purpose of this White Paper

The purpose of this white paper is to inform you about a very important Delaware Department of Education initiative that is being adapted here at Polytech High School. This initiative is poised to bring education in Delaware into the 21st century. As of July 1st, 2015, the State of Delaware has adopted the program *Schoology* (*pronounced Skool'uhjee*) as the professional learning system for all teachers in the state. Districts are now able to cost-share and expand the adoption of this state supported Learning Management System (LMS) for teachers and students. Polytech High School has signed on to offer this to all staff and students. This system, along with extensive training and support, will help bridge the gap between face-to-face and online instruction and has the potential to transform teaching and learning over time. Further, the use of a LMS across the state helps districts leverage an economy of scale, making this a cost- effective and efficient use of resources. As of May 18, 2015, some 78,922 students in the state of Delaware have been signed up to use Schoology as districts recognize the importance of this initiative to the “digital natives” in our schools.

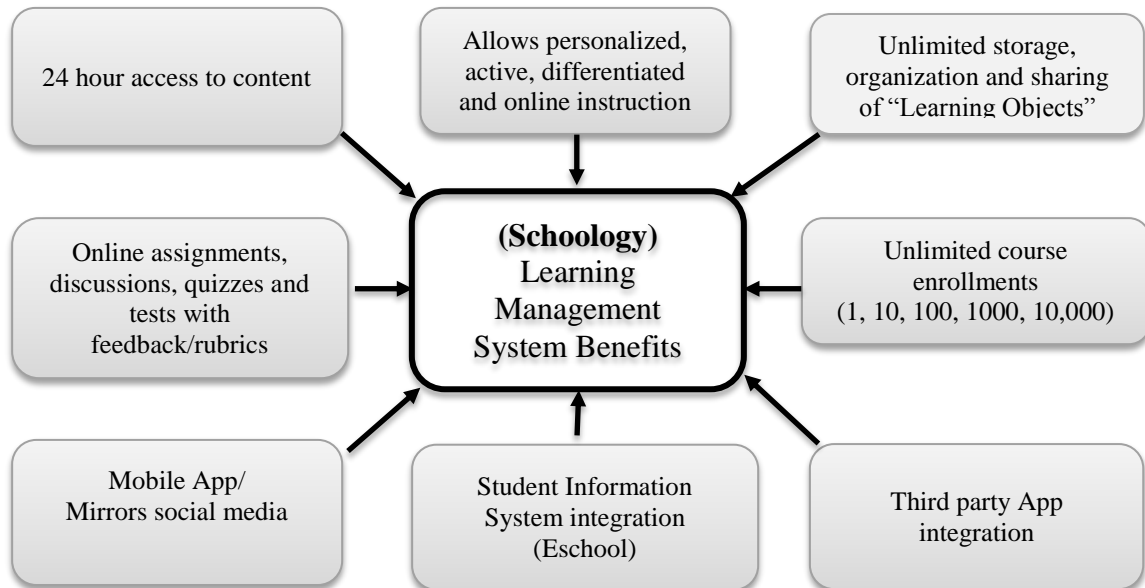


Why a Learning Management System?

As you probably know there are specific Common Core Standards related to students' use of technology. These include the ability to use “technology and media strategically and capably” to “thoughtfully enhance reading, writing, speaking, listening, and language use” (National Governors Association 2010, p. 7). Learning management systems (LMS) can support the achievement of these standards by providing a coherent platform to organize, access, create and share information by students. Additionally Learning management systems are used by almost 100% of colleges and universities, and researchers note the clear relationship between college readiness and post-secondary success and the ability to learn and use technology (Conley, 2012). For teachers, an LMS helps bridge the gap between the information on the internet and classroom content and

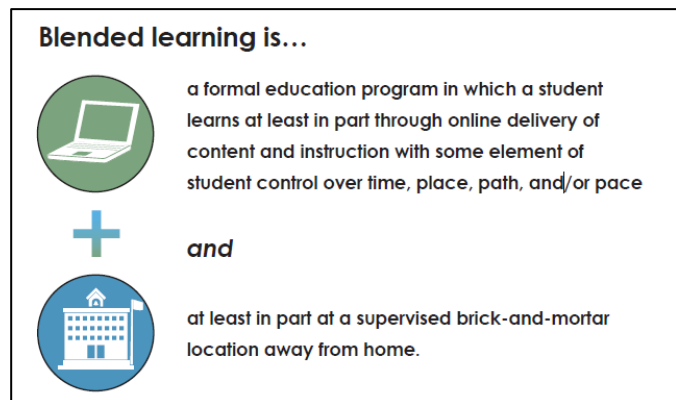
provides a mechanism to arrange, store and harness that information to direct learning behaviors. The figure below lists several of the reasons why learning management systems are effective learning tools in modern day schools.

Learning Management System (Schoology) Benefits for Teaching and Learning



Learning Management Systems Allow For Blended Learning

The state-wide Schoology initiative has been hailed as a “game changer” in Delaware for teachers and students because it has the potential to bridge the gap between face-to-face instruction and the rich information that the internet and internet enabled devices afford. This “blended learning” harnesses the best practices of face-to-face and online learning to improve student outcomes (Staker & Horn, 2012). ***An LMS like Schoology is the primary tool used to support blended learning practices.***



Blended learning can be characterized as the ***purposeful planning*** for online and face-to-face elements of instruction and assessment, enabling these two elements to support each other. Although many of us have probably posted resources online through a classroom website, blended learning is much more sophisticated and represents a break from the “traditional” factory model of education that typifies our current educational system. It changes the roles of students and teachers, as well as how we access information, collaborate, provide/receive feedback, and deliver, take and score

assessments in the classroom. Because blended learning expands instructional opportunities outside of the classroom walls departments of education are examining “seat-time” requirements and are moving towards proficiency or competency-based models.

The chart below shows examples of some of the differences between blended learning models and traditional learning. The chart below was adapted from Christensen, Clayton, and Staker (2013) and Forsyth County schools (2012).

Blended Learning Continuum and the role of the teacher

Category	Traditional Learning	Blended Learning
Access to Information	School Day	24 Hour
Role of the Teacher	Lecturer	Facilitator
Role of the Student	Passive learner	Active learner
Literacy	Limited Reading and Writing	Engaged Reading and Writing
Type of Content	Books/Worksheets	Learning Objects
Skills	Content Focused	Skill Focused
Source of Feedback	Teacher	Community
Assessments	Paper Based/Hand Scored	Electronic/Automatic
Requirements	Seat Time Based	Proficiency Based

In the graphic above, many of the elements of blended learning are not possible without a means to communicate and share content in a consistent and organized way. There needs to be a way to communicate frequently, organize content, submit assignments, collaborate with peers, take tests and receive grades. This is the primary role of a learning management system and Schoology can provide this platform.

Blended learning approaches also have the support of research. In a study by Means, Toyama, Murphy, Bakia, and Jones (2010) researchers analyzed the efficacy of online and blended learning. The meta-analysis focused on 50 studies that compared online and blended learning environments to purely face-to-face environments. They found that in the studies focused on blended and face-to-face instruction, “blended instruction has been more effective, providing a rationale for the effort required designing and implementing blended approaches (p. xvii).”

Here at Polytech, we are interested in a long term approach to developing blended learning practices for staff and students, recognizing this is an inevitable—and desirable—part of the future of education. It first starts with finding teaching and learning programs that support the skills needed for 21st century college and career

preparedness. However, additional investments in wireless infrastructure, program integration, devices, and professional learning will soon follow, once the effectiveness, efficiency and efficacy are shown on a small scale.

However, all of these investments in technology will be useless if substantial investments are not made in the area of staff training and professional learning. This white paper is one of many opportunities to develop an understanding of Schoology and blended learning prior to small-group and whole-group training in the beginning of the 2015-2016 school year. The remainder of this white paper will discuss the primary benefits and features of the Schoology system as a mechanism to support blended teaching and learning practices. Finally, login instructions are provided that will lead you to a self-paced, blended training course.

6 Primary Benefits and Features of Schoology

Check out this Schoology introductory [video](#) and [website](#). Many of us are familiar with LMSs, and Schoology is able to do many of the things we are familiar with, such as storing documents and discussion boards. However, what sets Schoology apart, are the awards it has earned for “best educational learning platform” due to the features that it offers. These features include grading, rubric development, and third party App integration. Additional awards have been earned from Ed Tech Digest, American Association of School Librarians, and District Administration publications.



There are *six primary benefits to using Schoology* and each benefit provides an opportunity to re-imagine classroom teaching and learning.






- 1. 24 Hour Access to Learning at any Scale and any Period of Time:** Once content is posted on the system, students can review that material anytime, thereby extending learning time because of access to course content. With the option to receive “notifications” and “push-updates,” learning can become on-demand and continuous. Content in Schoology can also be scaled to any size class. Courses can be created for 20 learners, 100 learners or 1,200 learners. This content can also be accessed for specific periods of time and access can be “time-released” or “hidden” until it is ready. Whether a course is 6 weeks, a marking period, a semester, a year, or multiple years, learners can have access to the content for extended periods of time. This allows for greater personalization and differentiation based on the needs of the students. Finally, Schoology works on EVERY mobile device with a robust mobile App.






The App can be downloaded by clicking [here](#) on your mobile device.

2. **Static Content:** Some of us may be thinking; “How is this different from my classroom website?” Many LMS’s allow the posting of content including *folders, pages, links, pictures, audio files, and video files*. In this case, with static information or non-interactive content, it is no different from a regular classroom website. Below are examples of the static information that can be shared with students. Here, the primary benefit is unlimited storage and the ability to “drag and drop” to organize this content.

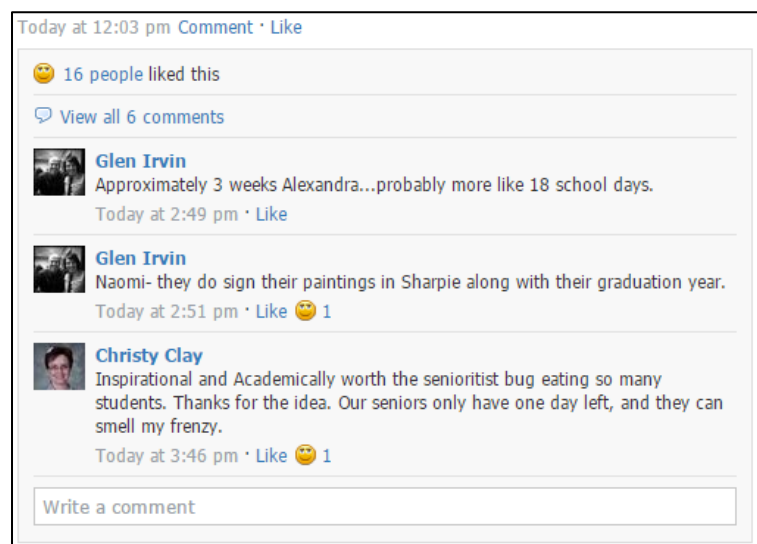
Click [here](#) to Learn about the Different Types of **Course Materials**

Sharing Information with Students		
Materials	Why use it:	How to use it:
 Folders	Organize your class materials. Ex: Create a folder for all the content for a particular lesson.	Drag-and-drop materials into folders or create new materials inside the folder. Expand folders to view contents.
 File Uploads	Share file online - View the Web or Device. Optionally download or print.	Upload any file from your desktop. Standard PDF, MS Office, image, and video files will preview.
 Links	Share website links for references or activities.	Display inside of Schoology or link out.
 Pages	Create your own web pages inside of Schoology.	Full rich-text editing. Attach supporting files, videos, or links.
 Media Albums	Share albums of images and/or videos.	Upload images and videos.

3. **Dynamic Content:** This is where things get interesting and where we are going to focus training for the year. Schoology possesses a number of interactive features that allow more engaging learning that can increase the rigor of student opportunities by providing more opportunities to read, write, synthesize, and share understanding. Further, these features also help develop information management and technology skills. Below are the primary student activities that are dynamic in the system. These include discussions, assignments, tests, and quizzes. However, there is also the added value of having students find and contribute content in the class and offer feedback to their peers.

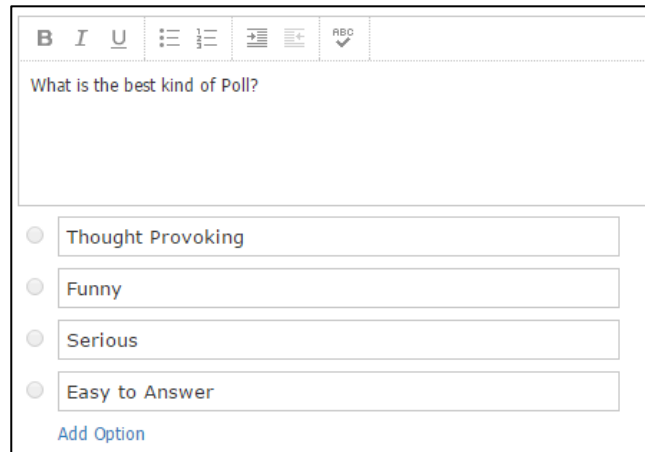
Student Activities			
Materials	Why to use it?	Graded Item	Calendar Item
 Discussions	Collaborative discussion boards for students to respond to a prompt from the instructor and respond to each other.	Optional	✓
 Assignments	Individual classwork or homework.	Optional	✓
 Test/Quiz	Individual testing Instant results, great for benchmarking.	Yes Objective questions are graded automatically.	✓

- Schoology Mirrors Social Media: By using the three activities above, Schoology mirrors social media elements. In every school system, students must learn responsible use of technology. Schoology, therefore, becomes a powerful tool for developing the skill sets that can be appropriately applied in the classroom and the open social media environment outside of school. Schoology supports access to instant updates and quick posts from instructors and all users have access to a “newsfeed” on their homepage. This “feed” aggregates all course or group information and presents it to the user in chronological order. Additionally, Schoology allows other users to “comment” or “like” other users’ posts on the “newsfeed.” Here is a picture of the newsfeed with likes, which mirrors many popular social media platforms. You can see that 16 people have liked this sample student’s post with 6 total comments and 3 comments from that day.

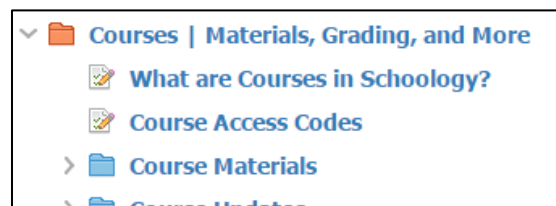


- Schoology Allows a User to Quickly and Easily Share Updates and Poll Students: As part of the “Update” tool in Schoology, instructors can design an “on the spot” poll and send it to their students for responses in seconds. This

creates a dynamic learning environment where the student voice is part of the classroom environment. Here is a picture of a “Poll.”

A screenshot of a Schoology poll interface. At the top, there is a toolbar with icons for bold (B), italic (I), underline (U), bulleted list, numbered list, indent, and a checkmark icon labeled 'ABC'. Below the toolbar is a text input field containing the question "What is the best kind of Poll?". Underneath the question field are four radio button options, each in a separate box: "Thought Provoking", "Funny", "Serious", and "Easy to Answer". At the bottom left of the poll area is a blue link that says "Add Option".

- Schoology Allows the User to Create and Manipulate “Learning Objects” with Ease: A learning object is a “base unit” in a digital or online curriculum. An example of a learning object could be any video, document, or internet hyperlink. Learning objects can then be combined in folders and with a logical sequence to make lessons, units, and courses. Schoology allows the user to create both static and dynamic learning objects that can be moved around and combined. In the picture below, any one of these folders can be moved around or put within another folder with a simple drag and drop. The power in this feature is that once a static or dynamic learning object is created, it can be used multiple times for multiple courses and users. Edits and changes can be done easily and learning objects become the foundation for a digital curriculum.

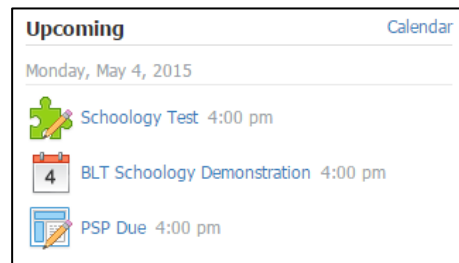


- Schoology Allows the Creation of Discussions, Assignments, and Online Tests: When you are creating learning objects, some of these will be discussions, assignments and online tests that can be stored, modified and used every year. In Schoology, the course designer can design discussions for inside of class (synchronous) and outside of class (asynchronous). Students can participate in discussions with their peers 24 hours a day. Assignments can also be created collected, graded and returned to students in an organized and efficient way within the system. Last, online quizzes, tests and other project-based assessments can be created in the system.

Click [here](#) to learn more about Online Discussions

Click [here](#) to learn more about Online Tests and Quizzes

- Schoology allows Reminders and Notifications: All of these learning objects can also be tied to a classroom calendar so students will receive both reminders on their “newsfeed” and receive “push” notifications on their cell phones. To the right are three example objects that are now part of a student’s upcoming reminders on the student’s “home” page. The first is a test, the second is a meeting reminder with documents attached, and the third is an assignment. This is powerful feature for keeping students on track and holding them accountable.



- Schoology allows Teachers to Provide Feedback on Assignments and Writing with Ease: In addition to creating the assignment and having students submit them online, Schoology allows you (the teacher) to provide feedback to the students in an electronic format. It also allows teachers and students to have a conversation about the assignment through posts. Teachers can easily go through Schoology and score multiple assessments quickly and easily.

Click [here](#) to learn more about Online Assignments

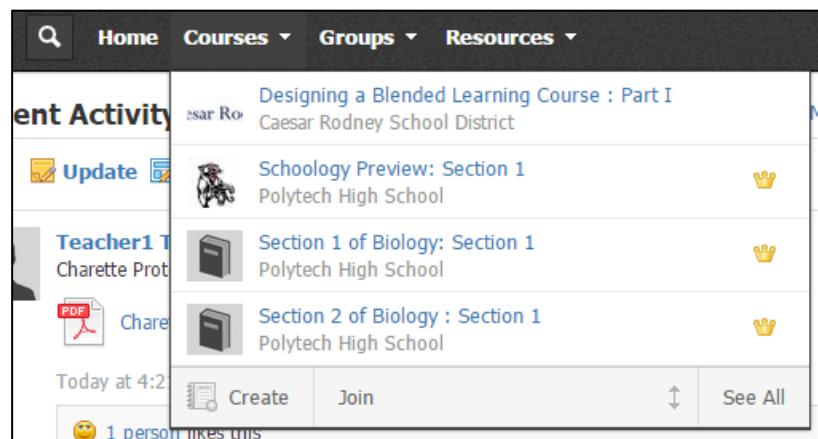
Click [here](#) to learn more about the Gradebook

- Schoology Allows Users to Tag Learning Objects to CCSS Standards and Make Rubrics: The ease of managing student assignments and providing feedback can also be combined with rubrics that are aligned to the CCSS Standards. In this case, a very simple rubric was created and used to score the assignment. The student will see this rubric when she starts the work and before she submits the assignment, allowing the teacher to clarify learning objectives for the student. The illustration below shows a marked rubric with points for each of the assignment domains and Common Core Standards clearly marked. A re-submission could then follow to improve the work.

Criteria	Rating				Pts
Topic and Focus Topic and Focus	4 Awesome	3 Great	2 Meh	1 What?	4
Research Questions Research Questions	4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement	3
Citations Citations	4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement	3
Product Design and Description Product Design and Description	4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement	4
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.4 Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.	4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement	2
LA.11-12.CCSS.ELA-Literacy.WHST.11-12.5 Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.	4 Excellent	3 Good	2 Satisfactory	1 Needs Improvement	4
Manage Rubrics					Total pts: 20 /28

Click [here](#) to learn more about Rubrics

- Eschool Integration for Courses and Grades: As part of the state contract, Schoology, SunGard (Eschool) and the State of Delaware have formed a partnership to have the courses and grades automatically integrated. For a teacher, course integration means that every section he or she teaches will automatically be created under the course tab in Schoology and all the students will be enrolled in the class. The teacher will only need to add the content to the classroom and begin teaching. Additionally, all of the grades that are entered in Schoology by the teacher, or automatically scored through the online assessments, will transfer over to Eschool. This eliminates the need for two gradebooks for the teacher, thereby eliminating a major barrier to the implementation of LMS's in the past.



4. **Schoology Builds Community and a Student-Centered Classroom:** One of the benefits of using Schoology is the development of a true community of learners that rely on one another in the finding, creation and evaluation of information. Students are able to activate background knowledge easily with videos, links, pictures or infographics. They are also able to find this information, combine it, and share it with the class as a “find.” Some students may also feel more comfortable posting and writing in a forum, rather than orally participating in

classroom discussions, creating multiple opportunities for participation. However, like face-to-face instruction, building a classroom community depends heavily on teachers and the relationships that we build with students. Schoology tools can help facilitate this community building.

- Community “Finds,” “Feedback” and “Active Learning” In a classroom with access to technology and a tool like Schoology, students can now find and share information with the entire class. Students are able to contribute to the classroom learning with their thoughts and research on any topic making the class rich with the flow of ideas and information. Additionally, students can also provide feedback as an individual or as part of a group. Given the right classroom environment, students can push each other to high levels of achievement with multiple revisions that are based on peer and teacher feedback. When students are part of the process, the teacher is no longer the sole source of feedback, information or ideas.
- Schoology allows teachers to use Badges for Competency-Based Learning and Recognition: When students are successful in class, they can be recognized for their effort and persistence. In this case, Schoology possesses a number of unique “badges” that can be used by teachers to create a competency-based learning environment and reward student effort. There are some badges already in the system, and custom badges can be created or found in the Schoology community. It is amazing how well high school students respond to the “badging” and recognition of their efforts.

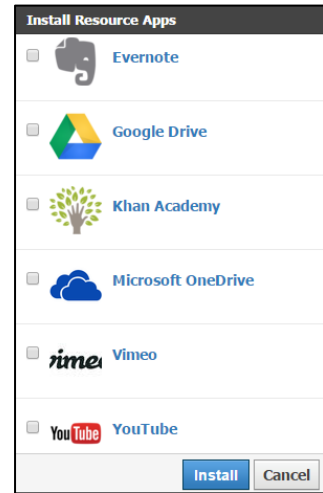


Perfect Att...	Good Liste...	Homework	Leadership	Most Impr...
▼	▼	▼	▼	▼
✓	✓	✓	✓	✓

- Collaborate, Share and Archive (Objects, Lessons, Units or Courses) in Resources:** Schoology is designed with the user in mind and built to save time. Although there is some work up front finding, making and organizing learning objects for students to interact with, once the object is created, it can be shared, stored and archived for use an unlimited number of times. For instance, a discussion post can be created with an interactive video, tagged to the standards with a rubric, and include specific stems or steps that guide the students to completion. This “object” can then be shared with colleagues who can add it their courses with a single click. All of these objects are then managed through the personal, public and group resources shown at the right. These folders act as digital filing cabinets and store all the learning objects in the cloud-based system.

Schoology currently has unlimited file storage available to store all the learning objects. Additionally, there are multiple learning objects already available in the “public” resources.

- 6. Integrate 3rd Party Apps:** Schoology is a system that integrates with other system developers. As part of their software design, they allow third party Apps to seamlessly integrate and become compatible with their program. Once these Apps are integrated, all of a user’s documents and files are available. For instance, a student can use Dropbox or Google Drive to post an assignment to Schoology by going into the App from Schoology. There are hundreds of Apps available and more being integrated every day. Some examples of integrated Apps that teachers find helpful are to the right.



Next Steps

According to Warschauer, Zheng, Niiya, Cotten, and Farkas (2014), the positive effects of blended learning may depend on several factors including the selection of the type of technology and technical supports, digital literacy considerations, and teacher training and social dynamics. Furthermore, Bebell and Kay (2010) suggest that “*it is impossible to overstate the power of individual teachers in the success or failure of 1:1 computing and blended learning*” and there must be “*massive investments in time and effort to adapt teaching materials and learning environments* (p.48).” It is important to emphasize that simply increasing access to devices does not support increases in student learning. There must be a coordinated program that (1) uses technology only where appropriate and (2) invests in professional learning for all staff members. Developing a coordinated program for blended learning and effective learning management is a long-term goal of the Polytech School District.

Training and Pilot Programs

Understanding and successfully integrating these new forms of learning will take a long-term commitment, but we will start with a few keys steps. The state of Delaware will provide all staff Schoology usernames and passwords in the beginning of this coming school year. Over the summer the Building Leadership Team (BLT) will come together to learn about the Schoology system and further refine the plan to implement this learning tool in the high school. These initial trainings will focus on first enrolling the BLT teachers as students in a course. During that course we will lead them through multiple sessions that will both build skill with using Schoology, as well as support building initiatives by “flipping” leadership/faculty meetings. This flipped learning will focus on maximizing face-face time by providing building management and instruction

updates through Schoology first so that staff are ready to engage in discussion of these updates during the meeting. Staff will therefore be informed and have a consistent base of knowledge on building initiatives.

In addition to having the BLT lead and learn about Schoology, all staff members will be given an introductory training in the system to complete the mandatory state trainings that are required of all Delaware teachers. These trainings include the topics related to gangs, bullying, child abuse, and suicide prevention.

Finally, some teachers (also BLT members) will be supported in piloting Schoology in their classrooms with students. These pilot programs will be small, supported, and scalable, so that we can eventually include more teachers and students. These pilots will involve wireless upgrades, new devices and technology support to enhance our learning and that of our students.

Accessing Schoology and Joining the BLT Course

Learning about Schoology is hard to do from a white paper with pictures, especially if the goal is active learning with dynamic content. In order to help develop background knowledge, a demo account has been created with an associated demo course. For access to this course, please email me. Please use the link below and the email address password to explore Schoology. This white paper, in addition to the course login, are provided to familiarize yourself with “why” Schoology is being supported and ideas for “how” it can be used for both professional learning for staff and student learning.

Key Terms in Blended Learning

- **Accreditation** – A peer-reviewed process to determine quality of an educational program by evaluating schools using a set of educational standards. In the United States, there are national accrediting bodies and regional accrediting bodies that are established as a peer review process for validating quality. There are governmental and non-governmental accrediting bodies. It is important to note there are reputable as well as dubious accrediting bodies, and the reputable accrediting bodies are approved by the United States Department of Education.
- **Active Learning** – Learning that involves talking, listening, reading, and writing as an individual, pair or collaborative group.
- **App** – Software designed for mobile devices that allows for instantaneous access to information and dynamic interaction with the user. It can be standalone or a quick reference application of a larger and more complex software program.
- **Asynchronous Learning** – Communication exchanges that occur in elapsed time between two or more people. Examples are email, online discussion forums, message boards, blogs, podcasts, etc.
- **Blended Learning** – Blended learning is when a student learns partly at a supervised brick-and-mortar location away from home and partly through online delivery with some element of student control over time, place, path, and/or pace; often used synonymously with Hybrid Learning. (Horn & Staker, 2011).
- **Blended Course** – A course that combines two modes of instruction, online and face-to-face.
- **BRINC Consortium** – A consortium of four districts (Brandywine, Red Clay, Indian River, and New Castle County Vocational Technical School District) that won a \$600,000 personalized learning grant. The primary result of their work was the selection of the Learning Management System, Schoology.
- **Content Management System** – Stores multiple learning objects so they can be shared, re-arranged, and modified based on the teacher or learner.
- **Competency Based Learning** – Customized learning that is adapted to the needs of the learner and progresses at the learner's own rate. Also known as proficiency-based learning.
- **Course Materials** – All of the learning objects and organization of the objects that allow for the delivery of units and lessons within a course.

- DCET – Delaware Center for Educational Technology is financing the teacher-related costs and some professional learning for teachers in the State of Delaware.
- Devices – Any technology that is wireless and connected to the internet or cellular data plan that can access the internet and perform a search.
- Distributed learning – Any learning that allows instructor, students, and content to be located in different locations so that instruction and learning occur independent of time and place; often used synonymously with the term “Distance learning.”
- Dynamic or Interactive Content – Course content or “learning objects” that require input or activity on the part of the learner. These include online tests, quizzes, discussion boards, or assignment submissions.
- Feed or Newsfeed – The home page to Schoology which is a collection of the updates and posts from all the groups or courses the user is in. These posts pop up in chronological order and allow the users to comment or “like” the post.
- Learning object – An electronic media resource (or digital file; or collection of files) targeting a lesson objective, standard, or a lesson concept, that can be used and reused for instructional purposes.
- Learning Management System – The technology platform through which students access online courses. A LMS generally includes software for creating and editing course content, communication tools, assessment tools, and other features for managing the course. (Northwest Educational Technology Consortium, 2005) See “Course Management System.”
- Meta-tag or Tagging – are content descriptions that allow search engines or users to search through online information.
- Notification – A dynamic tool that sends information from Schoology to the instructor or student as a reminder or update.
- Online Learning – Learning that occurs on the internet in any form.
- Passive Learning – Learning where the student does not actively listen, read, write, discuss or collaborate with other students for extended periods of times.
- Poll – Typically a single question that is asked of a small group of people requiring a quick response with immediately available results.

- Seat-time – The amount of instructional time to earn a credit (Carnegie Unit) and in online learning is determined by the amount of time engaged in coursework.
- Self-paced – Online courses in which students work at their own pace within a specific timeframe.
- Static Content – Course materials or learning objects that are not interactive and require no input from the end user.
- Synchronous learning – Online learning where participants interact at the same time and in the same space.
- Threaded Discussion – A forum that includes a running commentary of messages used by a group to facilitate asynchronous online discussions.

Schoology Resource Links for Additional Information

- [Getting Started on Schoology - For Instructors](#)
- [Profile](#)
- [Personal Account](#)
- [Personal Account: Settings](#)
- [Personal Account: Notifications](#)
- [Personal Account: Privacy](#)
- [Home Page](#)
- [Courses](#)
- [Groups](#)
- [Resource Center](#)
- [Instructor Guide](#)
- [Courses: Course Materials](#)
- [Courses: Create Courses](#)
- [Courses: Add Members to Courses](#)
- [Adding Attachments to Your Materials](#)
- [Inserting Content into Your Materials](#)
- [Courses: Gradebook](#)
- [Courses: Attendance](#)
- [Courses: Course Updates](#)
- [Course and Group Messages](#)
- [Course and Group Moderation](#)
- [Test/Quiz Question Types](#)
- [Course Analytics](#)
- [Recycle Bin](#)
- [App Center](#)

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Appendix B

IMPLEMENTATION PLAN AND GRAPHIC ORGANIZER

This artifact is a two-part artifact that I designed to support the implementation of Schoology and blended learning practices at Polytech High School. Together these artifacts provide the road map for Schoology setup and use among the various instructional networks at the school. These instructional networks include the technology infrastructure, administration, BLT members, all staff, and students.

Part I of this artifact is an implementation plan that was required by the state prior to implementing Schoology in the 2015-2016 school year. Any district that wanted to implement Schoology and participate in the cost sharing agreement with the state was required to complete this plan on the state template. Polytech High School purchased Schoology for all students and was therefore required to complete a plan that aligns Schoology implementation to other school initiatives and outlines clear timelines and goals for Schoology rollout. This plan is shown on pages 48-52 of this document and was submitted to and approved by the Department of Education in the summer of 2015.

The second part of this artifact, found on page 53, is the one page implementation summary that was used at Polytech High School as a simplified graphic of the state implementation plan. Having had experience with many implementation plans from my work with Race to the Top, I realized that sharing the state implementation with administrators and teachers in the district is often a very confusing process. State plans are typically multiple pages, lack a prioritized focus, and can often cover many years of implementation. In this case, the state template did not lend itself well to professional learning and communicating Polytech's implementation priorities. I reworked this plan

into a teacher-friendly document that more clearly communicates our school's goals for implementation.

Part II is visually appealing, easy to understand, follows a timeline, and demonstrates how Schoology is scaffolded for each of the instructional networks. For instance, orientation trainings, advanced trainings, and skill building sessions can all be seen in separate instructional networks occurring at different times. This is important because the orientation training should occur for the administrators and BLT members before the rest of the staff. Additionally, the technology team has clear goals around the implementation of Schoology and supporting the student pilots.

All of the objectives set forth in the summary found on page 53 have been completed and this is now the foundation that is being used in the spring of 2016 with the technology strategic planning committee. During these meetings, this plan will be re-worked by a team of teachers to set one-year and three-year goals.

Part I: Polytech Schoology Implementation Plan – Department of Education Requirement

Outcome <i>Must be measureable with evidence</i>	Actions Steps <i>What will be done?</i>	Responsibilities <i>Who will do it?</i>	Resources <i>Time, Structures, Budget, Material</i>	Timeline <i>By when? (Month/Year)</i>	Status with Evidence <i>What evidence do you have that demonstrates that your outcome had been achieved?</i>
Infrastructure and Technology Setup					
Schoology setup	Google SSO setup Eschool sync integration Setup student/staff portals Demo teacher account/ Demo Student Account	Atwood, Fuller, Basher	Meeting times weekly until complete Conference calls with Schoology staff (4)	8/31/15	Completed 8/21/15 Staff user accounts populated and tested Analytics will be used to determine successful account sync. Waiting for students to start to test grade sync
Wireless infrastructure improvements	Upgrade to Aerohive in 2000 wing not marked for construction – academic areas	Dufendach, Atwood	\$40,000	8/31/15	Completed 8/21/15
Pilot Chromebooks	Purchase 6 demo Chromebooks to increase battery life,	Atwood, Fuller	\$2,000	8/15/15	Completed 8/10/15

	speed, and accessibility				
Purchase 1 cart of Chromebooks	Purchase additional 26 Chromebooks to make a cart of 32	Atwood, Fuller, Peel	\$8,000	9/30/15	Completed 11/15/15 Explore additional purchases
<i>Understanding School Conditions</i>					
Technology survey	Develop, administer and analyze results	Fuller	Survey Monkey subscription	5/31/15	Completed 6/30/15 Survey results
Departmental demonstrations	Section meeting demos (8)	Fuller	Schedule time at sections meetings – voluntary Develop 3 consistent questions to ask group	6/15/15	Completed 6/15/15 – last days of school Group responses to questions –trends
<i>Administrative Training and Modeling</i>					
Administrative training and modeling.	Develop and share whitepaper Develop/administer admin training (3 x 1 hour)	Fuller, Peel	Schoology white paper Meeting dates	7/31/15	Completed 7/31/15 BLT training course developed for 8/17/15

	Implementation 1 pager for 1 year – spring 2016				Teachers identified for “train the trainer” and student pilots
Strategic planning	Preview Schoology implementation plan with district office for feedback	Peel, Fuller	Schoology white paper DDOE Schoology information	7/16/15	Completed 7/16/15
Board of Education demonstration	Demonstrative Schoology tools and capabilities as a 21 st century learning tool	Peel, Fuller	Setup Google/Schoology accounts Laptops	8/14/15	Completed 8/14/15 Feedback from superintendent
Administration advanced training	1 hour sessions – Fall 2015	Fuller, Peel	6 demo Chromebooks	11/23/15	Completed 10/15/15
<i>Staff Training</i>					
Building Leadership Team (BLT) Trainings	BLT training meeting flipped and paperless, (book talk)	Fuller, Peel	30 Copies <i>Cracking the Common Core</i> by Lewis, W., Walpole, S., &	11/23/15	Completed 12/7/15 Schoology course with six modules containing book chapters and

	<p>Complete assessment inventory grant</p> <p>Six sessions with book study and Schoology training</p>		<p>McKenna, M. (2014)</p> <p>Assessment inventory grant – collaborative work in Schoology to complete</p> <p>DDOE training Course</p>		<p>sections of DDOE course</p> <p>Course polls/badges earned, attendance, book discussions</p>
<p>ALL staff accounts setup - profile orientation, navigation</p> <p>F2F</p>	<p>Staff training for beginning of year to Complete state trainings (4, 1-hour staff rotations)</p>	Fuller	<p>IMS login and elder training Site</p> <p>DDOE training course</p>	8/25/15	<p>Completed 8/21/15</p> <p>Number of staff accounts setup</p> <p>Number of accounts remaining to setup (tech requests)</p>
<p>All staff accounts, self-paced training</p> <p>Online</p>	<p>After F2F meeting, staff will be required to complete online training prior to student use.</p> <p>Module checkpoints will be sent out through BLT that</p>	Fuller	<p>DDOE training course</p> <p>Follow up discussions at BLT, faculty, and section meetings</p>	11/23/15	Completed 8/21/15

	are completing the same course above.				
<i>Student Pilots</i>					
Student pilots (n=200)	Polytech Senior Project (PSP) training for student pilot welding, CET, and PSP support/AP	Masten (BLT), Starr (BLT), Stubbs, Summerfield, Haley (BLT), Hofmann, Fuller, Peel	Course designed Training dates (3)	11/23/15	On track as of 2/5/16 8/21/15 Student account setup Staff feedback
<i>Evaluation</i>					
BLT feedback	Regular sessions with BLT will be used to determine staff rollout, technology expansion, and additional student pilots	5/12 members of BLT to be identified	Focus group questions	11/23/15	Completed 1/13/16 Interpret results Revise implementation
Student pilot focus group	Discuss with students in PSP process using Schoology the experience and support needed	Masten (BLT), Starr (BLT), Stubbs, Summerfield, Haley (BLT), Hofmann,	Develop focus group questions with staff Staff lead discussions Report out on trends	11/23/15	3/1/16 Trends from discussion

Usage Analytics	Schoology analytics from the beginning of the year Teacher use/Student use/Documents posted/Discussion boards	Fuller	Schoology analytics tab	11/23/15 5/30/16	Collected 5/30/16 Usage analytics compared to 8/15/15
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Part II: Simplified Polytech Implementation Plan – One page summary

Spring 2014-2015	Summer 2014-2015	Fall 2015-2016	Spring 2015-2016
Administration and Modeling <ul style="list-style-type: none"> • <u>Orientation training</u> • <i>White Paper – Why, How, What</i> • Plan BLT trainings BLT/Pilot Teachers <ul style="list-style-type: none"> • Demo and discussion • <i>White Paper – Why, How, What</i> • <u>Orientation training</u> • Take technology survey ALL staff <ul style="list-style-type: none"> • Department demos and discussions Students <ul style="list-style-type: none"> • Recruit pilot teachers • N/A Technology <ul style="list-style-type: none"> • Plan for setup and integration • Plan for BLT access • Plan student portal • Evaluate Chromebooks 	Administration and Modeling <ul style="list-style-type: none"> • <u>Skill building session</u> • Plan mandatory state trainings • Plan BLT/Faculty meetings • Plan student pilots BLT/Pilot Teachers <ul style="list-style-type: none"> • Launch session 8/17/15 • BLT flipped book study ALL staff <ul style="list-style-type: none"> • <i>White Paper – Why, How, What</i> • Online access setup Students <ul style="list-style-type: none"> • Full day training for pilot teachers • Training for students • (Hofmann, Starr, Stubbs) • Access Technology <ul style="list-style-type: none"> • Implement setup and integration • Implement BLT access • Implement student portal • Plan for student pilots 	Administration and Modeling <ul style="list-style-type: none"> • <u>Advanced training</u> • Implement Schoology training • PASS & PSP on Schoology • Support student pilots BLT/Pilot Teachers <ul style="list-style-type: none"> • <u>Skill building sessions</u> • BLT flipped book study • Support student pilots ALL staff <ul style="list-style-type: none"> • <u>Orientation training (F2F)</u> • Online training • Implement state trainings • Flip faculty meetings • Deliver Friday footnotes Students <ul style="list-style-type: none"> • <u>Skill building sessions</u> • Student pilots • Small, supported, successful, scalable Technology <ul style="list-style-type: none"> • Support student pilots • Include mobile App access • Plan for scale-up 	Administration and Modeling <ul style="list-style-type: none"> • Embedded practice • Evaluate student pilots • Identify scale-up options • Senior Seminar on Schoology BLT/Pilot Teachers <ul style="list-style-type: none"> • <u>Advanced training</u> • BLT focus group evaluation • Continue book study • Identify scale-up options ALL staff <ul style="list-style-type: none"> • Evaluate trainings • Implement PASS, Senior Seminar, and PSP (included after focus group) Students <ul style="list-style-type: none"> • Continue pilots • Evaluate pilots at Tech committee Technology <ul style="list-style-type: none"> • Technology Committee • Evaluate student pilots • Identify scale-up options

Appendix C

CAN BLENDED LEARNING IMPROVE THE EFFICIENCY AND EFFECTIVENESS OF STUDENT LEARNING?

In school systems, there is continued pressure to improve student outcomes with decreasing financial resources. Blended learning instruction, where instruction occurs partially online and partially face-to-face, is one method that districts are using to accomplish this goal. The focus of this research brief is on three versions of an original, half-credit health course offered during the summer of 2013 at Caesar Rodney School District: Fully face-to-face, fully online, and blended. This project was designed to consider the potential of offering health as a blended course to increase student outcomes and decrease costs to the district.

In some areas of the country, blended learning programs within schools are expanding quickly, with minimal evaluation of their impact on student learning. Miron, Gulosino, and Horvitz (2014) argue that this rapid growth, paired with relatively poor performance on accountability measures, should encourage policymakers to limit the unrestricted growth of these programs. Furthermore, they argue that better outcome measures should be developed to track student progress and to report student data. These are needed changes since Vander Ark (2012) claims that more than four million U.S. K-12 students were enrolled in formal online programs, with roughly double that number using an online curriculum at school to make up lost credit. Additionally, Staker and Horn (2011) predict that 50% of all high school classes will be online by 2019 and all learning will be blended with the aid of technology. Therefore, there is a desperate need for quality program models.

Purpose

Because summer-school instruction was perceived as ineffective and expensive in the Caesar Rodney School District, the district administration chose to analyze the original credit portion of summer-school with a focus on health courses and their effectiveness. Using pre-test/ post-test performance data, focus groups, and cost analyses, I documented the effectiveness and efficiency in an evaluation designed to make future decisions regarding the merits of blended or online learning for these types of classes. Results from this project would then be used to improve the summer-school instructional program and inform plans for quality blended courses for both staff and students in the future. This brief was designed to answer the following questions:

Question 1: Which method of instruction did students in an accelerated health course value most?

Question 2: Which method of instruction resulted in largest increases in academic achievement?

Question 3: Which method of instruction resulted in the greatest cost savings?

Why Summer-school Health?

Health is a graduation requirement in Delaware and students typically complete the course during summer to free up their schedule for full year, high-level coursework. In terms of enrollment and completion, health is the single most common original credit course offered and completed during the summer at Caesar Rodney High School.

At Caesar Rodney High School, summer-school health is traditionally taught by three teachers with an enrollment of about 90 total students. This 1:30 teacher-to-student ratio is financially inefficient when compared to the traditional school year where the

teacher to student ratio can often reach 1:120 or more. Additionally, over the three years I monitored this program as the Supervisor of the district's Race to the Top efforts, summer-school funding decreased from \$50,000 to \$3,000. This health course was representative of a systemic problem within the summer-school structure where the costs of the program far exceeded the allocated budget and collected revenue from students.

Health is substantially different from the other summer-school classes offered at Caesar Rodney High School. It is the only original credit, elective class offered in the summer besides physical education. This made it a good candidate for study since the "seat-time" of 67.5 hours in summer-school was the same as a half-year class. Health is also one of the most common forms of online learning offered across the country as a graduation elective. According to the Florida Virtual School (FLVS), the largest single state provider of online and blended learning, Health is the second most common original-credit elective course comprising 8% of all enrollments behind physical education at 10% (FLVS, 2014). Caesar Rodney High School had similar enrollment trends. Students also have twelve opportunities to take and pass health class during their high school career. Therefore, studying health classes offered a low-stakes opportunity to test instructional variants as well as experiment with modifications to the seat-time requirement.

In many states across the country, there is a movement away from the seat-time model to a proficiency or competency-based model. For instance, the state of Ohio now has "flexible" credits. This process keeps the Carnegie unit, but provides multiple options to demonstrate competency and content acquisition without actually being in the "seat." This allows students to "customize aspects of their learning around their interests and

needs, which might include flexible schedules and choice from online providers” (Ohio Department of Education, 2010). This project was designed with flexible credits in mind, and the possibility that blended learning offers a feasible option for modifying Delaware’s seat time requirement and moving to a competency-based model.

The Instructional Variations

In the summer of 2013, students who wanted to participate in a summer-school health course were able to voluntarily select among three instructional variants that are described in the table below.

Option	Mode of Instruction	“seat time”	Enrollment Totals
Option 1 (Traditional)	Traditional – Teacher	77 Hours	28
Option 2 (Online)	Online – Compass Learning	77 hours	26
Option 3 (Blended)	Blended – Teacher and Compass Learning	38.5 hours – 2 cohorts	27

Mode of Instruction and Enrollment

Traditional Health Course. In this course, students (n=28) attended school each day and received all the instruction, assessment, and feedback from the teacher. The activities in this classroom included taking notes, reading articles, participating in classroom discussions, hands-on activities, and taking hand-scored assessments. This closely matches the instruction that students would receive during the school year for a half-year health course. In this traditional course, the teacher was the primary source of information, providing structured presentations that students would take notes on.

Students spent three and a half hours in the class each day, and this time was also used for collaborative activities and laboratory activities like heart rate and respiration labs.

Online Health Course. In this course students (n=26) worked in a high school computer room every day and progressed through an online health curriculum in Compass Learning™. In this online course, the teacher acted as a coach for students and all instructional activities, assessment, and feedback occurred in the online program. In this case, the assessments became the priority since students needed to meet certain proficiency standards to “pass” to the next learning module. This option was on-site and in a computer lab, but entirely online. This course represents how all credit recovery classes occur in the Caesar Rodney district. In the traditional and online options, students attended school for 22 days of instruction at 3.5 hours/day for a total of 77 hours.

Blended Health Course. In this course, part of the instruction was delivered online at home, and a teacher delivered part of the instruction in school. This blended health course involved students (n=27) working through the online Compass Learning™ program to specific “checkpoints” in the course outline, and the teacher then acted as a facilitator during face-to-face sessions to extend this knowledge base through discussions and laboratory activities or projects.

In the blended option, students were divided into two cohorts (A & B) and the 22 days were divided equally into 11 days for each group. Therefore, the in-class “seat-time” component was reduced by half allowing students to flexibly reach their checkpoints at their own pace. It is important to note that the blended option received a waiver from the Delaware Department of Education (DDOE) regarding “seat-time” and Carnegie unit requirements. In this case, “seat-time” was documented through actual “seat-time” as

well as time spent engaging in Compass Learning™. Compass Learning was reviewed by a DDOE official in curriculum and instruction, and was approved as the summer-school health curriculum as a fully-online or blended-content provider.

Research Methodology

This evaluation of the effectiveness of these three health course options used a non-randomized design. Students voluntarily selected the health course they desired, typically with parental input. From conversations with the participants, students chose the course options based on transportation needs and computer access in the home.

Data Collection Procedures

Both qualitative and quantitative data were collected for this study, resulting in a mixed-methods evaluation. The information below highlights the data collection tools and data sources for each of the research questions.

Question 1: Which method of instruction did students in an accelerated health course value most? Student focus groups were used to understand how students valued each instructional variation. Since student engagement can have an impact on performance, data about students' perspectives on course quality is an important consideration, even though students did not have the ability to participate in each option. The summary coding and trends in their responses were compared using the constant comparative method. The total number of students in each focus group were traditional (n=5), online (n=5), or blended (n=5). The questions asked of each group were:

Question 1: Why are you taking the summer health course and how do you like it?

Question 2: How easy/difficult is the course you are taking? Why?

Question 3: What are the expectations/requirements for the course you are taking?

Question 4: How do you receive information about your progress in the course on assignments, quizzes, and tests?

Question 5: How often do you work with other students to discuss and collaborate on assignments or projects? What do you think is the value of discussing and collaborating with other students?

Question 6: How can we help you perform better in this course? What could you do to perform better in the course?

Question 7: What would you say to another student who is going to take this course?

Question 2: Which method of instruction resulted in increased academic achievement? At the beginning of summer-school, a 25 question, multiple-choice pre-test was given to each student in each group. A similar test of 25 multiple-choice questions, measuring the same standards, was delivered to the students in each group at the end of summer-school. These assessments were the same pre-tests and post-tests designed by the Delaware Department of Education for the purposes of teacher evaluation and accountability. Means for each instructional group were analyzed using ANOVA and the Statistical Package for Social Sciences (SPSS).

Question 3: Which method of instruction resulted in the greatest cost savings? For this question, I calculated the costs associated with delivering each mode of instruction. This calculation took into account summer school instructor salaries and the tuition collected from the students for these courses.

Results and Discussion

The summary for this research is based on patterns that emerged from the focus groups, pre-test/post-test analysis of student performance on standards-aligned health

tests, and a cost analysis of the three instructional variants. For the discussion below, each instructional variant will be referred to as *traditional*, *online*, or *blended*.

Question 1: Which method of instruction did students in an accelerated health course value most?

Traditional course. In the traditional course, students stated that they were taking the course to “get ahead” and that they liked the ability to do this. One student stated that the course was “easy, because all I have to do is take notes and do well on the tests.” The students reported the majority of time was spent “taking notes” that were delivered on the overhead projector and “this was all the information that would be on the tests.” The other activities students did in class were “articles of the day” and “writing out vocabulary lists” to support the notes that were taken.

Students reported that once a week they participated in a “lab activity based on the notes.” For instance, in the unit on exercise, respiration, and energy, one student mentioned they did a “heart rate lab” activity. Several students noted that the class was “repetitive” with “notes, worksheets, labs, and tests.”

When the students were asked how they receive information about the progress in the course, they stated the teacher gives them a “grade sheet at the end of every week.” When the students were asked how often they collaborate and discuss with other students, they said “every day we work with our table group.” When I asked a follow-up question related to the value of discussing and collaborating, students said they “liked working with other people, or class would be boring.”

When asked how we can help them perform better in the course, one student indicated that he was doing well in the course and the only way that he could do better in the course was to “do better on the tests and pay attention during class.” When asked

what advice they would give to other students that would take the course, the students indicated that they should “be prepared to take notes and your hand will hurt.”

Online course. In the online course, students stated that they “didn’t like the course” and “it was really hard.” One student stated that he “didn’t know what we were supposed to accomplish in the class and when we were supposed to do it.” One student stated that on the first day that they were instructed to “login and get started without really knowing what to do and it has been that way ever since.”

When I asked the question regarding expectations and requirements for the course, one student indicated that there was a “course outline, but it really didn’t tell me what I needed to do.” Students reported that the course was “boring” and made them want to “go to sleep.”

When asked how they received information about their progress in the class they stated that it is “all on Compass.” The students reported that there is a “backpack” and it has all their grades and “how many times we took the test or the quiz.” Another student chimed in with “yea, but it’s really hard to pass the tests.” Many of the students shook their head affirming the difficulty of passing the online assessments.

An additional trend that students in the online course reported was an absence of collaboration. When the question related to collaboration was brought up, the students expressed that they “didn’t get to talk to the other students in the classroom” and that they “have to sit there the whole time.” The students indicated the only time they can get up from their seat is for the 15 minute break. One student said that she had wished she was taking the blended learning class downstairs. When asked why, that same student stated “because I can hear them and it sounds like fun.” Other students mirrored this sentiment

with head shakes in the affirmative. When I asked what the value of discussing and collaborating is, they stated that they “don’t get to talk to other students, except on the breaks” and that they “have to stare at the computer the whole time.”

When asked how we can help them perform better in the course, students indicated responses such as “more breaks,” “time to talk to each other” and “more time to talk to the teacher.”

When asked what they would say to a prospective student, they said “don’t take this course.” All of the students shook their head in agreement with this statement. One student then responded with, “I guess the only benefit is that we don’t have homework home like my friends in the other classes.” The other students agreed with this statement as well.

Blended course. In the blended course, students reported that they generally liked the course. In this course, students progressed through checkpoints at home in the course outline and then came to class for discussions and labs focused on this material. One student reported that the class time “was the best because we get to do fun things.” Another student indicated that she “like[d] that I could do it on my own at home instead of showing up to school” but that it “took a lot longer to get to the checkpoints and that they [the checkpoints] were not balanced very well.” I asked a follow-up question about this balance and the student stated that some checkpoints required “five hours to get to and others only required one hour.”

The most negative aspect to this course was the scheduling. Students indicated that this schedule was very difficult for their parents since they attend school every other day. In some cases, students’ parents did not have the flexibility to leave work to pick

them up on days they attended school. This was mirrored in the comments from parents in the three phone calls that were fielded at the district office. The parents indicated that due to the every other day nature of the course, it was very difficult to arrange transportation at 11:00 on those days. The parents were forced to leave work on some occasions to pick up their students.

When asked if they knew the expectations or requirements for the course, one student stated that the “teacher created a course guide for us with checkpoints in it.” After more probing and discussion, it was clear the teacher developed a calendar showing the blended schedule as well as the “checkpoints” that students should reach prior to arriving for each face-to-face class session.

Students also indicated that they received regular information about their progress. They stated the teacher reviews a grading sheet with them each week on their progress in class. When asked how often they worked with their peers, one student said “we do a lab every day.” Other students shook their heads in agreement. When asked what they thought the value of discussing and collaborating with other students was, one student stated “I really like how we learn the stuff in Compass Learning, and then come to school and work with the other people in our class.”

When I asked how we could help them perform better, one student immediately stated to “make the online work balanced” and another student stated “change the schedule so my parents don’t have to leave work.”

Finally, when asked what they would say to another student who is going to take this course, they re-iterated the “schedule” and the need for “fast internet at home.”

Focus Group Analysis. If the summer school options were ranked based on the analysis of focus group responses below, option 3 (blended) would be tied with option 1 (traditional) as having the most value and option 3 (online) with the least value. This would be based on the focus group responses with blended being the most valued and online being the least valued. However, it must be included here that teachers and students all value different things. For instance, students may value not having to work outside school, whereas teachers may see this as a valuable previewing activity before class. The overall value below was developed based on four trends that emerged through the coding of the data.

The four trends that emerged and cut across all the options included time, work demands, teacher support and scheduling convenience. The table below shows what the four trends look like if ranked in a table using a 1-3 Likert scale. In this case, a 3 would indicate the most value for that trend and 1 would be the least value for the trend. Below the chart, a brief synopsis of why each trend was rated each way is included.

Analysis of this question is based on an analysis of the data gathered from the three focus groups using the Grounded Theory methodology. Holton (2007) describes this method as using substantive coding to elucidate core categories and sub-categories based on the analysis of student responses within the transcripts. All of these focus groups were asked the same seven questions to allow for consistent moderation of the groups, coding, and analysis for primary trends. I then transcribed and coded the transcriptions to analyze the response trends until no new properties or dimensions emerged.

Focus Group Trend	Option 1 (Traditional)	Option 2 (Online)	Option 3 (Blended)
Time Outside of Class	1	3	2
Work Demands	3	1	2
Teacher Support	2	1	3
Schedule Convenience	2	2	1
Total Value (highest number)	8	7	8

Rank of 4 trends by Course Option and Student Value

The next section presents a summary of student comments for each of the course variants followed by a discussion of the four key patterns that emerged from the focus group data.

Focus Group Summary. Qualitatively, the online course was valued more by students on the issue of time, because students had no homework outside of class. Students did value the blended course because of the flexibility it offered, but were concerned about the amount of time they needed outside of class to accomplish their “checkpoints.” On the issue of time the traditional course was valued least, because students had homework almost every night, which required a great deal of additional time out of class to complete in addition to their time in class.

Work demands also emerged as a pattern and is defined here as the overall perceived ease or difficulty of the class. For this trend, the students valued the perceived ease of the traditional course, since the learning goals were clear and there was a consistent routine. The blended course was next, since students clearly understood the expectations from the “checkpoint guide” the teacher developed, and how the “flipped classroom” routine provided them with important background knowledge before the face-

to-face class time. Because of the frustrations students had in meeting the proficiency scores in the system and the time spent in front of the computer, the work demands of the online course were onerous to the students in that focus group.

Teacher support of learning is the third pattern that emerged in the data. In this case, teacher support means how well students felt that the teacher communicated their progress and the teacher's willingness to answer questions. It also refers to the organization and pacing of the class. This trend is heavily dependent on the individual teachers and the mode of instruction. For instance, the online course had very little teacher support given the fully online nature of the course.

Although individual teacher effects and mode of instruction do impact how students perceive the support they received, students in the blended course were the most positive about teacher support because they said their teacher kept them abreast of their progress regularly and the classes were well organized and "fun." The traditional course was generally positive but students reported that the teacher could have communicated progress more frequently and that the teacher regularly chastised them for poor note-taking and study skills. The least amount of positive responses about teacher support were related to the online course, since the class did not lend itself well to providing face-to-face support for student questions about course content or progress in the online system. The grades were all in the system, and the teacher could have no influence on the grades, thus limiting the need for communication, feedback, or support provided to the student beyond basic goal setting.

The last pattern emerged around scheduling convenience. For the traditional and online courses, students were required to attend the high school each day from 8:00 a.m.

to 11:30 a.m. These courses worked well for the parents who needed to coordinate transportation each day. Furthermore, since many of the students took health in the morning and physical education in the afternoon, students had a half hour break and then could continue on with their physical education class from 12:00 p.m. to 3:00 p.m.

The blended course required attendance in person every other day. Three separate parents called the district office to complain about the scheduling of the blended course format. All three of the complaints focused on transportation concerns and the fact the students needed to stay afterward for physical education each of the 22 days in the afternoon, but attend health only 11 days in the morning. Student comments from the blended group mirror the comments of these parents. Therefore, on issues of scheduling, the blended course was the least favored of the course formats, a concern that must be addressed if blended learning is to be used in these kinds of summer courses.

Question 2: Which method of instruction resulted in increased academic achievement?

The pre- and post- test data was examined by running an ANOVA using SPSS. Levene's test for equality of variances, which measured the variance across the groups was not statistically significant at 0.228 with a 0.05 confidence interval. This means the samples had a homogeneity of variance and followed a normal distribution. I was therefore able to continue with the ANOVA analysis, which demonstrated that even though the traditional course format had the highest mean growth, that growth was not statistically significant when compared to that of the students in the online and blended course formats. All of the courses resulted in approximately the same growth in achievement of the health course outcomes. *However, there was no statistically significant growth across any of these options.* The table below summarizes this data.

Group	n	Pre-test Mean	Standard deviation	Post-test Mean	Standard deviation	Gain
Traditional (Option 1)	28	16.0	4.6	18.6	2.4	+2.6
Online (Option 2)	26	17.1	3.8	17.6	2.7	+0.5
Blended (Option 3)	27	17.6	4.6	18.0	3.9	+0.4

Students' Pre- and Post-Test Scores by Health Class Option

Question 3: Which method of instruction resulted in the greatest cost savings?

Costs for implemented program. Caesar Rodney High School charged a \$100 per-student per-course tuition fee in the summer of 2013. However, although we collected \$8,100, in tuition revenue for the three courses, the cost for the three teachers was \$12,825, resulting in a \$4,725 total cost to the district. The traditional course represented \$1475 of the costs, and the online and blended courses cost \$1675 and \$1575 respectively. It is important to note that the cost of Compass Learning was not part of these calculations because Caesar Rodney School District possessed a site license that covered all students from grades 6-12 with unlimited usage for all core content and elective courses. Purchasing and maintaining this program is not part of the summer school budget. The only items that came out of the summer school budget were salaries.

In analyzing the costs for each instructional variant, it is also important to address a building level decision that impacted these costs. The total class size for the blended course in the A/B rotation was capped at approximately the same number as the other classes the day before summer-school registration was to begin. The building administration did not feel comfortable increasing the overall class sizes for this cohort. They were concerned about the potential for a grievance related to one summer-school teacher having double the number of students compared to the teachers in the other

instructional modes. If the original plan was implemented, there would be 25 students in the A cohort and 25 students in the B cohort. This additional tuition would have represented a \$725 profit for the district. It is clear that profit should not drive instructional decision-making. However, continuing to run significant deficits was depleting the summer school budget at Caesar Rodney High School.

Conclusions

This study supports the effort required to begin and maintain a blended learning program. There were no statistical differences in student performance among the three ways that students received credit in the courses. However, the district cost-savings and the potential for more flexible student learning, makes a blended learning framework an attractive option for the delivery of these kinds of summer courses. It also provides a rationale for expanding blended learning opportunities into other summer school and regular high school courses. It is important to note, that this type of learning did not adversely effect student learning, and this type of learning would decrease costs.

This study also provided information about what we may want to avoid. Going forward, I believe that districts should avoid instruction that is delivered entirely online through a pre-packaged program. Quite simply the students didn't like it, the teacher didn't like it, and it does not allow for collaboration, discussion, and project-based experiences. There are many versions of online learning, but any instruction that relies primarily on a computer for planning, instruction, and assessment needs a reliable and well-trained coach to assist students in setting goals and progressing through modules. Also, optimal learning cannot happen without collaboration with other students, which provides the benefit of multiple perspectives and discussions. Although the three

instructional variants resulted in similar post-test performance, lack of collaboration has important social, motivational, and instructional benefits. In addition, because students were required to access the online program in school, it did not offer the flexibility that is the hallmark of online programs. For schools like CRHS that have adopted packaged online programs, I recommend rethinking programs that use this approach.

This study would not have been possible without the special dispensation from the Delaware Department of Education to allow both time in class and time in the online modules to count as “seat time.” Therefore, it will be important for districts to push for policy changes around the Carnegie unit, specifically the 135 hours of “seat-time” required for a student to earn a high school credit. This policy effectively forces our entire school system into an age-based, grade-based system instead of a competency-based one. If schools are going to adopt blended learning approaches districts must push for more “flexible” credits that can be earned without face-to-face requirements. This single policy change would allow districts in Delaware, like CRHS and PHS, to break through a primary barrier and allow the exploration and development of new blended learning options. In this study, blended learning was just as effective as other variants, but has additional benefits to districts and students that must be communicated to the DDOE.

My third recommendation is to limit tenure’s impact on summer-school hiring. In the Caesar Rodney School District, summer school positions were awarded based on tenure status. Policies like these should not be included in negotiated agreements since they do not guarantee that the most qualified or innovative person is hired for blended learning positions. For example, in the Caesar Rodney School District, a motivated,

younger teacher developed and successfully instructed the blended learning course in 2013. However, because of the elimination of one summer-school position and the tenure status of another teacher, this instructor was not hired in the summer of 2014. Teaching and innovation is heavily dependent on the quality of the people, and districts need more control over personnel issues when moving into a new instructional framework. Not having innovative leaders can impact the effectiveness of blended learning in our schools.

One final conclusion is that building administrators also need training and time to plan for and review the effectiveness of these new types of learning frameworks and practices. For instance, when planning for the 2013 summer school at CRHS, the lack of time resulted in capping class sizes in the blended learning class at 12 and 13 the day before classes began, a decision that caused an economic loss for the district. Staffing and tenure issues in the summer of 2014 resulted in the most qualified teacher not returning to lead the blended learning course. Additionally, transportation issues can have a negative impact on students and families and affect the viability of blended learning for summer school classes. District administrators are in the best position to effect change around these issues and need the time to plan for and reflect on the implementation of new practices.

Limitations

There are some limitations to this study. The first limitation, related to the focus groups, is that the opinions of the students in each group may not be representative of the entire class. The students required significant probing to elicit responses, and there is a possibility that a minority of students experienced these trends. Additionally, the quality of the state developed pre-test and post-test assessments must be a consideration. These

tests were composed of only 25 multiple-choice questions, and were developed in haste in response to state legislation that mandated a fifth component to the teacher evaluation system focused on student growth. Therefore, when we look at the performance data we need to examine the sensitivity of these instruments for assessing student achievement of the Delaware health standards.

It is also important to recognize that the cost analysis of the instructional variants did not include the district cost of the Compass Learning program. Although this is a substantial cost to the district, it is not a part of the summer school budget because of its widespread use for regular instruction. Therefore this cost analysis is limited to only the summer school budget.

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Appendix D

A SURVEY OF THE INSTRUCTIONAL TECHNOLOGY SYSTEM AT POLYTECH HIGH SCHOOL.

Survey Background

In February of 2015, I started as a new assistant principal at Polytech High School. In acclimating to this new position, I quickly realized that the learning culture and operation of technology at the school was markedly different than the previous district I was employed in. In order to better understand these differences, and their impact on teachers' use of technology in instruction, I decided to develop this survey to inform my professional development work in the use of blended learning and the Schoology learning management system (LMS).

The primary goals of my doctoral work are to support the adoption of the LMS, Schoology, and to develop blended learning practices at Polytech High School using this system. One key component of this plan is to understand if the instructional technology system could support extensive use of this cloud-based learning platform. Using this LMS effectively depends on reliable online access, a strong technology infrastructure, accessibility of devices by staff and students, and the successful operation of those devices. It also depends on understanding how devices are currently used and the long term plans of the district about technology use. It would be impossible to truly leverage this instructional tool for collaboration, communication, and course management if the system cannot support a scaling up to all staff and students. It is imperative to understand a system before attempts are made to improve it.

To understand the purpose and results of this survey, it is important to define an "instructional technology system." In the simplest terms, an instructional technology

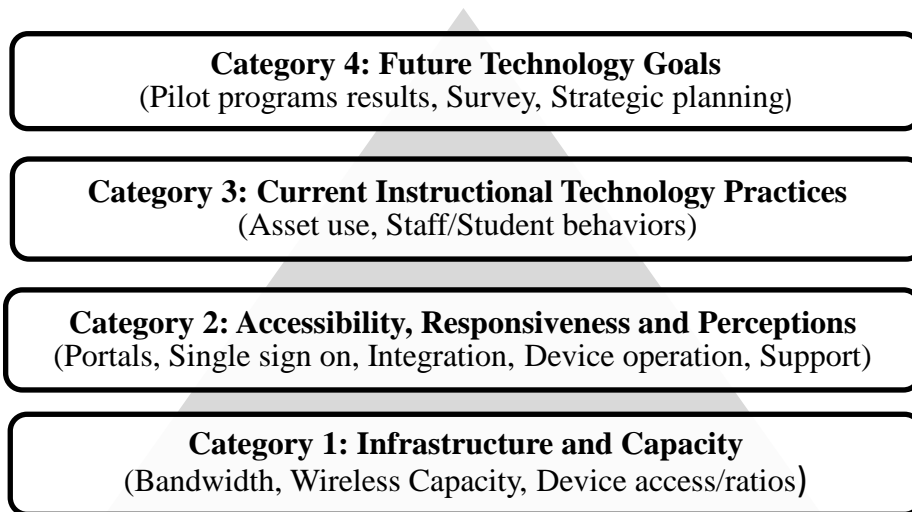
system is a system that supports student learning with technology. However, in the professional literature, researchers and educators often focus on the use of technology in instruction and the design of blended learning courses, while the complexities of the technology system itself are often overlooked. One reason may be that schools often possess a complex array of devices and technical configurations that are unique to each school setting and present unique challenges. For instance, at Polytech High School, there are two different wireless systems (Aero-hive and Meru) and devices need to be configured for both systems in order to work effectively. This has presented problems as we tried to use our newly purchased Chromebooks for instruction.

The function of the system can also be heavily affected by the beliefs of the people who manage the system. For instance, the technology department may believe Microsoft offers the best learning software, but this may not work best for instruction, since many students do not have this expensive software at home. Often, the vision for how the instructional technology system will operate, and the steps needed to enact that vision, can vary from person to person and impact training, teaching, and learning.

Improving the Instructional Technology System

This survey helped me to understand the instructional technology system as a whole in order to improve it. This includes its infrastructure, accessibility issues, current instructional practices and future goals.

The graphic below illustrates the parts of the instructional technology system that are the focus of this survey. The reason it is shaped like a pyramid is to convey the importance of a strong system foundation. For instance, the infrastructure and setup is crucially important because if the wireless signal does not work, or the bandwidth cannot



support large amounts of devices using Schoology, the system cannot be used for instruction and student learning. This leads to immediate frustration for all users. Below is a graphic of the Instructional Technology System.

Instructional Technology System

Infrastructure and capacity. The first focus of this survey is on infrastructure and capacity. In order to support 21st century learning, schools must first revisit the foundation of the technology system, beginning with the infrastructure and capacity to support internet accessible devices. This process involves looking at internet bandwidth, routers, wireless access points, and server configurations. It is also important to understand how many programs are running in the background of the system, what they are used for, how much support they require, and if these background processes affect the user's ability to login and learn. By focusing efforts here first, the goal is to provide robust and consistent access for any and all existing and future devices.

Accessibility, responsiveness and perceptions. The second focus of this survey is on issues of accessibility, responsiveness and the perceptions of the instructional technology system. Are the users able to login quickly? How long does it take for a

profile to load? How many usernames and passwords do students and teachers have? What programs are being utilized or underutilized at the district's expense? Are technology work orders responded to quickly? These accessibility and functionality issues are directly related to accomplishing instructional goals. If these are not configured the correct way, the user's ability to learn, and the perception of the system will suffer, making Schoology and blended learning training difficult.

Current instructional technology practices. The third focus of this survey is on the current practices that staff engages in on a daily basis. In this case, the questions are related to the types of devices, routines, and tasks that teachers use personally or professionally, with students and without. The goal is to understand the practices staff already perform on a routine basis, what practices or programs require more training, which tools or programs can be leveraged for professional learning, and to what extent the staff are implementing blended learning practices.

Future technology goals. Because of the fast pace of technology changes, it is important for school systems to set goals related to technology infrastructure and use. Achieving these goals and making strategic plans involve time, energy and money, which should be the result of stakeholder feedback and pilot programs that can guide decision making. This survey is an example of one feedback mechanism that will be used by the technology strategic planning committee to make data-based decisions around technology. Since the result of these plans can cost upwards of hundreds of thousands of dollars for smaller districts and millions for larger districts, having data is crucial to making good instructional technology decisions.

Survey Design

This survey was developed using a combination of three other surveys. The first survey, is an Ithaca College faculty survey (Dispensa, 2013) that influenced questions four, five and ten. The reason I used this survey is because the questions were focused on the personal and professional use of technology by teachers, as well as blended learning practices that are the focus of this leadership project.

The second survey I used was the PEW Research Center's (2013) survey on how teachers are using technology at home and in school. This survey heavily influenced question number six which is designed to elicit belief statements on the impact of digital technologies on society and students. The importance of this question is to understand the extent that teachers believe society and schools are changing and whether Polytech High School is meeting the needs of our digital natives.

The third survey is an instructional practice survey distributed by the Minnesota Department of Education (2012). The focus areas for this survey are technology tools in the classroom, which tools require more training, and how often these tools are used in the classroom. There is no mention in this survey of blended learning, online learning, or specific course material. It is focused on discrete tasks (i.e. using a blog) and I used this survey as a foundation for question seven, and to develop the demographic questions one through three.

I chose these questions based on how well they matched the four survey categories and because of their alignment with the instructional technology framework above. These categories and their corresponding questions include: demographic information (1, 2, 3, and 4); accessibility, use and perceptions of technology (5, 6);

current technology practices (7, 8, and 9); and future technology integration practices (10, 11). The last two questions (12, 13) are open-ended and provide additional ways to capture staff perceptions on improvements that could be made to the system.

Overall, I purposefully chose the questions on this survey to get quality information about the instructional technology system at Polytech High School. Using Guskey's framework for *Evaluating Professional Development* (1999), this survey will be analyzed to develop goals for improving the instructional technology system and delivering quality professional learning. However, even though this survey will provide important information, it is also important to note that we must also consider multiple indicators multiple indicators to chart a path forward, not just a single survey (Guskey, 1999).

Survey Administration and Response Rate

As a new assistant principal to Polytech High School, there were some challenges to overcome in designing and delivering a survey by the end of the 2014-2015 school year. This involved many meetings with district and building administration around the purpose of the survey and its usefulness within the building. There were also several meetings with the technology team to ensure that there was shared understanding about why a survey was needed and how the data could be used to improve the instructional system and support Schoology. Getting the technology department's input and support on draft surveys was key to shared decision making and charting the path forward. For instance, the technology department suggested adding existing district tools such as Camtasia, Mimeo, and Impero to gather data on how much staff are using them.

In May of 2015, after several survey iterations, the administrative team decided

that this survey would be administered to all teachers and administrators as part of the staff professional development activities at the end of the 2014-2015 school year. We agreed that this survey would be used as a starting point for a technology strategic plan to be developed in the spring of the 2015-2016 school year, after pilot programs have taken effect.

At the end of the year faculty meeting, this survey, its purpose, and the information that would be collected was discussed with faculty. This re-affirmed why the survey needed to be completed, that it was important to the district, and that the survey was entirely anonymous. There were no questions from the staff during the faculty meeting.

In order to administer the survey, time was allocated on the professional development agenda on the last day of school for teachers. One hour was allocated to complete the survey, and the survey link was provided for staff. Out of 114 staff members that included teachers, technology and administration, 25 people completed the survey for a response rate of 22%. This response rate was calculated after the first day of summer vacation for teachers. After several discussions within the administrative team about the relatively low response rate, the decision was made to not send the survey out again. The reason for this decision is that that district administrators wanted to honor contract obligations around summer work.

The survey was designed in the online survey software Survey Monkey since the district already uses this tool to collect data and staff are familiar with the tool. Respondents were only allowed to complete the survey once based on their IP address

and all survey respondents were anonymous with the exception of the demographic information that was collected in the category one questions.

Presented below are the survey questions, the respondent data, and an analysis for each question.

Category 1: Demographic Information of Respondents (1-4)

The demographic information questions in category 1 allow the data to be disaggregated based on teacher classification, subjects taught, years of teaching experience, and how each participant would rate their overall technology skills before taking the survey.

Question 1: Which classification best matches your position in the district?

Answer Choices		Responses
Content Teacher		64.00% 16
Career/Technical Teacher		20.00% 5
Special Education Teacher		12.00% 3
Specialist Teacher		4.00% 1
Total		25
#	Other (please specify)	Date
1	Instructional Aide	6/8/2015 2:45 PM

Question 2: Which of the following subjects or areas do you currently teach?

Foreign Language (s)	12.50%	3
History and/or Social Sciences	12.50%	3
Math	20.83%	5
PE/Health	4.17%	1
Science	16.67%	4
Generalist	4.17%	1
Total		24
#	Other (please specify)	Date
1	I assist teachers	6/8/2015 2:45 PM

Question 3: How many years have you been teaching?

Answer Choices	Responses
1-3 Years	4.00% 1
4-5 Years	0.00% 0
6-10 Years	36.00% 9
11-15 Years	12.00% 3
16-20 Years	20.00% 5
20+ Years	28.00% 7
Total	25

Question 4: How would you rate your overall skill using technology?

	Basic	Between Basic and Proficient	Proficient	Between Proficient and Advanced	Advanced	Total	Weighted Average
(no label)	0.00% 0	8.00% 2	60.00% 15	32.00% 8	0.00% 0	25	3.24

Demographic Questions 1-4 Discussion

These question are designed to capture relevant demographic information of teachers at Polytech High School. Of the respondents, content area teachers (64%) had the highest response rate, followed by career/technical teachers (20%).

Question two narrows down which departments responded to the survey most frequently. There were twelve departments listed on the survey form and members of six responded. There were no responses from the following: industrial academy, health and medical academy, modern technology academy, professional services academy, arts and/or music, and English/language arts. Math and science, content areas that I supervise, had the highest response rates totaling 37.5%. Because I directly supervise these departments, teachers in these content areas knew more about the rollout of Schoology and had more opportunities to ask questions about the purpose and intent of the survey in section meetings. These were also the first departments to get Schoology demonstrations in the spring of 2015. These factors might have impacted their response rate.

Question 3 focused on the age distribution of the faculty. This question mirrors the larger demographics of the school, with almost 50% of the respondents having greater than 16 years of experience. The experience of teachers and established culture in the building will be a factor in adoption, training and use of 21st century learning tools. Generally, the older a staff is, the less willing they may be to adopt new initiatives, especially technology driven ones. However, it might also be the case that our more experienced teachers can think more critically about how to infuse these new tools into existing instruction.

The last question in this group is a self-rating of teacher's technology skills. 92% of the respondents reported that they were proficient or between proficient and advanced in their educational technology skills. The reason this question is important is that it demonstrates respondents' self-efficacy regarding technology and their ability to use technology efficiently. Although this represents only a small sample of Polytech teachers,

having a core group of educators who are confident in their technology skills might be helpful for instituting a new blended learning framework.

Category 2: Accessibility, Responsiveness and Perceptions (5-6)

The questions in category two center on technology use, the role of technology in teachers' personal and professional lives, student technology use, and the supply and operation of devices at Polytech High School. These questions help us understand if and how staff members already use specific tools, and which tools could be used to support the design and implementation of professional and blended learning. Additionally, there may be district-supported tools that may be underutilized or not used at all. This becomes an important consideration if the program or tool is expensive and funds could be allocated elsewhere for greater impact. The last question in this group focuses on how teachers perceive the role of technology in students' lives and the use of technology tools by students.

Question 5: How often do you use the following technologies personally or professionally?

	Daily	Weekly	Monthly	Less than monthly	Never	Total	Weighted Average
Your school email address	100.00% 25	0.00% 0	0.00% 0	0.00% 0	0.00% 0	25	1.00
Student email addresses	4.00% 1	40.00% 10	36.00% 9	12.00% 3	8.00% 2	25	2.80
The school website for posting classroom content	20.00% 5	16.00% 4	8.00% 2	36.00% 9	20.00% 5	25	3.20
Online file storage (e.g., Dropbox, Google Drive, Skydrive)	4.00% 1	8.00% 2	8.00% 2	44.00% 11	36.00% 9	25	4.00
Cloud based bookmarks or bookmarking services (Chrome Bar, Digo)	0.00% 0	4.00% 1	8.00% 2	28.00% 7	60.00% 15	25	4.44
Social networking (e.g., Facebook, Google+, LinkedIn, Twitter)	32.00% 8	20.00% 5	4.00% 1	8.00% 2	36.00% 9	25	2.96
Learning management system (e.g., Blackboard, Sakai, Schoology)	0.00% 0	8.00% 2	16.00% 4	36.00% 9	40.00% 10	25	4.08
Media sharing sites (e.g., YouTube Flickr)	12.00% 3	28.00% 7	24.00% 6	16.00% 4	20.00% 5	25	3.04
Multimedia editing software (e.g., iMovie, Final Cut, Premiere, Protools, Audacity, Flash)	4.00% 1	0.00% 0	8.00% 2	24.00% 6	64.00% 16	25	4.44
Communication or collaboration tools (e.g., blogs, wikis, Google docs, Microsoft Office Live)	8.00% 2	0.00% 0	12.00% 3	28.00% 7	52.00% 13	25	4.16
Smart phone (e.g., Iphone, Android, Blackberry, Windows)	92.00% 23	0.00% 0	0.00% 0	4.00% 1	4.00% 1	25	1.28
Instant messaging or Text Messaging	84.00% 21	8.00% 2	0.00% 0	0.00% 0	8.00% 2	25	1.40
Online surveys (e.g., Qualtrics, SurveyMonkey, Google Forms)	0.00% 0	8.00% 2	40.00% 10	28.00% 7	24.00% 6	25	3.68
Online assessments (self designed or third party)	4.00% 1	8.00% 2	24.00% 6	28.00% 7	36.00% 9	25	3.84
The school share drives	24.00% 6	44.00% 11	16.00% 4	4.00% 1	12.00% 3	25	2.36

School provided online textbooks	12.00% 3	16.00% 4	12.00% 3	16.00% 4	44.00% 11	25	3.64
Impero	4.00% 1	12.00% 3	4.00% 1	8.00% 2	72.00% 18	25	4.32
Mimeo	20.00% 5	28.00% 7	8.00% 2	8.00% 2	36.00% 9	25	3.12
Camtasia	0.00% 0	0.00% 0	8.00% 2	0.00% 0	92.00% 23	25	4.84
Discovery streaming	0.00% 0	4.00% 1	24.00% 6	12.00% 3	60.00% 15	25	4.28
APEX learning	0.00% 0	0.00% 0	4.00% 1	8.00% 2	88.00% 22	25	4.84
Filr	0.00% 0	0.00% 0	8.00% 2	0.00% 0	92.00% 23	25	4.84
Outlook	92.00% 23	4.00% 1	0.00% 0	0.00% 0	4.00% 1	25	1.20

Question 5 Results/Discussion

I analyzed this question by collapsing the responses into three categories to determine whether respondents used the tools consistently (daily/weekly), sometimes (monthly) or hardly ever (less than monthly/never).

The tasks/tools that were used most often (daily/weekly) include: teacher email addresses, student email addresses, media sharing sites, smart phones, text messaging, and school share drives. The tasks/tools that were used sometimes (monthly) included: using the school website for posting content, using social networking, using online surveys, and using mimeos, a whiteboard technology. The tasks/tools that were used hardly ever (less than monthly/never) include: third party cloud based storage systems, cloud based bookmarking, learning management systems, multimedia editing, multiple editor communication and collaboration tools, online assessments, online textbooks, Impero, Camtasia, Discovery streaming, Apex learning, and Filr.

Tools being used consistently. The responses to this question demonstrate that teachers are consistently using computers and smart devices to communicate with friends, family, colleagues and students, that they are utilizing media sharing sites like Flickr and

YouTube to share photos and video, and that they are using the school share drives where they can store and share instructional material. It is not surprising that communicating through e-mail and texting is used daily by this group of teachers, since these are common activities. However, it is gratifying to know that teachers are utilizing both Internet share sites to upload photos and video, and the school share drives. One of the benefits of the Schoology LMS is that it can store teacher-created materials which can be easily shared with other teachers or teacher groups. Because the teachers are already using storage and sharing technology consistently, the transition into using an LMS that has this sharing capability can be smooth.

Tools being used sometimes. Responses to this question demonstrate that teachers are sometimes utilizing the school website for posting content, using social networking, using online surveys, and using Mimeo, a whiteboard technology.

Tools rarely used. The majority of the tools on the lower half of the list were rated as “less than monthly” or “never.” Many of these tools include district purchased programs with annual licenses such as Mimeo, Camtasia, and Impero. If these statistics hold true for the rest of the users in the building, there could be large dollar amounts being spent on programs that are not used. In this case, paying for programs that are not being used could also be affecting student outcomes and could represent a missed opportunity. The data from these questions support what I perceive as an absence of an instructional technology support system that communicates, trains, and supports teachers and students in the use of important learning tools.

Question 6: Indicate whether you agree or disagree with the following statements.

This question and analysis focuses on how teachers view changing technology, and its impact on school and instruction. This question is divided into 5 sub-groups of questions. The sub-groups within the question above include: technology trends, digital skills and creativity, access to technology, students expectations of technology, and technology support.

Question 6 Results/Discussion

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Total	Weighted Average
Schools are changing as a result of technology	64.00% 16	28.00% 7	4.00% 1	4.00% 1	25	1.48
Technologies impacts on society and schools is largely positive	32.00% 8	56.00% 14	12.00% 3	0.00% 0	25	1.80
The internet is a valuable teaching and learning tool	64.00% 16	32.00% 8	4.00% 1	0.00% 0	25	1.40
The internet is changing how I teach and how students learn	56.00% 14	36.00% 9	8.00% 2	0.00% 0	25	1.52
It is hard to stay on top of technology trends	36.00% 9	40.00% 10	24.00% 6	0.00% 0	25	1.88
Digital research and productivity skills are a requirement for college and career success	68.00% 17	24.00% 6	8.00% 2	0.00% 0	25	1.40
Digital technology encourages student creativity and personal expression	36.00% 9	44.00% 11	20.00% 5	0.00% 0	25	1.84
I have access to technology when I need it	52.00% 13	28.00% 7	16.00% 4	4.00% 1	25	1.72
My students have adequate access to technology (hardware/network) in my course	28.00% 7	40.00% 10	28.00% 7	4.00% 1	25	2.08
My students have adequate access to technology (software) in my course	20.00% 5	52.00% 13	20.00% 5	8.00% 2	25	2.16
My students expect some element of technology in their courses	32.00% 8	48.00% 12	20.00% 5	0.00% 0	25	1.88
My students have the technology skills needed to succeed in my course	40.00% 10	52.00% 13	8.00% 2	0.00% 0	25	1.68
Technology operates efficiently and effectively	16.00% 4	40.00% 10	40.00% 10	4.00% 1	25	2.32
Technology support is there when I need it	32.00% 8	52.00% 13	8.00% 2	8.00% 2	25	1.92
I am aware of the changes in technology as they happen	8.00% 2	60.00% 15	32.00% 8	0.00% 0	25	2.24
I need more training on technology applications and resources	20.00% 5	48.00% 12	24.00% 6	8.00% 2	25	2.20
There is technology training available when I need it	8.00% 2	60.00% 15	24.00% 6	8.00% 2	25	2.32

There is a strong vision for instructional technology at POLYTECH High School	12.00% 3	48.00% 12	24.00% 6	16.00% 4	25	2.44
Students need more training on how to use technology most effectively	12.00% 3	72.00% 18	8.00% 2	8.00% 2	25	2.12
Students need more training on how to use the internet and perform research	20.00% 5	72.00% 18	8.00% 2	0.00% 0	25	1.88
Students need more training on internet safety and responsible use of social media	36.00% 9	52.00% 13	12.00% 3	0.00% 0	25	1.76
Cell phones are valuable teaching and learning tools	20.00% 5	52.00% 13	12.00% 3	16.00% 4	25	2.24

In the first five questions related to technology trends, 97% of staff agree that schools are changing as a result of technology, 88% believe the impact of technology is largely positive, and 92% agree the internet is changing how they teach and learn. Many also agree it is hard to stay on top of these trends (76%).

In the next two questions, 92% of staff believe that digital research and productivity skills are a requirement for college and career success and that digital technology encourages student creativity and expression (80%).

With regards to access to technology, 81% of teachers agree they have access to it when they need it, while 68% of teachers agree students have access to hardware, and 72% agree students have adequate access to software. Additionally, 78% of teachers agree students expect some element of technology in their courses and 92% of teachers believe students have the technology skills they need to succeed in their courses.

When examining technology support, 56% of teachers agree technology operates effectively and efficiently, and this sub-question received the lowest overall score in Question 6. Further, 84% believe support is there when they need it, and 68% indicate they are aware of technology changes as they happen. Last, 78% believe they need more training on technology applications and resources, and 68% believe technology training is there when they need it.

In summary, these responses highlight a few important trends. First, teachers believe technology is important to society and to students, and has an impact on learning. The teachers also believe that technology skills are a requirement for success in college and career, yet it is hard for the teachers to stay on top of these trends and keep current.

More than three quarters of teachers, on average, believe that there is adequate access to hardware and software; however, nearly half of the respondents believe technology does not operate effectively and efficiently, and that there is a need for more training. This means there is more work ahead to ensure all technology operates effectively for everyone, and that teachers are proficient in using existing and new technological instructional tools. Ensuring a strong foundation will be essential to more advanced uses of instructional technology—including blended learning practices—that can be accommodated in the Schoology LMS. It will also be important to support teachers and design professional development that effectively scaffolds their learning of these new tools and practices.

Category 3: Current Technology Practices (7-9)

The questions in category 3 focus specifically on 21st century skills and digital learning activities. The range of these questions, from posting resources on a website to delivering an online class, were specifically chosen because of their relationship to Schoology skills and blended learning activities. The remaining questions in this group center on teachers' perceptions of student access to technology at home and their comfort level with incorporating new technology skills in their classroom.

Question 7: Please tell us if you have ever had students do any of the following as part of your classroom? (Purcell, Heaps, Buchanan, and Friedrich, 2013)

Access, download and merge information from websites	76.00% 19	24.00% 6	25	1.24
Review notes, files, links, or presentation from my class on the classroom website	52.00% 13	48.00% 12	25	1.48
Record or Embed an audio or video file	64.00% 16	36.00% 9	25	1.36
Edit or revise their own work using a collaborative web-based tool such as Google Docs	24.00% 6	76.00% 19	25	1.76
Edit others' work or give others feedback using a collaborative, web-based tool such as Google Docs	8.00% 2	92.00% 23	25	1.92
Develop, share or post their work (pictures/files) on a website, wiki or blog	28.00% 7	72.00% 18	25	1.72
Share or present their own website, slideshow or creative product to the class	56.00% 14	44.00% 11	25	1.44
Participate in online discussions or "like" others' statements on a any website	12.00% 3	88.00% 22	25	1.88
Submit assignments online and receive feedback	48.00% 12	52.00% 13	25	1.52
Take an online assessment and receive an instantaneous score from a third party site	32.00% 8	68.00% 17	25	1.68
Developed and delivered an online assessment or survey	4.00% 1	96.00% 24	25	1.96
Recognize or reward a student online via text, awards or online badges	16.00% 4	84.00% 21	25	1.84
Take an online course	16.00% 4	84.00% 21	25	1.84

Question 7 Results/Discussion

This question is directly related to Schoology-like technology tasks and was used to see what LMS-type activities staff members currently use in their classroom.

Engagement in these activities are possible without the use of a learning management system, but they are easier to do in a coherent way with an LMS.

The prompts in this question range from the more basic uses of technology in the beginning of the question toward more complex tasks at the end of the question. Not surprisingly, there are a larger proportion of teachers indicating “yes” to the basic uses of technology than to the more complex tasks. The basic technology tasks that teachers are

using in their classroom with students include: performing research (84%), accessing and downloading information (76%), reviewing notes, providing links and files on a website (52%), and recording video or audio files (64%). More than half of the teachers also have students share or present their work with a slideshow or website (56%).

However, respondents are less likely to use more complex technology activities that involve online collaboration or actively producing and contributing web-based content. These activities include having students editing or revising work collaboratively (8%), posting to a website or blog (28%), and participating in an online discussion (12%). In addition, respondents were less likely to have experience taking an online assessment (32%), rewarding or recognizing student work online (16%), or taking an online course (16%).

These tools are directly related to the primary uses of Schoology and developing 21st century blended learning skills. Despite the low survey response rate, the argument could be made that blended learning practices are not used widely by teachers in Polytech High School and that these skills will need to be built through targeted professional development.

Question 8: What percentage of your students would you estimate have:

	0-20%	21-40%	41-60%	61-80%	81-90%	Total
High Speed Internet Access	0.00% 0	12.00% 3	20.00% 5	44.00% 11	24.00% 6	25
At least one computer at home	0.00% 0	0.00% 0	28.00% 7	44.00% 11	28.00% 7	25
A smart phone capable of accessing the internet	0.00% 0	0.00% 0	16.00% 4	44.00% 11	40.00% 10	25

Question 8 Results/Discussion

This question looks at whether staff perceive that access to technology is a primary barrier to student learning. I included this question to compare our teachers' perceptions of student technology use to the research about student access and use of technology. In this case I used a survey of 802 teens age 12-17 developed by the Pew Research Center. Madden, Lenhart, Duggan, Cortesi, and Gasser (2013) report that 95% of teens are online, a number that has remained relatively unchanged since 2006. This survey also underscores that the way teens access and use the internet is increasingly mobile and social. For instance, teens are just as likely to access online content via a cell phone as they are to access it from a desktop or laptop.

However, when compared to the Pew study, staff at Polytech High School seem to consistently underestimate student access to computers and other internet enabled devices in the home. For example, in the table below, the Pew research study reports 85% of teens have high- speed internet access. By comparison, only 24% of the respondents at Polytech High School believe >81% of the teens have high speed internet.

PEW Research Center's Teens and Technology survey vs Polytech High School staff beliefs

Response	PEW Research	Polytech High School
% of teens who have.....		Staff beliefs >81%
High speed internet	85%	24%
At least one computer at home	93%	28%
A Smart phone capable of accessing the internet	73%	40%

The disparity is even greater when it comes to staff perceptions of home computer access. The Pew research demonstrated that 93% of teens have at least one computer in the home compared to the 28% of Polytech teachers who believe that >81% of students have at least one computer. If these results mirror the beliefs of the teachers in the rest of the building, then staff will need to become more familiar with their students' access to technology. If teachers underestimate student technology access to the internet through a computer at home or via smart phone, they may be less likely to believe that the use of an LMS and blended learning practices are needed or will benefit student learning.

Question 9: How comfortable are you with adopting new technologies and incorporating them into your teaching?

	(1) Not Comfortable	(2)	(3)	(4)	(5) Comfortable	Total	Weighted Average
(no label)	0.00% 0	8.00% 2	28.00% 7	28.00% 7	36.00% 9	25	3.92

Question 9 Results/Discussion

This question is designed to extend question 4, which explores how staff members rate their overall skill using technology. This question explores their comfort level with adopting new technology. Since perceived skill level with technology and comfort using new technology are similar constructs, these responses can be used to gauge teachers' comfort level as they learn and implement the Schoology LMS.

In this case the weighted averages of each question align to each other. The overall skill rating for the respondents was 3.2 out of 5 and the comfort rating was a 3.9 out of 5. Respondents generally reported a higher level of comfort incorporating technology than their skill level on a 5 point scale. With regards to Schoology and blended learning, these numbers indicate that the respondents have a relatively high level

of comfort implementing new technologies, and this bodes well for implementing Schoology.

Category 4: Future Technology Integration Practices (10-13)

The questions in category 4 center on which types of 21st century learning tools teachers would be interested in learning more about, as well as the barriers to incorporating more digital technologies in their classroom. Finally, the open response questions provide an opportunity for staff members to comment on other concerns that may not have been captured in the rest of the survey.

Question 10: For the learning activities below, which would you be interested in learning more about?

	Very Interested	Somewhat Interested	Not interested at all	Total
Using a Learning Management System to organize my digital learning content and pacing	28.00% 7	48.00% 12	24.00% 6	25
Getting my classroom content online to extend learning 24 hours a day	24.00% 6	60.00% 15	16.00% 4	25
Using web-based literacy strategies to increase reading and writing in my classroom	40.00% 10	52.00% 13	8.00% 2	25
Creating and posting notes/videos of my classroom to help students	32.00% 8	56.00% 14	12.00% 3	25
Using online discussion boards with students to increase reading, writing and feedback	36.00% 9	44.00% 11	20.00% 5	25
Creating and using online assignments/assessments to provide feedback/grade student work	40.00% 10	52.00% 13	8.00% 2	25
Using student to student and student to teacher collaboration software like Google Docs	32.00% 8	40.00% 10	28.00% 7	25
Being part of a model classroom to pilot new laptops	44.00% 11	28.00% 7	28.00% 7	25
Using cell phones as a learning tool inside my classroom	40.00% 10	36.00% 9	24.00% 6	25
Flipping my classroom	28.00% 7	24.00% 6	48.00% 12	25
Teaching a hybrid or fully online course	28.00% 7	40.00% 10	32.00% 8	25

Questions 10 Results/Discussion

The purpose of this question is to understand the perceived needs of the staff and what they would be willing to learn about and implement in their classrooms. The data from this question can then be used to design professional learning that meets these needs as well design larger goals for the district. For instance, the top two interest items showed 92% of the respondents indicated that they are somewhat interested or very interested in incorporating more digital literacy strategies as well as creating and using online assessments that automatically provide feedback and grades. Both of these activities align well to existing Schoology tools and therefore represent a perfect match for integrating professional learning activities around these kinds of activities.

The two activities with the lowest interest level of all the questions, based on combining the somewhat interested and not interested responses, include learning how to flip a classroom (52%) and teaching a hybrid or fully online course (68%). These questions scored at the lowest interest level when compared to the other questions. Despite this low interest, one of the goals in this project will be to pilot these methodologies which are in line with technology learning trends across the country.

Even though there may not be overwhelming interest for this type of learning, that does not mean they are not effective or will not provide value in the classroom. These responses also may be the result of a limited background knowledge or experience with these models of learning. In the near future, as part of this leadership work, staff will be enrolled in a flipped professional learning course as “students” to support Schoology skill development. This will help develop aptitude and experience in these systems, and hopefully increase interest in these learning practices.

Question 11: Is each of the following a MAJOR challenge, MINOR challenge or NOT a challenge at all for you, personally, in incorporating more digital technologies and digital learning into your classroom pedagogy?

	Major Challenge	Minor Challenge	Not a Challenge At All	Total
General resistance by colleagues and administrators	16.00% 4	48.00% 12	36.00% 9	25
Time constraints	40.00% 10	44.00% 11	16.00% 4	25
Pressure to teach and cover content	48.00% 12	20.00% 5	32.00% 8	25
Access to school programs from home	28.00% 7	48.00% 12	24.00% 6	25
The use of a laptop that I can take home	40.00% 10	28.00% 7	32.00% 8	25
The operation of technology (logging in, speed and/or battery life)	32.00% 8	40.00% 10	28.00% 7	25
Lack of information about available products, changes in service and/or school vision	28.00% 7	48.00% 12	24.00% 6	25
Lack of resources and/or access to digital technologies among students	37.50% 9	50.00% 12	12.50% 3	24
Lack of training on available resources	40.00% 10	40.00% 10	20.00% 5	25
Lack of technical support (such as repair, troubleshooting, set-up) to use digital technologies consistently	24.00% 6	52.00% 13	24.00% 6	25
Your own lack of comfort, knowledge or training with digital technologies	16.00% 4	52.00% 13	32.00% 8	25

Question 11 Results/Discussion

Question 11 focuses on the barriers to the successful implementation of digital technologies and digital learning in the classroom environment. The top four perceived “major” challenges are pressure to teach content (48%), the use of a laptop to take home (40%), the lack of technology training (40%) and the lack of available resources (40%). This data is important because it directly relates to the ability of teachers to implement blended learning through an LMS. There are no district supported laptops that staff can sign-out and use from home, and this could limit the staff’s access to learning tools and the ability to participate in school sponsored or individual professional learning, research, or course development. Additionally, the lack of technology training is a limitation that I

have observed in my work at Polytech. There is no instructional technology teacher or coach who has the skills and training to support the transition to 21st century learning. These are barriers that will need to be addressed in the spring with the formation of a district technology committee.

However, Schoology does offer a solution for the challenges that teachers feel around delivering content. Since an LMS offers 24 hour access to content for students, the LMS may lessen the burden teachers feel regarding coverage and “depth” vs. “breadth.” This important benefit of an LMS will have to become a focus of professional learning in the future.

Question 12: In your opinion, what are some of the improvements that have been made in instructional technology over the last few years that also improved teaching and learning here at POLYTECH High School? Please support your response.

#	Responses	Date
1	Student email accounts, more laptops, stronger wifi signal, mimio technology, cloud access	6/11/2015 4:51 PM
2	smart and mimeo boards.	6/11/2015 3:00 PM
3	More labs available.	6/10/2015 1:03 PM
4	Being able to access what we need to present to students.	6/8/2015 2:56 PM
5	New computer systems and projectors	6/8/2015 8:43 AM

Question 12 Results/Discussion

This open-ended response question was designed to capture the staff’s perceptions about improvements that have already been made to the instructional technology system. In this case, the staff reported that improvements have been made in the number of projector systems, computer systems and laptops. Response number one summarizes these changes with “student email accounts, more laptops, stronger Wi-Fi signal, Mimeo technology and cloud access.” This modernization began recently, but prior to my arrival. Three years ago, a new principal was hired and two years ago, a new district supervisor

for technology was hired. Many of these changes are the result of their combined efforts to modernize the building and its technology infrastructure.

Polytech is perceived by some staff members to be playing “catch up” to other districts, and they believe the current instructional technology system is still in transition. However, in the survey the staff generally perceive that positive steps are being made. Blended learning with Schoology would not be possible a few years ago because the infrastructure did not exist. Therefore, timing is perfect to train and support Schoology and blended learning practices with staff because we now have the infrastructure to support it and teachers perceive that the technology system is adequate.

Question 13: In your opinion, what are some recommendations you have to further improve instructional technology here at POLYTECH High School? Please support your response. (Optional)

#	Responses	Date
1	move back to SMART technology	6/12/2015 8:14 AM
2	Initial training and Follow up to training	6/12/2015 8:10 AM
3	Continue work toward using schoology to assist grading and ease of access to material for students	6/11/2015 4:51 PM
4	There has to be a strict no cell phone policy. Cheating is on the rise due to cell phones and student attention during instruction time is on the decline due to texting, gaming, and web surfing while on cell phones during class time.	6/11/2015 3:00 PM
5	additional teacher training, hotline for tech support with human at all times, laptop for teachers that could double as their at school computer but could also travel home	6/11/2015 12:46 PM
6	get rid of the roadblocks from the State, tablets/iPads/laptops for every student	6/10/2015 2:58 PM
7	There need to be more laptop carts available. Having multiple carts teachers could check out would make the world of difference. The laptops and desktops are outdated and cannot keep up with demand/use of our students.	6/10/2015 1:03 PM
8	We'd like to have lap tops in the classroom for numerous reasons.	6/8/2015 2:56 PM
9	Offer online structured courses	6/8/2015 8:43 AM
10	Internet access for students and throughout he school	6/8/2015 7:51 AM

Question 13 Results/Discussion

Question 13 is very similar to question 12, but intends to capture the staff's recommendations for improving the instructional technology system in the future. Three respondents specifically mentioned the need for more laptops. Two respondents

indicated the need for more training, and one specifically mentioned the need to use Schoology for grading and accessing instructional resources.

Summary of Recommendations

Infrastructure and Capacity

In the open response questions, all respondents were focused on some element of wireless access, laptop access, or training. One respondent specifically mentioned using Schoology. Fortunately, these concerns are already being addressed through improvements planned by the district. Polytech School District recently invested over \$40,000 to improve the wireless connectivity and prepare for more connected devices. This need was also specifically cited in question six of the survey where only 56% of respondents agree that technology works effectively and efficiently and question 13 where teachers indicated that more laptops are needed.

As the building undergoes additional renovations there will be additional upgrades to the technology infrastructure and access. These upgrades include: increased bandwidth, rewiring sections of the building, new switches, new routers and single sign-on capability. The timeline and progress of these upgrades will be the charge of the district technology planning committee that will begin in the spring of 2016.

Accessibility, Responsiveness and Perceptions

Question 5 from the survey focuses on the types of technology that staff use personally and professionally. Besides school email addresses, share drives, cell phones, and some social networking, the staff do not use many new technologies that students may be using, or that are used for blended learning. For instance, the vast majority of

respondents do not use online file sharing, learning management systems, collaboration tools, or have implemented any online assessments.

There are some contextual factors related to technology infrastructure that can be impacting this. First, the staff do not have laptops that they can take home with them or take with them around the building. This prohibits professional learning exercises outside of the three computer labs in the building, and can be suppressing teachers' use of more sophisticated forms of technology in their instruction.

Second, the "profiles" and access to technology within the building do not allow customization of the devices based on the user, or the installation of programs by teachers. The computer "profiles" are locked down and only programs approved by the technology department are allowed to be used. In my opinion, this "locked-down" philosophy of technology, coupled with the absence of devices, has not only led to some negative perceptions of technology, but has also slowed the staff's willingness to commit to innovation. This might be part of the reason that so few staff, as indicated by question seven, have developed advanced technology practices that support blended learning practices.

Third, there are many programs that are supported by the district that are not being used. The reason may be that there is no instructional technology training available to teachers in a consistent and coherent way. In question six, 68% of respondents indicated that they need more training on these applications and resources. Because the district spends a great deal of money on these programs, better training is needed to make the most of these expenditures.

The majority of staff believe that society, and students, are changing as a result of technology, and that this is affecting their classroom. However, only 61% said they believe that there is a strong vision of instructional technology at Polytech High School. Further, 92% of respondents believe that teens need more training on how to use technology and perform research.

Recommendations. First, I believe the district needs to rethink the accessibility of devices and examine how to improve the customization of the computers for the end user. This will help teachers to better leverage widely available online tools. One recommendation would be to provide laptops or tablets to all teachers. This would extend our faculty's ability to perform work duties outside of school and would allow them to engage in professional learning and PLCs with the aid of technology and collaboration tools.

Second, I believe the district needs to provide more time for technology training on technology programs that are currently licensed by the district. These tools include Impero, Camtasia, Discovery Streaming, Apex Learning, Filr, Google Apps and Schoology. In order to accomplish this goal we need to pull the usage analytics on these tools, as well as their costs, and determine if their usage and benefits justify the cost. If these programs are justified, or there is no alternative and cheaper tool, the district should then embark on training and support for these tools while holding staff accountable for their use, where applicable.

In the survey, teachers noted that the responsiveness of the technology department was positive (84%). However, with the introduction of new programs and potentially new devices, there will be increased demands that may negatively impact the instructional

system and actually take us backwards. For instance, implementing Schoology or Google Apps may tax the existing support system that can lead to an inability to address current work tickets, as well as the inability to support the new system. Further, as these systems expand to all students, we must ensure mechanisms are in place to troubleshoot technical issues, solve problems and maintain a positive perception of the technology tools. Using a small, supported, and scalable approach, the possibility exists to renew faith in the instructional technology system as a whole.

Current Instructional Technology Practices

The vast majority of online activities that teachers have students engage in center on research, downloading information, and recording/embedding audio or video files. They do not have students engage in discussions, take online assessments, edit work collaboratively, submit assignments online, or develop websites, wikis, or blogs.

Question eight also shows that staff under-report internet access rates of students as well as computer access and those that have a smart phone.

Recommendations. My recommendations center primarily on question number seven. Since staff report that they have not regularly engaged in blended learning practices as part of their classroom, then we must develop professional learning opportunities that allow staff to learn these practices. For instance, a staff professional learning course could be created in Schoology and all staff could be added as students to develop an understanding of blended learning practices. This would also allow the administration to model the use of these practices in Schoology and support existing building management and instructional initiatives. It may be beneficial to support and

train the Building Leadership Team in Schoology first, prior to training the full staff. This leadership team is made of the twelve section leaders in the building that meet on a bi-weekly basis throughout the year. This initiative would create a small scale learning environment for the Building Leadership Team that could prepare them to go out into their departments or PLC meetings to support the use of the new LMS and blended learning practices.

Future Technology Goals.

The responses for question ten, which are focused on what the staff would be willing to learn more about are evenly distributed by “very interested,” “somewhat interested” and “not interested at all.” Some trends in the data point to a staff that are very interested in piloting new laptops, using web-based literacy strategies, and creating/using online assessments. The responses to this question also demonstrate that staff that are not as interested in flipping a classroom or teaching an online course.

Question number eleven, which addresses the challenges to implementing technology in the classroom, shows that staff see the pressure to cover content, time constraints, lack of a laptops, and lack of training as primary challenges to their further implementation of technology.

In question twelve, many of the staff cite that more laptops and computer systems have become available over the last few years. However, question thirteen also has several responses that show the need for continued access to laptops within the school, the need for staff computers, and more training for staff.

Recommendations. The first recommendation for the future technology integration practices include the development of a strategic plan. This plan should start by

focusing on student use of technology in the classroom and by examining the types of skills that college students and post-graduates should have. For instance, we know that the world is becoming more mobile and social than ever before and that there are new ways of communicating and collaborating that simply did not exist a few years ago. We also know that all students must be fluent in multiple technology ecosystems (Google, Apple, and Microsoft) and that they should be able to customize their technology to support their own unique behaviors and styles of learning. I would argue that the knowledge of all these systems, how they interact with each other and are used for learning, are skills that are as important to college and career preparedness as mastery of the CCSS.

The second recommendation is to not treat technology as a separate skill. It must be tied to the existing literacy strategies that are currently a school-wide focus. The key to this work moving forward, and leadership in 21st century, is for administrators and coaches at Polytech High School to provide integrated and consistent professional learning opportunities that combine these technology practices and building literacy initiatives.

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Appendix E

BUILDING LEADERSHIP TEAM (BLT) PROFESSIONAL LEARNING COURSE

Artifact six of my Educational Leadership Project (ELP) is a Professional Learning (PL) course developed and implemented with Schoology for the Building Leadership Team (BLT) at Polytech High School (PHS). The goal of this artifact is to develop new knowledge about Schoology and model blended learning practices with our school's teacher leadership, prior to widespread staff and student use. In this case, the administrative team acted as the "teachers" of the course, and the teachers acted as the "students" thereby modeling blended learning practices.

This artifact is written to inform other administrators and building leadership teams about the goals, design, content, management, and implications of this approach. Many Delaware schools are in the midst of a digital transition because of the statewide purchase of Schoology, and there is a need for quality program models that blend professional learning for staff.

An additional element to the BLT PL course is a flipped book study. The goal of incorporating a book study into this course was to utilize flipped instruction, which is the most common form of blended instruction (Tucker, 2012). The text, *Cracking the Common Core: Choosing and Using Texts in Grades 6-12* (Lewis, Walpole & McKenna, 2014), was selected and used with Schoology to provide an exemplar of face-to-face and online instruction that teachers could easily translate into classroom practice with their own texts. This also supported a building-wide instructional focus on the development of literacy strategies related to the Common Core State Standards (CCSS).

These two approaches, the blended course and flipped book study, are combined in this artifact as a single summary since they were both implemented concurrently with the BLT in the fall of 2015. For instance, the online pre-work developed around learning specific Schoology tools, and assigned readings from chapters was then discussed in a single face-to-face BLT session.

Why a Building Leadership Course?

The BLT is the “pulse” of the school. It is a collection of 12 section leaders who represent academic teachers, career-technical teachers, and building administrators. The purpose of the BLT is to promote a shared leadership model for implementing school-wide instruction and management improvements. The information discussed in the bi-weekly BLT meetings after school on Mondays is then shared with all staff through section or department meetings on Tuesdays.

The reason for starting with the BLT is the clear, but indirect, relationship that principals have over student learning through their ability to develop a mission, set goals, and direct professional learning in their buildings. Waters, Marzano, and McNulty (2003) found in their studies spanning some 30 years and 70 research studies, that “there is, in fact, a substantial relationship between leadership and student achievement” (p. 3). Even though there are very few studies that can find a direct relationship between principals and student achievement, Hallinger, Bickman, and Davis (1996) found strong evidence that principals have a mediating effect between school and classroom variables such as instruction and school climate that do impact student achievement.

Supovitz, Sirinides, and May (2010) found four key factors in the professional literature, that when emphasized by principals, can positively influence teaching and

learning. Three of these factors are (1) setting the mission and goals, (2) encouraging trust and collaboration, and (3) actively supporting instruction. The last factor (4) is the influence that principals have on the informal leaders and instructional networks within school buildings that shape the culture. This is one of the most important aspects of my ELP work. Principals play an important role shaping and influencing the interactions of these instructional or advice networks around teaching and learning initiatives. These four factors, when managed effectively, can form a strong foundation for increasing student outcomes through a common vision in the building.

Quality PL within the BLT meetings is the primary way these four factors were shaped at Polytech High School. The BLT is central to the relationships within the building and the knowledge of teaching and learning that administrators and teacher leaders develop together. Therefore, a BLT PL course using Schoology, while modeling blended learning practices, became the perfect opportunity to set the instructional priorities, build trust, and gain commitment to blended learning with literacy. Additionally, this process indirectly influences all the teachers in the building.

I used Guskey's (1999) professional learning framework to guide my thinking about professional learning in PHS. Guskey's four principles include: (1) a clear focus on learning and learners; (2) an emphasis on individual and organizational change; (3) small changes guided by a grand vision; (4) ongoing professional development. With these frameworks in mind, I analyzed the existing content, processes, and contextual elements of the existing BLT meetings. I then used this analysis to determine what steps should be taken to connect these elements of the BLT to the new tools available in Schoology. In

this case, I relied on my previous experiences at the Caesar Rodney School District coordinating PL across the district.

The discussions during the BLT meetings typically focus on building instruction and management topics. The agenda is created when members of the BLT communicate a concern via email to administration. The administration also adds items to the agenda that focus on building-wide instructional improvements and management procedures.

When the BLT began in for the 2015-2016 school year, the content of what we discussed around instruction and management remained unchanged. However, now there were new elements that included Schoology, blended learning, and literacy as procedurally embedded constants for each meeting.

How the professional learning occurred became the largest shift with the introduction of Schoology and computers to the BLT meetings. Prior to the summer of 2015, laptops were not used within the BLT and the agenda was presented at the beginning of the meeting with little time to process the content for discussions. Adding computers and using Schoology effectively moved the BLT toward a “flipped” model of instruction whereby “learning became the constant and time became variable” (Van Der Ark, 2012, p.232). With 24-hour access to Schoology, participants completed “pre-meeting” tasks at their convenience. This modeled the most common form of blended learning, often referred to as “flipped” learning. This allowed the development of background knowledge on the topics being discussed in the BLT, enhanced time for processing, and allowed for better discussions during face-to-face time. Additionally, this change provided an opportunity to introduce the Schoology learning management system and its vast array of interactive applications and tools.

These “flipped” learning opportunities enabled the staff to conceptualize and actively engage in blended learning practices. This experience is important considering the current trends in online and blended learning for schools. If these current trends continue, most courses will be blended with the aid of learning management systems and technology in the future, which leverages the technology skills that students are proficient, or easily capable of mastering, in 9th grade at Polytech High School.

Goals and Timeline

On August 17th, 2015, at the first BLT session for the 2015-2016 school year, the face-to-face meeting focused on logging-on, orientating, and navigating within Schoology. The overall goals of the BLT professional learning course for 2015-2016 school year included:

1. Modeling and supporting blended learning practices with Schoology.
2. Discussing student pilots and instructional technology system improvements.
3. Designing seven flipped Schoology sessions concluding December 7th, 2015.
4. Supporting literacy development with seven “flipped” book discussions.
5. Supporting Schoology knowledge development with specific learning goals.

BLT Course Components

The primary design elements of the Schoology professional learning course focused on collaboration, shared leadership, and a requirement to preview information ahead of time as part of a flipped routine. Every BLT member had access to a device outside of school and the first crucial step within the BLT’s face-to-face meetings was providing access to computers for every meeting. Initially, this started out with Dell laptops. However, a cart of Chromebook computers was introduced in October 2015. The

BLT were the first staff members to use the devices, which were purchased for their ease of management, long battery life, and fast start-up time.

Collaborative agenda. The agenda for every BLT meeting during the 2015-2016 school year is available by “<http://tinyurl.com/jda6gr8>.” The agenda, collaboration, and recording of minutes for the BLT meeting was transformed by using a Google document and embedding the document into Schoology. Additionally, anyone could record the meeting minutes on the document or make comments before, during, or after meetings.

By placing this document in Schoology and simply “drop and dragging” the document between folders, the accessibility of the agenda for the BLT members improved. It became part of the BLT members’ routines to review the agenda ahead of time along with the other pre-work session components; this increased the collaboration and discussion during the face-to-face BLT meetings. This also allowed the BLT members to copy the document for sharing at their own section meetings that followed the BLT sessions.

Book sign-up and presentations. Another example of distributed leadership and collaboration was how the book discussion was managed in Schoology with the BLT members. Another Google document was developed and used to coordinate the reading of each chapter throughout the seven sessions. This allowed the BLT members to pair up and present at the beginning of each BLT meeting. At the first meeting on August 17th, 2015, BLT members teamed-up and signed-up for one of the six sections on the Google document. This document is available by “<http://tinyurl.com/jxmxt4p>.” As part of this assignment, each group was required to develop presentation material, post the material in Schoology, and then lead the discussion at their assigned BLT meeting date. In this

document, the book was broken up into six sections using the *Cracking the Common Core* page numbers to balance the amount of reading prior to each meeting. Each BLT member was also required to read the same chapters independently as part of the assignment. Next, during each BLT meeting, the groups were required to present their information. As each group presented, the information was discussed and recorded on the same document, thereby expanding the document over each successive meeting as part of this collaborative process.

State Schoology course. An in-depth understanding of Schoology was one of the primary goals of developing this work with BLT members at PHS. In order to support their understanding of the system, an additional routine was developed for BLT members focused on the use of a state developed, fully-online, self-paced, professional learning course. Since Schoology is a state-wide initiative and I have a close relationship with the Director of the Delaware Center for Education Technology (DCET), I was able to gain administrative access to this course, copy it to my own resources, and break up the course to blend learning for BLT members. This changed the use of the course from an independent, fully online course to a blended component of my BLT course and allowed me to model research-based best practices around blended learning. In this case, I supported the development of background knowledge by allowing BLT members to view the course components. The next steps then became supporting an extension of their learning through application tasks and allowing for clarification during face-to-face discussions. Finally, this course also provided each BLT member eight hours of professional learning credit as part of the BLT course.

Inside the Professional Learning Course

The figure below shows the first four meeting folders in the BLT course. The screenshot of course modules, below, demonstrates the instructional routine that I developed for this blended course.

The screenshot displays a list of course modules in a web interface. Each module is represented by a folder icon, a title, and a list of tasks. The modules are as follows:

- Meeting 1 - BLT Resources - August 17th** (Pink folder icon)
- Meeting 2 Pre-Work** (Yellow folder icon)
 - Task 1 - **Setup** your Profile, Privacy, and Notification Settings
 - Task 2 - **Read Book** Chapter 1
 - Task 3 - **Preview State Schoology Course** Parts 1 and 2
 - Task 4 - **Submit** ANY attachment to the task 4 assignment
- Meeting 2 - BLT Resources - September 21st** (Yellow folder icon)
- Meeting 3 Pre-Work** (Green folder icon)
 - Task 1 - **Post** an Image to the Media Album - Try it from your Cell!
 - Task 2 - **Read Book** Chapters 2 & 3
 - Task 3 - **Preview State Schoology Course** Part 3 Resources
 - Task 4 - **Submit** a Sample Assessment

Available after 9/18/15 3:00pm
- Meeting 3 - October 5th** (Green folder icon)

Available after 10/05/15 8:00am
- Meeting 4 - Pre-Work** (Pink folder icon)
 - Task 1 - **Send** a "Connection" request to a member of the BLT
 - Task 2 - **Read Book** Chapters 4 & 5
 - Task 3 - **Preview State Schoology Course** Part 4 Sharing
 - Task 4 - **Submit** a Discussion post Regarding Schoology Uses

Available after 10/05/15 3:00pm
- Meeting 4 - October 19th** (Pink folder icon)
 - Please review today's discussion questions in this folder from the "Cracking the Common Core" book and feel free to respond now or have one ready for today's meeting.

Available after 10/19/15 8:00am

Online and Face-to-Face Session Components for Four Meetings

Each of the meetings had a different color and name, and every face-to-face meeting had an associated “pre-work” folder which contained all the tasks BLT members were to complete in advance of the face-to-face discussion.

For each meeting, the “pre-work” consisted of four tasks that were to be completed in advance of the face-to-face session. The goal of this flipped learning routine was for participants to develop new knowledge and allow more time for activating prior knowledge, processing, researching, and discussing the literacy concepts in advance of the face-to-face BLT session. This avoided the previous BLT meeting routine where the agenda was presented at the meeting and opinions and consensus was sought from participants on the spot, with little to no preparation by the BLT members.

Included below is a description of each of the pre-meeting tasks. In these examples, it is important to note that meeting one did not involve any pre-work tasks. Overall, there were seven face-to-face meetings with six online pre-work for sessions required prior to face-to-face meetings two through seven.

Task 1

Task one typically focused on orientation, navigation, or background knowledge development in Schoology prior to each face-to-face meeting. As an example, in meeting two above, participants set up their Schoology profile and privacy and notification settings. Task one in all six pre-work sessions focused on supporting BLT members with understanding Schoology and blended learning principles for eventual use in their classrooms. A list of all the task one topics for each pre-work session is included below. There was no pre-work for meeting one, resulting in six pre-work meeting tasks.

- Meeting 2 pre-work: Setup your profile, privacy, and notification settings.

- Meeting 3 pre-work: Post an image to the group media album.
- Meeting 4 pre-work: Send a “connection” request to another member of the BLT.
- Meeting 5 pre-work: Read *Teens and Social Media* (2015) and post to the discussion.
- Meeting 6 pre-work: Have your students’ log on to Schoology.
- Meeting 7 pre-work: Have your students post to a discussion board.

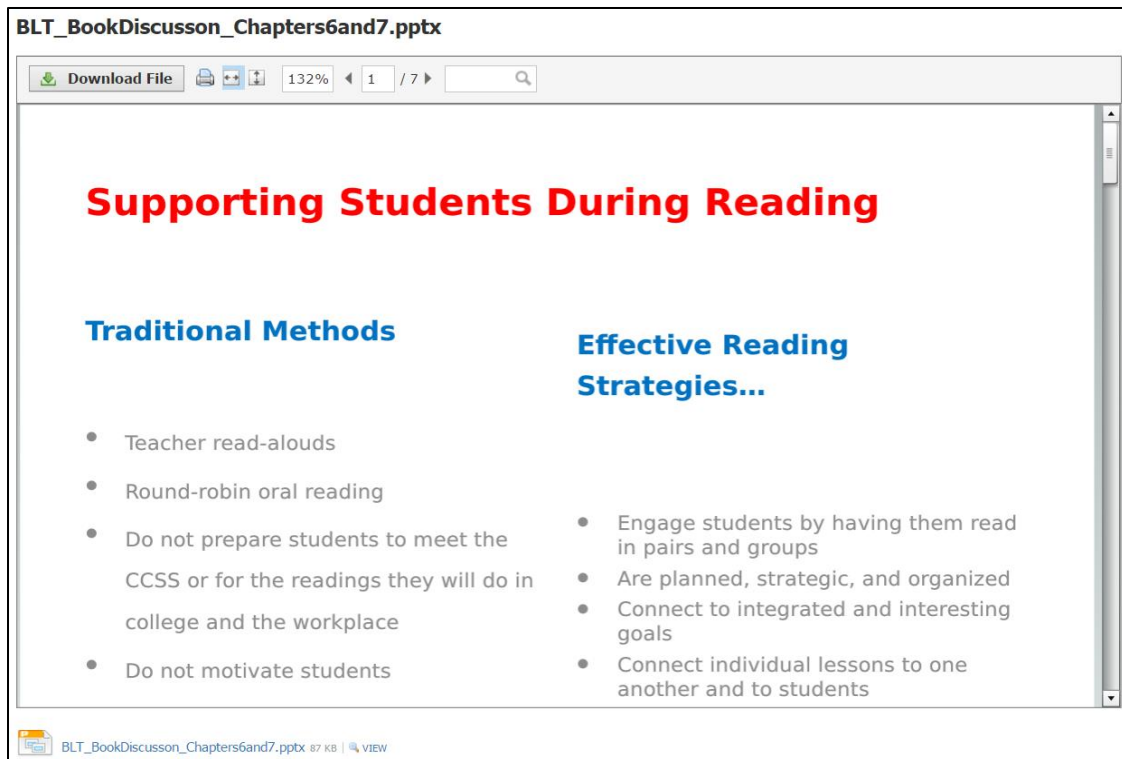
Task 2

This task focused on reading chapters in the book as part of the flipped book study. The list below shows all the chapters covered during each of the pre-work sessions.

- Meeting 2 pre-work:
 - Chapter 1 – Embracing the Common Core
- Meeting 3 pre-work:
 - Chapter 2 – Understanding Adolescent Readers
 - Chapter 3 – Understanding Challenging Texts
- Meeting 4 pre-work:
 - Chapter 4 – Designing Challenging Text Sets
 - Chapter 5 – Building Background Knowledge
- Meeting 5 pre-work:
 - Chapter 6 – Supporting Students during Reading
 - Chapter 7 – Implementing High-Quality Discussions after Reading
- Meeting 6 pre-work:
 - Chapter 8 – Text-Based Writing to Support Understanding

- Meeting 7 pre-work:
 - Chapter 9 – Research in the Content Areas

As previously mentioned, a collaboratively editable Google document was embedded in Schoology to manage the BLT member sign-ups, order of the presentations, and summary notes and discussion for each presentation. This document is available at “<http://tinyurl.com/jl82npv>.” Examples of the tools that the BLT members created and used during their presentations included polls, PowerPoints, pdf documents, discussion boards, and an online quiz. I supported this process by providing administrative access to Schoology to the presenters along with ideas for the types of resources they could try. This assisted the BLT members in taking the information learned in the Schoology course and focusing their learning towards direct application within the system. The example below is a PowerPoint presentation slide that was embedded in Schoology showing effective reading strategies based on chapters six and seven in the *Cracking the Common Core* text.



Presentation Example for Chapters 5 & 6

The figure below shows a portion of the Google document used to coordinate the presentations for the groups. It illustrates the date of meeting two, the chapter to read, the BLT presenters, and the notes that were collaboratively taken using the Google document.

Each group was required to develop an essential question that guided the other BLT members during the presentation.

2 - September 21th	Ch. 1 – Embracing the Common Core 1-14 (Next Session)		1.Lisa Layton-Krout 2.Elyse Starr
<p>1. How can the non-ELA teachers support the literacy standards without having to add more to an already rushed curriculum or without having to completely revamp their lesson plans?</p> <ul style="list-style-type: none"> • We all must be literacy teachers and the common ground plan was written for all subjects and teachers • Finding one good strategy and making it “stick” <p>2. How important is it for embracing the standards to be “shared responsibility” at POLYTECH? Why?</p> <ul style="list-style-type: none"> • It is not just the ELA teachers and literacy (before, during, after) needs to be embedded in the content area. It is not a separate thing. <p>3. What do we do when the text is in the appropriate grade band, but the concepts are way above a student’s realm of understanding?</p> <ul style="list-style-type: none"> • Goes back to the four PLC questions <ul style="list-style-type: none"> ○ 1. What do we want students to learn? ○ 2. How do we know they learned it? ○ 3. What if the learned it? ○ 4. What if they didn’t learn it? <p>4. We looked at the science example in the Appendices, and while it is grade-level appropriate for literacy, it is too complicated of an idea for the average 11th-12th grade science student. Even adults could have problems understanding the concept.</p>			

Chapter Sign-up and Discussion Questions for Meeting Two

Task 3

Task three always focused on using the State of Delaware, self-paced, eight-hour, Schoology course. The course was broken up over the six sessions allowing BLT members to learn a specific skill or set of tools prior to discussion in the face-to-face meetings. This course covered topics such as creating courses and content, gradebook features, resources, sharing learning objects, using groups, and blended learning practices. As these tasks were learned by the BLT members, they could also be applied through the book chapter presentations in the task 2 activities. The pre-work tasks for each face-to-face meeting session are below.

- Meeting 2 pre-work: Schoology course parts 1 (Introduction) & 2 (Courses)

- Meeting 3 pre-work: Schoology course part 3 (Gradebook)
- Meeting 4 pre-work: Schoology course part 4 (Organizing resources)
- Meeting 5 pre-work: Schoology course part 5 (Collaboration tools)
- Meeting 6 pre-work: Schoology course part 6 (Blend your classroom)

Task 4.

The last task in the pre-meeting work focused on specific application tasks. I designed these tasks to be “graded” and I awarded badges to the teachers when they completed these tasks. I wanted to demonstrate how reinforcement could be used with their own students. In meetings five, six, and seven pre-work, these tasks changed at the request of BLT members to include the use of Schoology with students. The complete list of these tasks is below.

- Meeting 2 pre-work: Submit any attachment to the assignment (Course assignments)
- Meeting 3 pre-work: Take a sample assessment designed in Schoology (Gradebook)
- Meeting 4 pre-work: Read an article and post to the discussion board (Resources)
- Meeting 5 pre-work: Review your courses in Eschool and Schoology for Sync accuracy
- Meeting 6 pre-work: Watch the video on logging into Schoology for students
- Meeting 7 pre-work: Create a discussion post or poll to be used with students

An example of an application task is below. This image captures the meeting two pre-work in which the participants in the BLT course were required to submit any attachment to the online assignment. The goal here was to mimic how students would

submit an online assignment. I also enabled the assignments to allow comments. This allowed the teachers to ask questions, mirroring how a student would ask questions in the future. It is also possible to see that out of the 10 participants that could have submitted the assignment, eight of them did it “on time.”

Meeting 2 Pre-Work

[< Prev](#)
[Next >](#)

Task 4: Submit an Assignment

Due: Monday, September 21, 2015 at 3:00 pm

Task 4

Submit ANY attachment to this assignment

Posted Sat Aug 8, 2015 at 6:14 am

Comments

just checking to see if I have this correct. BLT meetings are on the 1st & 3rd Mondays..... so our we should not meet on Sept 14th?????

[Reply](#) · [Like](#) · [Delete](#) · Tue Aug 25, 2015 at 7:35 am

Hi Lisa, I fixed them all in the BLT course for the 1st Semester.

[Reply](#) · [Like](#) · [Delete](#) · Tue Aug 25, 2015 at 10:03 pm

I am attempting to submit an attachment, but I think I cannot do so because I have been added as an administrator to this class. I think Dennis will be in the same boat. Am I on the right track, or am I just missing the way in which we submit assignments? Thanks!

[Reply](#) · [Like](#) · [Delete](#) · Sun Aug 30, 2015 at 9:55 pm

I fixed it!

[Reply](#) · [Like](#) · [Delete](#) · Tue Sep 8, 2015 at 12:12 pm

Submissions
[Received \(8/10\)](#)

10/10 · On time

10/10 · On time

10/10 · On time

10/10 · On time

10/10 · On time

10/10 · On time

10/10 · On time

10/10 · On time

Example Online Submission with Discussion Board

Course Access

The summary provided in this narrative is to share the highlights of this single course, including the goals, timeline, and specific tasks that helped implement Schoology at Polytech High School. A full picture of the course can be viewed online.

References

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Appendix F

BUILDING LEADERSHIP TEAM (BLT) FOCUS GROUP

Artifact 8 for this Education Leadership Project is an evaluation, in the form of a focus group, which I conducted with members of the Polytech High School (PHS) Building Leadership Team (BLT). The purpose of this focus group was to evaluate how the introduction of Schoology and blended learning with technology has changed the BLT. Additionally, I was interested in whether the use of Schoology to design and implement blended professional learning was effective and has resulted in a positive perception of the learning management system. As a secondary priority, I will use the analysis of the focus group data to design professional learning with staff, and training for students, as Schoology use expands throughout the building.

The original goals of the BLT course included:

1. Modeling and supporting blended learning practices with Schoology.
2. Discussing student pilots and instructional technology system improvements.
3. Designing seven Schoology sessions concluding December 7th, 2015.
4. Supporting literacy development with “flipped” book discussions.
5. Supporting Schoology knowledge development with application tasks.

To understand the effectiveness of this training, I chose to use a focus group as an evaluation tool since focus group dialogue often generates rich information, and because a focus group is a relatively low cost and efficient way to generate evaluative information (OMNI Institute, 2015). Because the members of this focus group were also part of the Building Leadership Team (BLT), and invested in the mission of the school, they were also able to provide unique insights based on their history, context, and role at Polytech.

There are three sections to this artifact. The first section describes the recruitment and composition of the focus group and the considerations taken for the protection of human subjects. The second section includes the checklists that I used to prepare and moderate the focus group. The third section is an analysis of each question and a summary of the trends that emerged across all of the focus group questions. The last section also includes the conclusion and the limitations to this artifact. I used all of this information to refine Appendix H, which is a professional learning course for all staff at PHS.

Designing the Focus Group

Identification and Sampling

There are 17 total members in the BLT. Of these members, there are twelve section leaders (six academic and six career/technical) and five administrators. For the purposes of this focus group, I used both exclusionary and screening criteria to find a minimum of four participants. I then performed the exclusion and screening using the following steps.

- Exclude administrators due to bias (five administrators).
- Exclude any new members of the BLT for the 2015-2016 school year due to an absence of context with previous BLT meetings (four teachers).
- Invite the remaining BLT members to participate (eight teachers).
- Select six team members to guarantee a minimum of four total participants.
- Select three males and three females.
- If possible, select three career/technical education (CTE) teachers and three academic teachers.

In order to clarify the purpose of this focus group, I developed the following statements about the goals of the focus group and sent them to the eight eligible participants through Microsoft Outlook with the date, time, and location of the focus group's session. Sending statements prior to the group meeting helped clarify the purpose of the evaluation activity and is considered a best practice for conducting focus groups (Krueger, 2002). The statements were:

- Reflect on and evaluate the implementation of Schoology with the BLT since the beginning of the year.
- Determine the next steps for using Schoology with students.
- Determine the next steps for using Schoology with staff.
- Identify the best ways to train and support staff and students.

Of the eight invitations that I sent out, five members of the BLT team accepted and agreed to participate. The final number of focus group participants was four females and one male (n=5). This included three academic teachers and two CTE teachers.

Protection of Human Subjects

This research involved the use of human volunteers; therefore, I followed the Institutional Review Board's (IRB) Human Subjects Protocol and Review Procedures in accordance with University of Delaware policy (2015). This IRB process occurred on 12/12/15. As a result, this study was deemed exempt by the IRB since the research occurred in commonly accepted educational settings, and will not be published in any journals or used in conference presentations.

Advance Organizer/Research Questions

According to Jayanthi and Nelson (2002), an advance organizer contains “brief, written information given to focus group participants in advance of a meeting to organize their thoughts” (p. 57). Two days prior to the implementation of the focus group, I emailed the research questions below to participants along with the IRB consent form. I designed these questions to help facilitate the discussion during the face-to-face time in a logical way. The questions allowed the participants to develop their thinking, activate their prior knowledge, and even do cursory research. The research questions are included below.

1. From the first BLT session on August 17th and up until now, how has the implementation of Schoology changed the BLT?
2. How do you feel about your ability to access Schoology and navigate the resources based on the training you received in the BLT sessions?
3. With regards to the pre-work for each session, do you feel that everyone completed the tasks?
4. Did the pre-work activities help develop background knowledge for the group discussions?
5. Some of the pre-work activities centered on developing Schoology skills with specific tasks that were developed by the state. Did these tasks help develop your knowledge and use of Schoology?
6. Task 3 focused on implementing blended learning with a “flipped” book study. The goal was to use this book to discuss literacy practices related the Common Core State Standards (CCSS). Was this successful? Why or why not?

7. As a result of the BLT discussions, Polytech Advisement Support System (PASS) was developed and implemented using Schoology in the staff professional learning course. Has this been successful? Why or why not?
8. What other ways do you think we could use Schoology in the building for professional learning purposes?
9. What additional training do you think the staff need to allow a better implementation and use Schoology in their classrooms?
10. What barriers exist to using Schoology in more classrooms here at Polytech High School?
11. How would you train students to become proficient in using Schoology?

Beginning the Focus Group

According to Jayanthi and Nelson (2002), “it is not an oversimplification to say a focus group’s success hinges on what the moderator conveys to participants during the first ten minutes” (p. 82). As participants walked into the room, I greeted each one of them and directed them to their assigned seats around the recording device. Each seat also had the consent forms to sign and the list of focus group questions. The focus group began with an ice-breaker: “Why did you decide to participate in this focus group today?” I did not need to establish a specific protocol or have participants introduce themselves since these individuals know each other from their work within the BLT.

Monitoring the Focus Group

Jayanthi and Nelson (2002) provided several checklists that I reviewed and modified to create a customized list for beginning and moderating the focus group. These

lists were used as a quick reference tool to prepare the room, start the group, and moderate the group to ensure the process would run smoothly.

Before the Focus Group	Starting the Focus	Focus Group Moderating
<ul style="list-style-type: none"> • Have committee review the focus group questions • Develop and implement screening and exclusion criteria • Develop IRB letter and consent form • Contact eight participants with invitation and goals • Book the main conference room • Obtain approval to conduct a focus group during exam days • Sign out a recording device and practice operation • Email consent form and advance organizer to eligible participants two days in advance • Assign seats for audio quality 	<ul style="list-style-type: none"> • Ensure room is clean, organized, and comfortable • Setup/start recorder • Turn off PA system • Greet participants • Introductions, explain the purpose, consent forms, and opt-out procedures • Have participants sign the consent forms • Explain ground rules for discussion and question/ answer order • Introduce list of questions • Conduct ice-breaker activity 	<ul style="list-style-type: none"> • Ask questions as planned with a goal to end focus group by 3:00 • Limit the focus group to one hour • Take notes on non-verbal communications • Paraphrase, summarize, and clarify responses • Keep participants on the question/topic • Give everyone a chance to speak by rotating questions • Use probing techniques in open-ended form

Focus Group Checklists

Recording and Moderating the Focus Group

During the focus group, I collected data using both a tape recorder and handwritten notes. To collect the audio, I used a Tascam audio device signed out from the Polytech Broadcast Media department. I had the recording transcribed and then coded the file using the constant comparative method. The hand written notes were used primarily to capture the non-verbal cues, which go along with each response discussion. These non-

verbal communications include eye contact, hand movements, or other body movements (Holton, 2007).

After I conducted the icebreaker activity, I asked questions in a clock-wise fashion starting to my left. This allowed each participant an equal opportunity to participate and share his or her original thoughts. Throughout the focus group discussion, three different probing techniques were used to elicit more detailed responses. These three techniques included stimulate, extract, and clarify probing techniques (Jayanthi & Nelson, 2002). In order to stimulate responses, participants were asked what they think another member of the BLT might think about a particular topic or question. This became useful if the dialog on a particular question was particularly brief. I also asked other participants who were not participating or were quiet what they thought, or if they had anything to add to the topic, an extraction technique. My goal was to get the participants to contribute meaningfully to the conversation by making the conversation relevant to them. Finally, I used a clarification strategy to focus on reiterating, summarizing, and asking for examples. This forced the participants to “back up” what they said with concrete statements on why they felt the way they did.

Data Analysis

After conducting the focus group, I paid for a professional transcription service (GMR transcription services) to transcribe the audio recording to text. The one-hour recording resulted in 58 pages of transcribed data. I then began the work analyzing the data. This included analyzing the responses for trends and searching for supporting statements for those trends after the trends were identified. I began with underlining key words and writing down conceptual categories for each pattern. These same key words

were then used to identify patterns across questions that supported the primary goals of conducting this focus group. For this analysis, I will review the discussion related to each question. At the end of the artifact, I will then review the primary trends as they relate to the intended goals of the Schoology implementation plan and the BLT professional learning course.

1. From the first BLT session in the beginning of the year on August 17th and up until now, how has the implementation of Schoology changed the BLT?

I coded the data for this question into three primary categories. These categories are easy access to the materials, being able to easily present the notes at section meetings, and the use of laptops as an improvement over previous BLT meetings.

Regarding accessing of the course materials, one member of the group stated that the materials are “more accessible upfront...with less steps required than getting into the teacher share-drives.” Further, the materials are “very concise with the ability to look over the materials ahead of time.” This allows the section leads to “bring it up on Tuesday morning with the whole section to show everyone, as opposed to handwritten notes.” This increased the ability to “deliver information in a substantive and consistent way that had not been done before.” Since all the information is digitally stored on Schoology, it stays in one place and is easily accessible by team members.

Since this information is digitally stored, the participants needed laptops to access the materials during the BLT meeting. In order to facilitate this process, I would wheel a laptop cart into the BLT meeting each time. When the focus group was asked how laptops use changed their meetings, they stated that the use of laptops was “huge” and that “laptops have really changed the meetings” and that the BLT “is much more productive” because of them. In previous years, laptops were not used in BLT meetings

and focus group members indicated that they were happy with this change. The other participants provided “yeah” statements and smiles when discussing laptop use to affirm this statement.

2. How do you feel about your ability to access Schoology and navigate the resources based on the training you received in the BLT sessions?

The trends that emerged in question two focused on the login problems that occurred during the first session on August 17th, 2015. Getting all the participants to login to the laptops and find the resources in Schoology during their summer vacation was not a smooth process. This was the first time using Schoology and Google with any staff in the building. One respondent stated that there were “initial problems getting everyone logged on.” Once everyone was logged-in, participants felt that the folder contained “a lot of information” and that they were “not in school mode at that time.” The reason for this perception is the folder containing the documents at the beginning of the year had 21 files for them to review as soon as they got to the meeting. This information was not sent out ahead of time for them to preview.

After discussing the challenges of the first summer session, the group discussed the routines of the next six BLT meetings. These routines began with an online learning session in Schoology that I referred to as pre-work. The goal of the pre-work sessions was to have participants both develop background knowledge about the professional learning topic, and learn about a specific application task in Schoology. The focus group panel stated that they “liked the pre-stuff” or pre-work, and “completing specific tasks” to learn about Schoology. When discussing the routine of viewing the pre-work information to develop background knowledge prior to face-to-face meetings, one participant noted that by learning this way” I am better able to see the problems that I might have in my

classroom when we roll it out to students.” Another respondent added that “our confusion may be their [the students’] confusion and we will know how to handle this in the classroom.”

3. With regards to the pre-work for each session, do you feel that everyone completed the tasks?

The respondents felt that the BLT members did not fully complete all tasks. They stated a number of reasons why they had not completed the background knowledge and application tasks designed in Schoology as pre-work. These responses ranged from “my priority was my kids,” “grading,” “no motivation to do stuff at home,” “my semester workload increased,” and “personal matters.” It did not appear that pre-work tasks were a priority and each member seemed to have a reason for not completing some of that work.

Despite not having completed all the tasks, one respondent indicated that they “liked that the materials were all there in one location.” Another respondent indicated that she intended to “go back and do the things that were needed within the next two or three weeks.” One respondent indicated, “Schoology is a perfect delivery system for the way that I learn, but not everyone did the activities.” The dominant trend that emerged in all of these instances was that BLT members needed more time to complete the Schoology tasks.

4. Did the pre-work activities help develop background knowledge for the group discussions?

We skipped this question since the participants felt they had already addressed this question in question number three. They agreed that the pre-work activities were beneficial to the BLT’s learning, but that they needed more time to complete the

activities, and because of the time constraints, BLT team members often did not complete the work.

5. Some of the pre-work activities centered on developing Schoology skills with specific tasks developed by the state. Did these tasks help develop your knowledge and use of Schoology?

Three of the respondents indicated that they did not finish or complete all the tasks assigned for the same reasons addressed in question three. Overall, participants thought the resources provided were beneficial and helped them develop background knowledge in Schoology. For the modules that were completed, the participants thought the “videos are good,” and thought it is “really critical that we complete the tasks.” Completing these tasks and attending the meetings are part of the stipends that they receive for being BLT members. From these statements focus group members they felt there was value in completing the state-developed tasks to develop Schoology expertise.

One respondent brought up the possibility of using this same type of training methodology across the building. This statement specifically referenced the parts of the Schoology course tasks that were developed by the state and used in the BLT course, the member suggesting, “Why don’t we get it done at a professional learning day in the spring or something?” The respondents agreed that it would be good to offer professional learning opportunities like this to all staff in the beginning of the year or even this spring. Another respondent stated that it would be good to “commit to some training in Schoology.” Another respondent indicated it would be possible to “complete the training by department, since they know the strengths and weaknesses of each other.” Lastly, one person added “other people that have already completed the training can help others complete the training and become trainers.”

Overall, the participants in the focus group felt the Schoology pre-work elements were valuable and helped them develop background knowledge about the LMS. They also agreed that expanding the training to the whole faculty would have value. However, it is important to note that not all participants completed all the course modules.

6. Task 3 focused on implementing blended learning with a “flipped” book study. The goal was to use this book to discuss literacy practices related the Common Core State Standards (CCSS). Was this successful, why or why not?

Overall, the focus group participants did not feel that the flipped book study was very successful as designed. They felt this way “not because of Schoology or anything you [the moderator] did. There was just no time to read a book.” One respondent thought that to make the book more beneficial, we should “do more with the book with staff,” and to better coordinate the book study with the Common Ground trainings that many teachers were already participating in. These Common Ground trainings are state coordinated training sessions attended by a group of Polytech High School teachers. Our participation in this initiative is focused on implementation of the CCSS through the use of targeted literacy strategies. Some of the Common Ground team members are also BLT members.

Although the focus group identified problems associated with the book study, one participant felt that the information from the text validated much of what the English teachers do each day. This teacher stated that “70% of informational text that students use should be across the curriculum and not simply in English classes.” She felt that “this book and the strategies enable non-English teachers to use informational texts in ways that support us.”

The respondents also stressed the need to “do something with the information” from the text after they read it stating: “It’s just that you read it, and then you forget it....You’ve got to keep using it, and if we keep rolling it out and making it something we do in professional learning, that’s going to happen.”

When discussing the way chapters were separated out allowing each member of the BLT to present a chapter, they said “that was good,” but that it was a “waste of time and like presenting to one of my worst classes because no one read it.” In response to this one participant chimed in with “let’s be honest... we are BLT members, and we get paid to do this, and we should be doing it.”

7. As a result of the BLT discussions, PASS has been developed and implemented using Schoology in the staff professional learning course. Has this been successful, why or why not?

The PASS acronym at PHS stands for the Polytech Advisement Support System. This advisory system is designed so all staff and students are re-grouped and have monthly meetings on a variety of topics. This results in an advisory system that is built upon strong relationships with small groups of students. Schoology was used as a presentation tool for the PASS advisory information, and PASS was the first experience many of the staff had with applying Schoology.

One respondent started the conversation by stating that the implementation of PASS on Schoology has “definitely gotten better” because of the new technology and that “PASS last year was a disaster” because of the way that hard copy advisory materials were delivered to the teachers with few teachers knowing what to do with the information. The respondent added that in previous years the “the kids looked at me like I had 10 heads” and “that did not happen this year.”

Another focus group participant stated that the problem with previous iterations of the PASS program was students “didn’t do anything and it was inconsistent across classrooms. Some classrooms were eating donuts and other teachers were struggling trying to figure it out. This year I didn’t have to go and find the materials or wait for somebody to stick it in my mailbox. It just flows and the timing is pretty good because I can go through the whole PASS process with just enough time to cover it all.”

One staff member stated that using “Schoology makes me feel a little more comfortable in the PASS process.” When asked to clarify what that meant, she replied “sometimes it’s difficult talking to kids about teen-dating violence and gender identity issues...the videos [embedded in Schoology PASS modules] help cover the topics.” Then another staff respondent replied with “I love PASS in Schoology.”

8. What other ways do you think we could use Schoology in the building for professional learning purposes?

Responses to this question immediately picked up where the last question left off and focused more on student learning. One staff member stated “Schoology should be used for the Polytech Senior Project (PSP).” They continued by explaining that the “consistency will allow teachers to critique with the rubrics, and help teachers stay on the same page.” When examining the groups’ reaction to this statement, it did not appear that everyone shared this sentiment. The other BLT members did not affirm this statement with any of the typical verbal or non-verbal gestures. In my opinion, it was difficult for them to visualize this complex process on Schoology. The respondent that replied to this question had the most experience in Schoology.

When the group was re-directed to the stem of the question related to staff professional learning, another person added that “we could probably end up taking our

section notes on there like we do in the BLT.” These “section notes” are minutes that result from the Tuesday morning discussion in each section or department after the BLT meetings on Monday. These notes are currently kept on the teacher share drive.

After probing for additional ideas, another respondent saw the potential for using Schoology for sharing material and stated, “for some of the English teachers that are more technologically inclined, I could create a group and we could put resources on there so we could grab each other’s resources and use them. The other day I created a quiz that another teacher went and grabbed and gave it to her students and Schoology automatically scored it.” One respondent stated that “we could collaborate on common plans” and another person added “yeah, I think it’s a really good collaborative tool for teachers.”

9. What additional training do you think the staff need to implement and use Schoology in their classrooms?

In terms of additional training, one focus group participant stated that there needs to be an “accountable commitment to training and then to produce some things like we did in the BLT.” When I probed this statement and asked what things could be produced, the respondent added “things to do with kids, like a discussion board or an assignment.” Another respondent then added that “it would be great to combine literacy and Schoology on some half-days to develop some things, give the assignments to the kids and report back on how it went.” This could then be “differentiated with some people that are really good at [Schoology] and could help the other groups.” Another focus group member added that it would be great to “free up people” to “coach you along” and that some departments have “teachers that are already like coaches.”

One of the focus group participants then stated “that is what you did for me; you came in to make sure someone else was there and didn’t leave until I was comfortable with it. Even when I had a substitute unexpectedly, you came in and supported them [the students] too.”

When I asked the group what the best starting point would be for all staff, one participant stated that “they could start with the 8 hour training again, but then maybe we could get two half days to go through the whole thing and plan some lessons.” We just need the “time” and to “slow down and reflect.”

When discussing the two other full-day professional learning days that occur this year, one respondent stated that “we also have good things on table right now with the literacy stuff and depth of knowledge. We should not just forget about them. We need to keep working on them.”

10. What barriers exist to using Schoology in more classrooms here at Polytech High School?

When discussing the barriers to technology, one person had a list prepared and read it aloud. This participant read the focus-group questions before the session and took the time to prepare the list. She unfolded the list in a dramatic way that emphasized that there are a great deal of barriers. The other participants chortled. This list included: “tech problems like getting dumped off the internet, passwords sometimes don’t work, and support personnel are not available.” Once the list was finished, another person added that it is “the most frustrating problem dealing with the IT department. When you have a problem, especially one that is urgent, and then they ask you to put in a work ticket. I can’t fill out a work ticket in the middle of class, especially if I can’t get on my computer to complete the ticket!” When I asked how this may relate to the barriers that exist to

using Schoology, another person added “so to tie that into Schoology, we are already having problems and it’s possible as we get larger with Schoology, it could be worse.”

In order to stimulate more responses from participants, I brought up the newly formed technology committee. I stated that one of the goals of this committee is to provide reliable access to the internet and computers and then to develop ideas for more training. One respondent from the social studies department mentioned that “all of those are really important since we are making substantive changes right now. We are considering purchasing Chromebook computers instead of purchasing textbooks and we have a member on the technology committee.” She emphasized that “we need a commitment from technology department that they [Chromebooks] are going to work if we only purchase Google Chromebooks instead of textbooks.” Another person added that “we can’t purchase both a computer and a textbook; they’re mutually exclusive.”

The best summary for this question is that we have had some successes with implementing Schoology, Google, and Chromebooks. However, the staff have legitimate concerns regarding the individual support they would receive. This trepidation is magnified when major transitions, like purchasing Chromebooks instead of textbooks, is considered.

11. How would you train students to become proficient in using Schoology?

The same focus group member that responded in the last question about purchasing computers over textbooks started this question with an example. She stated that the students are also going to need some “on the job training.” She then clarified this statement by saying “we have to have a way to train students in the classroom on all these new things.” Another staff member added that “students don’t seem to have near as much

trouble picking it up as adults do. Many of our students are absolutely comfortable with the technology, so that's what you also use." When asked to clarify this statement, she added that "you can use your students as trainers in your classroom." Another person added that "[the students] learn by doing and trial by fire. They are used to just going in and figuring it out."

This discussion then changed from students into a discussion about teachers' comfort levels when using Schoology. One teacher added that he wants to "feel like a guru and be able to answer student questions." Another focus group participant responded and re-directed the question with "it comes down to teachers' comfort level and that sometimes you have to admit you don't know and let the kids show you and write some things on the board." Another person added that the students will "jump right in" and that teachers need a "confidence component to be able to work through the first class of Guinea pigs."

Conclusion and Findings

After I conducted this focus group and analyzed the results, four trends emerged from the analysis. These trends will inform the continued use of Schoology for staff professional learning and student use in the future. The four trends are: access and convenience, the need for additional training, combining Schoology with other initiatives, and technology support.

Trend 1: Access and Convenience

The first trend I found related to the access and convenience of using Schoology for professional learning in the BLT course. In question number one, one participant stated that they liked the fact that the materials were "more accessible upfront" and that

they could “go back to the materials at any time.” Additionally, one respondent stated that they could “deliver the information in a substantive and consistent way at section meetings” on Tuesday mornings. This access and convenience was a dominant theme throughout the transcripts. It is evidence that the pre-work sessions accomplished the goal of making these meetings more productive by engaging the participants in a flipped instruction framework.

Blended professional learning with Schoology has enhanced the BLT members’ access to the information for running the meetings. However, there is an important caveat; because many teachers did not participate in the pre-work it will be important moving forward to find ways to hold teachers accountable for completing professional learning pre-work, and to provide teachers time to engage the online component of their professional learning. There was a myriad of excuses as to why the work was not completed and the administrative team chose not to hold them accountable. I know that as an administrative team, we felt that keeping the situation positive and supportive was more important than punishing BLT members as we began this Schoology rollout.

As opposed to holding participants individually accountable, the administrative team felt our best avenue for supporting flipped instruction and productivity was modeling the access to course materials and showing what student learning may look like when they use this system in the future. Our goal became keeping the material focused on the learning topics and finding other ways, such as peer pressure, to ensure completion.

This flipped process in the BLT is not ground breaking, but by modeling this type of learning, we were slowly implementing blended learning while relying on the best parts of both forms of instruction. These is the instant, 24-hour access to materials online,

and the face-to-face meetings that allow learners to clarify, connect, interpret information, and collaboratively construct meaning. Finally, Schoology also allows the development of multiple learning objects that can be posted to the learning management system. This helps teachers to share and organize information and teaching and learning activities.

Trend 2: Additional Training

The second dominant trend that emerged from my analysis centered on the use of the eight hour, state developed, Schoology course. The BLT focus group acknowledged two very important things when discussing training. The first is the need to complete more Schoology training and the second is the fact that they did not complete all of the training provided to them in the Schoology modules. Early on in this focus group, every one of the BLT focus group participants cited a reason for not completing the pre-work sessions, which included information from both the state run Schoology course and the professional learning book chapters. However, almost all the participants cited that the training was valuable to developing background knowledge about literacy and Schoology skills. This seeming contradiction leads me to believe that many of the BLT members completed the initial pre-work session, but then stopped doing this work when they understood there would be no individual accountability to the process aside from completing their book chapter presentation.

According to this focus group, the best way to provide additional training is to get the staff to “commit to some minimum level of training,” and also make sure that “time is provided during professional learning days or during section meetings” to complete it. This has not been done at this point. The BLT focus group brought up the idea of using

the eight-hour Schoology course with all staff to establish a foundation for learning. Further, there are a few knowledgeable people about Schoology and these people could be useful in their department meetings to help differentiate learning about Schoology for their staff members.

Another key component of training is that there needs to be an activity or product that results from it. The BLT stressed the need to “do something” with the training or else they would just forget about it. Encouraging staff to produce learning objects would help make the professional learning better connected to their job responsibilities and provide more opportunity for Schoology use in the classroom.

When Schoology is used with students, some of the members of the BLT focus group see the students as an asset and acknowledge that students are both confident and proficient in figuring out how to use Schoology, and many other online tools, in the classroom. However, this represents a challenge for some staff who do not know how the technology works and would require additional training and support to “take the leap” with their students. The training will need to be differentiated based on the staff members’ will and skill in using Schoology.

Trend 3: Combine Schoology with Other Initiatives

Trend three arose as the BLT focus group members discussed other initiatives that were occurring in the building and their impact on implementing Schoology. In my opinion, after the analysis of these questions, this trend can be summarized as “initiative overload.” This could also be a contributing factor as to why the BLT members were unable to complete the trainings, despite their stated desire to do so.

A primary example of competing initiatives includes the Common Ground team and the use of the book study and Schoology. Polytech High School regularly sends a team of teachers to Department of Education sponsored training focused on learning literacy strategies and bringing them back to the building. These strategies are then used with all staff on professional learning days. At the same time, as part of the BLT, the section leads were reading the *Cracking the Common Core* text and using Schoology to bring this information into their section meetings. They felt these initiatives supported one another, but the Common Ground trainings were “not tied to the book study.” One respondent brought up the idea of “combining the groups” and “developing the literacy activities for the next in-service day in Schoology.”

In my opinion, overloads of this type are a challenge to educational leaders, and it is important that leaders coordinate competing initiatives in a way that staff can see the connections between these initiatives. Additionally, collaborative planning time was not used to coordinate these two literacy initiatives. One BLT focus group member stated that there are “good things on the table right now, like the literacy stuff and depth of knowledge, the emphasis should be on tying them together so we can apply them meaningfully in our classrooms.”

These statements are something I agree with from working with the BLT. In my opinion there needs to be more work on the part of the administrative team to ensure there are clear goals and collaborative planning in the design and delivery of integrated PL opportunities.

Trend 4: Barriers to Implementation

The fourth trend that emerged from the analysis was the barriers to the continued implementation of Schoology. In this case, the single most important barrier to the use of Schoology is technology issues. By technology, I refer to internet connectivity, wireless access, and the need for reliable devices.

In question ten, which was devoted to identifying the specific barriers to implementation, the BLT focus group resoundingly decided that the successful operation of technology was a critical and primary barrier to the expanded use of Schoology in the building. Another barrier is staffs' comfort level with technology and the ability to assist students that could potentially be more familiar with the technology. Overall, the consensus was that if the internet, wireless connectivity, devices, or logging-in does not work using Schoology is futile.

The group expressed a number of frustrations with their individual classroom technology and technology support. The key to understanding these barriers was when one BLT focus group member stated that "we are already having problems and it's possible as we get larger with Schoology, it could get worse." Another respondent cited examples of these problems including the responsiveness of the technology team to "fix problems as they arose" and that the "computers were too slow."

Further, one member of the BLT focus group member is leading the Social Studies department in purchasing new textbooks for the 2016-2017 school years. They are also considering purchasing laptops instead of computers. She expressed that they "need a commitment from the technology department that they [the laptops] are going to work" since they cannot purchase both.

Overall, the successful setup and operation of technology is critical to efficient and effective use of Schoology. Since Schoology is a cloud-based program and relies on the efficient and fast operation of the internet, wireless, and laptops, staff will need guarantees if they are to commit to this program for instruction.

Next Steps

Based on the information identified in the trends above, there are a few key steps to undertake with the instructional networks in the building to continue to implement Schoology and support blended learning. These instructional networks include the administration, BLT members, staff, and technology teams.

Administrative Team

The administrative team, which develops the agenda and moderates the BLT, has the most important work to do. As the progress of Schoology continues, it will be up to us maintain our expertise in Schoology, prioritize and combine initiatives for the BLT and staff, and direct resources to maintain a successful expansion of Schoology. These resources include people, time, and money. Additionally, it will also be up to the administrative team to hold staff accountable for actively participating in Schoology PL as it expands. Currently, the use of Schoology is a voluntary process outside of the BLT members. However, during the 2016-2017 school years, we need to hold all BLT members accountable by clearly communicating the expectations and providing support to complete all assigned tasks. Second, individual conversations should occur with staff members who do not complete the work, especially given the large stipends they are receiving.

Building Leadership Team

For the BLT instructional network, the use of flipped instruction and Schoology was the instructional priority for the year. This will be supported with the BLT in the future by combining PL initiatives such as literacy and Schoology for all teachers. The BLT meetings will continue to develop Schoology expertise for members and begin to use BLT members to incorporate professional learning activities into section meetings and other professional learning days. This will include the use of Schoology to take section meeting minutes, which was a recommendation from the focus group.

All Staff

The lessons learned from the focus group will be used to support staff in two ways. First, the administrative team will continue using the staff professional learning course that is already established. This includes using Schoology for staff trainings, storing in-service/faculty meeting agendas, and providing additional “turn-key” curriculum resources such as PASS. The staff course was will also be expanded based on the BLT focus group to include Senior Seminar and PSP resources to be used directly with students. As we now move into summer professional development and ideas for next school year, Schoology will continue to be used by other members of the administrative team to streamline curriculum development and tie this resource to other initiatives in the building. The BLT focus group specifically mentioned combining Schoology with the literacy initiative that is the focus of the Common Ground CCSS implementation team.

The second resource that I will develop, because of the BLT focus group, is a six-week professional learning course. The need for training for both staff and students was a primary trend woven throughout the focus group transcripts. These requests were also

common from staff. In addition to these requests, the district technology committee has recommended the purchase of between 8-10 carts of Chromebook computers. This much needed and expanded access to devices, which provides a greater potential to use Schoology, will combine with the six-week, blended, professional learning course. The teachers and department chairs who will receive these computers in the 2016-2017 school years will be enrolled in this course. With approval, these staff members will receive a stipend and will have three face-to-face meetings during those six weeks. The first half of the course will focus on developing Schoology expertise and the second half of the course will focus on application tasks directly related to their classrooms. If the application tasks are not completed, they will not receive the PL hours or the stipend. This six week course is a “train the trainer” model focused on developing experts within each content area that are responsible for the carts and training of other colleagues. Many of the participants that will be enrolled in this course, and receive the computers, have already been identified as self-motivated staff willing to make these instructional shifts.

Technology Committee

As mentioned earlier, a technology committee was formed in the spring of 2016. This team includes one member of each section, much like the BLT leaders. This is an additional instructional network with a goal of developing a technology strategic plan beginning in the 2016-2017 school years. As Schoology use expands, and we consider the purchase of additional Chromebooks, their input will help chart the course to expanded internet bandwidth, wireless capacity, devices and training. This is the number one concern of the BLT focus group and these crucial foundational supports need to be expanded as Schoology usage grows.

The first step of this technology committee will be site visits to other districts. The technology committee will ensure that teachers' concerns are addressed and their voices are heard throughout the development of this new instructional network. At the end of these meetings, the committee will make recommendations to the superintendent and school board on the next steps to improve student learning with technology.

Limitations

The primary limitation with this focus group is the potential for bias and limited generalizability. The bias in this group could arise from the relationship they have with me as the moderator and the potential to provide biased information or convey information that may represent a personal agenda. For instance, the BLT members may avoid stating a concern to the moderator since I am also a member of the administrative team. Additionally, members may have a personal stake in ensuring that problems related to the technology team are highlighted in the focus group session.

Finally, the individuals selected for the focus group had been on the BLT for a number of years and were established leaders in the building. Since they also knew each other for a long time, it is possible that their views may not represent the rest of the BLT or the staff as a whole, and therefore have limited generalizability to a whole population. (Jayanthi & Nelson, 2002).

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Appendix G

STAFF PROFESSIONAL LEARNING RESOURCES AND TRAINING COURSE

The final artifact of my ELP is a summary of the materials and processes I established with the all staff at PHS to develop the use of Schoology and blended learning practices. Our goal, as an administrative team, was to model the use of Schoology and pave the way towards a coordinated, consistent, and effective path to staff use of the LMS with students. The audience for this artifact is other school leaders interested in learning and developing blended learning practices with school staff prior to student use.

The goals of this artifact are to (1) train all Polytech High School (PHS) staff to access Schoology, (2) develop the use of Schoology as a professional learning tool for all staff, (3) provide training and practice with Schoology through specific, job-embedded application tasks and (4) develop a “train the trainer” course to expand the use of Schoology throughout the building (Guskey, 1999).

The first two goals have remained unchanged since the inception of this ELP. However, goals three and four have evolved over time to better meet the needs of staff. These goals have also been impacted by the data I have gathered through my informal evaluation of the BLT staff training course and the BLT focus group conducted on January 13th, 2016. As a result of these sources of feedback, I have added additional, job-embedded tasks to expand the use of Schoology with students. Additionally, I created a “train the trainer” course for staff, because many instructional networks within the building have requested additional training in Schoology.

Goal 1: Train all Staff to Access Schoology

I created the initial elements of this staff professional learning course in August of 2015, at about the same time the BLT course began in the 2015-2016 school year. The initial goals of this course were to train PHS staff to sign into Schoology, navigate the LMS, and provide an introduction to its tools.

This initial training for all staff occurred as part of a professional learning day on August 23rd, 2016. This training consisted of a one-hour “Schoology Account Setup” tutorial. In this session, I helped staff access Schoology through the staff portals, and provided basic information about Google Apps for Education, Schoology access for students, and the training options available for the LMS. As homework for these staff members, I placed the Schoology White Paper in the staff Schoology course and asked all staff to review this document and discuss it at their next section meeting. This follow-up task supported the message that I provided to the BLT at the first BLT meeting in the summer. I also recommended they sign up for the State of Delaware online, eight-hour Schoology professional learning course if they were interested in using Schoology with their students. These steps encouraged staff to use Schoology as a voluntary opportunity to improve instructional practice.

Since this initial training, I have held two additional training sessions for staff. The second training was on October 23rd, 2015 and focused on Google Apps for Education. The third training was on December 4th, 2015, and focused on having the “pilot” teachers and BLT members talk to the staff about their successes within the Schoology system. These staff volunteered to use Schoology with students and I supported them to become instructional models for other staff.



After this training, and because the consistent use of an LMS will help develop expertise in the LMS, I supported staff members as they began using the system.

However, I knew that without a reason to access Schoology, many of the staff would quickly forget how to use the LMS. Therefore, my next step included posting the faculty meeting presentations and in-service agendas on Schoology. This forced staff to use the LMS to review the information, thereby maintaining their ability to login and develop navigation routines within the LMS.



The figure below shows the active folders in Schoology. Essentially the folders build chronologically from top to bottom. The red folder at the top is where the first staff trainings are stored. The white folder is where the faculty meetings and in-service agendas are stored, requiring staff to log into the system.

15-16 PHS Staff-Professional Learning : Section 1



Polytech High School

 Add Materials ▾
 Options ▾
  Student Progress



All Materials ▾


Staff Training Sessions




This folder will hold the informaiton for specific trainings that are held during in-serice days


Faculty Meetings/In-Service Agendas




This folder will hold documents that were discussed or shared at faculty meetings. The meetings will be in chronological order.


Training Videos on Schoology and Google




In this folder there are DPAS II, Google and Schoology training videos made with Camtasia to support the use of these systems.


Polytech Advisory Support System (PASS)




The POLYTECH Advisory Support System (PASS) information will be held in this folder and all the meetings will be in chronological order.


Polytech Senior Project (PSP) Information




In the spring of 2016, Schoology may be used to collect project proposals for juniors and manage this project in the fall of 2016 for papers and presentations.


Senior Seminar




The senior seminar is the second half of students' senior year and focuses on Resume building and reference letters related to college or career goal attainment.


Technology Committee Resources


It is hard to separate instruction and technology in the 21st century. The goals of the technology committee are to evaluate the current instructional technology system and propose recommendations for improvement to the superintendent with 1 year and 3 year goals. Technology will form one pillar of a renewed district strategic plan starting in 2016.


PSAT/SAT Training Resources


This folder contains resources and training information on the redesigned SAT and PSAT. Polytech will continue to give these assessments to all students in grades 9 to 11 and SAT to students in grade 11. All students that take the PSAT can link their scores to Khan Academy to preview SAT skills.


Schoology "Train the Trainer" Course


This folder is for all staff members that will participate in summer professional learning. This folder will used for the blended learning course next year.

15-16 PHS Staff-Professional Learning Course Snapshot

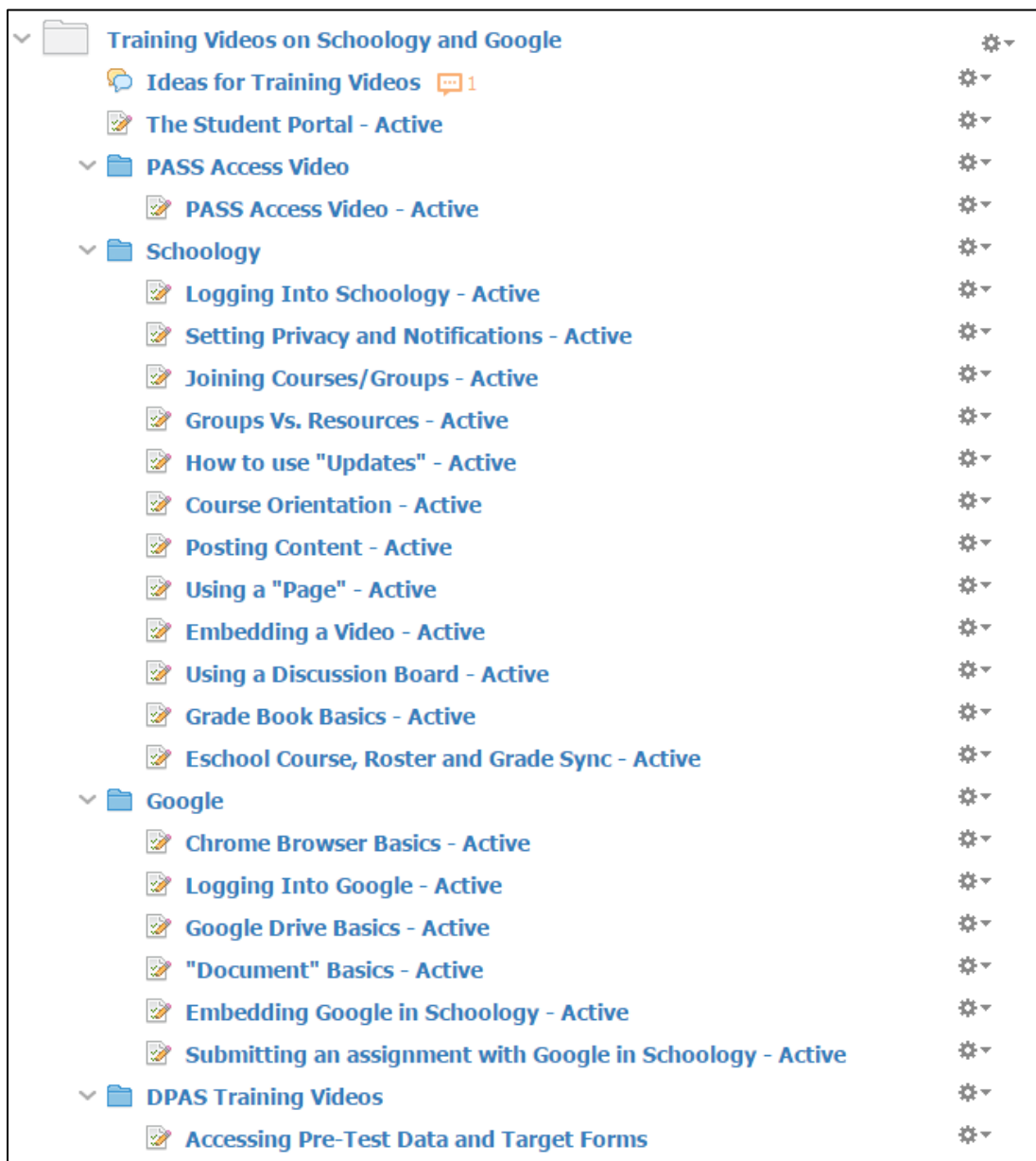
Goal 2: Develop the use of Schoology as a Professional Learning Tool

The first two folders have been used since the beginning of the year by all staff, and their use helps achieve my first goal by simply getting all staff to login and navigate the Schoology system, and access agendas for faculty meetings and professional learning in-service material.

Over time, PHS teachers developed enough facility with the system that I was able to begin to meet my second goal of using Schoology as a professional learning delivery system. This second goal centered on improving existing practice through a video application of Schoology. In order to expand the use of Schoology and meet the need for more training, I created the third folder in Schoology as a form of “on-demand” professional learning. This folder now includes 22 instructional videos that I made with Camtasia software, stored in Google, and then embedded into Schoology. I created these videos from October to December of 2015 and a screenshot of these videos is available on the next page.

These videos have become an efficient way to support the Schoology initiative. These videos have allowed every staff member to learn about Schoology at their convenience. Additionally, as more people want to use Schoology, the videos that I created provide critical background knowledge about the Schoology LMS and its tools. Encouraging teachers to access these videos serves two purposes. First, it ensures that the people who use Schoology are motivated, committed, and willing to develop background information on their own. Second, it saves time when directly working with over 100 staff members with varying technology skills and comfort levels. Overall, these videos help staff develop a comfort level before using the system itself.

These videos now include instructions for using Google Apps, navigating Schoology and its tools, and finding data for the Delaware Performance Appraisal System (DPAS II) related to employee evaluations and student growth. A discussion board is also included for staff to request additional training videos on topics that interest them or they need more information about. This can be seen at the top of the page with one “unread” recommendation.



Goal 3: Implement Specific, Job-Embedded Tasks

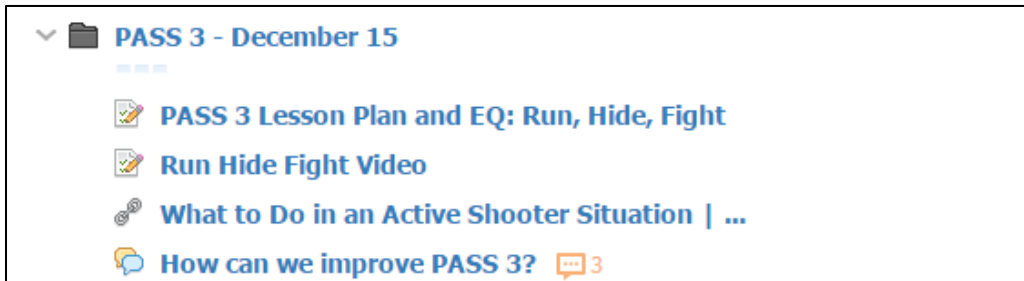
Delivering PASS in Schoology

The fourth folder, “Polytech Advisory Support System (PASS),” was the first procedurally embedded element that required all staff to login, navigate, and deliver a pre-designed curriculum with students.

About five times a year, the PHS administration regroups all students and all staff into advisement groups. For instance, as an assistant principal, I have an advisement group consisting of 12 juniors. I then loop with these students until their senior year and then start with another group of freshman after my original group graduates. PASS covers a range of topics including goal setting/GPA analysis, social media use, gang/bullying prevention, and SAT preparation. Traditionally, the information for PASS sessions was emailed out to all staff and placed on the share drive. This process presented a few problems. For instance, staff often tried to access the same resources at the same time in the share drive and this resulted in “conflicted copies” of the documents. This is when the document becomes inaccessible to more than one person. Also, emailing prohibited the use of large video or audio files. In my opinion, this limited the instructional potential of PASS.

In total, there were five PASS sessions created by the administrative team and delivered by the staff. The figure below is snapshot example of the PASS 3 materials from December 15th, 2015. This image shows the lesson plan, video page, resources links, and even a discussion board that allowed us to capture feedback for improvement. The lesson plan provided the Essential Question and goals of the session for staff. This

also provided a sequence of the key instructional activities and discussion topics for teachers to follow. For example, the video below was embedded directly into Schoology and allowed staff to show the video at the same time. Finally, there is a staff discussion board below, in which three staff replied with comments to improve future PASS sessions.



PASS 3 Information

Using Schoology to design and deliver PASS also opened the door to getting Schoology in front of every student, thus developing student background knowledge about the LMS. Every student now knows what Schoology is and has been able to see it used to deliver instruction by a staff member. Many staff members have also started adding their own resources to Schoology to supplement the learning objectives of the PASS lessons.

By delivering PASS in Schoology, we were able to augment and enhance the process by providing a consistent and easy way to access and deliver the materials for the teachers. This resulted in a functional improvement over past practice. It improved how the instructional elements (embedded videos and infographics) were designed/delivered, and allowed more than one person to access the documents. Further, the use of discussion boards provided a timely and effective way to capture feedback from staff.

The BLT Focus Group Feedback

On January 13th, 2016, after the first four folders were implemented with staff, I held a focus group with five members of the BLT. The original goals of this focus group were to:

- Reflect on and evaluate the implementation of Schoology with the BLT since the beginning of the year.
- Determine the next steps for using Schoology with students.
- Determine the next steps for using Schoology with staff.
- Identify the best ways to train and support staff and students.

The focus group supported the use of Schoology in the BLT. Although the focus group felt that the implementation of Schoology was generally effective, they also described how training could be improved in a number of ways.

The first recommendation from the focus group centered on continuing to use Schoology for the PASS experience. This is primarily because of the convenient access to PASS materials. By having the materials in advance, the staff could preview the information and even add their own resources in order to personalize their advisement of students. Further, by housing PASS in one place, we were able to provide more time for teachers to process, and reflect, on the materials. This supported richer discussions during the face-to-face time with students. One of the members of the focus group stated that they “love PASS in Schoology” and that it is “completely different than last year.” This is because the materials are available ahead of time and there is a consistent implementation throughout the building.

One of the recommendations from the focus group, after reflecting about PASS, was to deliver the Polytech Senior Project (PSP) and Senior Seminar materials in Schoology for all juniors and seniors similar to what we created with PASS. The PSP class is a half-credit graduation requirement for all seniors at Polytech High School. All seniors are required to complete this senior project in the first and second marking periods of their senior year. The primary benefit focus group members cited was the ability of Schoology to provide consistent access to instructional materials across the different teachers, classes, and students immersed in the project. Based on this information, I have taken the steps to build the curriculum teams and develop the PSP for implementation via Schoology in the spring of 2016. Moving in this direction with these curriculum projects also supports two other recommendations from the BLT focus group. These recommendations include providing more training for staff and combining the use of Schoology with existing school initiatives.

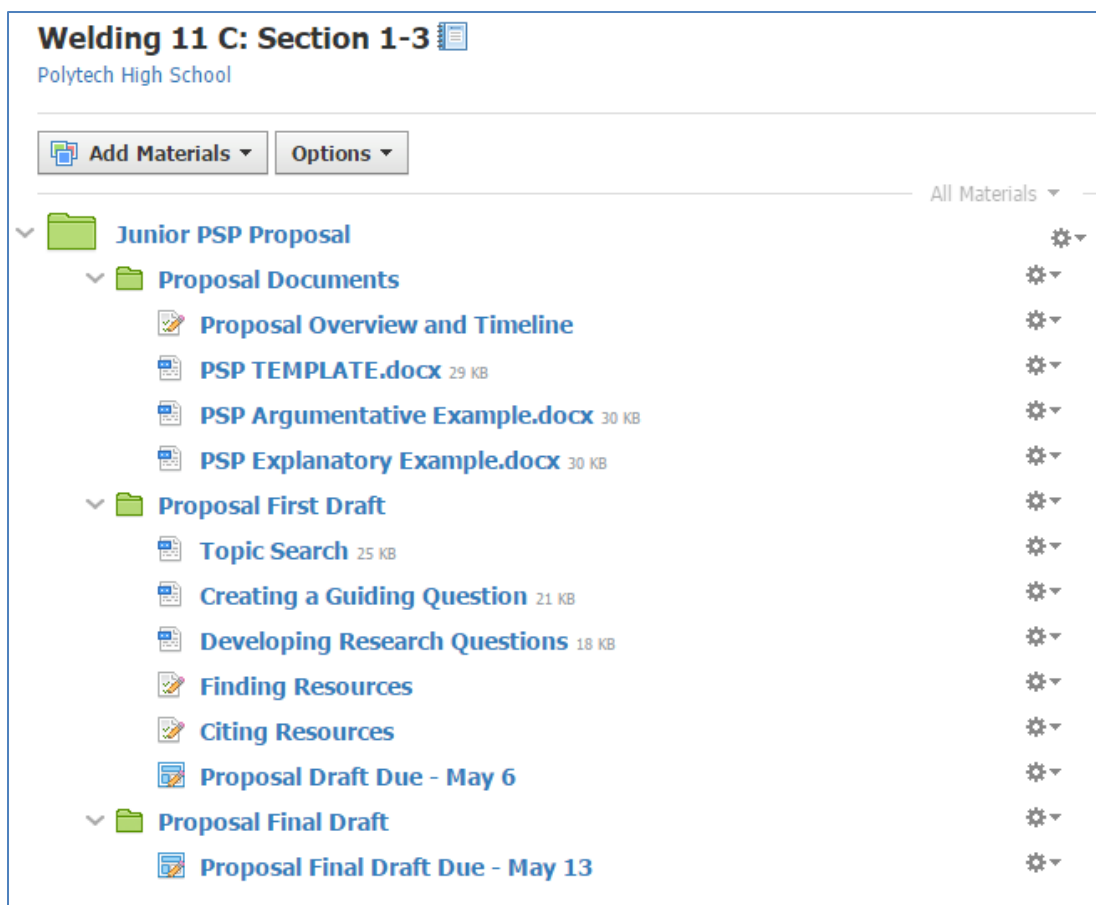
In order to support the development of the PSP materials, the building principal and I developed a “pay for curriculum product” system at Polytech High School. This process leveraged the teachers who committed to the Schoology training, and who demonstrated leadership with the use of LMS, by paying them to develop learning objects, lessons, and semester-based blended learning classes within Schoology. These stipends also served to recognize and reward staff for their commitment to curriculum development and continuous learning.

Polytech Senior Project

In this case, the collaborative features of Google and Schoology became assets to these PSP curriculum development teams since they worked independent of the time

constraints inherent in face-to-face meetings. Typically, there were three meetings used to design this work. The first meeting included a launch with contract signing and an outline of the teams, timelines, and work products to be completed. The second and third face-to-face meetings became a report-out with the group. At these meetings, the team shared their progress and discussed goals, assignments and grading processes with each other. Since each group was involved in developing a separate marking period worth of work, I needed to align the work for pacing and grading consistency. Below is a graphic of one part of the PSP course developed by this team.

The top-level folder below is the “Junior Proposal” that was created by the PSP committee. In this example, the entire folder and its contents has been copied to the Welding course by the Welding teacher so that this can now be accessed and used with his students.



Polytech Senior Project and Senior Seminar Courses

The first step in the PSP involves having students submit a proposal in their fourth marking period as a junior to their Career and Technical Education (CTE) teachers. The proposal template is included as the “PSP Template.docx” file above. The students will download this template, edit it under the guidance of the CTE teacher, and then submit a draft on May 6th and final copy on May 13th. The true value in this system is that the PSP teacher, CTE teacher, and administrator can all see and provide feedback on the May 6th draft before the student submits the final draft. This ensures there are multiple rounds of collaborative feedback, and use of a rubric, throughout the process.

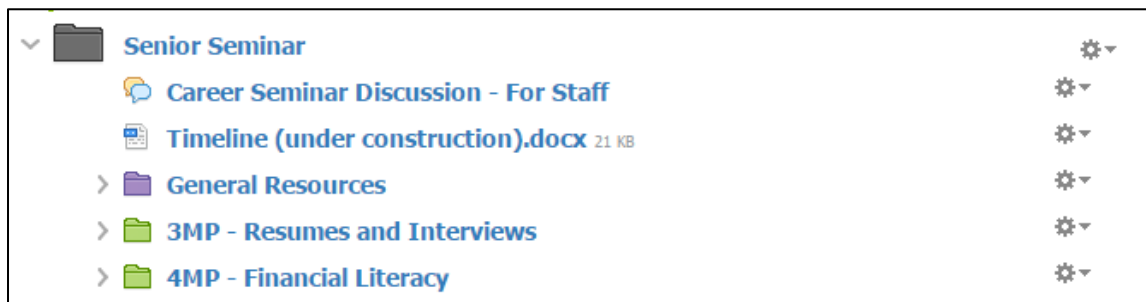
The ultimate goal is to improve upon existing practice and provide a consistent and streamlined process for the 300 seniors and over 40 staff involved in the 21 different

CTE areas involved in this process. Schoology has turned out to be a perfect instructional organization system that will begin this blended learning for students in coordinated and coherent way. This streamlines the grading by using the same lesson plan, templates, examples, instruction, assignment deadlines, rubrics, and grading processes throughout the building. In effect, the online elements in Schoology help coordinate the face-to-face work during class time. This will hopefully result in a successful blended learning experience for all these students.

This PSP proposal is the first time Schoology will be widely used in a consistent way with students as part of an organized blended curriculum. For students, this course is an opportunity to develop college and career readiness skills that will prepare them for the post-secondary challenges they face. For staff, this course is an opportunity to collaborate, model, and implemented a blended learning course as an embedded application activity that supports PL.

Senior Seminar

The Senior Seminar is also currently in development and will serve as the 3rd and 4th marking period class for seniors after the PSP project is completed in the 1st and 2nd marking periods. This course is focused on resume development, interview skills, and financial literacy. The image below shows the primary folders that staff will access to deliver this curriculum.



Senior Seminar Course Folders

The goal of this course is to provide all seniors with a strong foundation for beginning their college or career journey when they leave Polytech High School. This folder is currently being used with all seniors.

Goal 4. Develop a Staff Professional Learning Course for Trainers

In the winter of 2015 and spring of 2016, in response to growing requests from staff for Chromebooks and training, I requested that the district form a technology committee at PHS. One of the recommendations from this committee is the purchase of between 8 and 10 Chromebook computer carts to expand access to devices within the building. As a result of the BLT feedback, BLT focus group, Technology committee feedback, and multiple requests from staff, I have created a 6 week blended professional learning course for teachers. I have already created this six-week course and plan to use it in the beginning of the 2016-2017 school years. If the district purchases 8-10 additional Chromebook carts of computers, this course will be combined with the rollout of these devices to develop expertise for the staff receiving these computers.

In the beginning of the 2016-2017 school year, the computer carts will be allocated across the building in each content area and CTE area and the person receiving the cart will get exclusive use of this cart for the first two months of the year. The person responsible for the cart will need to accept the terms of being part of the expansion. This will include a requirement to: charge the computers, complete training, provide a designated place to store the computers, to complete work orders for repairs, and to manage a shared calendar for use of the Chromebook cart. Since Chromebooks are more affordable, and access can be dramatically increased with these devices, a model will be

developed to share these computers in small teams. This is much different from the current model of sharing multiple computer carts of varying quality among over 100 staff members in the building.

Having the participants commit to blended training with this course will help ensure a consistent baseline of knowledge about Schoology and blended learning. Further, after learning from the BLT focus group that not all of the BLT members completed the pre-work associated with the online sessions, there is a need to ensure that the individuals receiving a computer cart are held accountable to attend and complete the training. I will accomplish this by establishing reflection journals, online discussion board requirements, and the creation of learning objects for their classrooms as a project based requirement.

The reason for letting the individual who commits to training use the computer exclusively for two months throughout the course accomplishes two things. First, it allows them to develop expertise while participating in the six-week course. Second, it encourages colleagues in their content or CTE area to use the computers. This will then open the door for further teacher commitment to training. Below is a graphic of the six-week course that is currently being developed.



Six week “train the trainer” Professional Learning Course

The graphic above is a template for the course that will be used in this “train the trainer” course. Initially I will host a face-to-face launch session in which teachers commit to the training expectations and receive a computer cart. The next three weeks will be online, in Schoology, and support virtual collaboration through discussion boards and reflections. Each week will follow the methodology that was used with the BLT blended learning course and research-based instructional frameworks. This includes the (1) development of background knowledge, (2) application within the classroom, and (3) collaboration and reflection on instructional practice (Tucker, 2012). Further, these weeks will be designed to specifically support the use of Schoology with students and have resources, such as videos, that can be used directly to support students.

The mid-point of the six-week course will be a face-to-face meeting with all the trainers. This will be a chance to share and collaborate on the successes and challenges in the classroom. The next three online weeks will follow the same model above and can be customized based on the needs and discussion at the mid-point meeting. For instance,

mastering the grade sync with Schoology and Eschool can present problems. These trainers will navigate this process as a cohort and be able to learn the successes, challenges and misconceptions together. This will help inform all other staff in the building through the existing BLT and section meetings.

At the final meeting, the participants will be required to share out their final reflections and lessons learned from using Schoology with students. I will also collect feedback to improve the six-week training prior to enrolling an additional cohort. The final project for these meetings will be to share examples of the learning objects and assessments they have created. This will also include sharing examples of student work submitted within Schoology.

My goal with this final report-out will be to use the resources created by these trainers and their students as learning examples for future training sessions. I hope that this will result in a number of learning objects that teachers can use to build learning their own Schoology courses. This will support a continuous cycle of curriculum development and collaboration to fully utilize Schoology and leverage the true benefits of the online components in a blended learning environment.

References

Guskey, T. (1999). *Evaluating professional development*. Thousand Oaks, CA: Corwin Press.

Tucker, C. R. (2012). *Blended learning in grades 4-12: Leveraging the power of technology to create student-centered classrooms*. Thousand Oaks, CA: Corwin Press.

Appendix G

INFORMED CONSENT TO PARTICIPATE IN RESEARCH

Title of Project: The Polytech High School Building Leadership Team's Professional Learning Experience

Principal Investigator(s): Ryan Fuller, M.Ed.; William Lewis, Ph.D.

You are being invited to participate in a research study. This consent form tells you about the study including its purpose, what you will be asked to do if you decide to take part, and the risks and benefits of being in the study. Please read the information below and ask us any questions you may have before you decide whether or not you agree to participate.

WHAT IS THE PURPOSE OF THIS STUDY?

The purpose of this study is to evaluate the implementation of the Polytech Building Leadership Team (BLT) professional learning experience you took part in this fall. The insights from this focus group will be used to develop professional learning for all staff using the Schoology learning management system. Additionally, the information I gain from this research will be used to help the BLT move forward with their work on technology integration and blended learning at Polytech High School.

These questions will help me to better understand how to design professional learning using technology at Polytech High School and will be used as part of my dissertation study in the Ed.D. program at the University of Delaware.

You will be one of approximately 6 participants in this study. You are being asked to participate because you are a member of the Building Leadership Team, and because you have taken part in a professional learning experience that used the Schoology learning management system. You have also been chosen because, through your work on the BLT, you have demonstrated your willingness to collaborate with administrators in an advisory capacity. This study will be a focused extension of the advisory work that you already do.

WHAT WILL YOU BE ASKED TO DO?

As part of this study you will be asked to participate in a focus group. The group meeting will be held during professional learning time at Polytech High School, and the total amount of time for completing the focus group activity will be approximately 1 hour. I will serve as the facilitator and will ask questions and lead the discussion. If you volunteer to participate in this focus group, you will be asked some questions about your experience with this fall's professional learning course and the Schoology learning management system. I will be recording your responses and taking notes about our discussion.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

There are minimal risks to participating in this study. No risk greater than those experienced in ordinary conversation are anticipated. Everyone will be asked to respect the privacy of the other group members. All participants will be asked not to disclose anything said within the context of the discussion, but it is important to understand that other people in the group with you may not keep all information private and confidential.

WHAT ARE THE POTENTIAL BENEFITS?

Your participation may benefit you and other faculty members at Polytech High School by helping administration to improve professional learning in our school. Additionally, your participation can help us better understand how to use the Schoology learning management system for instruction.

HOW WILL CONFIDENTIALITY BE MAINTAINED? WHO MAY KNOW THAT YOU PARTICIPATED IN THIS RESEARCH?

The research team will keep information learned about you confidential to the extent possible. We cannot promise that information shared with other study participants during the focus groups will be kept confidential. However, all information will be collected digitally and will be stored in password-protected files. The digital voice recording will be transcribed by Ryan Fuller and then destroyed after transcription. No other researcher will have access to this recording.

The written transcript will not contain any data identifying your name. Additionally, no participant will be identified by name or linked to the results. Results will contain some direct quotes from our conversation but will not be associated with identifying information. Results of this focus group will be shared with other members of the BLT. Additionally, findings will be reported as part of my doctoral portfolio at the University of Delaware. Therefore, members of my doctoral committee and some university administrators will read the results of this focus group.

The confidentiality of your records will be protected to the extent permitted by law. Your research records may be viewed by the University of Delaware Institutional Review Board, which is a committee formally designated to approve, monitor, and review biomedical and behavioral research involving humans. Records relating to this research will be kept for at least three years after the research study has been completed.

WILL THERE BE ANY COSTS TO YOU FOR PARTICIPATING IN THIS RESEARCH?

There are no costs associated with participating in the study.

WILL YOU RECEIVE ANY COMPENSATION FOR PARTICIPATION?

There is no compensation for taking part in this study.

DO YOU HAVE TO TAKE PART IN THIS STUDY?

Taking part in this research study is entirely voluntary. You do not have to participate in this research. If you choose to take part, you have the right to stop at any time. If you decide not to participate or if you decide to stop taking part in the research at a later date, there will be no penalty or loss of benefits to which you are otherwise entitled. Your decision to stop participation, or not to participate, will not influence current or future relationships with the Polytech High School or the University of Delaware.

WHO SHOULD YOU CALL IF YOU HAVE QUESTIONS OR CONCERNS?

If you have any questions about this research contact Ryan Fuller at (302) 697-3255, ryan.fuller@polytech.k12.de.us, 823 Walnut Shade Rd. Woodside, DE 19980 or Dr. William Lewis at (302) 831-1644, wlewis@udel.edu, 121B Willard Hall. If you have any questions or concerns about your rights as a research participant, you may contact the University of Delaware Institutional Review Board at hsrb-research@udel.edu or (302) 831-2137.

Your signature on this form means that: 1) you are at least 18 years old; 2) you have read and understand the information given in this form; 3) you have asked any questions you have about the research and the questions have been answered to your satisfaction; and 4) you accept the terms in the form and volunteer to participate in the study. You will be given a copy of this form to keep.

Printed Name of Participant	Signature of Participant	Date
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Person Obtaining Consent	Person Obtaining Consent	Date
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(PRINTED NAME) (SIGNATURE)

IRB Approved: 12/22/15



RESEARCH OFFICE

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DATE: December 22, 2015

TO: Ryan Fuller, M.Ed.
FROM: University of Delaware IRB

STUDY TITLE: [844794-1] The Polytech High School Building Leadership Team's Professional Learning Experience

SUBMISSION TYPE: New Project

ACTION: APPROVED

APPROVAL DATE: December 22, 2015

EXPIRATION DATE: December 21, 2016

REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # (6,7)

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All sponsor reporting requirements should also be followed.

Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office.

Please note that all research records must be retained for a minimum of three years.