Teacher Autonomy in a Site-Managed Charter School: Views of Autonomy, Autonomy Support, and their Educational Impact

Kristen Levin
klevin@twinoaksschool.org

Follow this and additional works at: https://irl.umsl.edu/dissertation

Part of the Educational Leadership Commons

Recommended Citation
https://irlumsl.edu/dissertation/735

This Dissertation is brought to you for free and open access by the UMSL Graduate Works at IRL @ UMSL. It has been accepted for inclusion in Dissertations by an authorized administrator of IRL @ UMSL. For more information, please contact marvinh@umsl.edu.
TEACHER AUTONOMY IN A SITE-MANAGED CHARTER SCHOOL: VIEWS OF AUTONOMY, AUTONOMY SUPPORT, AND THEIR EDUCATIONAL IMPACT

By

KRISTEN W. LEVIN

BS, Loyola University, New Orleans
MEd, University of Missouri-St. Louis

DISSERTATION
Submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Education in the Graduate School of the University of Missouri-St. Louis

May, 2018

Dissertation Committee:
Gayle Wilkinson, EdD, Chair
Wolfgang Althof, PhD
Carl Hoagland, PhD
William Kyle, PhD
Abstract

The purpose of this study was to discover how pre-service teachers (PSTs), classroom teachers, and administrators in an urban charter school perceive their own levels of professional autonomy and administrative support by the school, and how the balance of autonomy and support impact their instructional practices. In my aim to construct a deep understanding of the many viewpoints, I designed and implemented this research as a single case study of Highland Charter School (a pseudonym), in a Midwestern U.S. city. This study involved seven elementary and middle school teachers, three pre-service teachers completing the student teaching component prior to college graduation, six building administrators, and one administrator at a local university. In this project, the case is an independent charter school serving mainly students of low socioeconomic backgrounds, from Kindergarten through Eighth-Grade. Originally intended to focus on instructional technology, I began the study with an open online survey and unstructured interviews. The iterative data collection and analysis process I followed allowed me to quickly identify weak areas within the original protocol and helped me to redesign the work as a much broader case study, focused on all areas of teaching innovation as effected by teacher autonomy and administrative support. At the beginning, the interviews were loosely structured and informed by classroom observations. As I became familiar with the different teachers, the interview questions became more focused but remained open-ended. Constant comparison of participants’ approaches and their reflections helped to reveal their own beliefs about student engagement and the importance of teacher autonomy in meeting student needs. By
developing partnerships with these teachers, employing several data sources, and leaving a clear audit trail, I worked to establish and maintain reliability within the project.

There were many lessons to be learned throughout this endeavor. First, Highland’s leaders had cultivated an environment which balanced professional autonomy with administrative support. However, the autonomy was defined differently by each player, depending on his or her role in the school. Overall, teachers felt empowered and supported by the school administration, but they desired more direct guidance in terms of classroom technology and preservice teacher training. Teachers were encouraged to explore creative teaching strategies to meet the needs of their exceptionally diverse student body, and the Common Core was viewed by all as merely a supportive document to help teachers develop learning objectives for their children. Teacher agency extended to their use of technology, and was generally seen as a tool for learning rather than a centerpiece. Finally, instructional planning was deeply impacted by the personnel’s shared commitment to character education, and their endeavor to meet student needs through project-based learning.
# Table of Contents

Abstract........................................................................................................................................... 2  
List of Tables and Figures.................................................................................................................. 10
Acknowledgements............................................................................................................................... 11
Chapter 1: Introduction ....................................................................................................................... 13
  The Common Core State Standards................................................................................................. 14
  Charter Schools in Public Education............................................................................................... 15
  The effectiveness of charter schools............................................................................................... 16
  Character Education in the Schools................................................................................................. 17
  Integrating ICT in the Classroom.................................................................................................... 18
    ICT implementation in the urban classroom................................................................................ 19
  Social Constructivism in the Classroom ......................................................................................... 20
  The Problem: Teacher Autonomy and Its Impact on Instruction in a Charter School ................. 21
  Purpose of this Study...................................................................................................................... 21
  Research Questions......................................................................................................................... 22
  Theoretical Framework.................................................................................................................... 22
    Introduction................................................................................................................................. 22
    Self-determination theory (SDT)................................................................................................. 23
    TPACK......................................................................................................................................... 25
  Limitations and Delimitations of the Study.................................................................................... 26
  Significance of this Study................................................................................................................ 28
  Summary........................................................................................................................................ 29
Abbreviations and Terminology.......................................................................................................... 31
Chapter 2: Review of the Literature................................................................................................. 32
  Introduction..................................................................................................................................... 32
  Theoretical Foundations: Self-Determination Theory and the Importance of Autonomy ........... 36
    SDT as a predictor for motivation............................................................................................... 37
    Connection between SDT and teacher autonomy..................................................................... 38
  Theoretical Foundations: TPACK, a Framework for Understanding Educational Technology ...... 39
  Theoretical Foundations: Social Constructivism and Learning...................................................... 41
    Vygotsky and social constructivism in education........................................................................ 41
    Bruner's view on society and learning......................................................................................... 43
  The Unique Challenger of Teaching in Urban Schools................................................................. 44
    Teacher turnover......................................................................................................................... 45
    Urban education is not simply a single story............................................................................ 46
    The digital divide....................................................................................................................... 48
    The digital divide as a complex issue....................................................................................... 48
Chapter 4: Results

Setting and Participants

The School

The Participants

Data Collection and Data Analysis

Data Collection

Data Analysis

Results

Introduction to the Four Categories

Category 1: Conditions Supporting Self-Determination

Subcategory: autonomy/ independence

Autonomy examples (1st level property)

Autonomy support (1st level property)

Autonomy support: importance (2nd level property)

Autonomy support: examples (2nd level property)

Impact of autonomy (1st level property)

Empowerment (2nd level property)

Job satisfaction (2nd level property)

Impact on students (2nd level property)

Teacher challenges (2nd level property)

Time invested (3rd level property)

Teaching experience (3rd level property)

Ease of communication (3rd level property)

Subcategory: sense of trust

Subcategory: interpersonal communication

Relationships among staff (1st level property)

Coaching (1st level property)

Collaboration (1st level property)

Category 2: Leadership

Subcategory: leadership training

Subcategory: vision

Character education (1st level property)

Achievement (1st level property)

Shared vision (1st level property)

Subcategory: hiring processes

Subcategory: accountability and standards
Subcategory: professional development ............................................. 146
  P.D. focus (1st level property) .................................................. 147
  New teacher training (1st level property) .................................. 149

Category 3: School Culture .................................................................. 153
  Subcategory: diversity ................................................................. 153
  Subcategory: school community ................................................... 157
  Subcategory: Socioeconomic status (SES) ...................................... 162

Category 4: Instruction ...................................................................... 163
  Subcategory: classroom environment .......................................... 166
    Class routine (1st level property) ............................................ 166
    Classroom structure (1st level property) .................................. 167
      Physical structure (2nd level property) ................................. 168
      Teaching styles (2nd level property) ................................. 168
    Student engagement (1st level property) .............................. 169
  Subcategory: instructional strategies ........................................... 175
    Project-based learning (1st level property) ............................. 176
    Student collaboration (1st level property) ......................... 177
    Teacher-centered instruction (1st level property) .................... 178
  Subcategory: student needs .......................................................... 178
    Subcategory: technology ......................................................... 188
      Technology use and purpose (1st level property) .................. 188
        Frequency of use (2nd level property) ............................ 188
        Four major uses (2nd level property) ............................. 190
      Factors influencing technology use (1st level property) ...... 192
        Supporting factors (2nd level property) .......................... 192
        Limiting factors (2nd level property) ............................. 196
    Technology growth (1st level property) .................................. 196

Summary ......................................................................................... 199

Chapter 5: Discussion and Conclusions ........................................... 201

Introduction ..................................................................................... 201
  Purpose of the Study ................................................................. 201

Setting and Participants in the Study.................................................. 203
  Setting ....................................................................................... 203
  Participants .................................................................................. 203

Data Collection and Analysis .......................................................... 204
  Data Collection .......................................................................... 204
  Data Analysis ............................................................................. 205

Discussion ......................................................................................... 207
  Research Question 1: Perceptions of Autonomy by the Different Players .................................................................... 207
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition of &quot;autonomy&quot;</td>
<td>207</td>
</tr>
<tr>
<td>Different roles led to different meanings of &quot;autonomy&quot;</td>
<td>208</td>
</tr>
<tr>
<td>Administrative support of professional autonomy</td>
<td>211</td>
</tr>
<tr>
<td>Not always enough support</td>
<td>214</td>
</tr>
<tr>
<td>Major findings and connections to the literature</td>
<td>215</td>
</tr>
<tr>
<td>Varied definitions of &quot;autonomy&quot;</td>
<td>216</td>
</tr>
<tr>
<td>Administrative support and necessary limitations</td>
<td>219</td>
</tr>
<tr>
<td>Research Question 2: Perceived Impact of Autonomy on Instruction and Achievement</td>
<td>223</td>
</tr>
<tr>
<td>More freedom in meeting student needs</td>
<td>224</td>
</tr>
<tr>
<td>Teaching practices</td>
<td>226</td>
</tr>
<tr>
<td>Major findings and connections to the literature</td>
<td>227</td>
</tr>
<tr>
<td>Freedom to meet students' needs</td>
<td>228</td>
</tr>
<tr>
<td>Teaching practices</td>
<td>230</td>
</tr>
<tr>
<td>Research Question 3: The Effect of the Common Core on the Teachers' Autonomy</td>
<td>233</td>
</tr>
<tr>
<td>Major findings and connections to the literature</td>
<td>233</td>
</tr>
<tr>
<td>Research Question 4: Classroom Technology Use and Teacher Autonomy at Highland</td>
<td>235</td>
</tr>
<tr>
<td>Autonomous use of ICT in the classroom</td>
<td>236</td>
</tr>
<tr>
<td>Administrative support of ICT use</td>
<td>236</td>
</tr>
<tr>
<td>Other limitations to technology-related autonomy</td>
<td>237</td>
</tr>
<tr>
<td>Purposeful ICT integration</td>
<td>238</td>
</tr>
<tr>
<td>Reasons for ICT use in classrooms</td>
<td>239</td>
</tr>
<tr>
<td>Major uses of ICT at Highland</td>
<td>240</td>
</tr>
<tr>
<td>Student projects and research</td>
<td>240</td>
</tr>
<tr>
<td>Demonstrations and teacher presentations</td>
<td>241</td>
</tr>
<tr>
<td>Classroom administrative tasks</td>
<td>242</td>
</tr>
<tr>
<td>Major findings and connections to the literature</td>
<td>242</td>
</tr>
<tr>
<td>Autonomous use of classroom technology</td>
<td>242</td>
</tr>
<tr>
<td>The need for additional professional development</td>
<td>243</td>
</tr>
<tr>
<td>Other limitations to ICT use in the classroom</td>
<td>245</td>
</tr>
<tr>
<td>Purposeful use of ICT in the classroom</td>
<td>246</td>
</tr>
<tr>
<td>ICT as a tool for student engagement</td>
<td>246</td>
</tr>
<tr>
<td>ICT as a tool for lesson relevance</td>
<td>246</td>
</tr>
<tr>
<td>ICT as a tool for teaching transferrable skills</td>
<td>247</td>
</tr>
<tr>
<td>Major uses of technology in Highland classrooms</td>
<td>248</td>
</tr>
<tr>
<td>Research Question 5: Additional Factors that Impact Instructional Decision-Making</td>
<td>248</td>
</tr>
<tr>
<td>Highland's vision for character education</td>
<td>249</td>
</tr>
<tr>
<td>Project-based learning at Highland</td>
<td>250</td>
</tr>
<tr>
<td>Section</td>
<td>Page</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Diverse student population</td>
<td>252</td>
</tr>
<tr>
<td>Differentiation</td>
<td>253</td>
</tr>
<tr>
<td>Multiple measures of achievement</td>
<td>254</td>
</tr>
<tr>
<td>Major findings and connections to the literature</td>
<td>255</td>
</tr>
<tr>
<td>Character education at Highland Charter School</td>
<td>255</td>
</tr>
<tr>
<td>Project-based learning</td>
<td>257</td>
</tr>
<tr>
<td>Diverse student population</td>
<td>258</td>
</tr>
<tr>
<td>Conclusions</td>
<td>259</td>
</tr>
<tr>
<td>Implications</td>
<td>259</td>
</tr>
<tr>
<td>Recommendations for Future Research</td>
<td>259</td>
</tr>
<tr>
<td>Concluding Remarks</td>
<td>261</td>
</tr>
<tr>
<td>References</td>
<td>264</td>
</tr>
<tr>
<td>Appendices</td>
<td>283</td>
</tr>
<tr>
<td>Appendix A: Consent Form</td>
<td>283</td>
</tr>
<tr>
<td>Appendix B: Code Book</td>
<td>287</td>
</tr>
<tr>
<td>Appendix C: Classroom Arrangement</td>
<td>301</td>
</tr>
<tr>
<td>Appendix D: Room Arrangement and Classroom Activity</td>
<td>303</td>
</tr>
<tr>
<td>Appendix E: Researcher-Perceived Levels of Student Engagement during Classroom Visits</td>
<td>307</td>
</tr>
</tbody>
</table>
List of Tables and Figures

Table 1. Comparison of Student Demographics at "Highland Charter School" and the Surrounding School District, 2015-2016 School Year .................................................................................................................................................. 110

Table 2. Demographics of “Highland Charter School”, Other Charters in the Area, and the Neighboring School District (TPS) (2015 Data) ................................................................................................................. 110

Table 3. Participants Included in this Case Study ............................................................................................................................. 112

Figure 1. Category 1: Conditions Supporting Self-Determination ....................................................................................................... 119

Figure 2. Category 2: Leadership ........................................................................................................................................................ 136

Figure 3. Category 3: School Culture .............................................................................................................................................. 153

Figure 4. Category 4: Instruction ...................................................................................................................................................... 165
Acknowledgements

I am so grateful for the help of so many people, without whose guidance and persistent patience I would never have completed this endeavor. Thank you so much for climbing this mountain with me, and for not giving up on me, when giving up would have been the easier (and perhaps wiser?) choice.

First, a huge “thank you” to my committee: Dr. Wilkinson, Dr. Althof, Dr. Hoagland, and Dr. Kyle. I am ever so appreciative of the advice, encouragement, and indispensable feedback you provided. An especially huge thank you goes to Dr. Wilkinson and Dr. Althof. I have no idea how I would have managed this without your guidance. I will be eternally grateful.

Of course, none of this would be possible without the generosity of my participants. You made me feel so welcome and allowed me to invade your classrooms with a moment’s notice. Thank you! Your dedication, talent, and love for your craft are inspiring.

I want to thank Dr. Marvin Berkowitz, Ms. Stephanie Koscielski, and Mr. William Mendelsohn for their insight into character education, PST training, and charter schools, respectively. Your help was incredibly valuable, and I appreciate it more than you know.

I have so much gratitude for my own school leaders, Mrs. Sherry Blough and Mrs. Debbie Stair, as well as my wonderful co-workers, including (but not limited to) Kristin Hoekzema, Julie Cordray, Matt Pannkuk, Heather Sartin, Traci Runge, Tracy Bommell, Laura Quinn, Eric Wildermuth, and Crystal Barnes. Thank you so much for your encouragement and support!

Finally, and certainly the closest to my heart, my own family will forever have my love, admiration, and deepest gratitude. My husband Shawn, who is certainly my better half, often had to take on the role as single dad while I shut myself in the library. My beautiful children Connor, Kerrigan, and Kenna have spent far too many weekends
without their mom. And thank you so much to my parents Linda and Bob Woodstuff, and parents-in-law, Valerie and David Levin, for moral support and for caring for our children when writing whisked me away. I love you all.
Chapter 1

Introduction

The goal of this case study was to investigate teachers', administrators', and pre-service teachers' perceptions of professional autonomy in an urban, site-managed charter school. In this project, I examined the school's commitment to character education, the administrators' support of educator development, and teachers' technology use; my aim was to understand how these factors interplayed and impacted professional agency and instructional decision making. In the current standards-based educational climate, I wanted to determine the extent to which these educators, working with a largely low-income student population and outside of the traditional public school model, believed their autonomy was encouraged and supported by school leadership.

Since the 1980s, the United States has experienced an ever-changing education climate. After the 1983 release of the U.S. Department of Education’s report *A Nation at Risk*, there was suddenly national attention on the failings of our educational system. The report claimed that we were rapidly losing our status as a world economic power as student achievement in competing countries was surpassing ours. These statements had a lasting impact on the U.S. education system. Since the first national set of standards was published in 1989 by the National Council of Teachers of Mathematics, the United States education system has seen an evolution of standards reform and corresponding accountability programs.

The *No Child Left Behind Act of 2001* (NCLB) was the federal government’s first directive addressing nationwide improvement of the educational system. This federal law mandated specific steps that all states had to take in order to improve instruction and
student achievement. With NCLB came the birth of widespread standardized testing which ensured that all school systems were held accountable for student progress. This also fore-fronted the topic of national standards and eventually led to the idea of a common set of educational standards (Barton, 2009).

**The Common Core State Standards**

The Common Core State Standards Initiative was a joint effort driven by the National Governors Association’s Center for Best Practices and the Council of Chief State School Officers. The resulting document, *The Common Core State Standards*, was created with the cooperation of a large network of teachers, educational researchers, and educational administrators.

The intent of the document was to guide educational reform so that all students will complete the twelfth grade ready to either enter the workforce or to enter accredited colleges (*Common core*, 2012). Written to integrate learning of English Language Arts and Math across the curriculum, the “standards [were] designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in college and careers. With American students fully prepared for the future, our communities will be best positioned to compete successfully in the global economy” (*Common core*, 2012, Mission Statement section, para. 1).

The CCSS directly address the nation’s concerns that awakened with the release of *The Nation at Risk*. In order to prepare high school graduates to enter the workforce or to further their education, the standards:

- Are aligned with college and work expectations;
- Are clear, understandable and consistent;
Include rigorous content and application of knowledge through high-order skills; 
- Build upon strengths and lessons of current state standards; 
- Are informed by other top performing countries, so that all students are prepared to succeed in our global economy and society; and 
- Are evidence-based (Common core, 2012, About the Standards section, para. 4).

At this time, the CCSS has been voluntarily adopted by forty-two states, the District of Columbia, four U.S. territories, and the Department of Defense (NGA & CCSSO, 2016).

**Charter Schools in Public Education**

Charter schools first emerged in the 1990s, offering an alternative to traditional public schools, and less strenuously regulated by states' legislatures. Charters are publicly-funded schools which are governed by an authorizing agency, or sponsor, and are under less governance from public school districts than traditional public schools (Ni, 2012). Students enroll into charter schools by choice, rather than being placed there by the school district.

The original intent of the charter school model was twofold: to create publicly-funded schools with less direct regulation, thereby allowing for more agency in instruction; and supporting the creation of innovative teaching methods that would improve education across all public school arenas. As of the 2014-2015 School Year, there were over 6600 charter schools across the United States, in 40 states, serving over 2.6 billion students (National, 2016). During that year, 501 new charter schools opened their doors across the country (National, 2016). That year, 42 states had laws allowing for
charter schools, and 40 states had charter schools operating in their school systems (National, 2016).

Though charter schools must follow fewer guidelines than their traditional public schools (TPSs), they are held to the same accountability standards that govern all public schools. For example, the state prepares an Annual Performance Report (APR) for all public schools; the APR data is the result of student achievement, attendance rates, student growth, and graduation rates. The major difference between charter schools’ APRs and those of TPSs is the fact that charter schools do not attain accreditation through the state. Instead, the APR is used solely for reporting purposes (B. Metsker, personal communication, March 9, 2016).

This does not mean that achievement scores have no lasting impact on charter schools in the state. Like TPS, charter schools are evaluated through the state's School Improvement Program and must be evaluated every five years. The extent to which a charter school meets the state standards will have direct bearing on whether the school has its charter renewed (B. Metsker, personal communication, March 9, 2016).

The effectiveness of charter schools. Research studies have reported mixed results when comparing student achievement data between TPSs and charter schools (Carruthers, 2012; Flaker, 2014; Ni & Rorrer, 2012; Xiang & Tarasawa, 2015; Zimmer, Gill, Booker, Lavertu, & Witte, 2012). In 2010, the U.S. Department of Education concluded that the charter middle schools serving low-income, low-performing students displayed significant improvement in math scores, while charters serving higher income students saw a decline in math achievement scores; in reading, there were no significant
impacts on students from low-income communities, and a decline in scores for students in higher-income communities (Gleason, Clark, Tuttle, & Dwoyer, 2010).

Though charter schools are less bound by state regulations than TPSs, research has shown that the amount of professional autonomy afforded to teachers may not be higher than in TPSs (Crawford, 2001; Ni, 2012). Ni (2012) discovered that teachers working in charter schools supported by districts perceived more decision-making power within their schools than those teachers working in charter schools supported by other organizations. This may suggest that school districts often provide administrative resources and may offer additional support to charter school personnel than their private counterparts (Ni, 2012). Dee, Henkin, and Pell (2002) discovered that teachers working in independently managed (site-based managed) charter schools experienced enhanced levels of autonomy and were often encouraged to participate in decision making.

**Character Education in the Schools**

Character education is "the set of psychological characteristics that motivate and enable one to function as a moral agent, to perform optimally, to effectively pursue knowledge and intellectual following, and to be an effective member of society" (Berkowitz, Bier, & McCauley, 2016). Though it is not a "new" quest in education, character education became a renewed quest in public education in the 1990s. The year 1992 saw the emergence of Character Counts, a training program used to teach character education in schools, and Character Education Partnership (CEP, or Character.org), a nonprofit organization dedicated to facilitating character education in U.S. schools. The development of these organizations resulted in "character education [that] was broadened to include a wider range of pedagogical and psychological perspectives" (Althof &

Character.org celebrates those schools which have demonstrated a persistent commitment to fostering character education in its students. National Schools of Character that have completed a rigorous evaluation, proving that character education has had a profound impact on academics, student behavior, and school environment. The "National School of Character" title is held for a five year period, after which it must be renewed (Character.org, 2016b).

**Integrating ICT in the Urban Classroom**

Information and communications technology (ICT) is a term which includes all digital and multimedia tools used to enhance the acquisition, understanding, and manipulation of information. Research has suggested that ICT, when integrated seamlessly into classroom instruction, adds relevance and coherence to the learning experience; incorporating technology tends to encourage students to invest personally in their learning (Craft et al., 2008) and aids the learners in identifying and solving problems (Morphew, 2012). Gilbert (2007) emphasized technology’s role in encouraging students to become creators of “new knowledge”, rather than simply consuming extant information (p. 121).

Prior to the 1990s, the presence of classroom technology was considered highly novel, with few teachers having the technology skills to integrate digital tools meaningfully in instruction (Trilling & Hood, 1999). Presently, computers and digital technologies are considered integral to teaching and learning. Access to digital tools and
networking systems is an essential part of the U.S. national standards movement, as evidenced by the *Common Core State Standards* (CCSS, 2011) and the *International Society for Technology in Education (ISTE) Standards* (2012a, 2012b).

The importance of using ICT as an effective tool for student collaboration has been well documented (Brindley, Walti, & Blashke, 2009; Gilbert, 2007; Ligorio, Talamo, & Pontecorvo, 2005). When students use technology to work on realistic issues and become co-creators of new information, the relevance of classroom learning is greatly enhanced (Craft, Chappell, & Twining, 2008; Gilbert, 2007). The vast majority of adolescents today are steeped in technology outside of the school setting, but there is a significant segment of student population who have limited access to the same digital tools and technological skills of their affluent classmates (U.S. Department of Education, 2013). This may influence the efficacy of ICT use in urban schools.

**ICT implementation in the urban classroom.** The extant literature has cited several factors that influence the extent to which teachers integrate technology into their students’ learning. Some of these factors include access to digital resources; teachers’ training in using ICT effectively; the amount of support for ICT-related instruction by administrators; teachers’ perceptions of technology’s benefits on student learning; and the existence of a district or building technology plan (Brinkerhoff, 2006; Miranda & Russell, 2011).

Research also suggested that schools serving students from low socioeconomic status (SES) often do not have equal access to meaningful digital resources when compared to schools with populations from higher SES (Hohlfeld, Ritzhaupt, Barron, & Kemker, 2008; Staples, Pugach, & Himes, 2005). Mouza (2011) discovered that the less
funded urban schools provided fewer technological resources in the classroom. Furthermore, Warschauer, Knobel, and Stone (2004) suggested that low-SES schools often use technology more frequently for remedial work in literacy and math, and do not tend to rely on technology as a tool for research and innovation.

Van Dijk (2006) defined the “digital divide” as “the gap between those who do and those who do not have access to new forms of informational technology” (pp. 221-222). Though the term seems straightforward, Van Dijk (2005) and Van Dijk and Hacker (2003) warned that the term itself is misleading and may cause several misconceptions to occur. Van Dijk (2005) claimed that the term “digital divide” implied a static situation in which two clearly divided groups of people (those who had access and those who did not) were separated by the situation, and that the gap was difficult to bridge; in reality, he argued, the groups were dynamic rather than static, and they were not divided neatly into two separate groups. Instead, people have had varying amounts of access to current technologies. According to Van Dijk (2006), the inequality of access to technology led to much more than simply unequal access to resources. He claimed that people with less access to current technology also developed fewer skills; achieved lower degrees of social power; and experienced fewer opportunities to participate in society.

**Social Constructivism in the Classroom**

The importance of meaningful technology integration across the curriculum may be explained by the social constructivism communicated in the works of both Lev Vygotsky and Jerome Bruner. Vygotsky (1930/1980) and Bruner (1971) claimed that learning is primarily a social activity, highly dependent upon cultural context. In other words, a person is unable to fully escape the influence of other people, and his or her
understanding of the world is impacted by their interactions with others. Learning cannot take place within a social vacuum. Vygotsky’s (1930/1980) study of human language development and Bruner’s (1971, 1977) investigation of the learning process each revealed the integral role of other people on a learner’s cognitive growth.

**The Problem: Teacher Autonomy and its Impact on Instruction in a Charter School**

As I mentioned, there have been ample studies that reveal variations in teacher autonomy within charter schools; also represented are reports that describe the complex issues that greatly impact classroom instruction in highly dense, low income urban communities. What is missing are the varied points of view of pre-service teachers, classroom teachers, and administrators regarding the professional autonomy each experiences in a single charter school. Uncovering the diverse reflections around teacher autonomy and administrative support, and the impact of the autonomy-support balance on instructional practices, would lead to a deeper understanding of how autonomy and support can be best structured to enhance teaching and learning in a diverse urban classroom. In this study, I investigate how one urban charter school deliberately balances instructional support and teachers’ independence in classroom teaching.

**Purpose of this Study**

The purpose of this case study is to examine how the instructional strategies of PSTs, classroom teachers, and administrators, working in an urban charter school, are shaped by their perceived professional autonomy and the support provided to them by the school. The bounded system, and the case itself, in this project is Highland Charter School (a pseudonym) situated within an urban community in a Midwestern metropolitan area. Examining the teachers’ views on autonomy and their approaches to instruction
may lead to greater insight of how established teacher autonomy can improve instruction in classrooms serving students from lower socioeconomic (SES) backgrounds.

**Research Questions**

This study was intended to answer the following questions.

1. How are teacher autonomy and autonomy support by school leadership perceived by (a) classroom teachers, (b) preservice teachers, and (c) administrators at Highland Charter School?

2. To what degree do teachers at Highland Charter School believe professional autonomy impacts their teaching practices; and how do they feel this impacts student achievement?

3. How do teachers at Highland Charter School view their own autonomy in the face of the *Common Core State Standards*?

4. To what degree do the teachers believe classroom technology, and their perceived autonomy in using technology, impact their teaching styles?

5. What factors, other than teacher autonomy, do the participants believe have the greatest impacts on classroom instruction and teachers' decision-making?

**Theoretical Framework**

**Introduction.** This study is oriented to consider how Deci and Ryan’s self-determination theory (SDT) can explain teachers' decision making and classroom instruction in a locally-managed charter school. SDT claims that human motivation is driven by three innate psychological needs: competence, autonomy, and relatedness; furthermore, it provides a framework for predicting the social contexts which enhance or
diminish a person’s motivation and maintains that an individual’s sense of autonomy is a vital component in this theory (Deci & Ryan, 2000).

Mishra and Koehler’s 2006 TPACK model illustrates the complex interaction between the teacher’s pedagogical knowledge, content understanding, and technological knowledge. Instead of considering these three components as separate entities, the TPACK model emphasizes the connections between them and their united impact on teaching.

The works of Lev Vygotsky (1930/1980) and Jerome Bruner (1971, 1977) emphasized the social component of learning. In this research, I use their writings as a foundation to explain the necessity of human interaction in all arenas of education.

**Self-determination theory (SDT).** Developed by Deci and Ryan (1985), SDT asserts that human motivation is primarily driven by three innate, universal psychological needs: competence, autonomy, and relatedness. According to this model, the extent to which these three needs are met by an activity directly impacts a person’s motivation to pursue a goal (Deci & Ryan, 2000). Ryan and Deci (2008) defined competence as the “efficacy with respect to autonomously selected goals or areas of growth” (p. 189), while autonomy was identified as the feelings of “self-organization and self-regulation of actions and experiences” (p. 188). Finally, relatedness refers to the “sense of being cared for and connected with (other people)” (Ryan & Deci, 2008, p. 189). In order for a person to be highly motivated in accomplishing a task, all three of these psychological needs must be met in the activity (Deci & Ryan, 2000, 2008; Ryan & Deci, 2008).

Failure to meet these needs has a negative impact on an individual’s motivation: “To the degree that these organismic processes are hindered by nonfavorable conditions-
specifically when one’s context is excessively controlling, overchallenging, or rejecting—they will, to that degree, be supplanted by alternative, often defensive or self-protective processes” (Deci & Ryan, 2000, p. 229).

SDT identifies four different types of motivation, placing them on a continuum based on the degree to which the person’s actions are self-governing. If a person feels coerced or pressured into a certain action, the motivation is called external regulation. Secondly, if the behavior is driven by feelings of guilt or by the need to attain approval from others, the motivation is labeled as introjection. If the individual identifies his or her own goals and chooses to work towards attaining them, then he or she is guided by integrated regulation, assuming that the goals are consistent with the person’s values. Finally, the motivation is intrinsic when the person’s actions reflect a deep interest or curiosity in the outcome of the action (Ryan & Deci, 2008). According to Ryan and Deci (2008), a higher degree of autonomy reflected in a person’s motives typically leads to a higher engagement and greater success.

According to Deci and Ryan (2008), the greatest number of published SDT studies has focused on its application in various fields, including education. Aelterman, Vansteenkiste, Van Keer, and Haerens (2016) successfully used SDT to predict physical education teachers’ changed beliefs regarding a new teaching approach and their intention to implement the approach in future classes. According to their study, the degree to which the teachers’ needs (competence, autonomy, and relatedness) were met during school-sponsored professional development correlated to their acceptance of the teaching strategy and their intentions to apply the strategy (Aelterman et al., 2016). According to the authors, “The more PE teachers reported their psychological needs for
autonomy, competence, and relatedness to be fulfilled during the training, the larger the change in their effectiveness and feasibility beliefs” (Aelterman et al., 2016, p. 70).

Gagné and Forest (2008) applied SDT to study the effect of tangible rewards on motivation in the workplace. Interestingly, they discovered that introducing tangible rewards for autonomous behavior ultimately lowered motivation for success; however, verbal rewards had a positive impact. Additionally, rewards given simply for engaging in the behavior (regardless of the level of performance) had a greater negative effect than performance-contingent rewards (Gagné & Forest, 2008).

**TPACK.** Mishra and Koehler (2006) proposed a framework for ICT integration in instruction. Their model, called technological pedagogical content knowledge, or TPACK, was designed to provide a structure from which teachers can understand the complex interactions between pedagogy, technology, and content knowledge. Based upon the work of Schulman (1986), TPACK asserts that ICT integration is highly contextual and is dependent upon several factors: content knowledge (CK), or the actual discipline taught within the class; pedagogical knowledge (PK), or the understanding of how teaching strategies promote learning; technical knowledge (TK), or the skills needed to operate digital resources; technological content knowledge (TCK), or the understanding of how technology can impact learning; and pedagogical content knowledge (PCK), or the understanding of which teaching strategies best support learning within the discipline (Mishra & Koehler, 2006).

A sophisticated understanding of how pedagogy, technology, and content interact in the learning process allows the teacher to more effectively develop instruction to enhance student learning in the classroom. Mishra and Koehler (2006) argued that too
often, teachers merely rely on technology and do not understand that the impact of ICT is greatly dependent on the context in which it is being used; they claimed that “merely introducing technology to the educational process is not enough” (p. 1018).

**Limitations and Delimitations of the Study**

Limitations to this research project included rigid time constraints, a modest number of participants within the single site, potential researcher bias, and limited member checking of data. These factors could not be minimalized and may have had some impact on the findings in this study.

Data collection for this study took place during the spring semester, 2016, and spanned from January through May. This limited time frame allowed me to examine only the immediate impacts of autonomy on teacher behavior rather than any possible long term effects. Further studies observing the influences of professional autonomy on teachers' identity development would provide a more complete understanding.

The research was a single case study of one particular school site. As inherent to a study involving one school, the pool of participants was fairly limited. This particular school was staffed primarily by “newer” teachers, with the average classroom experience at seven years. Therefore, five of the seven teachers included in this study had five years’ or fewer teaching experience. Four teachers were tasked with guiding pre-service teachers through their student teaching as well.

The teachers at Highland were accustomed to having visitors in and out of their classrooms, so my presence as a researcher did not appear to affect the teachers’ or the students’ activity. There was no apparent concern or hesitation of any informant in welcoming me as a silent observer in the classrooms. My freedom to enter the classroom
at my will ensured that I was able to observe a variety of lessons and teaching strategies in each classroom. I feel this afforded me a clearer vision of the teachers’ approaches and enhanced the less-than-obvious diversity among the participants in this project.

Though my presence probably had minimal impact on the teachers' actions, I cannot ignore the possibility of my own researcher bias. Though my role in this case was purely etic, it is possible that my past teaching experiences may have influenced my own perceptions. Prior to this study, I had taught in high school and middle school science classrooms for ten years, and I had taught for several semesters in a teacher education program, preparing college students to enter their professional internships. Therefore, I cannot claim to be 100% impartial, as I carry my own professional experiences. My own prior teaching experiences, educational philosophy, and experiences in training PSTs likely impacted the interpretation to some extent. At the time of data collection, I had briefly stepped away from my own teaching, but I reentered the middle school classroom while still steeped in data analyses. Therefore, my perception evolved from that of a researcher to a practitioner as I finalized this report.

With my reentry into the classroom, the writing process was stretched over the course of a year. Therefore, all member checking took place shortly after I had completed my data collection. Since I left the site in May, near the conclusion of the 2015-2016 school year, I was only able to send my participants a summary of the analysis that I had derived at that point. I did not send subsequent iterations of my study until the report was finalized. At that point, I emailed a PDF copy of the completed dissertation to the participants.
Delimitations to this study include a narrow focus on teacher behavior in a highly situational context, thus limiting the generalizability of my findings. My focus was to understand how the different players reflected on the workings of the school in terms of teacher agency and support. My hope is that the reader will find some aspects of the research that may be applied to different situations, but I do not expect the findings to be highly generalizable to a broad range of contexts. The research did uncover some individual patterns that may echo the workings of other urban schools in the United States and therefore can be identified as an instrumental case study, as described by Stake (1995).

**Significance of this Study**

By studying the differing perspectives of PSTs, classroom teachers, and administrators regarding effective teaching, autonomy, and professional support in a shared urban school setting, I hoped to construct a deeper understanding of how these factors interact to contribute to meaningful instruction in this charter school. Though this case is unique, my goal was to uncover factors that led to student success in a school serving a large number of children from low SES backgrounds and diverse cultures. My aspiration was to add to a general understanding of ways teachers and administrators can collaborate to enhance classroom learning. I hoped to inform charter schools and other independent local education agencies (LEAs) on ways administrators can balance teacher autonomy and professional guidance to improve classroom instruction.
Summary

The purpose of this study was to gain a deeper understanding of how the teaching and administrative staff at Highland Charter School perceive the level of individual autonomy experienced by the teaching staff; and how they believe teacher autonomy and professional support help to shape their instructional practices. Understanding the different perspectives of PSTs, classroom teachers, and administrators, within a shared school setting, helped to reveal ways autonomy and support can be balanced to enhance teacher effectiveness in a low SES, highly diverse, urban charter school. Through an iterative data collection and analysis process, I was able to systematically uncover relationships among these variables and to construct an understanding of the perceived importance of autonomy by these teachers and their supervisors. I hope this study can add to the general knowledge of how urban schools can empower their teachers to meet the needs of a diverse student body in a low SES community.

The following chapters will present this project in depth. My intent was to use narrative to guide the reader through my research process. Chapter Two will review the extant literature and theoretical foundation on which this case study was designed. Chapter Three details the methodology I followed, including the overall research design, sample selection, and concurrent data collection and analyses. Chapter Four communicates my findings in terms of the four main categories which emerged from the data. Chapter Five answers my five research questions and discusses their relevance, connections to extant literature, and their implications.
Chapter 2: Review of the Literature

Introduction

When planning this study, I oriented this research around the social determination theory of Edward Deci and Richard Ryan. This work is a psychological macrotheory that
explains human motivation from the standpoint of satisfying three distinct but related innate needs: autonomy, competence, and relatedness. Though all three of these needs greatly impact one another and affect an individual’s motivation to accomplish goals, I will focus my investigation on educators’ need for autonomy in their professional practice. I begin this chapter with an explanation of the major tenants of the theory and how it can be used to understand teachers' instructional decision making.

Though a small portion of this study, this research considers ICT as a tool for enhancing student learning in the classroom, and how the interplay between teacher autonomy and support from school administrators helps to shape how ICT is incorporated into classroom instruction in this urban charter school. Therefore, it is essential to discuss the complex connections between these factors. Mishra and Koehler’s (2006) TPACK model explains the interplay between the teacher’s technological know-how, their understanding of pedagogy, and their fluency within their specific content areas. Instead of considering these three factors as separate entities, Mishra and Koehler insist that they are all intertwined and form one general professional competency (2006).

Teachers working in low-SES urban schools face unique challenges. Research has stated that these school districts often experience high teacher turnover due to lower teacher salaries, lower support from administrators, and more frequent student behavior problems (Ingersoll, 2004; Warschauer et al., 2004; Warschauer, Matuchniak, Pinkard, & Gadsden, 2010). In addition, students may experience inequitable access to digital resources or technology skills; according to data collected in the 2010 Current Population Study, there were significant differences in home Internet usage along racial and educational lines (Persons, 2011).
Charter schools have become a tool for reform in forty states (National, 2016). By providing an alternative means for publicly-funded education, with less state-mandated governance, charter schools promise opportunities to meet student needs in creative ways (Preston, Goldring, Berends, & Cannatta, 2012). In addition to increased school autonomy and self-rule, charter schools are intended to create a financially competitive environment, thus prodding TPSs to improve their educational programs (Imberman, 2011). However, there has been debate over how successful charter schools have been in improving teacher autonomy and support, and in students’ academic achievements (Carruthers, 2012; Crawford, 2001; Dee et al., 2002; Imberman, 2011; Ni, 2012; Preston et al., 2012; Quinn & Ethridge, 2006).

The particular charter school in this study was committed to infusing character education in all educational practices and inner workings of the school. In 2009, it earned its original designation as a National School of Character, awarded through the nonprofit organization Character.org. In order to achieve this award, a school must demonstrate a consistent dedication to fostering character education in its students. The "National School of Character" title is held for a five year period, after which it must be renewed (Character.org, 2016).

Student teaching, though a highly individual experience, often presents a common set of challenges for PSTs. Often, the complex relationships between the PST, his or her cooperating teacher, and university supervisors lead to differing visions on the outcome of the training experience (Valencia, Martin, Place, & Grossman, 2009). Often, the mentor may lack understanding of the university’s requirements for its PSTs and mentors and may not be afforded the training needed to meet the unique needs of his or her PST
(Anderson & Stillman, 2013; Roehrig, Bohn, Turner, & Pressley, 2007; Russell & Russell, 2011; Schwille, 2008; Sim, 2011). However, the training’s level of success can be enhanced by cooperation among the different players in the situation; employing motivated cooperating teachers who are committed to helping their PSTs develop professionally; maintaining open and honest communication between PSTs and mentors; and providing support and training to the mentors (Anderson & Stillman, 2010; Orzulak, 2012; Roehrig et al., 2007; Russell & Russell, 2011; Schwille, 2008; Valencia et al., 2009).

An abundance of extant literature has prescribed ICT as a collaboration tool in the classroom and insists that the effective use of digital tools enhances the relevance of learning within schools (Brindley et al., 2009; Craft, 2012; Craft et al., 2008; Ligorio et al., 2005; Trilling & Hood, 1999). Technology use in research is a prominent feature across the Common Core State Standards, which compels school systems to integrate ICT across the English Language Arts (ELA) and Mathematics curricula (NGA & CCSSO, 2016). When students are engaged in relevant, purposeful learning experiences, they often become deeply engaged in the content (Cooper, 2012).

Though survey data suggested that the vast majority of American teenagers are regularly accessing the Internet, other data sources revealed that there is a significant number of adolescents who have diminished access to digital tools and the skills necessary to become co-creators of novel information (ERIC, 2011; Gilbert, 2007; Ritzhaupt, Liu, Dawson, & Barron, 2013; Sipior, Ward, & Connolly, 2011; Staples et al., 2005; U.S. Department of Education, 2013; Van Dijk, 2006; Warschauer et al., 2010). In addition, economic limitations in urban school districts may limit ICT-related
professional training available to classroom teachers (Hughes & Ooms, 2004). Greenhow, Walker, and Kim (2009); and Warschauer et al. (2004) reported that low-SES classrooms frequently required students to use ICT in terms of remediation and low-level research while classrooms in affluent communities assigned ICT-related tasks which employed critical thinking.

The term “digital divide” describes the inequity of technology access experienced among socioeconomic and different cultural groups in society. However, the term is misleading; it does not simply delineate people into two clear-cut groups: those who have technology, and those who do not. That is a misconception. Instead, it describes a dynamic situation in which different groups of people have varying access to technological tools and skills needed to perform meaningful tasks (Van Dijk, 2006). In order to support students in low-SES schools, it is imperative that ICT is used to support higher order thinking skills.

ICT is used to varying degrees within individual classrooms. There are many factors that determine the extent to which digital tools are utilized. In this paper, I focus on four general determinants: the availability of resources; professional development training offered to school staff; the amount of support of teachers by school leaders; and teacher attitudes toward technology. Extant literature has revealed that pre-service teachers’ use of classroom ICT is often influenced by the mentoring relationships shared with their cooperating teachers; by the perceived useful of the technology by the PST; and the by the PST’s perceived skill level in technology (Grove, Strudler, & Odell, 2004; Sadaf, Newby, & Ertmer, 2012).
Theoretical Foundations: Self-Determination Theory and the Importance of Autonomy

Self-determination theory is a framework claiming that human motivation is dependent upon the satisfaction of three innate psychological needs: a person’s need for autonomy, competence and relatedness (Deci & Ryan, 2000). In other words: “SDT suggests that it is part of the adaptive design of the human organism to engage interesting activities, to exercise capacities, to pursue connectedness in social groups, and to integrate intrapsychic and interpersonal experiences into a relative unity” (Deci & Ryan, 2000, p. 229). This model declares that all three of these needs are essential in a person’s psychological development and if one of the needs are neglected, the individual experiences negative consequences (Deci & Ryan, 2000). Though designed as an explanation to understand human psychological development, SDT also addresses the needs in terms of goal development and the motivation to attain those goals and explains the influence of social context on motivation and behavior (Deci & Ryan, 2008).

The three needs are interrelated and not easily separated. For example, autonomy refers to self-organized activity and self-regulation of experiences; in order to feel competent, a person must feel as if he or she was successful in attaining an autonomously chosen goal or aspiration (Ryan & Deci, 2008). Relatedness, or the feeling of connection with other people, enhances the person’s feelings of being competent, while the trust the person shares with people in a social context boosts the individual’s ability to make decisions and thus maintain a level of personal autonomy (Ryan & Deci, 2008). Deci and Ryan (2000) claimed:

To the degree that these organismic processes are hindered by...excessively controlling, overchallenging or rejecting... they will, to
that degree, be supplanted by ...defensive or self-protective processes, which...would include...the tendency to withdraw concern for others and focus on oneself (p. 229).

**SDT as a predictor for motivation.** This model is helpful in categorizing the types of motivation which stimulate human action. Ryan and Deci (2008) labeled four types of motivation, according to the degree of autonomy that compels each: First, if a person is motivated strictly by external factors and feels forced into action, the motivation is called external regulation; this is occurring in a highly mechanistic context in which the individual has little opportunity to make his or her own decisions. Secondly, if a person feels obligated to act a certain way or is motivated by feelings of guilt, this is labeled introjection; in this case, there is only a slight degree of decision making by the person. Third, if the person agrees to a certain behavior because he or she agrees with the goals, the motivation is called integrated regulation; the person has autonomy in making the ultimate decision. Finally, if the person’s actions are driven by his or her inquisitiveness, and the motivation is strictly from the person’s curiosity, the motivation is intrinsic. In this situation, the person has complete autonomy in determining his or her own behavior.

**Connection between SDT and teacher autonomy.** As described in the four categories of motivation, SDT distinguishes sources of intrinsic motivation from the extrinsic (Gagné & Forest, 2008). When a person is exercising full autonomy, then he or she is motivated to engage in an activity for the activity’s sake, simply because of the individual’s interest in the action. Gagné and Forest (2008) discovered that often extrinsic rewards can thwart a person’s goal attainment: If a physical reward is offered to a person for completing an autonomous task, the person’s motivation can be negatively
impacted; obtaining the reward simply for engaging in the action, without considering the level of performance, had a much stronger negative influence than obtaining the reward based on the person’s success. Furthermore, verbal rewards for autonomous activity enhanced motivation (Gagné & Forest, 2008).

Gagné and Forest’s study can be applied to the workplace; they called attention to the fact that clear guidelines have been established through research on the most effective ways to engage employees in taking on leadership roles, but the types of reward systems that enhance the effects of the guidelines are not well-known.

A recent study involving physical education teachers clearly illustrated how teachers’ need satisfaction during a professional development regime regarding an instructional approach led to their intent to implement the approach with their students (Aelterman et al., 2016). The research team concluded that even teachers with a well-established teaching repertoire are willing to embrace change when their needs for competence, autonomy, and relatedness are met during the training process (Aelterman et al., 2016). Guay, Ratelle, and Chanal (2008) discovered a similar trend in student performance; their study revealed enhanced autonomous motivation for learning activities led to improved grades, deeper learning, and greater satisfaction with school.


The TPACK model, proposed by Mishra and Koehler (2006), is rooted in Shulman’s (1986) conception of pedagogical content knowledge (PCK). Shulman (1986) insisted that the common notion that content knowledge and pedagogy are separate entities was ineffective. At the time, the most common school of thought was to prioritize either content knowledge or pedagogy, so that one took precedence over the other; he
argued that both aspects of teaching were instead intertwined and that effective teachers considered both simultaneously. Shulman (1986) insisted that PCK includes “an understanding of what makes the learning of specific topics easy or difficult: the conceptions and preconceptions that students (...) bring with them to the learning of those most taught topics and lessons” (p. 9).

Mishra and Koehler (2006) created TPCK, now known as TPACK (Mouza, 2011; Schmidt et al., 2009) in response to the common practice of considering technology as separate from PCK. They argued that considering only the technology, and not its actual use, creates problems in classroom instruction. Instead, the relationships between technology, content, and pedagogy are complex and are bound within the context of the classroom (Mishra & Koehler, 2006). Understanding the relationships between them allows educators to make effective instructional decisions and impacts student learning (Mishra & Koehler, 2006).

The framework considers the relationships among pedagogy, content, and technology in separate dyads: pedagogical content knowledge (PCK), technological content knowledge (TCK), and technological pedagogical knowledge (TPK); the framework’s creators believed that an understanding of the separate relationships leads to the grasp of the TPACK model (Mishra & Koehler, 2006).

Content Knowledge (CK), according to this model, refers to the discipline or subject matter to be taught; pedagogical knowledge (PK) is the general understanding of learning processes and effective teaching strategies which are common in all disciplines; combined, PCK is the understanding of which strategies are the most effective in the
subject area, and how to implement them for more effective instruction (Shulman, 1986; Mishra & Koehler, 2006).

Technological knowledge (TK) is general knowledge on how to use different technologies in general; when combined with CK, it becomes technological content knowledge (TCK), which is highly contextual. TCK is the knowledge on the most effective ways to use technology to teach subject matter and the ability to learn and implement newer and more advanced technologies meaningfully within the discipline (Mishra & Koehler, 2006).

The combination of TK and PK is technological pedagogical knowledge (TPK), the understanding of how different technologies impact the learning process, and how students’ comprehension may be heightened with the implementation of different technologies (Mishra & Koehler, 2006). TPACK, which combines all of these components into an intricate web:

Is the basis of good teaching with technology and requires an understanding of the representation of concepts using technologies; pedagogical techniques that use technologies in constructive ways to teach content; knowledge of what makes concepts difficult or easy to learn and how technology can help redress some of the problems that students face; knowledge of students’ prior knowledge and theories of epistemology; and knowledge of how technologies can be used to build on existing knowledge and to develop new epistemologies or strengthen old ones (Mishra & Koehler, 2006, p. 1029).
Theoretical Foundations: Social Constructivism and Learning

Vygotsky and social constructivism in education. The study of Soviet psychologist Lev Vygotsky on social interactions and their impact on development has provided the foundation for social constructivism in education. According to Vygotsky (1930/1980), all learning takes place within a social context; he claimed that human development is “deeply rooted in the links between individual and social history” (p. 30). Both memory and learning concepts start out as observable and external to the child, and they gradually evolve to become internalized. The ability to remember originates when the young child interacts with the people and objects within sight.

Vygotsky (1930/1980) described development in terms of a cyclical or spiraling process, in which the learner’s understanding of the same content grows deeper and more sophisticated as he or she develops. “Development, as often happens, proceeds here not in a circle but in a spiral, passing through the same point at each new revolution while advancing to a higher level” (p. 56). The thought process that he described appears to be the basis for Bruner’s spiral curriculum, as described later in this chapter. However, Vygotsky never used the term within the text.

Vygotsky (1930/1980) defined learning as a process in which the learner’s dependence upon others gradually decreases. The child’s actual developmental level is the degree to which the development of a particular skill has been completed at a specific time. However, this is not a complete description of the child’s capability; instead, Vygotsky argued that the child’s potential developmental level must be taken into consideration. The difference between the child’s potential development and actual development comprises the skills that are in the process of maturation; Vygotsky (1930/
1980) labeled this as the individual’s “zone of proximal development” (p. 86). According to this model, the learner is dependent upon others in order to progress towards the end point of the zone of proximal development, or ZPD. Gradually, his or her dependence on other people lessens until the skill is finally mastered. Throughout this process, the ZPD is actually moving along a continuum of increasing complexity (Vygotsky 1930/1980).

**Bruner’s view on society and learning.** Cognitive psychologist Jerome Bruner’s social constructivist views were largely inspired by the work of Vygotsky, as explained in *Actual Minds, Possible Worlds* (Bruner, 1986). His understanding of language, thought, and culture as permanently intertwined was rooted in Vygotsky’s notion that reality is deeply influenced by culture and history (Bruner, 1986; Vygotsky, 1962). Bruner (1986) cited Vygotsky’s ZPD as an instrumental concept in his own work, as it describes how society provides concepts and ideas upon which the learner builds his or her understanding of the world. In other words, the involvement of others is key components in helping the child develop cognitively.

Bruner claimed that society is a key component in understanding our world. Language is a reflection of a society itself: Meaning making involves negotiating a common working definition to be shared among the members within the society and is accomplished through the sharing of ideas (Bruner, 1986). Therefore, learning and development take place within a social context. This is in stark contrast to past educational theory, which described the child as an “active scientist”, a “rather isolated being, working alone at her problem-solving” (Bruner & Haste, 1987, p. 1).

Bruner’s (1977) and Vygotsky’s (1930/1980) views agreed that learning, though a separate process from development, does not have to take place after a person reaches a
certain level of development. Instead, Vygotsky (1930/1980) argued that learning and development drive each other: As a person develops cognitively, learning is taking place. The learning then drives the person’s development even further, and so on. Bruner (1971, 1977) argued that all people are able to learn any given subject at some level, regardless of their development. He claimed “for any knowledge or empowering skill that exists in the culture there is a corresponding form that is within the grasp of a young learner at the stage of development where one finds him” (Bruner, 1971, p. 17). In order for the child to learn the subject matter, it must be taught to them at their own level of readiness, or developmental level; this learning will help to drive their development, so that the subject matter can eventually be reintroduced at a deeper and more complex level (Bruner, 1977). In fact, Bruner (1977) argued, it is to the child’s advantage to be introduced to more complex ideas at a younger age; if the child encounters the concept or aspect of the concept at a younger age, then he is more likely to master the subject later on. The introduction and reintroduction of the same subject at increasing degrees of complexity is what Bruner termed spiral curriculum (Bruner, 1977).

Bruner’s spiral curriculum is the underlying premise for the structure of the CCSS (2012). Both the English Language Arts (ELA) and the Mathematics components of this standards document are designed so that the same core skills are introduced and reintroduced over and over again, with a gradual increase in complexity. By structuring the standards in this way, the goal is to cultivate college and career readiness in all U.S. students by the time they have completed the twelfth grade (CCSS, 2012). An example is the use of technology for research and writing, which is required at all grade levels,
beginning in Kindergarten; the standards require all children, to some degree, to use technology meaningfully in research and in communicating their ideas (CCSS, 2012).

**The Unique Challenges of Teaching in Urban Schools**

Urban schools, densely populated and frequently located in low socioeconomic communities, often experience challenges influencing how classroom technology impacts student learning. Schools in these communities are often plagued with high teacher turnover, inequitable access to digital tools, less technological support by the school district; and lower ICT efficacy of students and community members. These factors may shape how teachers use ICT as learning tools in classroom instruction.

**Teacher turnover.** Urban schools are often identified as being “resource poor”, with schools characterized by low achievement test scores and less qualified teachers (Ingersoll, 2004; Tate, 2011). Ingersoll (2004) claimed that the teacher turnover rate is much higher in high-poverty school districts in the U.S. He argued that those high need urban and low-income rural schools lose approximately one-fifth of their teachers every year and claims “in such cases, ostensibly, an entire staff could change within a school in only a short number of years” (Ingersoll, 2004, p. 1). He based these assertions on data collected from the *Schools and Staffing Survey (1999-2000)* and the *Teacher Follow-up Survey (2001-2002)*, conducted by the National Center for Educational Statistics. He claimed: “Access to qualified teachers is one of the most important, but least equitably distributed, of educational resources” (Ingersoll, 2004, p. 2).

Ingersoll (2004) cited several reasons for this high turnover rate of qualified teachers, including increasing student populations and dwindling funding which leads to lower teacher salaries. In addition, the teachers have reported too much intrusion on class
time, limited teacher input into policy making, low level support from administrators, and student behavioral problems as sources for their job dissatisfaction (Ingersoll, 2004). Warschauer et al. (2004); and Warschauer et al. (2010) echoed these findings on a smaller scale: The faculty at the two low-SES high schools in their study had an average 4 fewer years teaching experience than the faculty at the high-SES high schools; in addition, the low-SES high schools had five times as many teachers who did not possess full teaching credentials than the high-SES schools. A 2010 report by the National Center for Education Statistics echoed this finding, claiming that predominantly-Caucasian schools employed a smaller percentage of newer teachers, with fewer than three years’ experience (10%) than schools that served a student body that was at least half Black (13%) or at least half Hispanic (15%) (Aud, Fox, & Kewal-Remani, 2010).

In addition to hiring a higher percentage of inexperienced teachers, schools serving mainly Black students or Hispanics are more likely to hire teachers who do not hold a certification in their primary disciplines (Aud et al., 2010). Overall, twelve percent of secondary education math teachers did not have a major or a certification in mathematics; schools serving a student body of at least half white enrollment had fewer math teachers without those qualifications (8%) than schools with more than half black enrollment (25%) (Aud et al., 2010).

**Urban education is not simply a single story.** In her 2009 Ted Talks presentation, author Chimamanda Ngozi Adichie warned her audience of the “unintended consequence” of not noticing the variance among groups of people holding less political power. She argued that the dominance of one voice over another results in the telling of a “single story”, and that power is “the ability to tell a story about a person [or, in this case,
groups of people] but to make it the definitive story of that person [or group]” (Adichie, 2009, 10:13). In other words, it is easy to only notice one aspect of a group of people and to remain unaware of the rich diversity within the group. She cited herself as an example: As a young girl growing up in Nigeria, she was an avid reader and story writer; the books which were available to her were stories written by British and American authors. The result was her misconception that only people from those cultures could exist in literature. She didn’t discover other African writers until much later. The “single story” exists within our schools as well. Lynn, Bacon, Totten, Bridges, & Jennings (2010) described the perceptions of teachers at a low-performing high school with a 99% African American student body. In interviewing the faculty, mainly African American teachers, they discovered that the teachers had very low expectations of their African American male students; this echoed data collected in a 1990s study conducted in Detroit (Polite, 1994). The fact that certain students, simply because of their race and gender, were expected to underperform is a clear example of how a single story may alienate people. Lynn and his team (2010) discovered that nearly all of the teachers in the study blamed factors outside of the school, such as lack of parental involvement in their education, or negative involvement; a “general ‘lack of structure’ in the homes” (p.311); lack of male role models; the culture’s devaluation of education; lack of student motivation; and the prioritizing of religion over education. The authors noted that the teachers did not mention their own roles in the students’ lack of success. Furthermore, they speculated that these teachers’ views were shaped by internalized oppression, as they were members of the same race; the research team also believed the social class differences between teachers and students shaped the teachers’ views about what their
unsuccessful students were lacking (Lynn et al., 2010). The authors reported: “It seems that for the teachers we studied, social class interacts with race to create a unique set of ‘limit situations’ that make it impossible, at least in their own minds, for them to teach these students well” (Lynn et al., 2010, p. 315).

**The digital divide.** The digital divide refers to the lack of equity in access to newer forms of ICT (Van Dijk, 2006) and is usually present among groups of people belonging to different socioeconomic (SES) levels, genders, and ethnicities (Ritzhaupt et al., 2013). Often, since children from low-income homes may have less access to technology outside of school, they are often less likely to be proficient ICT users than their peers from middle- or high-SES families (Ritzhaupt et al., 2013). A 2016 Pew Research Study revealed that only 53% of American households with incomes below $30,000 have broadband access at home, compared to 94% of households with annual incomes over $100,000 (Anderson, 2017). In addition, 66% of higher-income American households (with annual incomes over $100,000) own a computer with broadband access, a smartphone, and a tablet, compared to 17% of households with annual incomes under $30,000 (Anderson, 2017).

**Digital divide as a complex issue.** When considering the complex challenges faced by schools serving the poorest neighborhoods, it is so important to remember that there is a tremendous amount of diversity among the people in these communities. It is tempting, and so much simpler, to overlook the fact that each student in low SES schools carries his or her unique family situation, culture, interests, and experiences to the classroom. Urban schools have the reputation of being populated with students who are all from economically disadvantaged families; the term digital divide may lead us to
assume that most students in an urban school will not have access to technology. However, this is not the case.

Hargittai (2010); Warschauer et al. (2010); Sipior et al. (2011); and Wijetunka (2014) argued that the digital divide is not simply due to the lack of physical access to technology. Instead, they claimed that the phenomenon is much more complex and results from the disparity in efficacy in technology usage. Data collected from the 2010 Current Population Survey (CPS) by the U.S. Census Bureau and analyzed by the U.S. National Telecommunications and Information Association (NTIA) reported significant differences in home Internet usage along racial and educational lines. According to the report, approximately 53% of black, non-Hispanic households reported accessing the Internet at home on a regular basis, compared to 71% of white, non-Hispanic households (Persons, 2011). Over 87% of households including an adult with a college degree and 53% of households without high school diplomas reported regular Internet access (Persons, 2011).

Davis’ (1989) technology acceptance model (TAM) examines technology usage by population groups in terms of the perceived usefulness (PU) of a digital source and its perceived ease of use (PEOU) by the public. Sipior et al (2011) discovered strong relationship between the PU and PEOU and people’s perceived barriers to technology. This study, which examined usage of government websites among various demographics, determined that low-income, low-education level households perceived greater numbers of barriers to Internet access. Employment status was strongly related to PEOU; the authors suggested that employment may increase a person’s efficacy in using the Internet by providing opportunities to use online resources (Sipior et al, 2011). Wijetunga (2014)
uncovered similar findings in her study of mobile phone usage among low SES populations in Sri Lanka. Though government programs have enable the underprivileged population to gain access to mobile phones, Wijetunga (2014) discovered that the access to ICT technology on the phones is inequitable along socioeconomic lines; she argued that the underprivileged youth lack the computer competency required to attain autonomy in using the phones for sending or accessing information. Hargittai’s (2010) study of college freshmen attending an urban public university revealed similar findings. She discovered that students of low SES backgrounds, women, and Hispanic and African American ethnicities reported less efficacy in Internet usage than other demographics (Hargittai, 2010).

The authors of these studies echoed a shared recommendation: They all claimed that conquering the digital divide requires more than simply offering physical access to technology to underserved populations; instead, the increased access must be accompanied by technological support to help people attain the knowledge and skills needed to meaningfully use the resources (Hargittai, 2010; Sipior et al, 2011; Warschauer et al, 2010; Wijetunga, 2014). Sipior et al. (2011) predicted: “If the digital divide is not narrowed, the powerful communication tools meant to enrich lives will serve as a social divider” (p.310).

The digital divide in the classroom. Greenhow et al. (2009) discovered the majority of the low-SES students in their study tended to use desktop computers (82.9%), with their Internet usage highly dependent upon their location. In their study, only 35.5% of the students from low-SES schools owned a laptop; 63.9% used a mobile phone to go online; and 7.9% had other mobile digital devices. Furthermore, their study revealed that
most of the students who used a desktop computer at home shared it with at least four other family members, and 25% of those students had dial-up Internet access at home (Greenhow et al., 2009).

The study by Greenhow et al. (2009) showed that 52% of the 852 low-income teen participants reported going online once a day, with only 16% of them reporting that they go online more than once a day. The teens’ Internet usage was primarily task-focused and brief, often consisting of reading or sending emails or searching for information for school assignments (Greenhow et al., 2009). Perhaps this is due to sharing a computer among family members, as the teens would have less time for their own use. Though their usage of the Internet was for practical purposes, the students claimed to feel comfortable using ICT, and nearly all of them had learned new ICT from peers rather than from teachers or other adults (Greenhow et al., 2009).

A more recent study indicated that 21% of low-income adults, earning less than $30,000 per year, are dependent upon smartphones for Internet access and do not have broadband services at home. Only 10% of adults earning over $75,000 depend on smartphones to go online (Pew, 2018).

Data collected by Warschauer et al. (2004) revealed that teachers in the participating low-SES high schools implemented ICT mainly for presenting content, for remediation or review, and for simple research tasks for their students; in contrast, teachers in the high-SES schools assigned ICT-related assignments which required higher-order thinking. Students in both low-SES and high-SES schools used computers for writing and creating presentations, though only the teachers at the high-SES schools assigned opportunities to edit and analyze student work (Warschauer et al., 2004).
Greenhow et al. (2009) discovered the teens in their study reported consuming information in their (low-SES) schools; they rarely produced information. A study by Hohlfeld et al. (2008) reported similar findings, with students in high-SES-level schools utilizing production software more frequently than their peers in low-SES-level schools; this study suggested that teacher efficacy with ICT may be a factor in this discrepancy.

Warschauer et al. (2004) offered additional explanations for the differing classroom uses of ICT among low-SES and high-SES schools. First, the student achievement test scores in the low-SES schools tend to be lower than the scores of peers attending high-SES schools, and there is an increased pressure on the teachers to focus instruction on raising test scores; Warschauer et al. (2004) reported that less experienced teachers feel greater pressure to improve student performance than their more experienced colleagues. Secondly, Warschauer’s team (2004) reminded us that a greater number of low-income students do not have access to ICT in their homes, or they must share a single computer with family members. Finally, low-SES schools tended to have a greater percentage of English language learners (ELL) in the classroom; Warschauer et al. (2004) reported three times as many ELL students in the low-SES classrooms in their study than the high-SES classes.

Mouza (2008) revealed that the introduction of laptops into low-SES classrooms with well-trained teachers can have a great positive impact on students. In this study, which included two laptop-equipped classrooms and two similar classrooms without laptops, Mouza (2008) observed a greater amount of student exploration, increased student motivation to learn, and more collaboration among peers. The students within the laptop-equipped classes were engaged in sustained class projects and often directed their
own inquiries; experienced significant gains in literacy and mathematics; and felt empowered as they shared their newfound skills with classmates and their teachers (Mouza, 2008). This study suggested that ICT can be successful in raising student achievement and engagement, when they are directed by knowledgeable teachers.

**Charter Schools as a Tool for School Reform**

**Beginnings.** Charter schools began to emerge in the early 1990s, in response to the need for education reform. The first charter law was passed in Minnesota in 1991. Since then, 42 states have passed laws allowing for charter schools; 40 of those states currently have charter schools in operation (National, 2016). As of 2013, charter schools served between four and five percent of students in U.S. public schools (National, 2014). Initially, the aim for charter schools was to allow educators, parents, and communities “to support the development of independent and innovative schools that addressed local needs” (Roch & Na, 2015). Lack of outside support eventually led to the development of management organizations to oversee and support multiple charter schools, centralizing the governance of the schools to a single location (Roch & Na, 2015).

As publicly funded schools with less state regulation, charter schools were designed to be autonomous so that student needs, and not a rigid curriculum, would drive the education; furthermore, charter schools are not regulated by public school districts in terms of personnel, financial, and scheduling regulations (Crawford, 2001). By creating a sense of competition with public schools, the hope was that charter schools would hold themselves to high standards and would drive reform in TPSs (Crawford, 2001; Imberman, 2011; Thaman, 2015).
Teacher autonomy in charter schools. Though charter schools were originally planned exchange the school’s accountability for increased autonomy (Thaman, 2015), research studies have unveiled a much more complex interchange of the two. Ni (2012) discovered that often the schools do not extend the autonomy they receive within their charters to the teachers. Often, teachers in district-granted charter school are more involved in policy making than teachers in organization-granted schools; and often that leads to greater workloads among faculty (Ni, 2012). Crawford (2001) discovered that teachers in TPSs often believe they engage in a greater amount of decision making than the teachers in charter schools and postulated that the legislation that outlines the trade of accountability for autonomy may be flawed. He suggested that autonomy, by its nature, may not be governable through legislation (Crawford, 2001).

Dee et al. (2002) discovered that site-managed charter schools (those schools which are managed on-site rather than by a management organization) tended to depend on teachers to design curriculum and execute educational innovations. In site-managed charter schools, the authority for decision-making rests upon the school personnel, often arranged into teams, or councils (Dee et al., 2002).

A study by Quinn and Ethridge (2006) illustrated this point. In a case study of a successful charter school in Florida, the researchers discovered that this site-managed school relied upon its teachers to create a child-centered curriculum and inventive practices. The personnel enjoyed a tremendous amount of professional autonomy, and this led to a “strong sense of ownership and investment by the teachers and administrator who were part of the founding of the school” (Quinn & Ethridge, 2006, p. 117). Interestingly, the school’s focus was not on standardized tests but remained fixed upon
student-centered inquiry, yet the test scores have demonstrated high student achievement levels (Quinn & Ethridge, 2006). Teachers in the study indicated a high level of trust placed upon them by the school administrators; this trust was easily transferred between teachers and students as well, creating a community of mutual respect (Quinn & Ethridge, 2006).

Mayer, Donaldson, LeChasseur, Welton, and Cobb (2013) contended that site-managed charter schools aimed at promoting teacher autonomy must incorporate structures to support teacher decision making; in their case study of six urban charter schools, the team discovered that schools with few established supports for teacher autonomy developed power struggles between principals and teachers. Among the six schools, none had successfully crafted a school context which afforded teachers full autonomy and widespread decision making; teachers were free only to design their instructional strategies and grading practices over the two year study period (Mayer et al., 2013). Teacher autonomy was implemented to varying extents, depending on how administrators and staff interpreted autonomy, through the lenses of the schools’ existing cultures, regulations, and structures (Mayer et al., 2013).

**Character Education as a Means for Reform**

According to Character.org, character education is defined as "an educational movement that supports the social, emotional and ethical development of students" (Character.org, n.d., p.1). The nonprofit organization identifies character education as schools' continuous, proactive efforts to teach all students "core, ethical and performance values" that help students "to be their best selves" (p. 1). In its publication *Eleven Principles of Effective Character Education: A Framework for School Success* (current
Character.org outlined eleven elements required in order for character education to be deemed effective. These include:

- a set of values that all stakeholders develop and promote, making it clear that "these basic human values transcend religious and cultural differences and express our common humanity" (p. 2)
- a comprehensive program that teaches students to understand the values, act on them, build an appreciation for them, and to reflect on their own behavior
- integration of character education principles into every aspect of the school, relying on all adults to faithfully implement all values
- a focus on building caring relationships between students, between adults and students, and among all adults
- provisions for students to plan and participate in service learning projects
- an academic program designed to celebrate all learners and to meet students' diverse needs
- positive approaches to correcting student behavior, without an emphasis on extrinsic rewards for particular behaviors
- involvement of all staff members and stakeholders in the planning and implementation of the program
- partnerships between school and home, keeping families well-informed and involving them as stakeholders in their planning
- multiple measures to continually measure school's success in its character education initiative. (Character, 2016a).
Berkowitz, Bier, and McCauley (2016) defined an "effective" initiative as one that is "supported by scientific evidence including statistical tests of the significance of the impact" (p. 4). They introduced the framework PRIMED, which is an expansion on previous work by Berkowitz, 2009; Berkowitz & Bier, 2014; and Berkowitz & Bustamante, 2013. PRIMED is an acronym which spells out six elements the authors identify as being essential components of an effective character education program:

- Prioritization, in which character education is central to the school's mission. This includes the use of common terminology and ideals that are shared by all school staff and implemented in every classroom;

- Relationships, which define the school's organization structure. The school's entire infrastructure is designed to support caring relationships among students and all stakeholders in the school and community;

- Intrinsic motivation, to encourage students' "internalization of values and virtues that motivate and guide one's behavior" (p. 19);

- Modeling of the shared values, by adults, older students, and all real and fictional characters introduced in classroom lessons;

- Empowerment, through acknowledging all voices within school governance;

- Developmental pedagogy, designed so that "students' needs… [are] understood and met, particularly through strategies implemented. These include challenge, autonomy, belonging, competence, and relevance" (p. 13).
Challenges in the Student Teaching Experience

Contemporary research has supported the inclusion of student teaching in preparing educators to enter the classrooms; this internship experience is identified as a critical component in the PST’s learning process (Levine, 2011; Roehrig et al., 2007; Russell & Russell, 2011; Valencia et al., 2009). Russell and Russell (2011) argued that effective mentoring greatly impacts the success of beginning teachers and reduces educator attrition rates. Though considered an essential ingredient in teacher preparation, student teaching experiences are complex and varied, making them difficult to understand (Valencia et al., 2009).

Student teaching is highly situational and varies greatly for each PST. However, there are universal challenges of the experience, as well as documented ways to enhance the success of the training. Challenges to student teaching often include the complex relationships and varied perspectives between the PST, their cooperating teacher, and university personnel; and a cooperating teacher’s misunderstanding of teacher training requirements and their own roles as mentors (Roehrig et al, 2007; Russell & Russell, 2011; Valencia et al., 2009). The student teaching experience is often improved through the selection of highly motivated and involved cooperating teachers; an open communication between the PST and cooperating teachers; a common vision between the PST, the cooperating teacher, and university supervisors; and greater training and mentoring experience of the cooperating teachers (Anderson & Stillman, 2013; Orzulak, 2012; Roehrig et al., 2007; Schwille, 2008; Valencia et al., 2009).

Multiple players, different perspectives. Student teaching requires the cooperation among a triad of individual players: the PST, the cooperating teacher, and a
The roles of these individuals are complex and often imprecise; since the three are managing differing work expectations and have diverse perspectives, the student teaching process is complex and often obscure (Valencia et al., 2009). The intricate relationships among these actors are not well understood; most of the extant literature focuses on the perspectives of one or two players within the triad and fails to depict the complete context of a student teaching experience (Valencia et al., 2009).

Valencia et al. (2009) discovered that the three players within the triad were “simultaneously operating in multiple settings and facing competing demands that shaped their actions and stances” (p. 304). Resulting from this conflict were several examples of lost opportunities for PSTs’ professional growth. As the cooperating teachers and university supervisors all operated under their individual experiences, understandings, and philosophies, their approaches to mentoring the PSTs were highly diverse (Valencia et al., 2009). Anderson and Stillman (2010) discovered that PSTs often felt pressured to meet widely differing expectations: They often had to struggle to achieve the requirements of their teacher education program (TEP) while operating under the policies of the school, often contrasting with the practices and theories emphasized in the TEP. The school administrators in Anderson and Stillman’s (2013) study often focused more on teacher fidelity in following the mandated curriculum than the actual methods used to teach the content; these discrepancies led the PSTs to struggle in describing strategies they learned in their TEPs and to demonstrate their use in the classroom (Anderson & Stillman, 2013).

**Struggles cooperating teachers (mentors) face in training PSTs.** Much of the extant research has argued for increased mentoring training for cooperating teachers
Anderson and Stillman (2013) discovered that the cooperating teachers in their study showed a lack of understanding of the TEP requirements on their PSTs. Without explicit training, these cooperating teachers were obligated to “equip teacher candidates [PSTs]...with the adaptive expertise needed both to recognize students’ knowledge and experiences and to leverage them for learning...” (p. 8). Perhaps due to the lack of mentor training, Anderson and Stillman (2011) found that the cooperating teachers often provided “vague encouragement” rather than critical feedback to the PSTs (p. 16). Roehrig et al (2007) found that the cooperating teachers in their sample schools received insufficient training on effective mentoring; the PSTs trained by these mentors proved to be less effective at the end of their apprenticeship than the students who were supplied with researcher-trained mentors. This data was corroborated in research by Russell and Russell (2011), and by Sim (2011). Schwille (2008) argued that “a conceptualization of mentoring practice that rests on a shared vision of good mentoring needs to be developed so that novice teachers receive more than emotional support or professional socialization” (p. 139).

**Active participation of the cooperating teacher in the student teaching experience.** M.L. Russell and Russell (2011) argued that effective teaching mentorships require cooperating teachers to be highly motivated. In their study, their mentor-participants claimed that they were motivated by the opportunities to share their knowledge with their PSTs, to learn new instructional methods from the PSTs they were mentoring, to support and encourage new teachers, and to actively work with the PSTs. In this study, the highly motivated cooperating teachers played active roles in training...
PSTs and expressed their desire to make the pre-service teaching experience beneficial to the mentees (Russell & Russell, 2011).

Anderson and Stillman (2013) argued for student teaching experiences which require active guidance from the cooperating teachers; they insisted that training based solely on the PST’s independent practice of teaching skills is not an effective means to prepare them for the classroom. This active guidance would introduce the PST to, and engage him or her in, making curricular decisions aligned to the content taught in the TEP courses (Anderson & Stillman, 2013). Often the structure of a school day does not allow ample time for collaboration, and most teachers do the majority of their planning away from the classroom; however, with communication-enhancing technology such as internet-based tools and smart phones, the task of collaborating outside of school hours is much less arduous.

Schwille’s (2008) study echoed these ideas, as the cooperating teacher participants in her research moved “beyond the traditional supervisory roles such as peripheral supporter and advisor... [and] worked side by side with their novices [PSTs] to help them learn the tasks of teaching as they occurred...” (p. 156). By collaborating with the PSTs in creating relevant and meaningful learning goals and modifying lesson content, these mentors were training their PSTs to respond effectively to student needs. Schwille (2008) recommended that experienced mentors actively coach their PSTs by interjecting into the lessons when signaled by the PST; in addition, she argued that co-planning, co-teaching, analyzing each other’s teaching, and post-lesson debriefing are highly effective strategies that cooperating teachers can use to actively guide their PSTs (Schwille, 2008).
**Partnering within the student teaching context.** In order to build a meaningful apprenticeship experience for the PST, many researchers have recommended creating solid partnerships among the cooperating teacher, TEP personnel, and the PST (Anderson & Stillman, 2013; Orzulak, 2012; Valencia et al., 2009). Anderson and Stillman (2013) argued that a solid partnership between the cooperating teacher and the university supervisor or TEP representative is critical to support the PST in simultaneously meeting the TEP goals and working under the school’s policy. They claimed that the situational nature of student teaching demands that there is a common understanding of program and school requirements; they emphasized the importance of TEP educators and cooperating teachers working together to “co-construct contextually specific responses to policy mandates” (p. 28). Their research revealed that irregular or infrequent site visits by TEP personnel could make it more difficult for the PST to effectively integrate teaching approaches taught within the program.

Furthermore, the act of mentoring may alter a cooperating teacher’s perspective on instruction and their role within the classroom. Research by Sim (2011) uncovered dramatic changes to the perspectives of two elementary teachers acting as cooperating teachers. The additional supervisory roles the two teachers adopted in becoming mentors had a profound effect on their senses of professional identity: Both teachers became concerned about the effect their PSTs’ performances had on their professional reputations, and both felt that the recognition they had received as effective teachers would be threatened if their PSTs were unsuccessful (Sim, 2011). As a result, the researcher argued that the increased professional and social demands on cooperating
teaching must be addressed by the TEP personnel so that the experience is beneficial to the mentor as well as the PST (Sim, 2011).

In addition to building working relationships with supervisors at the university, cooperating teachers must craft a collaborative partnership with the PSTs they support (Orzulak, 2012; Valencia et al., 2009). Orzulak (2012) argued that efforts to develop a partnership with the PST can be successful if the cooperating teacher treats the PST as a colleague and a professional. She recommended that cooperating teachers intentionally discuss classroom-related decision-making with the PST; refer to the class as ours rather than mine; adding the PST’s name to the syllabus and other classroom communications; modeling different effective methods for teaching a lesson, allowing the PST to see various options; and for thinking aloud during the mentor’s own decision-making process.

**Prior mentoring experience.** Roehrig et al. (2007) revealed that the amount of previous mentoring experience a cooperating teacher has had often has an impact on their effectiveness in guiding their PSTs. In their study, the PSTs who showed the greatest amount of professional growth had mentors with greater amounts of experience than the mentors of the least successful PSTs. In addition, their mentors exhibited highly effective teaching strategies and were consistently discussed their choices with their PSTs (Roehrig et al., 2007).

**The preservice teacher’s dual roles.** Extant literature has acknowledged the fact that PSTs often feel the pressure to fulfill two different, and often opposing, roles as they complete their teacher training (Krebs & Torrez, 2011; Russell & Russell, 2011; Valencia et al., 2009). Though they gradually attain more teaching responsibility, PSTs often are
viewed, and view themselves, as a guest in the cooperating teacher’s classroom (Valencia et al., 2009). In Russell and Russell’s (2011) study, the cooperating teachers described an elaborate “code of etiquette” which they felt was necessary for their PSTs to follow; included in these unwritten rules were their expectations that PSTs would respect the cooperating teacher’s personal space, would adhere to the school’s dress code, and would not allow their personal lives to interfere with their professional identities (p. 26).

The second role of the PST often opposes his or her position as a guest in the mentor’s classroom; though PSTs rarely are given full autonomy in their teacher training, they are eventually expected to assume a greater degree of responsibility until they acquire all of the teacher’s daily tasks (Krebs & Torrez, 2011). They are under pressure to try instructional strategies taught in their TEPs while adhering to the mentor’s expectations and the school’s policies. This can lead to tension, as cooperating teachers often hold diverse views about how PSTs learn to teach and how to mentor them effectively (Valencia et al., 2009).

**Influence of mentoring on the PST.** Roehrig et al. (2007) declared that a cooperating teacher’s attitudes, beliefs, and understandings have an enormous impact on his or her PST’s learning, as the mentor’s attitudes directly influence his or her behavior. Ng, Nicholas, and Williams (2010) found that some of the PSTs’ beliefs are more flexible and likely to change than others; those beliefs and attitudes which change over the course of teacher preparation are often directly influenced by student teaching experiences. Valencia and her team (2009) discovered further evidence that student teaching has a lasting impact on PSTs: Eight of the nine cooperating teachers who participated in their
study used similar mentoring techniques on their PSTs than they experienced from their own mentors as beginning teachers.

Research suggested that often PSTs strive to emulate their cooperating teachers in their student teaching experiences (Rozelle & Wilson, 2012; Valencia et al., 2009). In Rozelle and Wilson’s (2012) extensive study examining the process in which PSTs build their teacher identities, the PST’s teaching practices were impacted greatly by the cooperating teachers. At the beginning of the study, all six PSTs tried to re-enact their cooperating teachers’ lessons, even retaining the teachers’ anecdotes and humor throughout the lessons (Rozelle & Wilson, 2012). As the student teaching progressed and the PSTs began to develop their own lessons, they continued to mimic their mentors’ teaching styles (Rozelle & Wilson, 2012). The researchers identified this process as having two distinct phases: “using the script” and “following the patterns” (Rozelle & Wilson, 2012, p. 2001). All six of the PSTs developed teaching styles and philosophies that mirrored their cooperating teachers’ approaches and beliefs (Rozelle & Wilson, 2012). These findings corroborated the evidence collected by Valencia et al. (2009), who discovered that the PSTs who were placed with cooperating teachers who relied heavily on teacher-centered, whole class instruction, had difficulty employing student-centered, student collaboration techniques in their teaching.

Why Technology?

Extant literature has claimed that technology, when used to promote collaboration and critical thinking, can greatly enhance the relevance of classroom instruction (Brindley et al., 2009; Craft, 2012; Craft et al., 2008; Ligorio et al., 2005; Trilling & Hood, 1999). Currently, 42 states, four U.S. territories, the District of Columbia, and the
U.S. Department of Defense Education Activity have voluntarily agreed to adopt and implement the CCSS, which requires the meaningful integration of technology across the ELA and Mathematics curricula (NGA & CCSSO, 2016). Studies by Craft et al. (2008), Ligorio et al. (2005), and Trilling and Hood (1999) have shown that technology, if used meaningfully, can increase student learning. These studies claimed that technological tools used to encourage student collaboration can also enhance creativity and innovation and motivation by crafting a relevant learning environment. The ISTE Standards calls for “authentic learning experiences and assessments incorporating contemporary tools and resources to maximize content learning in context” (Morphew, 2012, p. 5). The CCSS (2012) requires the integration of digital tools in all discipline areas.

**Technology can improve classroom collaboration.** The social constructivism perspective of Vygotsky (1930/1980) and Bruner (1971, 1977, 1996) emphasized the significance of collaboration in the learning process. Vygotsky’s (1930/1980) zone of proximal development is embedded in the concept that children learn in an alliance with adults or more knowledgeable peers. Ligorio et al. (2005) claimed this social theory of learning emphasizes the importance of collaboration; it requires active participation of the student in the learning process. They argued that intersubjectivity, or the inclusion of others’ perspectives into an individual’s own outlook, is central to education (Ligorio et al., 2005).

Brindley et al. (2009) defined a collaborative learning environment as one in which the students share knowledge as they work toward a common learning goal. They contended that the students in a collaborative classroom “are not passive receptacles but are active in their process of knowledge acquisition” (p.3). A classroom designed to
promote collaboration effectively engages students in discussion, active searches for information, and exchanging of ideas; “knowledge is co-created and shared among peers, not owned by one particular learner after obtaining it from the course materials or the instructor” (Brindley et al., 2005, p.3).

The CCSS requires this type of classroom setting. The ELA Standards expect that students will gain the skills needed to “prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively” (CCSS, 2012, “Comprehension and Collaboration”, para. 1). In addition, learners are required to “integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally” (CCSS, 2012, “Comprehension and Collaboration”, para. 2). Children are expected to use technology in all grade levels, beginning in Kindergarten (CCSS, 2012).

Collaboration is not restricted only to the ELA standards in the Common Core. It is a vital expectation in the Mathematics standards as well. Collaboration is a necessity in math classrooms, as students are expected to “construct viable arguments and critique the reasoning of others” (CCSS, 2012, “Standards for Mathematical Practice”, para. 4). This requires them to “justify their conclusions, communicate them to others, and respond to the arguments of others” (CCSS, 2012, “Standards for Mathematical Practice”, para. 4).

Craft (2012) asserted that technology, over time, has caused the meaning of childhood to change. She claimed that today’s children, in their interaction with technology, have become “skillful collaborators, capable of knowledge-making as well as information-seeking” (p. 174). She argued that children’s continuous contact with technology has impacted their development of self-identities, or their self-actualization
(Craft, 2012). This changing childhood is characterized by four features that she terms the *four P’s*: pluralities, possibilities, playfulness, and participation (Craft, 2011). She claimed that the online world offers students an essence of plurality, or a variety of contexts in which to engage with others (Craft, 2012). Within this virtual realm, there are a multitude of opportunities to think creatively and to explore possibilities that would not exist outside of the setting (Craft, 2012). They enhance the children’s prospects for play, as they open up scenarios for make-believe (Craft, 2012). Finally, these diverse creative spaces entice children to participate within the virtual world (Craft, 2012).

With these characteristics, Craft argued, come new requirements for education. As children’s imaginations and creativity are enhanced by the digital world, teachers must create learning opportunities which tap into these abilities. Creativity, she stated, must be “both means and its ends” (Craft, 2012, p. 183).

Collaboration, by definition, requires active participation from the learners in the classroom. Rowe, Bozalek, and Frantz (2013) explained that the students’ interaction changes the power relationships between the teacher and the learners; as students take control over their own learning, the instructor becomes a facilitator in the learning process. Rowe et al. (2013) claimed educators committed to helping their students develop critical thinking skills should consider “authentic activities that are integrated across physical and online spaces, using appropriate technology platforms that are informed by sound theoretical perspectives” (p. 605).

Authenticity is a vital ingredient in cultivating a learning environment which encourages critical thinking development. When students are involved in purposeful student collaboration activities that involve writing for a real audience, their engagement
rises (Cooper, 2012). Craft et al. (2008) demonstrated opportunities to engage in dialogic debate are essential in motivating students. Engaging the learners in a personally meaningful endeavor causes them to be viewed as competent individuals and encourages them to be active participants in their own learning (Craft et al., 2008).

Though technology can enhance collaboration within the classroom, its presence does not ensure meaningful learning is taking place. Simply introducing ICT into a learning environment is not enough. Hammond (2014) argued the focus of ICT has been on the adoption of the digital resources and that pedagogy has not been adequately considered. Instead, many educators assume that using computers in instruction will automatically interest the students or that “introducing ICT will necessarily lead to curriculum reform” (Hammond, 2012, p. 194). Mostmans, Vluegels, and Bannier (2012) supported this assertion and claimed ICT tends to promote a “rather traditional, ex-cathedra, teaching approach” (p. 104). Therefore, ICT is only as useful as the pedagogy that supports its integration.

**Learning in the "Knowledge Age": Adding relevance to learning.** According to Trilling and Hood (1999), the year 1991 marked the dawn of the *Knowledge Age*, as it was in this year when the U.S. federal government’s spending on information technology first exceeded its spending on capital goods; they claim that the shift in emphasis from the production of physical goods to the acquisition of knowledge “changes what is needed to prepare for life and work in our society – the main concern of education” (p. 2). Gilbert (2007) claimed that our current society is built upon *knowledge societies*, focused on the acquisition of knowledge to further economic growth; in this sense, knowledge has become more a more valuable commodity than our natural resources.
In the United States, teenagers’ widespread and frequent use of the Internet is well documented in current literature. However, gaining a clear understanding of its use can be challenging. Different studies have revealed conflicting and inconsistent data regarding the equitability of online access in homes. Much of the data was compiled from surveys and can be open to interpretation. A 2012 Report by the National Center for Education Statistics (NCES) revealed that 93.3% of 15-19 year olds have access to the Internet; 87.3% of these Internet users have access from home (U.S. Department of Education, 2013). In other words, the vast majority of U.S. teens, ages 15-19, are accessing online resources, with approximately 81% of the total population having Internet access at home. However, the reader must acknowledge that nearly one-fifth (19%) of teens in this age group do not have access to the Internet within their homes. According to the report, nearly half (44.9%) of these students indicated that their lack of technology at home was due to the expense of access (U.S. Department of Education, 2013). The same report showed that 96.2% of white U.S. teens, ages 15 to 19, access the Internet regularly, compared to 90.6% of black teens and 89.9% of Hispanic teens in the same age group. Family income was another strong indicator of regular Internet use, showing that students in households with larger incomes access the Internet more regularly than students from low income households (Anderson, 2017; Ritzhaupt et al., 2013; U.S. Department of Education, 2013; Warschauer et al., 2004).

The National Center for Education Statistics, an agency within the U.S. Department of Education (2010) reported 98% of all classrooms in the U.S. had internet access as of 2008; the student-computer ratio that year was 3.1:1, a decrease from 6.6:1 in
1995. However, other studies indicated that public schools may not have sufficient Internet access (Purcell et al., 2013).

This tremendous focus on the Internet and other technologies shows in the differences between current students in the U.S. and their predecessors; according to Prensky (2001), today’s students think radically differently than students from previous generations, as they are accustomed to accessing information instantly. He termed this younger generation, born in the 1980s and later, digital natives, as they have experienced a wide range of technology and have used many digital tools from early childhood (Prensky, 2001). In contrast, he referred to people born prior to the 1980s as digital immigrants, as they have had to learn how to use technology in ways that have not always been familiar to them (Prensky, 2001). However, Prensky’s delineation of the digital natives and digital immigrants simply by age assumed that all younger people have similar competencies in using digital tools; this paints an inaccurate picture of today’s student populations. Other factors, including socioeconomic status, may influence the frequency students are able to access technology and their skills in using these digital tools (U.S. Department of Education, 2013).

Prensky (2001) claimed that the inertia of education in moving towards a technologically rich field is due to the fact that our current students, the digital natives, are being taught by digital immigrants. He argued that digital immigrants exhibit different degrees of confidence in trying new technologies and that there are many who are hesitant to learn “new” ways of teaching. Cooper (2012) emphasized the need for education to actively seek out ways that digital tools can be integrated within instruction.
to increase student learning since U.S. students are progressively using more forms of technology.

Hammond (2014) claimed that education’s embrace of technology does not ensure pedagogical improvement, as policy makers tend to misunderstand how to implement it effectively in the classrooms. He argued that:

Policy and practice in the use of technology have been “distorted.” In particular, the use of ICT has been unquestioned, policy has focused on adoption rather than pedagogy, and beliefs about ICT are characterised (sic) by determinism, for example, a belief that children will find the use of computers inherently interesting or introducing ICT will necessarily lead to curriculum reform (p. 194).

Increasing the effectiveness of ICT in education, Hammond (2014) argued, would require a greater emphasis on the pedagogy and the reduction of ICT as a mere tool to achieving the learning goals. In other words, technology, when used to effectively, enhances the relevance of the instruction and promotes student engagement. However, it cannot be simply the goal in itself; technology is simply a tool to meeting learning goals, a means to an end.

Craft et al. (2008) emphasized the importance of instruction designed to enhance “learner agency” (p. 235). Their project, Aspire Pilot, was designed to evoke creativity in 11-18 year-old male students in the U.K. at two schools, and involved them in creating a schome, defined by the group as a community uniting the school and home, or “the education system for the Knowledge Age” (236). The students collaborated in creating a vision of the schome community, developing the community, and designing the
infrastructure needed for effective collaboration. The team discovered that the boys, many of whom had previously lost interest in school, became actively engaged with one another in highly meaningful ways.

Factors that Influence the Integration of ICT

Surry and Farquhar (1997) claimed the adoption and integration of instructional technology in a classroom can be predicted by applying Rogers’ (1995) diffusion theory, which attempts to explain the process in which a new technology is adopted by an organization and implemented by the organization’s members. By considering how a new technology is adopted by the leadership of the school system at the macro-level and how it is utilized by individual teachers at the micro-level, Surry and Farquhar (1997) claimed innovation’s prevalence in the school can be predicted.

The factors that determine the extent to which ICT is integrated in classroom learning are varied and complex. Brinkerhoff (2006) arranged the myriad of determinants into four broad categories: availability of resources, training and experience, support by leadership and administration, and the attitudes of school personnel. Miranda and Russell (2011) expanded this list to include other factors such as the teachers’ perception of benefits to learning, the presence of technology standards, whether there is a shared vision of technology use by school personnel, and the extent of technology planning by the school. Garcia-Valvarcel, Basilotta, and Lopez (2014) claimed that the time for “methodological reconversion” must also be considered (p. 72). In order to grasp this intricate web of influences on ICT implementation, it is helpful to organize the factors into Brinkerhoff’s four categories (2006).
Resources. The availability of digital resources is perhaps the most obvious factor influencing the use of ICT in classroom instruction. Miranda and Russell (2011) found that a principal’s discretion over a school’s technology budget is one of the strongest indicators of technology implementation at a district wide level. Tondeur, van Keer, van Braak, and Valke (2008) found that 50% of the teachers in their study cited the lack of access to resources as the most formidable barrier against ICT integration in their classrooms; the student-to-computer ratio in the classroom was another significant determinant in how ICT was used.

Resources influencing instructional technology use can take forms other than digital technology equipment, including time available for professional development, planning, and collaboration (Hughes & Ooms, 2004; Tondeur et al., 2008). Tondeur et al. (2008) discovered that “lack of time was singled out as one of the main causes for the absence of developing a shared vision on the applications of ICT” (p. 217). A recent study by Garcia-Valvarcel et al. (2014) corroborated this finding, as their participants felt that ICT requires a large amount of planning time.

Urban school districts, which often serve a greater percentage of low-income students, tend to experience the absence of resources more acutely than their wealthier counterparts; Staples et al. (2005) claimed these schools are largely underfunded and may be tempted “to cut back on professional development to save money or to view technology as an ‘unaffordable luxury’” (p.306). Hughes and Ooms (2004), in their case study of five teachers at an urban school with grades K-8, found that lack of time was cited as “the ‘biggest issue’ related to using technology… and teachers indicated a lack of technology resources as well as problems with the school schedule that limited integrated
curriculum activities” (p. 401). Furthermore, the teachers were not familiar with which hardware and software were available to them in the media library (Hughes & Ooms, 2004).

Staples et al. (2005) argued that the integration of technology equipment needs to take place simultaneously with supportive professional development opportunities for school staff. However, these two activities tend to occur separately, with the focus often being on equipment acquisition (Hughes & Ooms, 2004; Staples et al., 2005). Staples et al. argued that the two must be closely intertwined, with the leaders first having a solid understanding on the difference between technology as a tool for improving learning and technology as a productivity instrument.

**Professional development/ training and experience of school staff.** Lack of teacher expertise in technology can greatly inhibit the effective implementation of ICT. Tondeur et al. (2008), in their study of varying levels of influence on ICT, discovered that one significant barrier to technology integration, identified by 27.8% of their 574 teacher participants and 53 principals, was “limited ICT skills of the teachers” (p. 218). The number of in-service teacher trainings on technology greatly influenced ICT use for the teachers in the study (Tondeur et al., 2008).

According to the U.S. Department of Education’s 2009 report, 46 states’ teacher standards included technology requirements; however, only 21 states required formal technology training in their educator licensure process, and only 10 states mandated technology to be integrated within school districts’ professional development programs for teachers. More recent data regarding these factors has not been published. At the time, the state's educator standards included technology requirements, but the state did not
compel teacher candidates to complete formal technology training or active teachers to complete technology-related professional development (U.S. Department of Education, 2009).

Currently, this state's teacher standards do not include specific criteria for technology use in instruction. However, individual school districts have set their own standards for ICT use in the classroom. For example, in 2011, 90% of the school districts in this state had ICT-related standards for their teachers; 94% had ICT standards for middle school students; and 79% had ICT standards for high school students. Of the school districts with established ICT standards, 83% of the districts created their own standards locally, with 42% adopting portions of the ISTE Standards. According to this document, approximately 59% of teachers (N=2315) reported having an “intermediate” competency level with classroom ICT; 11% reported being at a “beginner” level; and 30% reported having “advanced” capabilities in using ICT in instruction (p. 13). However, this survey data was self-reported and therefore would have been open to interpretation by the teachers who provided the data in the report. The data was not based on skills assessment or teacher evaluations.

Effective professional development, Staples et al. (2005) claimed, includes definite connections between the technology introduced and the curriculum. This claim is aligned with the TPACK framework offered by Mishra and Koehler (2006), as it assumed that technology use is highly contextual in nature and functions differently according to the various disciplines in which it is used. Hughes and Ooms (2004) argued for professional development opportunities which are designed specifically to meet the needs demanded by the social context in which the learning is to take place.
Hughes and Ooms (2004) discovered that “ongoing, focused professional learning opportunities” that promotes collaboration among teachers has a profound effect on the teachers’ meaningful implementation of ICT; they claimed that these opportunities must require equal participation from all teachers and leaders (p. 398). Brinkerhoff (2006) discovered that collaboration was a vital element among the teachers who participated in his study; the project established a long-term professional development academy in which the teachers shared ideas and collectively created instructional plans. According to Brinkerhoff’s (2006) participating teachers, the cooperation provided meaningful occasions to reinforce the teachers’ own learning.

Hughes and Ooms (2004) recommended that teachers are grouped according to similar content areas; that the in-service training experiences are rooted firmly in “teacher-identified problems of practice”; and are located on site (p. 400). Furthermore, data from Brinkerhoff (2006) study suggested that offering continuous training experiences is a vital agent for change in teachers’ attitudes towards technology use.

**Support by school leadership.** An abundance of research has demonstrated that the amount of support offered by administration leaders has a tremendous influence on teacher use of ICT (Brinkerhoff, 2006; Hughes & Ooms, 2004; Staples et al., 2005; Tondeur et al., 2008). Tondeur et al. (2008) reported teachers who experience a high degree of ICT-related support in their schools are more likely to implement the technologies in their classrooms. Hughes and Ooms (2004) recommended the inclusion of a media specialist or technology coordinator within the school’s leadership team, as they would be an integral resource as schools create ICT policies.
The lack of clear, effective technology policies can greatly impede teachers’ professional growth and their use of ICT in instruction (Brinkerhoff, 2006; Staples et al., 2005). Teachers in schools with a clear ICT plan and a shared vision reported using ICT more frequently in their classrooms (Tondeur, 2008). Tondeur’s team discovered that, among the 53 principals interviewed in their study, only 12 reported that their school had established a comprehensive ICT plan with clear goals and strategies to attain the goals; twenty-one principals reported that their schools had adopted a limited plan, consisting of goals but no prescribed strategies; twenty-one principals reported having no ICT plan in place at all (Tondeur et al., 2008). One contributing factor for the lack of plan was ineffective communication between school leaders and their teachers; this study further revealed that a collaborative approach to creating a school wide ICT policy is essential in cultivating a school-wide vision for technology use (Tondeur et al., 2008).

**Teacher attitudes and perceptions.** Studies have indicated that teacher perception is an essential ingredient to successful technology use in schools (Liu, 2011; Miranda & Russell, 2011; Mostsmans et al., 2012). Miranda and Russell (2011) discovered that “the strongest predictor of reported teacher directed student use [of ICT] might be the teachers’ belief about the instructional benefits of technology, followed by teachers’ experience with technology and teachers’ perceived pressure to use technology” (p. 317). Garcia-Valvarcel and her team (2014) claimed that often teachers focus on the obstacles of using ICT in instruction as the students’ already-established technology habits make using ICT for collaboration difficult and ineffective; these teachers are referring to the students’ familiarity with computer games and individualized work as well as struggles with literacy.
Garcia-Valvarcel et al. (2014) argued that ICT is useful in encouraging students to think “beyond conventional models” and offers increased opportunities for collaboration among learners (p. 66). However, she contended that teaching practices have not changed dramatically in response to new educational demands. Liu (2011) discovered that Taiwanese teachers claimed to hold learner-centered teaching beliefs but often abandoned constructivist ICT practices in the attempt to prepare students for high-stakes achievement tests mandated by the government. Her findings suggested that many of the teachers in the study did not understand constructivist use of technology (Liu, 2011). When the teachers in her study did not perceive the learning benefits of technology and its positive impact on student achievement, they abandoned the practice and adopted a lecture-based approach to instruction (Liu, 2011). The study by Mostsmsans et al. (2012) reported similar observations and argues that generally, teachers’ attitudes towards adopting ICT are “lagging” and that “the traditional unidirectional pattern of teaching still appears to remain dominant: Teachers teach and pupils listen and record” (p. 111).

Summary

Urban schools continue to face challenges related to dense population, less experienced teachers, high teacher attrition, and fewer resources. Charter schools have been introduced as a possible solution to some of these challenges; by providing public school parents a choice and establishing a context of school autonomy, these schools are aimed at meeting students’ individual learning needs. However, autonomy is often not shared with the teachers by charter school administrators. Several factors influence the passage of autonomy, including the written legislation, and the school culture, context,
regulations, and existing support structures. Research does show a potential for increased student learning in schools that provide support structures and opportunities for their teachers to influence school policy.

Support and mentoring are essential for the professional growth of all teachers, but they are particularly important for PSTs and inexperienced classroom teachers. The roles filled by their cooperating teachers are often under-defined and complex. There is a definite need for mentoring training by the teacher education programs.

One of the main objectives for charter schools is to provide meaningful, student-centered learning. ICT provides an important vehicle for innovation in teaching, and allows students to interact with each other and their learning environment in authentic and relevant ways. However, students from low SES communities are often at a disadvantage with technology, as they may not have equitable access to technology resources or the training to use the resources in meaningful ways.

When introduced to encourage students to produce and to consume information, ICT can be a powerful tool in encouraging critical thinking. In order to implement these digital tools effectively, teachers must understand the complex network of interactions between the subject area, pedagogy, and technology; combined, these three instructional components require skillful planning.

Missing from the extant literature are the varied perspectives of PSTs, classroom teachers, administrators, and cooperating teachers on the balance of autonomy and autonomy support in an urban charter school. The intent of this study was to delve into the reflections of many individuals in a charter school serving students from Kindergarten through Eighth Grade, to attain a clear understanding of their definitions of teacher
autonomy, and how they believe autonomy and administrative support helps to shape their instructional practices and classroom technology use. My goal was to provide an insight into the most effective ways to integrate teacher autonomy with administrative support to enhance teaching and learning in an urban charter school serving a diverse student population.
Chapter 3: Methodology

The purpose of this study was to investigate how an urban Midwestern charter school employs innovative practices to engage its students in learning, and how the school balances professional autonomy with administrative support. I strived to capture the participants’ reflections on the autonomy each feels is afforded them by the school, and how each player believes his or her autonomy is steadied by administrative support. In the process, I examined the school setting to discover the ways that teachers and administrators showed innovation when planning for instruction. My initial focus was on classroom technology and how it was being used to engage a student population consisting largely of children from low socioeconomic (SES) backgrounds. However, it became clear that technology, though an important factor in the school environment, was not telling the whole story. The study was thus expanded to investigate teacher autonomy. Ultimately, I developed a case study of the single school site, involving seven classroom teachers, three pre-service teachers, and seven administrators. I hope that this research will lead to a deeper understanding of how one urban school effectively balances teacher autonomy with professional support to enhance innovation in classrooms serving students from low SES backgrounds.

This aim of this case study was to ferret out the commonalities in thought among classroom teachers, pre-service teachers, and school administrators. The project was driven by these research questions:
1. How are teacher autonomy and autonomy support by school leadership perceived by (a) classroom teachers, (b) preservice teachers, and (c) administrators at Highland Charter School?

2. To what degree do teachers at Highland Charter School believe professional autonomy impacts their teaching practices; and how do they feel this impacts student achievement?

3. How do teachers at Highland Charter School view their own autonomy in the face of the *Common Core State Standards*?

4. To what degree do the teachers believe classroom technology, and their perceived autonomy in using technology, impact their teaching styles?

5. What factors, other than teacher autonomy, do the participants believe have the greatest impacts on classroom instruction and teachers' decision-making?

Throughout the project, I was guided by these overarching questions. The focus of the research remained on the case itself (the school personnel) rather than a problem; therefore, the questions were designed to help me understand the actions and reflections of the people and were not aimed at solving any particular issue. Following the methods of Stake (1995), I chose to write topical questions to describe the case, rather than issue questions aimed at solving specific problems.

Since this case was complex, I purposely kept the research questions broad and flexible; they were intended to uncover the teachers’ and administrators’ rationales that drive their actions. However, complex cases such as Highland Charter School exhibit human actions which are often not propelled by simple causes (Stake, 1995). Therefore, a
list of static, specific questions would not lead to a deep understanding of the players’ actions in the school. Thus, I was determined to maintain a semi-structured approach to my interviews.

This chapter will serve as a guide through the methodology I employed over the course of the study. I begin describing my methodology by focusing on the research design I followed and explaining the utility of this approach in answering my questions. Next, I describe my sampling procedures, while acknowledging factors that limited the participant pool. Then, I describe my data collection steps and explain how a constant comparative approach helped shape the continuous sampling. I explain how multiple data sources were used to enhance the reliability of my findings. Finally, I illustrate the limitations inherent to the study.

**Research Design**

The purpose of this study is to gain a deep understanding of my participants’ perceptions of the ways their professional autonomy influences their instructional practice. Therefore, I think it is important to emphasize the situational nature of the context in which the teachers are acting; it is largely based on individual discernment. In other words, the actors’ decision making and reflections both shape the environment and respond to it. In this project, I examined innovation and teacher autonomy in a very specific context; in other words, it is impossible to separate the phenomenon (teachers’ and administrators’ perceptions on classroom autonomy, professional support, and innovative teaching) from the context (in an urban charter school). The context and the phenomenon are intertwined. My goal was to gain a deep understanding of teacher action and reflection within a precise context, relying on different data collection methods and a
constant comparative analysis. Therefore, a case study methodology proved ideal for this research. I originally intended this study to be an intrinsic case study in an attempt to emphasize the situational nature of the phenomenon. However, as I reflected upon the data and developed my conclusions, I realized that different discrete portions of the study might mirror other school settings. Therefore, I consider this an instrumental case study, as defined by Merriam (2009) and Stake (1995).

According to Yin (2003), case studies are “the preferred strategy when ‘how’ or ‘why’ questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context” (p. 1). They are empirical inquiries that examine a real life situation when the phenomenon and context are intertwined, without clear boundaries separating them; in addition, they rely heavily on multiple data sources to paint a complete picture (Yin, 2003). A case study is often helpful for “deeply investigating dynamic, experiential and complex processes and areas” (Vissak, 2010, p. 372) and is recommended for researching “topics that have not attracted much research attention” (Vissak, 2010, p. 371).

Stake (2006) explained that a “case” consists of a person or thing under study; the focus is on the person rather on the particular action. In this research project, I studied a single “case” which is the shared school setting, with each individual participant contributing to the case. The focus of the research was on the school rather than one specific action or factor. As Stake (2006) explained, the context shapes the activity and the actor’s and researcher’s interpretations of the activity. Therefore, my focus remained on informants' perceptions rather than simply studying the activity itself (in this case, the teaching practices).
In this project, each of the participants have several characteristics in common: With one exception, each player worked within one school site, which is comprised of grades Kindergarten through Eighth Grade; each player was in a position to describe the inner workings of the school in terms of its strategies for effective teaching and increased student engagement; and each player had his or her opinions on the amount of professional autonomy afforded to them by their supervisors. The bounded system is a single charter school situated within a low-SES, urban community.

Conducting a case study has allowed me to attain a deeper understanding of the factors influencing my individual participants’ approaches in teaching. Since my focus was on the beliefs and actions of teachers and administrators in the school, I did not interview students in the classes. I simply did not want to remove attention from the intended focus of this study, and I felt that including other stakeholders (specifically, students, parents, and community members) would detract from the intent of the project.

Stake (2006) explained that a case study needs to be designed with a clear organizational plan, but one that is flexible and “not too constraining” (p. 30). Therefore, much of my data collection was conducted simultaneously with data analysis. In other words, the data often helped me determine subsequent data sources.

By the project’s conclusion, I had planned to have developed a complete understanding of how teacher autonomy, when coupled with administrative support, could enhance innovative teaching in an urban school environment characterized by a highly diverse student population, largely from low socioeconomic backgrounds. I hoped this project would help to uncover ways that empowered teachers can effectively engage students in urban classrooms.
Originally, I had planned to focus on the school’s implementation of digital resources as a tool for innovative teaching processes. My intent was to uncover the ways classroom technology promoted student engagement and inquiry among students from a predominantly low-income community. I had planned to create a grounded theory study determining how technology was perceived by experienced and novice teachers in the school and how it drove their instructional decision making.

After my initial few visits, it became clear that the project’s original design was insufficient: My focus on technology was clearly not going to tell the story of such a complex and unique case. One theme stood out consistently: autonomy. There was an element of autonomy in every situation, and every participant expressed the idea that its existence drove their feelings of empowerment.

**Sampling Procedures**

I chose Highland Charter School as the case in this research for several reasons. Although it is only one out of 32 operating charter schools in this region, Highland was known for innovative teaching practices and widespread technology use. In addition, the school’s scores on the statewide standardized tests have been significantly higher than the city’s public school district, over the past six years (*MAP district, 2015; MAP school, 2015*).

With the help of a university adviser, I identified the school site by identifying schools in the university’s program which are located in an urban, low-SES setting; support several PSTs in the teacher education program; and serve a large student population. In addition, this school’s test data was consistently higher than the surrounding school district, which serves students with similar demographics (*Building,*)
TEACHER AUTONOMY AND AUTONOMY SUPPORT IN A CHARTER SCHOOL

2015; District, 2015; MAP district, 2015; MAP school, 2015). I had hoped that the principals and teachers at Highland would be willing to participate, as they have a close working relationship with the university.

During my initial meeting with the Head of School, the Elementary School Principal, and the Middle School Principal, I was provided with a list of teachers who were known for innovative teaching, and who used technology to varying degrees in their instruction. Four of the seven teachers included in the study played dual roles: They were classroom teachers, and they supervised pre-service teachers who were completing their final student teaching requirements prior to graduation.

The data collection and analyses often occurred simultaneously. This allowed me to consult the data to determine how often to observe the participating teachers in their classrooms; it also helped drive questions I asked informally during observation times and formally during individual interviews. Though the study was amended almost immediately after its inception so that it was no longer a grounded theory endeavor, the sampling process retained some of its initial intuitive aspects as described by Glaser and Strauss (1967). Though the participants were identified early on, the data dictated the number and frequency of visits to each classroom. I was not concerned with visiting all participants the same number of times or the same amount of time.

Population and Sample

The participants in this study, with the exception of one, were either current employees of Highland Charter School or were completing their student teaching experiences at the school. The exception was Brad Metsker (a pseudonym), who acted as the university’s Director of Charter Schools. School participants included three middle
school classroom teachers (two who supervised pre-service teachers to some degree); four elementary teachers (two who also supervised pre-service teachers), and six school administrators, including the Head of School, the Assistant Head of School, the Elementary Principal, the Middle School Principal, one Teacher Leader, and the Technology Administrator.

I chose to include PSTs in the study, as they were nearing the end of their university coursework and were learning how to teach in an apprenticeship setting. I felt these individuals would have a slightly different view on the workings of the school: As novices, they would presumably require more support from the school administration and the classroom teachers, and they were able to observe the juxtaposition of autonomy and support afforded to the classroom teachers who supervised them. I had also hoped that the fact that the PSTs were just beginning their careers would indicate that they were well versed on the “newest” and most innovative teaching methods and could therefore describe classroom instruction from that perspective.

Throughout the research, I replaced all names with pseudonyms, which I used in all field notes, memos, and transcripts. The pseudonyms were names I created, and I kept a master list of the participants’ identities and corresponding pseudonyms in my analyzing software, under password protection. This helped to ensure the confidentiality of all informants involved in the study.

Highland Charter School is situated in an urban region in the Midwestern United States, on a sprawling campus consisting of three separate buildings: the Kindergarten building is flanked on one side by the Middle School building and on the other by the
Elementary building. All three of these buildings share a courtyard surrounded partially by a brick wall and partially by a wrought iron fence.

Surrounding Highland, the “Roth School District” served 24,154 students in the 2015-2016 school year, with 86.1% enrolled in the free/ reduced lunch program, compared to the statewide average of 50.0% in the free/ reduced lunch program. In 2015-2016, 82.6% of the students in the district were African American; 11.3% were white, non-Hispanic; 2.6% were Asian; 3.3% were Hispanic; 0.2% were Native American; 0% were Pacific Islander; and 0% were multi-racial. In the 2014-2015 school year, 68.1% of Highland’s 900 students were enrolled in the free and reduced lunch program. The student population of the school consisted of 28.4% African Americans; 45.3% white, non-Hispanic; 7.7% Asian; 13.6% Hispanic; 7.7% Pacific Islander; 0.1% Native American; and 4.9% multi-racial (Missouri, 2017a).

Extant literature has suggested that often teachers in urban school districts have fewer years of teaching experience and less education than their colleagues teaching in more affluent districts (Ingersoll, 2004; Warschauer et al., 2004). According to the state's Department of Education website, this trend is evident among districts in the site’s metropolitan area. In 2015, urban Roth District’s teachers had an average of 9.1 years of classroom experience, and 50.2% of them have earned their Master’s Degrees or higher. In 2015, Highland had a faculty averaging 7.0 years’ experience, with 37.1% having had advanced degrees, as of 2015 (Missouri, 2017b).
Data Collection Procedures

Beginning the project with interviews. Stake (1995) explained that data collection in a case study typically begins the moment a researcher becomes committed to the project. In this research, data collection began as the project was still in its inception phase. I entered the field by meeting with three of the school administrators: the Head of School, the Elementary Principal, and the Middle School Principal. The purpose of the meeting was to discuss my research interest and to learn about school history, goals, and customs. The principals then supplied a list of teachers who had agreed to participate in the study. The meeting ended with a tour of the middle school building, during which I was able to briefly speak with each of the three middle school teachers on the list. I left the school with an appointment to meet with the elementary teachers and the elementary principal so that I could explain the research. I also left with significant first impressions, attained intuitively, from simple observation. Since I took few notes in the first meeting, I quickly wrote down these initial thoughts as soon as I left the school grounds.

Shortly after I met with the school administration, I interviewed the Director of Charter Schools at the local university. My intent was to understand the history of charter schools in the region, how they had evolved, their strengths and struggles, and how they are governed. I also wanted his perception of Highland’s strengths and shortcomings, as well as the school’s use of technology and resources in their teaching practices. During this meeting, I gained an understanding of the political and social climate surrounding charter schools in the area; how the schools develop; the schools’ accountability as local
education agencies; and some features that made Highland unique from the other charters in the area.

**Data collection and analysis as concurrent processes.** As I had originally planned the research as a grounded theory study involving multiple school sites, I began the project by analyzing data as soon as I collected it, thus using the data to drive further investigation, as suggested by Glaser and Strauss (1967). Huberman and Miles (1994) identified this synchronized data collection and analysis pattern as being a common feature to qualitative studies, an aspect that differs qualitative approaches from experiential research. This back and forth pattern also allows the researcher to identify errors in research methods and to make adjustments to the data collection procedures (Huberman & Miles, 1994).

The fact that data were collected and analyzed simultaneously allowed me to discover a few weeks into the research that the study was gravely flawed. It was time to redesign the project to better convey the story of the school. At that time, under the advice of Dr. Wilkinson and Dr. Althof, members of my dissertation committee, I decided to focus on Highland as the sole research site, and realign the study so that my research questions would allow me to uncover the school’s innovative teaching, and the impacts of teacher autonomy and administrative support on instructional practices. The project would no longer be aimed at developing a substantive theory as defined by grounded theory research; instead, it evolved rather quickly into a single case study (Glaser & Strauss, 1967; Stake, 1995).

I found that the iterative data collection and analysis remained essential as I continued the project as a case study. I reexamined the first open interviews for initial
concepts. As I analyzed these interviews, I developed a new set of tentative research questions to help frame the next few interviews and classroom observations. I used a constant comparative approach to determine which teachers to visit most frequently and which questions to ask in the interviews. I refined the research questions gradually throughout this process, and I learned the importance of remaining flexible and open to new ideas and new avenues of investigation. In this way, the research retained some of the most significant characteristics of a grounded study project.

**Classroom observations.** The field notes which I gathered in my frequent classroom visits proved to be a vital source of data. In all, I conducted 27 separate classroom observations. It was during the second observation, as I was viewing Ms. O'Connell’s sixth-grade English class that I noticed evidence of autonomy the teachers experienced, which seemed to drive creative teaching. Afterwards, I discovered that autonomy was a theme repeated over and over again, within the classrooms and among building administrators.

From the beginning, I felt it was very important to note the instructional practices taking place, the tone of the teachers’ voices, their interactions with their students; and my interpretation of the students’ engagement levels during the many activities. I tried to note almost every detail and every teacher action as it occurred. I was careful to sit unobtrusively in a back corner, and I quietly typed my jottings onto my iPad so that I could capture the experiences as fully as possible. My aim was to recreate these observations as thick descriptions and thus my field notes were peppered with my own impressions and interpretations so that I would be able to recall and relay the experiences as clearly as possible (Stake, 1995).
Semi-structured interviews. Stake (1995) recommended that case studies must examine the multiple perspectives of all of the actors within the case. Highland afforded me a tremendous opportunity to see the school through many different eyes. At the beginning, I had hoped to study the school from the varied perspectives of teachers, administrators, and pre-service teachers. As I progressed through the data collection and analysis, I became more and more confident that the participants’ views were highly diverse and helped me to develop a broader understanding of the school’s mission; how the school staff viewed innovation in teaching; the challenges and strengths of teacher autonomy; and the amount of support provided to the teachers by supervisory staff. In all, I conducted twenty-one individual interviews, speaking with many participants twice. I also conducted one dual interview with the kindergarten teacher and the preservice teacher she supervised. I had originally intended to hold focus group conversations throughout the study but decided the individual conversations were much more informative, as the speakers' words would not be influenced by other people present. My intent with the interviews was to have relaxed discussions with each participant, and I believe that every teacher felt comfortable sharing their viewpoints and experiences with me.

It is important to note here that all data I collected, whether in the form of field notes or interview transcriptions, were kept as confidential as possible. Even in the notes, meant only for my eyes, each player's name was replaced with a pseudonym. I wanted to ensure that no statements spoken by a participant could easily be traced if my notes fell into another person’s hands.
Open-ended survey. A final source of data that informed this study was a survey with seven closed and two open-ended questions that “Ms. Fisher”, the Head of School, distributed on my behalf. I used the Survey Monkey website to create the survey and shared the link with Fisher. She then emailed the link to all staff members in the school. Teachers were not obligated to disclose their identities in the survey. There were twelve total respondents, with four disclosing their names. The survey data did not prove helpful, however, as it was developed early in the study and focused strictly on classroom technology use. Therefore, I abandoned it as I believed the data collected in interviews and observations proved a sufficiently rich source of information.

Multiple data sources and triangulation. Data triangulation occurs when the researcher collects data from an array of sources, thus leading to corroborating evidence (Yin, 2003). Yin (2003) explained the role of triangulation in data analysis: “Any finding or conclusion in a case study is likely to be much more convincing and accurate if it is based on several different sources of information...” (p. 98). The varied sources of evidence I consulted has allowed me to test and retest the data against my analyses. In addition, the teachers involved in this endeavor were willing to read and check my analyses for accuracy. Using triangulation to test the validity of the concepts and the hypotheses helped to ensure that I was not prematurely drawing conclusions or falling into the trap of fitting the data into extant theory. In addition, it helped to highlight patterns in data that otherwise may have remained obscure, and helped me to redirect the study. Stake (1995) identified such “data source triangulation” as a way to determine whether similar patterns are found in different settings and other times (p. 112). Therefore, I felt that it was very important to conduct multiple observations of each
classroom and to conduct interviews near the beginning of the study and again towards the end of data collection. I also utilized different data collection methods, in the forms of interviews, observations, and the survey; this practice, identified by Stake (1995) as “methodological triangulation” is the most commonly used triangulation protocol (p.114).

**Data Analysis**

**Data analysis using a constant comparison approach.** Data analysis begins at the launch of a research endeavor and continues throughout the entire study; as data are being collected, they are systematically analyzed and reanalyzed. In a grounded theory study, this process informs the next round of data collection (Corbin & Strauss, 1990). Often data analysis procedures in case studies follow the grounded theory method, and require a mix of inductive and deductive analyses (Huberman & Miles, 1994). After redesigning the research as a case study, I retained the constant comparative approach to data analysis. By simultaneously collecting and analyzing data, the investigators compare “every slice of data…with all existing concepts and constructs to see if it enriches an existing category, …forms a new one or points to a new relation” (Urquhart, Lehmann, & Myers, 2010, p. 359).
**Constant comparisons.** In this research, I followed this tactic as I continuously moved from collecting to analyzing data, to determining the next rounds of data collection, to collecting and analyzing additional data. By using constant comparison, I began with a particular data set, and compared that set to incidents found in other data sets, developing tentative categories in the process. By constantly comparing data sets against one another, my analysis gradually advanced from developing individual concepts to creating categories, to combining related categories.

Huberman and Miles (1994) explained that data analysis usually begins as an inductive endeavor and remains “undifferentiated and disjointed” as the researcher attains some familiarity with the field (p. 186). As patterns emerge from the data, the analysis then shifts to a more deductive approach; this process is time consuming because patterns may not seem apparent at first (Huberman & Miles, 1994).

I used constant comparison to develop and refine my categories. By comparing concepts against each other, I was able to obtain greater precision of my data. Constant comparison of data aided greatly in redefining the scope of the study, in developing a new set of hypotheses, and in illustrating relationships among categories of data. I was careful to document the entire process through informal notes, and later, as patterns became evident, through memo writing.

Constant comparison in data analysis helps the investigators prevent researcher bias, as “he or she is then challenging concepts with fresh data” (Corbin & Strauss, 1990, p. 9). Miles and Huberman (1994) stressed the importance of the researcher to be “open to disconfirming evidence when it appears” (p. 246).
Coding the data. Data coding is an inductive, comparative, interactive, and repetitive process; later on in the study, as researchers test their emerging theories, it becomes highly deductive (Charmaz, 2010). According to Charmaz (2012), “coding helps us to gain a new perspective on our material and to focus further data collection, and may lead us in unforeseen directions” (p. 187).

Miles and Huberman (1994) derived and published a list of 13 “tactics” for analyzing qualitative data, including: “noting patterns and themes; seeing plausibility; clustering by conceptual grouping...; making metaphors...; counting...; making contrasts (and) comparisons...; partitioning variables;...subsuming particulars into the general; factoring...; noting relations between variables; finding intervening variables; ...building a logical chain of evidence; and making conceptual/ theoretical coherence” (p. 245-246).

Many of these tactics mirror strategies grounded theorists use while developing categories to illustrate relationships among data points. The constant comparative approach to analyzing my data involved almost all of these tactics to some extent, but stopped short of theory production (tactic number 13) (Miles & Huberman, 1994).

The coding process. Coding is a systematic method of constantly comparing data with the analyses of the data. It occurs in stages and involves comparing data sets to determine commonalities and differences; data are then grouped together according to their similarities.

The first general stage is open coding, or “the interpretive process by which data are broken down analytically” (Corbin & Strauss, 1990, p. 12). It involves comparing “events/ actions/ interactions...with others for similarities and differences” (Corbin & Strauss, 1990, p.12). Data are assigned conceptual labels, and eventually categories are
developed (Corbin & Strauss, 1990). During open coding, the researcher generates questions to help compare individual units of data (Corbin & Strauss, 1990). It is at this point that the researcher compares pieces of data with one another to decide which data are most similar, or most different. These pieces of data are given a name, or code; in-vivo codes are named using the actual language of the informant (Harry, Sturges, & Klingner, 2005).

The next phase of analysis, axial coding, includes relating the categories to their subcategories and using data to test the connections between them (Corbin & Strauss, 1990). This process was identified as “clustering” by Miles and Huberman (1994), and it occurs after some patterns and relationships among data have emerged. By comparing categories with one another, the researcher is able to refine the categories and subcategories to ensure precision in the data coding (Corbin & Strauss, 1990). At this point, hypotheses may materialize from the data. In order to consider the hypothesis to be conceivable, it must be supported over and over again by the data; by seeking variations in the data, the researcher may verify or discard the hypothesis (Corbin & Strauss, 1990).

As relationships between data are discovered, provisional categories are developed and properties within those categories are identified. Properties help the researcher determine the extent to which data are described by their assigned categories; hypotheses are used by the researcher to predict relationships between categories. Concepts which are represented frequently may become categories, or related concepts may merge to form a single category. In addition, broad categories that prove too inclusive to effectively describe data may be split into subcategories. Miles and Huberman (1994) referred to this process as “partitioning variables” (p. 254). Often,
“lower level” categories appear first, while the “higher level categories” form as the lower level ones merge in the sorting process (Glaser & Strauss, 1967, p.36). The lower level categories which are grouped together may eventually become identified as subcategories.

Categories, subcategories, properties, and hypotheses remain tentative throughout the process and are inductively generated by the researcher. This is in stark contrast to quantitative data analyses, which examines hypotheses developed before the data collection process began (Merriam, 2009). The inductive coding helps the investigator to examine data closely, determining how individual ideas are linked.

As the researcher becomes more confident that categories accurately represent the data, then he or she can develop a code book to diagram the links between them. It is at this point that he or she has refined the study’s research questions to focus on finding data which fit into the categories, and is seeking for the presence and absence of the categories in the data. This phase of coding, the selective phase, allows the investigator to decide how categories “relate to each other and what stories they tell” (Harry et al., 2005).

**Documentation.** Corbin and Strauss (1990) claimed that maintaining a clear and consistent method of documentation is a necessity in the meaning-making process:
"To maintain consistency in data collection, the investigator should watch for indication of all important concepts in every observation… All observations would be qualified by noting the conditions under which the phenomena occur, the action/interactional form they take, the consequences that result, and so forth. Careful noting of qualifiers gives specificity to concepts" (p. 9).

In this case study, I relied heavily on my field notes which describe, in detail, the setting in which the observations or conversations are taking place, as well as the actions and body languages of the participants, direct quotes, levels of student engagement in activities as I perceived them; and my reactions as observer. As described by Montgomery and Bailey (2007), each note was labeled with the date, the established pseudonym(s) of the participant(s) involved; any direct quotes were denoted with quotation marks, and any researcher reactions were conveyed with a set of brackets. In order to ensure that I did not miss any opportunities for significant meaning making, I typed brief field notes as I observed the classrooms, revising them into more detailed and coherent passages as immediately as possible upon leaving the school.

The purpose of field notes is to “form the basis for the construction of memos” (Montgomery & Bailey, 2007, p. 76). They are simply “a freely written chronicle of the researcher’s observations of events and interactions during data collection” (Montgomery & Bailey, 2007, p. 70). According to Montgomery and Bailey (2007), field notes often become more defined through the data collection process as categories begin to emerge from the data.
Unlike field notes, theoretical memos directly influence the developing theory and are “a documentation of the researcher’s thinking processes rather than a description of a social context”; in other words, they translate field note descriptions into “theoretical accounts” (Montgomery & Bailey, 2007, p. 68). Like field notes, memos may start out as broad impressions and may narrow as categories are refined; for this reason, it is important to label each memo with the date, level of analysis, and corresponding code (Montgomery & Bailey, 2007).

I documented all data and my reflections throughout the research process. As I worked on coding the data, I recorded reflective theoretical memos, code notes, and operational notes, which were saved under password protection on my Dropbox account and on my Google Drive. Each note was carefully labeled with the date, time, place of occurrence, brief description of the incident, and the type of note. Doing this allowed me to keep the ideas organized so I could avoid losing any important vein of data.

Corbin and Strauss (1990) maintained that memo writing and diagramming “help you gain analytical distance from the materials” by allowing you to “move away from the data to abstract thinking, then in returning to the data to ground these abstractions in reality” (p. 199). By helping me to move to a more objective stance after examining an artifact, I was able to reflect on the meaning of the data and use it in developing analytical questions. Later, I was able to summarize the points of view and the strategies each player exhibited so that I could ask each participant to check the accuracy of my interpretations.
Enhancing trustworthiness

Miles and Huberman (1994) explained that most researchers do not follow an established set of procedures to ensure accuracy in their interpretation of data. With few guidelines to follow and often working alone throughout the duration of a study, researchers often do not communicate how they arrived to their conclusions from the data collected (Miles & Huberman, 1994). They cautioned researchers to be sensitive to potential types of bias, including “holistic fallacy”, which assumes data is more closely related than they truly are; “elite bias”, which overemphasizes the opinions of more educated and socially privileged participants while deemphasizing those viewpoints of less educated or less privileged individuals; and “going native”, which involves the researcher forgetting his or her etic perspective on the case and superimposing his or her own opinions on the informant’s explanations (Miles & Huberman, 1994, p. 263). Stake (1995) cautioned that even the seemingly most impersonal issues can easily become personal, and therefore misconstrued, when applied to human beings; in other words, the researcher needs to remain aware of any potential misunderstanding throughout the study, regardless of the topic under investigation.

The iterative approach to research can greatly enhance the trustworthiness of the study; the coding process is designed to require the researchers to repeatedly check the appropriateness of a category and to continually compare data against data, codes against codes, and categories against one another (Charmaz, 2012). By repeatedly checking and rechecking the analyses and treating all codes, hypotheses, and categories as provisional, I frequently revisited my analyses and interacted with the data, asking whether the categories account for the majority of codes and hypotheses; determining which
categories are rich in data and which are weak; and revisiting my reflections and hunches. By constant reflection and tapping into the extant literature, my own experience, and my analyses, I believe that I was able to enhance my theoretical sensitivity (Corbin & Strauss, 1990). Defined as a researcher’s insight into the field of research, the nuances in participants’ behavior, and the ability to filter data according to their importance, theoretical sensitivity is enhanced when researchers frequently ask themselves questions such as: “What is going on here? Does what I think I see fit the reality of the data?” (Corbin & Strauss, 1990, p.44). Questioning my analyses helped to reduce any effects of researcher bias as well (Corbin & Strauss, 1990).

To enhance the study’s reliability, I often used member checking with my participants to help determine how accurately I interpreted their words and behaviors. I used my memos to create analysis trail so that I could clearly communicate the decision making and meaning making with the reader.

By remaining as transparent as possible in the research methods, the meaning making processes, and my own interpretations, I hoped to create a study that is verifiable to my readers. Corbin and Strauss (1990) acknowledged that “no theory that deals with social psychological phenomena is actually reproducible in the sense that new situations can be found whose conditions exactly match those of the original study” (p. 15). My task, therefore, was to describe every aspect so clearly that the readers can easily envision the settings, the actors within the settings, my own research approach, and my interpretations.

My own etic role in this environment allowed me to focus strictly on the teachers’ and administrators’ actions. In other words, my attention was never split between the role
of observer and the emic role of participant. Stake (1995) explained that the qualitative researcher often acts as interpreter for the readers, helping his or her audience make meaning and avoid simplistic, superficial understanding of the case. In the process, the researcher is attempting to construct an interpretation of the experiential reality and to integrate the interpretations into a collective understanding of rational reality, and accomplishes this through creating a thick description of the case (Stake, 1995).

**Summary**

This study was a highly constructivist look at how pre-service teachers, classroom teachers, and administrators perceive innovation in their shared school setting; the levels of perceived autonomy and administrative support experienced by each player; and how these impacted their instructional practices.

In order to attain as much meaningful data as possible from a small number of participants, I designed this research as a case study, with the case being a single charter school in a Midwestern city. This school is situated in an urban center of a sprawling metropolitan area, in a low-SES community and serves a large percentage of students from minority groups. The school employs a large number of people and is a prominent student teaching location for the university.

Throughout the process, I collected and analyzed data in the form of observation field notes, interview transcripts, and open-ended survey data. The participants in the study were eager to help and often acted as collaborators by checking my summaries to ensure I was capturing their viewpoints accurately. Through these partnerships and by leaving a clear audit trail, I strived to reveal any sources of misconception to my readers, thus establishing and maintaining the trustworthiness of the study.
Chapter 4: Results

The purpose of this instrumental case study was to examine the ways instructional decisions made by administrators, teachers, and pre-service teachers in an urban charter school were impacted by the levels of perceived autonomy and support provided within the school setting. The study was conducted at a single site and relied upon data collected through numerous interviews and classroom observations. Overall, the goal of this research is to provide insight on how a balance between professional autonomy and administrative support can enhance the learning environment in a school serving a large, diverse student population in a low SES community.

The study, which was conducted from January, 2016, through May, 2016, was designed to answer these research questions:

1. How are teacher autonomy and autonomy support by school leadership perceived by (a) classroom teachers, (b) preservice teachers, and (c) administrators at Highland Charter School?

2. To what degree do teachers at Highland Charter School believe professional autonomy impacts their teaching practices; and how do they feel this impacts student achievement?

3. How do teachers at Highland Charter School view their own autonomy in the face of the Common Core State Standards?

4. To what degree do the teachers believe classroom technology, and their perceived autonomy in using technology, impact their teaching styles?

5. What factors, other than teacher autonomy, do the participants believe have the greatest impacts on classroom instruction and teachers' decision-making?
In this chapter, I will first describe the school in which this study took place and introduce the reader to the participants who provided all of the data presented in this report. Then, I will briefly summarize the data collection and analysis procedures I used to attain a deeper understanding of the participants’ stories. Finally, I will attempt to retell those stories by illustrating the relationships between ideas in a framework of categories that emerged throughout the process. I will discuss the results in-depth in Chapter 5, when I explain how the data helps to answer the research questions.

Setting and Participants

The School

The study was conducted at Highland Charter School, in a Midwestern city. In the 2015-2016 school year, Highland had a student enrollment of 900 students, of whom 68.1% were enrolled in the Free and Reduced Lunch Program, based upon financial need. The school included grades Kindergarten through Eighth grade and was situated within three adjacent buildings on a large fenced campus in the city. The buildings provided separate facilities for the kindergarten, elementary grades (grades 1 through 5), and middle school grades (grades 6 through 8); however, the school’s enclosed campus allowed for students to share cafeterias, playgrounds, the library, and other common areas.

Highland Charter School was unique among charter and traditional public schools in this region for several reasons. First, it was the only charter school in the area that has been designated as both a State and a National School of Character, receiving the title in 2011 from the national umbrella organization Character Education Partnership (CEP, now known as Character.org). According to Character.org, schools that earn the title are characterized by low rates of bullying,
discipline problems, and dropout rates; high student engagement; high parental involvement and teacher satisfaction; and improving test scores (Schools, 2016). The school was committed to fostering character education as its central mission.

Another characteristic that makes this school unique was the diversity of its student population. Table 1 below compares the demographic data of Highland's students with the surrounding school district, "Roth School District" in the 2015-2016 school year. See Table 2 for a comparison of the schools’ demographic data with other charter schools serving a large low-SES population in the same metropolitan area (Missouri, 2017a; Missouri, 2017c; Missouri, 2017e; National Alliance, 2016).

Table 1. Comparison of Student Demographics at "Highland Charter School" and the Surrounding School District, 2015-2016 School Year

<table>
<thead>
<tr>
<th>Student Characteristics</th>
<th>Local Education Agency (LEA)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot;Highland Charter School&quot;</td>
</tr>
<tr>
<td>Number of Students</td>
<td>900</td>
</tr>
<tr>
<td>% Students in Free/ Reduced Lunch</td>
<td>68.1</td>
</tr>
<tr>
<td>% Students Receiving Special Education Services</td>
<td>16.2</td>
</tr>
<tr>
<td>% Students Receiving ELL (English Language Learner) Services</td>
<td>22</td>
</tr>
<tr>
<td>APR Score</td>
<td>84.4</td>
</tr>
<tr>
<td></td>
<td>&quot;Roth School District&quot;</td>
</tr>
<tr>
<td></td>
<td>24,154</td>
</tr>
<tr>
<td>% Students in Free/ Reduced Lunch</td>
<td>86.1</td>
</tr>
<tr>
<td>% Students Receiving Special Education Services</td>
<td>14.6</td>
</tr>
<tr>
<td>% Students Receiving ELL (English Language Learner) Services</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>76.1</td>
</tr>
</tbody>
</table>

Table 2. Demographics of “Highland Charter School”, other Charters in the Area, and the Neighboring School District (TPS) (2015 Data)

<table>
<thead>
<tr>
<th>School</th>
<th>% students enrolled in Free and Reduced Lunch Program</th>
<th>Grade Levels</th>
<th>Number of Students</th>
<th>% Asian</th>
<th>% Black</th>
<th>% Hispanic</th>
<th>% Indian</th>
<th>% White</th>
<th>% Multi-Race</th>
<th>% Asian/Pac. Islander</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highland</td>
<td>68.1</td>
<td>K-8</td>
<td>900</td>
<td>7.7</td>
<td>28.4</td>
<td>13.6</td>
<td>0.1</td>
<td>45.3</td>
<td>4.9</td>
<td>7.7</td>
</tr>
<tr>
<td>CS1</td>
<td>48.3</td>
<td>K-8</td>
<td>210</td>
<td>0.5</td>
<td>42.4</td>
<td>3.8</td>
<td>0</td>
<td>49</td>
<td>4.3</td>
<td>0.5</td>
</tr>
<tr>
<td>CS2</td>
<td>51</td>
<td>K-5</td>
<td>305</td>
<td>0</td>
<td>53.8</td>
<td>2</td>
<td>0</td>
<td>44.3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>CS3</td>
<td>64.8</td>
<td>K-5</td>
<td>422</td>
<td>0.7</td>
<td>55.5</td>
<td>15.4</td>
<td>0</td>
<td>28.4</td>
<td>0</td>
<td>0.7</td>
</tr>
<tr>
<td>CS4</td>
<td>57.9</td>
<td>K-4</td>
<td>153</td>
<td>3.9</td>
<td>52.9</td>
<td>0</td>
<td>0</td>
<td>43.1</td>
<td>0</td>
<td>3.9</td>
</tr>
<tr>
<td>CS5</td>
<td>61.8</td>
<td>6-8</td>
<td>36</td>
<td>0</td>
<td>66.7</td>
<td>11.1</td>
<td>0</td>
<td>19.4</td>
<td>2.8</td>
<td>0</td>
</tr>
<tr>
<td>CS6</td>
<td>42</td>
<td>6-8</td>
<td>230</td>
<td>0.4</td>
<td>9.1</td>
<td>4.3</td>
<td>0</td>
<td>73</td>
<td>1.3</td>
<td>0.4</td>
</tr>
<tr>
<td>CS7</td>
<td>70.4</td>
<td>K-5</td>
<td>326</td>
<td>1.2</td>
<td>23</td>
<td>2.5</td>
<td>0</td>
<td>59.8</td>
<td>13.2</td>
<td>1.8</td>
</tr>
<tr>
<td>CS8</td>
<td>66.6</td>
<td>6-11</td>
<td>335</td>
<td>0</td>
<td>64.5</td>
<td>3.6</td>
<td>0</td>
<td>27.5</td>
<td>4.2</td>
<td>0.3</td>
</tr>
</tbody>
</table>
This state evaluates its public schools on a yearly basis and reports individual school performance with an Annual Performance Report (APR) score. The APR is used to express the degree to which a school or district has met the requirements outlined by five standards in the state's School Improvement Program. These five standards include “Academic Achievement” and “Subgroup Achievement”, as measured on state assessments; “High School Readiness” for grades Kindergarten through Eighth or “College and Career Readiness” for grades Ninth through Twelfth; “Attendance Rate”; and “Graduation Rate” (for high schools only). The term “subgroup” is defined as “black, Hispanic, students with disabilities, English language learners, and low income students (eligible for free/ reduced lunch [FRL]).

According to the state's education department, Highland Charter School scored 84.4% on the school’s Annual Performance Review (APR). The report provided APR data for local charter schools; the mean APR for this group in 2015 was 69.1%, and the neighboring public school district scored 76.1% (Missouri, 2017d).

The Participants

There are seventeen total participants included in this study. Of these, seven are classroom teachers, with a range of two to sixteen years of teaching experience. Out of the seven teachers, four also act as guides in training pre-service teachers (PSTs). Four PSTs participated at the onset
of in the study; however, one did not complete the semester at Highland and left for unknown reasons. Finally, I interviewed seven administrators over the course of the study. Table 3 describes the seventeen participants whose insights have contributed to the findings in this report.

Table 3. *Participants Included in this Case Study*

<table>
<thead>
<tr>
<th>Participant*</th>
<th>Role</th>
<th>Number of Years at Highland</th>
<th>Total Years Teaching/Admin Experience</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teachers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ms. Baker</td>
<td>7th-grade Lang. Arts, cooperating teacher**</td>
<td>3</td>
<td>3</td>
<td>Began teaching career at Highland. This is her first year as cooperating teacher.</td>
</tr>
<tr>
<td>Mrs. Howard</td>
<td>6th-grade Math, cooperating teacher**</td>
<td>2</td>
<td>3</td>
<td>Taught 6th/7th/8th grade science and 8th grade L. Arts at another school before coming to Highland. taught 6th-grade science for 2 years at Highland. This is her first year teaching math and first as cooperating teacher.</td>
</tr>
<tr>
<td>Ms. O’Connell</td>
<td>6th-grade Language Arts</td>
<td>2</td>
<td>2</td>
<td>Began at Highland three years ago as a PST (teaching 6th grade L. Arts)</td>
</tr>
<tr>
<td>Ms. Ryan</td>
<td>5th-grade, cooperating teacher**</td>
<td>5</td>
<td>5</td>
<td>Taught Special Education at Highland for 2 years prior to teaching 5th-grade. This is her first year as cooperating teacher.</td>
</tr>
<tr>
<td>Ms. Boston</td>
<td>3rd-grade, cooperating teacher**</td>
<td>0</td>
<td>8</td>
<td>Taught 6th-grade at a rural school in a neighboring state for 8 years.</td>
</tr>
<tr>
<td>Mrs. Hanson</td>
<td>1st grade teacher</td>
<td>2</td>
<td>7</td>
<td>Taught 1st/2nd grade (alternates every year), prior to this, she taught 5th-grade.</td>
</tr>
<tr>
<td>Mrs. Morris</td>
<td>Kindergarten, cooperating teacher**</td>
<td>16</td>
<td>16</td>
<td>Alternated 1st and 2nd grade for 16 years before moving to Kindergarten in current year.</td>
</tr>
</tbody>
</table>
On my first visit to Highland, I met with Ms. Fisher (the Head of School) as well as Mr. Davis and Mrs. Lincoln (the Middle School and Elementary School principals, respectively). The purpose of the meeting was to describe the goals of my research and to identify likely participants. They were very helpful and supplied me with the names of several teachers who had volunteered to participate in the study. At the close of the meeting, Mr. Davis guided me in a tour around the middle school building and introduced me to Ms. Baker, Ms. O’Connell, and Mrs. Howard. I then made arrangements for initial classroom observations.

I feel that it is important to mention here that Ms. Fisher, the Head of School, was in the process of completing her doctorate at the time of my data collection. She has since graduated with
her Doctor of Education degree, which she completed in 2016. She is referred as "Ms. Fisher" throughout this document since she had not completed the degree at the time.

Mrs. Lincoln arranged an informal meeting with the elementary teachers a few weeks later. At that time, I meet Mrs. Morris, Mrs. Hanson, Ms. Boston, and Ms. Ryan. I explained my research goals and the entire process. All were very supportive and signed the informed consent forms without hesitation.

**Data Collection and Data Analysis**

**Data Collection**

The majority of my data collection was in the form of unscheduled classroom observations and scheduled interviews. The number of interviews and observations varyed among the participants. It was my intention to begin with classroom observations and then conduct interviews afterwards so that I could be certain I had a firm understanding of the instructional practices taking place in class. I also wanted insight into the participants’ intentions as compared to the lesson delivery. The combination of interview transcripts and field note data provided a means for triangulation. Since teachers were often unavailable to debrief after observations, interviews were scheduled separately though a few teachers were able to informally converse in short periods during the observation sessions.

Data collection took place beginning in January and continued through the middle of May, when the school year was coming to a close. I typically visited the school about three or four days a week, and spent varied amounts of time in the three buildings. I spent the first few weeks in the middle school building before moving into elementary classrooms. I did this to ensure that I would spend longer periods of time focused on a few classrooms; I thought this would allow me to
capture typical and continuous classroom instruction in these classrooms. I focused mainly on the middle school classrooms in January, 2016, and February, 2016, and then shifted my attention to the elementary school in March, 2016.

Overall, I conducted 24 interviews and 35 classroom observations. During observation sessions, I carried my iPad into the classroom with me and sat in an inconspicuous location at the back of each room. This allowed me an effective vantage point and prevented my disrupting classroom instruction as I entered and left. I used my iPad and the attached keyboard to type field notes, which I then immediately transferred to my Dropbox account later that day. I did not take audio recordings or video of any class session.

Interviews were audio recorded with my participants’ permission. Every evening, I would upload the recordings to my Dropbox account and delete them off of the device to ensure confidentiality and to prevent the loss of data. I transcribed as many interviews as I could but became overloaded towards the end of data collection. I finally used an online transcription service to complete the final eight transcripts for me. All transcripts were stored under password protection in my Dropbox account.

I had planned on conducting a couple of focus groups but found them unnecessary. I believed the data I collected in the individual interviews and during observations provided me with rich insight so I decided against conducting group interviews. The one exception was the joint interview I conducted with Mrs. Morris and Ms. Miller; scheduling interviews proved difficult with the kindergarten teacher and her PST, so I conducted a single interview with them on May 3, 2016.

In addition to the interview and observation data, I created a survey on the Survey Monkey website; this survey was initially intended to ascertain teachers' use of technology in the
classroom, and the factors which influenced their use. It included seven close-ended and two open-ended questions. Ms. Fisher distributed the link to all of the teachers in the school for me. Those who responded signed a separate informed consent form, as they were not among the teachers in my sample. The response rate was very low on the survey, and many of the participants provided short or vague answers to the open-ended questions. I abandoned the survey data as it focused on a very narrow area of the project.

Data Analysis

It was important to begin data analysis right away. Much of my data collection was determined as the process continued, so the information needed to be analyzed as it was collected. My earliest data consisted mainly of classroom observations, though I conducted early interviews with administrators during my first few weeks on campus. The field note data was helpful in identifying areas that needed further exploration and informed the direction of future interviews.

Conducting data collection and analysis in tandem proved essential, as I was able to discover early on that my participants had a much broader and richer story than I had anticipated. Originally, my intent was to emphasize how the teachers’ professional autonomy in technology use shaped their classroom instruction; however, I soon discovered that the agency experienced by school staff extended far beyond their use of technology. If I had ignored this and remained on my original path, I would not have been able to tell the unique and complex story of this school and its staff.

All of my empirical data was qualitative in nature, and I used a grounded theory approach in its analysis. The concurrent data collection and analysis process I followed is a central tenant of the grounded theory approach, and it was essential in attaining a deep understanding of my informants' perceptions. Using Dedoose, a qualitative research analysis site, I began with open
coding, carefully reading and rereading each document line by line and identifying possible codes within the data. I pored over the same documents countless times in order to form a rudimentary code book. As relationships among the data were revealed, I constantly refined my code book to represent the complex links between concepts.

After several weeks, I saw clear patterns in my data, and my coding process evolved into axial coding, which is a more discriminate procedure. Codes became properties, which were joined to create broader, more inclusive properties and subcategories. Later, four major categories would become evident and would form the cornerstone of my findings. I continued a line by line analysis, but at this point, I knew what pieces of information were proving relevant to the study. This resulted in a more focused look at the documents, and I was able to easily separate the highly relevant details from the less important ones.

The constant comparative approach to data analysis uncovered a complex network of relationships among ideas that could only be revealed through seeking similarities and differences among individual excerpts of data. This resulted in numerous iterations of the code book, which was not finalized until this chapter was drafted.

**Results**

This project shed light on the many different perspectives among the seventeen informants. In this chapter, I will attempt to retell their stories by weaving them into a framework that explains the relationships between ideas; I will do this by following the format laid out in my final code book. The table version of the code book can be found in Appendix A, on pages 283-286.
By taking this approach, I will provide a brief answer to the main research question in this chapter. In Chapter 5, I will relate the stories in greater detail as I present the findings in a way as to answer all of the research questions and tie them to the existing literature.

**Introduction to the Four Categories**

To explain how perceived professional autonomy shapes instructional planning of teachers, administrators, and PSTs, I will describe the four categories that have emerged from the data. These categories form the foundation for the findings, since they are the factors that most directly shape the participants’ experience at the school. The four categories include “Conditions Supporting Self-Determination”, “Leadership”, “School Community” and “Instruction”.

The four categories have been subdivided into separate, but closely related subcategories. Most subcategories include properties, which developed as key ideas emerged from the data. First level properties are the most general, or broadest, of these. When appropriate, first level properties may have been further separated into distinct, but related second-level properties. One of the second-level properties, "Teacher Challenges", is further subdivided into three individual third-level properties, which describe three challenges teachers faced as a result of their perceived professional autonomy.

**Category 1: Conditions Supporting Self-Determination**

As I explained in Chapters 1 and 2, the self-determination theory first proposed by Deci and Ryan (1985) provides a theoretical framework for studying teacher autonomy and motivation. Themes inherent to the theory consistently appeared in the data and eventually gave rise to this
category. Within this category appear three subcategories: “Autonomy/ Independence”, “Sense of Trust”, and “Interpersonal Communication”.

Figure 1. Category 1: Conditions Supporting Self-Determination
Subcategory: autonomy/ independence. One key feature in Deci and Ryan’s (1985) self-determination theory (SDT) of human motivation is autonomous action. It is important to note here that the participants often describe their feelings of “autonomy” in a manner which differs from the autonomy described in the SDT model. In order to be autonomous, Ryan and Deci (1985) insisted that “a person must also feel free from pressures, such as rewards or contingencies” (p. 29) and that their resulting actions do not occur “under conditions where controls or reinforcements are the experienced cause of action” (p. 29).

Autonomy examples (1st level property). Informants in this study described their feelings of autonomy in different ways, often veering from the definition proposed by Deci and Ryan. Often the term autonomy is used as a synonym to voice. This is particularly evident when teachers refer to their active roles in choosing and designing curriculum within grade level and subject area teams. Teachers were expected to participate, but they expressed appreciation for having their voice heard by administration.

Ms. Baker and Mrs. Howard both spoke of their professional autonomy in terms of the administration's inclusion of teachers in curriculum development:

- Curriculum wise, I think that for language arts, I had a part in choosing the curriculum we are using... because I had a say in choosing it and I saw the results from using it, it's not as intimidating anymore (Ms. Baker, Interview, May 4, lines 389-392).

- So actually, [Dr. Stewart] meets with each grade level once a week and we are working on our curriculum and it has been a really great process as far as - how do you say- like he gives us ideas, or like - we kind of work on something, but he has been leaving it so much up to us as far as 'what is
going to work best for you guys' when we are doing this, so it’s beneficial and meaningful. He has he said he wants the curriculum to come back so that if someone new starts they can just pick it up and use it, so it's not completely personal, but the whole process of it is very much done so that is very useful to us and beneficial. So, we are very much a part of the curriculum process here, in general (Mrs. Howard, Interview, March 24, lines 205-212).

Ms. Lewis and Ms. Tanner, both PSTs, expressed their own autonomy in much the same way, as they explain that PSTs are encouraged to take part in curriculum planning sessions. Though the PSTs rarely discussed autonomy, it was typically in terms of having their voices heard by administration and their cooperating teachers. Ms. Lewis expressed her appreciation of being allowed to contribute in the curriculum meetings:

We were expected to participate as well. So, we were, obviously, not expectations but if I had something to say, I could say it. If I had something to add, I can add it. If we had homework, I would read what they read, too. So that was very cool” (Ms. Lewis, Interview, April 27, lines 97-99).

In slight contrast, Ms. Tanner's remarks emphasized her ability to modify plans so that the instructional methods are more tailored to meet the needs for the learners in her classroom:

The teacher who plans math- we all take a subject and plan it - so the teacher that takes math ... gives us the plans, and we have to kind of rearrange it and make it work for our kids... and then, in writing, we really are able to engage the students and bring in projects that are interesting to them and incorporate the computers like we've been doing...I don't really know how it's done at other schools as far as
curriculum goes. But I feel like I know they are able to do what works for these kids and what they are interested in. I think that's important (Ms. Tanner, Interview, April 20, lines 140-148).

When asked to discuss ways the Highland staff experiences autonomy, the administrators sometimes described viewpoints similar to the teachers’, in the fact that they emphasized teachers' roles in curriculum development:

   It is collaborative, think pushing time, where you are really talking with other professional and peers working with the same types of problems that you many or not have. Something that you are creating that will make you a better teacher in the end you will have a product that can say, 'Oh gosh, I was a part of the formation’ and it really… I think it builds by empowerment. You are helping to craft that curriculum or what it looks like (Mrs. Wright, Interview, May 6, lines 930-935).

Often, administrators spoke of autonomy in terms of decision-making ability, or authority. Ms. Fisher, the Head of School, called herself the “superintendent for this little mini-district” and explained that she was the “ultimate decision maker” but included the voices of others (administrators and teachers) in nearly all major decisions she makes (Interview, May 10, lines 256, 259).

According to Mrs. Wright, the school’s chief financial officer supported the school administrators’ decision. She claimed this is an unusual experience: “The budget doesn’t drive our programs. Our programs drive the budget. It is what the need really is for the school, for the teachers or whatever it might be. She understands that philosophically I think in a way that most CFOs don’t” (Interview, May 6, lines 690-693).
According to the teachers and instructors, professional autonomy extended into individuals’ instructional styles and technology use. Mrs. Howard and Mrs. Boston both spoke of appreciating having the agency to adjust their teaching to meet the needs of their students:

- I think it's really important to have some consistency as far as – well, a lot of consistency as far as standards, what's expected of you and your students, but as far as the way you deliver that instruction, I love having that freedom of not feeling like you have to stick to a certain thing all the time (Mrs. Howard, Interview, March 24, lines 168-171).

- [Autonomy is] so important. If I'm in the middle of a lesson and I see, number one they don't understand, or they've already got it, or they take me on a different path than where I thought we were going to go, then I have the freedom to stop and do what I need to do. That's responsive teaching, and that's what it should be, so I think it's so important (Ms. Boston, Interview, April 8, lines 572-575).

Mrs. Morris and Ms. Ryan both describe their curricula as simply a resource and explained that they do not feel pressured to strictly adhere to the materials provided by the school:

- Everything is seen as a resource, and again, whatever you see fit for your kids, whatever is going to work for your kids, you can do. You can adjust things, you can get rid of things, you can add things in. The decision-making process I form is very student-led, and then it really helps to give me all of those choices (Mrs. Morris, Dual Interview, May 3, lines 280-287).

- Even if I had to use a teacher's manual, I'd have to somehow prepare it in a different way. I can't carry that book around. Because we are on the ground with the kids and at their desk, and that the carpet and chairs, and it just doesn't work. So, it's nice to
have that, and we definitely have that at our school. It's the needs of the kid first. Once their needs are met, let's push some academics, find a way to get their common interest going, and we have that. And, to me that's how kids learn. That's how our kids learn (Ms. Ryan, Interview, April 20, lines 243-248).

**Autonomy support (1st level property).** This property refers to the ways the teachers and administrators perceived that their own professional agency was intentionally supported or nurtured by supervisory staff at the school. Informants frequently mentioned the importance of having established means of support from the administrators; these comments eventually gave rise to the second level property "Autonomy support: importance". Many participants elaborated with various examples of support they believed had enhanced their own feelings of autonomy, thus establishing the second level property "Autonomy support: examples".

**Autonomy support: importance (2nd level property).** Teachers and administrators expressed the importance of the school to provide means to support teachers’ autonomy instead of expecting each person to make decisions without any guidance. Ms. Fisher, the Head of School, explained that she and the other school leaders intentionally sought out opportunities to provide professional autonomy to the teachers. Mrs. Wright stated that her “mission” was to “empower” the teachers and all other people within the school (Interview, May 6, lines 208, 209). According to Dr. Stewart, relying on teachers as decision makers helped to build leadership skills within the school personnel. Mrs. Howard and Ms. Ryan each described the importance of the administration to temper teachers’ professional autonomy with accountability measures. Mrs. Howard described having too much autonomy in her former school and felt that the administrators never evaluated teacher performance (Interview, May 5). Ms. Ryan explained that teacher autonomy can be too
extreme: “I think that, if used appropriately, teacher autonomy can be a Powerhouse thing. I think also that it can get abused, if it's not used appropriately. So sometimes it's important for administrators - higher-ups - to make decisions for the common good” (Ms. Ryan, Interview, April 20, lines 222-225).

Ms. O'Connell expressed the importance of supported teacher autonomy in terms of specific ways she believed she needed more support. She described wanting more specific feedback from administrators in terms of her instruction but explained that the school leaders were not yet completely familiar with the new Language Arts curriculum. She also expressed the need for more support in trying new classroom technologies and expressed her hesitance in seeking out new technology resources without guidance from the school.

Autonomy support: examples (2nd level property). Teachers discussed varied ways that the school administrators supported their autonomy. Four teachers (Ms. Baker, Ms. O'Connell, Ms. Boston, and Mrs. Howard) and five administrators (Mr. Davis, Mrs. Wright, Mrs. Lincoln, Dr. Stewart, and Mr. Bowers) emphasized the fact that school administration strived to provide resources upon teacher request. Ms. Fisher explained this was the school leaders’ way of “moving obstacles out of the way” of teacher creativity (Interview, May 10, line 710).

In addition to providing material resources, Ms. Fisher explained the importance of providing support staff to the teachers:

A lot of these positions have come out of teachers' ideas too. It hasn't just been like, ‘Let's have this person because this is what we need.’ It's more like, ‘What are they telling us that we need? Okay, let's try to budget for this and see if we can't get this position in.’... There have been times where I'd be like, ‘All right, reel it in people’, because it's too many cooks in the kitchen, you know what I mean? You got to
allow people to be out there making their own mistakes and learning from those too, so it is this kind of balancing act (Ms. Fisher, Interview, May 10, lines 830-832, 805-808).

Other ways that teachers and PSTs believed they were supported in their autonomous decision making include the support they receive from other teachers and frequent check-ins from teacher leaders. Mrs. Morris and Ms. Ryan described one-on-one goal setting sessions with their assistant principals while Ms. Baker believed the feedback she received from Dr. Stewart, the Assistant Head of School, was invaluable: “He is very, very strong, very much data-driven. One of the hands-down best bosses I've ever had... he knows what good teaching looks like, he knows what good curriculum looks like, he knows numbers don't lie.” (Ms. Baker, Interview, May 4, lines 269-276).

**Impact of autonomy (1st level property).** The participant responses revealed four major areas in their work that are directly impacted by their professional autonomy. Those areas form the second level properties: “Empowerment”, “Job Satisfaction”, “Impact on Students”, and “Teacher Challenges”.

**Empowerment (2nd level property).** Administrators (Mrs. Lincoln, Ms. Fisher, Mr. Davis, and Mrs. Wright) explained that they intentionally found ways to empower their teachers through supporting their autonomy. Ms. Fisher, Mr. Davis, and Mrs. Wright each expressed the importance of teacher excitement and creativity in teaching. Fisher explained that teachers who feel empowered in their jobs will in turn empower their students to succeed.

It is definitely something that we believe in and the hopes are that if we're practicing as adults empowering each other, that's just really going to be a natural way of teaching in your classroom with kids. Kids feel that they can be empowered
to make their own decisions and so every year, I think we get better at that (Ms. Fisher, Interview, May 10, lines 277-280).

Mr. Davis described how empowering his teachers to be creative ultimately engages the students in their learning:

The teachers have a lot of freedom to create engaging lessons for the students that will keep them, you know, really focused on their work as well. I think that's kind of the idea. If they have some of that autonomy, it's going to get their creative juices flowing. In the end, we want to inspire them to be creative with the kids (Interview, May 6, lines 93-96).

Mrs. Wright recounted how new staff members tend to view the professional autonomy as a novel idea:

The newest team members aren’t quite ready for that sometimes so I just try to give them a taste of that so that they can see, 'Oh so if something is making me excited about the way that the student or the these groups of students are responding to this, then you are going to empower me to be able to pursue that.' That’s a fun light bulb to see turn on with them (Interview, May 6, lines 156-160).

*Job satisfaction (2nd level property).* Without prompting, eleven of the seventeen participants described having high levels of job satisfaction. Phrases used to describe the informants’ jobs include: “great experience”, “appreciate my job”, “fun”, “incredible year”, “happy”, “exciting”, “pleasant”, “enjoyable”, “amazing”, “love it here”, “lucky”, and “awesome”. Only one of these eleven described factors that may have tempered her happiness, as she described being “overwhelmed” and “exhausted” at times as she balanced her lesson planning with training her PST (Ms. Baker, Interviews, March 25, line 656; and May 5, line 299). The other six
participants did not express their levels of job satisfaction directly, but they seemed to share the enthusiasm their co-workers described.

*Impact on students (2nd level property)*. Four participants described the impact of their own autonomy on their students. Ms. O'Connell, Mrs. Howard, and Ms. Baker all explained that there was no pressure for teachers to jump into academics at the beginning of the school year; instead, the school provided time for each team to build relationships with their students before expecting content instruction to begin. Mrs. Morris said that her autonomy allowed her to tailor her teaching to the needs of her highly diverse Kindergarten class. However, she explained, in her fifteen years at Highland, as she had always felt free to meet her students’ needs and that during her first few years, she had often felt the level of autonomy was “overwhelming”, since teachers were expected to craft their curricula out of “nothing” (Interview, May 3, lines 101, 102).

*Teacher challenges (2nd level property)*. The teachers’ perceived autonomy was not without its challenges. In this study, teacher participants identified three major challenges they face due to the agency they experience in their jobs. These third level properties include “Time Invested”, “Teaching Experience”, and “Ease of Communication”. The participants who spoke to these three properties were mainly teachers, but two administrators and one PST also commented on these.

*Time invested (3rd level property)*. Mrs. Howard and Ms. Baker both expressed some concern over the amount of time they invested in their own planning. Ms. Baker stated that the amount of agency resulted in a vast amount of time invested to create new projects and to craft her lessons; often she found this to be “exhausting” and “overwhelming”, particularly when balancing her teaching load with the time to instruct her PST (Interviews, March 24, lines 123, 130; May 4). Mrs. Howard also described the balance between acclimating to a new subject and participating in
"so much PD (professional development)" as "overwhelming" (Interview, March 24, lines 287, 435).

Teaching experience (3rd level property). According to the informants, being a newer teacher with high perceived independence was often demanding. Ms. Boston and Mrs. Howard described the challenge of becoming acclimated to a new school setting and a different curriculum. Ms. Baker, a third-year teacher, described balancing her classroom planning and training a PST as "overwhelming" (Interview, March 25, line 656). Mrs. Morris expected that new teachers would find the vast number of resources with few school-mandated guidelines to be "overwhelming" and explained that was her experience her first few years at Highland (Interview, May 10, line 101).

Ease of communication (3rd level property). With the latitude provided to all school personnel came the challenge of disseminating information and sharing ideas among staff members. Dr. Stewart, Mrs. Howard, and Ms. Lewis all described a sense of disconnect among the three buildings. Dr. Stewart called this a "cautionary tale" and that the "pump-the-brakes moment" came when he realized that they "do have to find a way to be aware of all the things that are happening in the school" (Interview, May 2, lines 223, 225-226). Ms. O'Connell expressed concern at the administration’s current unfamiliarity with the new Language Arts curriculum and thought this challenge was compounded by the level of instructional agency in her subject area (Ms. O'Connell, Interview, April 29). Adding to this challenge, Ms. Baker claimed, is the number of platforms the school uses for staff communication. She argued that the school’s use of the networking site Yammer in addition to Gmail and Outlook made sharing ideas with other staff members difficult and confusing (Interview, March 3).

Subcategory: sense of trust. The concept of “trust” was repeated several times throughout the study. Informants reported feeling a sense of competence because they were trusted to do their
jobs well. Ms. Baker and Ms. Boston both stated that they felt the administration trusts their professional judgment as experts in their disciplines:

- In terms of support, my principal fully supports me in what I am doing. He sees us as the experts and him as the observer. He questions things just to see our thought process behind them, but we are, in turn, the experts of our grade level content (Ms. Baker, Interview, March 25, lines 99-102).

- They’ve been really good letting me come in and bring the things that I've done, probably because they've come in and seen the work that the kids are doing and know that I have experience. I have a literacy background; I have my lit coach certification. I was a literacy coach in my last district as well, and an interventionist, so I think that probably helped a little bit that I have some other experience to bring those things in (Ms. Boston, Interview, April 8, lines 585-590).

This sense of trust seemed to be shared by administrators and PSTs as well. Mr. Bowers explained that the top school leaders trusted him to do his job because only he knew the best way to do his work (Interview, March 3). Mrs. Wright expressed the feeling that she was trusted to use her talents to support her teachers. Ms. Tanner, a PST, expressed the feeling of being trusted by her cooperating teacher Ms. Ryan.

Five of the teachers and three PSTs in this study described feeling competent in their work. Ms. Baker and Ms. O'Connell believed they were able to adapt to new technologies and learn their uses fairly rapidly. Ms. Baker, Ms. O'Connell, Ms. Ryan, Ms. Boston, and Mrs. Morris all expressed feelings of competence in writing and adapting their curricula, and that the administration's reliance on their curriculum development has helped them to become more confident in implementing the curriculum. Ms. Lewis, a PST, believed that the Common Core...
standards in math enhanced her ability to effectively teach math “conceptually” without struggling to find effective teaching approaches (Interview, April 27, lines 260, 262). Mrs. Morris explained that her own resourcefulness in her first few years at Highland, when she relied heavily on research to determine her teaching approach, had greatly strengthened her own pedagogical understanding (Interview, May 20).

**Subcategory: interpersonal communication.** This theme was repeated throughout the study. Included in this subcategory are the properties “Relationships among Staff”, “Coaching”, and “Collaboration”.

**Relationships among staff (1st level property).** Ms. O'Connell, Ms. Boston, Ms. Baker, Mrs. Howard, and Ms. Ryan reported strong connections among their team (same grade-level) members, while Ms. Baker, Mrs. Morris, and Ms. Ryan also specifically described the trust and support communicated to them by school leaders. Two PSTs, Ms. Lewis and Ms. Tanner, expressed their feelings of belonging among the school staff and feel that school leaders are approachable:

From the beginning, I have seen the principal walking around every day. I see him, and we will say hi, and the assistant head of school - I see him almost - I used to see him every week, we would meet in a meeting with the Math people which was- I felt very blessed even to be invited to go to that (Ms. Lewis, Interview, April 27, lines 85-88).

Administrators Ms. Fisher and Mrs. Wright explained that fostering positive relationships among their staff members is a high priority of school leaders.

- We're still people. We have bad days and it's not always perfect, but I think just putting some of that stuff out there and talking in that kind of safe and casual kind
of way, whether it be with me or their principals; that really helps that family feel. You feel supported. You know that it's okay to make mistakes here... We're in the people business. It's got to be about relationships first (Ms. Fisher, Interview, May 10, lines 359-362, 236-237).

- It is to allow and meet people and celebrate them and support them, challenge them, have honest conversations (Mrs. Wright, Interview, May 6, lines 1276-1277).

**Coaching (1st level property).** School leaders repeatedly described their own supervisory roles as teacher coaches. Mr. Davis identified himself as a “partner” whose job was “guiding (the teachers)” (Interview, May 6, lines 470-471). According to Ms. Fisher and Ms. Lewis, the school had intentionally hired support staff in order to help the teachers grow in their own professions. Mr. Davis, Dr. Stewart, and Mrs. Lincoln each referred to open conversations that occurred between administrators and teachers following classroom observations. Mr. Davis expressed his desire to help teachers improve their craft, and believed that most of the staff appreciated his constructive criticism:

> The one thing I've learned through co-observations is that even a great lesson which might just get a gold star somewhere else, we're going to find something that we can, not to nit-pick, but we're going to always challenge our teachers to do a little bit more, a little bit better. I think they appreciate that. I mean, the ones who've been around here for a long time are very accustomed to observations and being pushed. They don't take it as, you know, criticism. It's constructive (Mr. Davis, Interview, May 6, lines 75-81).

Dr. Stewart described the conversations as a means to ask teachers to reflect on their work, and then how he used the reflections as a tool for evaluation:
If a teacher comes out of it with, 'This is what I did. This is what I learned about my kids as a result of this. This is the plan in order to help this next time.' I start there. Then, obviously, I look for more pedagogical things (Dr. Stewart, Interview, May 2, lines 600-602).

Mrs. Lincoln contrasted the roles of teacher leaders with her own role as teacher evaluator:

That coaching is really based on really making sure that the teachers are coming through our doors, really understand our mission and value character as much as we do, and relationship building and all of that. There are coaches, and they're the ladies that that's their job. It's not an administrator like me that's going to be evaluating. It's really their job just to support them (Mrs. Lincoln, Interview, May 10, lines 141-146).

Teachers in the study identified the importance of coaching in their own professional development. Ms. Baker, Mrs. Howard, Mrs. Morris, and Ms. O'Connell communicated the importance of having strong new teacher training and thought that the current program supports new faculty in their development as teacher professionals. Ms. Baker and Ms. O'Connell explained that teacher observations accompanied with specific feedback were essential in improving their own instructional practices.

Collaboration (1st level property). Administrators, teachers, and PSTs all expressed the school’s emphasis of collaboration among faculty and administrators. Ms. Fisher explained that she intentionally involved teachers and other administrators in policy design and decision making, as she reasoned that “it is so much more rich when you've got other people's ideas and voices” in the process (Interview, May 10, lines 263-264). Mrs. Wright discussed how administrators teamed up in decision making and shared their ideas in a school-created group called the Leadership
Development Institute (LDI), a platform in which the “divergent thinkers” that comprise the administration could share ideas and design programs (Interview, May 6, line 1840).

Teachers and PSTs reported having established partnerships with other teachers and with school administrators. Teachers met weekly in groups, as grade levels or subject areas, to plan instruction. Mrs. Howard and Ms. O’Connell both stated that the teachers on the sixth-grade team often met informally during their plan times and would simply plan in the same room so they can share ideas with one another. Ms. Lewis and Ms. Tanner both described their own active planning roles on their respective teams. Formal team meetings almost always included an administrator, who acted as a planning partner and contributed to the team’s decision making. Ms. Ryan, Ms. O’Connell, Ms. Boston, and Mrs. Morris all described how the administrators’ active roles in team planning helped them to feel supported by school leadership.

**Category 2: Leadership**

The leadership structure and function at Highland seemed to play a huge role in the teachers’ and PSTs’ experiences within the school. Administrators discussed ways they felt the school leadership expressed innovation; teachers and administrators spoke of various aspects of the school’s vision as well as how standards and professional development training had impacted instruction in the school. School leaders also explained the importance of hiring decisions made by administrative personnel. The resulting sub-categories include “Leadership Training”; “Vision” (which is further divided into properties “Character Education”, “Achievement”, and “Shared Vision”); “Hiring Practices”; “Accountability and Standards”; and “Professional Development” (further divided into properties “Professional Development Focus” and “New Teacher and PST Training”).
Figure 2. Category 2: Leadership.

Subcategory: leadership training. Five of the six administrator-participants spoke of ways they thought Highland’s school leadership was unique. The most mentioned defining feature was the fact that the school sought to provide leadership training to faculty and administrators alike. Five of the six school leaders in the study were “homegrown leaders”, a term I have borrowed from Ms. Fisher (Interview, May 10). Ms. Fisher, Mr. Davis, Mrs. Wright, Mrs. Lincoln, and Dr. Stewart had all served at the school in various capacities, as shown on Table 1. These leaders had attained higher leadership roles as their professional experience grew. Of these five, all but Mrs. Wright were originally hired as classroom teachers and worked in that capacity at Highland before moving into administration.

One specific source of leadership training came from a partnership with a character education leadership program at a local university. With character education being a central focus of the school, every administrator at Highland actively participated in the character education
program, which was designed as a yearlong cohort of school leaders. Mrs. Wright explained the reason Highland administrators decided to enroll in the program: “We were looking for something that was different as far as how they connect with kids, relationship-wise but also to their highest kind of selves” (Mrs. Wright, Interview, May 6, lines 662-663).

In addition to this university-based leadership cohort, the school had designed other opportunities for continued leadership training for administrators. Mrs. Wright described the Leadership Development Institute, created by Ms. Fisher, as small heterogeneous groups of administrators whose goal was to find ways to advance academic achievement in the school. She stated:

She’ll take a curriculum hardliner and she will take someone more like me and a few other people and mix us in and we have conversations about like performance events. How can you develop a portfolio to look at the way a student grows over the course of their time with us? What are the skills sets we are looking for? Are we growing leaders? How can you assess that when it comes to achievement? ... There are times I have been on this little LDI teams and it is just been so funny having these conversations because they will be like, ‘I think this way’ and ‘I think this way,’ and then you start to see how they are actually just totally complementary of each other.” All that can come together to give you the chance to do more with the kids. It all ends with that (Mrs. Wright, Interview, May 6, lines 1848-1856, 1916-1920).

Teachers participated in continuous leadership training as well. Ms. Fisher and Dr. Stewart explained that the inclusion of teachers in "meaningful" decision making led to developing teacher leaders and “master teachers” (Dr. Stewart, Interview, May 2, line 187; Ms. Fisher, Interview, May
Mrs. Wright further asserted that one goal for providing teachers with leadership training was for the faculty to further instill similar skills in the students. She encouraged teachers to ask these questions:

'Are we growing leaders? How can you assess that when it comes to achievement?’
I mean, for me personally, that’s what I think of. I think of: ‘Are students taking on more and more opportunities to be leaders? Are they able to perform at these - whether it might be a public speaking or any kind of like performance event that they might need to do? How can they communicate their thinking?’ (Mrs. Wright, Interview, May 6, lines 1855-1859).

**Subcategory: vision.** Highland's teachers and staff communicated very clear goals that were repeated multiple times by various speakers. Six administrators and three teachers frequently spoke about the central theme of "Character Education"; in addition, "Student Achievement" was brought up frequently as administrators and teachers discussed success in terms of their students. Finally, the first level property "Shared Vision" is included to communicate the fact that the participants clearly communicated the dual goal of the school to foster character education and student achievement for every learner.

**Character education (1st level property).** According to ten informants, the entire school was centered on the mission of character education, which was ingrained in all parts of the school day (Ms. Baker, Mr. Davis, Mr. Bowers, Ms. Fisher, Mrs. Howard, Mrs. Lincoln, Mrs. Morris, Ms. O’Connell, Dr. Stewart, Mrs. Wright, Interviews). Mr. Bowers explained that character education framed everything that was done in the school, while Ms. Fisher and Mrs. Wright identified it as the “turnaround model” which had led to increased academic achievement and a true sense of
community among students and faculty (Mr. Bowers, Interview, April 6; Ms. Fisher, Interview, May 10, line 217; Mrs. Wright, Interview, May 6). Mr. Davis asserted that all teachers were “invested... in [students’] character development because you really can’t address some of these academic concerns or challenge these students... unless you’ve developed a solid relationship with them and that they have the character to forge on and succeed” (Interview, May 6, lines 169-173).

Ms. Fisher, Mrs. Wright, and teacher Ms. O’Connell each identified character education as a contributing factor in the students’ improving achievement scores. Mrs. Wright equated character education with “finding the strengths and the talents” of every child and then helping each student build on those talents (Interview, May 6, lines 227-228). Ms. Fisher and Dr. Stewart both specified that this must occur within developmentally appropriate conversations, and that the school’s expectations for individual students are based on students’ growth in the desired character traits (Ms. Fisher, Interview, May 10; Dr. Stewart Interview, May 2).

Highland had established programs to ensure its successful emphasis on character education. As previously mentioned, all school administrators had actively participated in a character education leadership program at a local university. Ms. Fisher, Dr. Stewart, Mr. Bowers, and Mrs. Wright each claimed that the school continued to aim character education training at leadership staff in attempts to continually improve character education for all students.

The school provided time in its daily schedule for students to have discussions centered on issues in character education. The typical school day began with fifteen-minute class meetings, designed to encourage students to communicate ideas with one another and with a trusted teacher (Ms. Fisher, Interview, May 10; Ms. Baker, Interview, May 5). When recent racial unrest flared in the city, the school set aside an entire school day to help students process their feelings and safely discuss their viewpoints in these small groups; Ms. Fisher described her uncertainty about opening
the school on that particular day but felt encouraged when the majority of the students arrived at school. She stated that she felt the important class meeting discussions were successful in helping students work through feelings of racial tension that resulted from the events that had occurred (Ms. Fisher, Interview, May 10).

Mrs. Wright claimed that students would often identify a social need in the school or in the community and will plan a service project to meet that need, recruiting classmates and faculty to become involved (Interview, May 6). I observed this happening when observing Ms. Ryan’s class; two students from another fifth-grade class entered the classroom, politely asking the teacher if they could address the class. After reading the book *Pay it Forward*, they had decided to start their own “Pay it Forward” initiative and invited Ms. Ryan’s students to join in their campaign (Field Notes, April 15).

**Achievement (1st level property).** Highland measured student achievement on the basis of student growth. Mrs. Lincoln, Mrs. Wright and Dr. Stewart each explain that student achievement, determined for individual students, requires more than simply examining test data. Mrs. Lincoln stressed the essential role of formative assessment as a true measure of student learning:

> Student growth we measure in a lot of different ways. We do some standardized stuff, like NWEA and all of that, but I think the true stuff is more the formative assessment and the day to day, because to me that really drives what the instruction... if you're not doing that throughout, you're going to get to the end and find out some kids might not have learned anything (Mrs. Lincoln, Interview, May 10, lines 312-316).
Mrs. Wright and Dr. Stewart's emphasis was placed on the importance of multidimensional assessment to determine student achievement. Both claimed that the school's administration was mainly concerned with individual student growth:

- We have different tools that we use to measure like diagnostically, that kind of thing. Really, for us in that respect, you are always looking for just growth but beyond that which is just kind of one thing. I think our goal is to develop students who are creative thinkers (Mrs. Wright, Interview, May 6, lines 1831-1834).

- I think you have to look comprehensively at kids. In particular, for a school like this whose mission is world-class education that also involves character, the lens can't just be [state assessment] scores, or NWEA, or some of these hard numbers that say, 'This is how this kid stacks up academically versus whatever.' ...that's definitely a factor. We've got to consider that... We literally start with that baseline of, 'What did the hard numbers tell us in terms of who's on track, not on track, whatever it is?' We literally make a spreadsheet of every single kid... We use it to look at individual students based on, 'Did they grow statistically more than they should have on the [state assessment]?' We look at that, but then the NWEA is another tool that is even a little bit more granular ...It's another criterion-referenced test, but basically it measures growth as opposed to just a hard number. We give the kid a number here, we give the kid a number here, and then it'll correlate it over the course of a year to say, 'Well, you can infer that this kid grew one and a half years', or whatever it is. That's the next piece we look at. ... 'Let's just look at reading.' ...then, we look at attendance... Then, we look at behavior and discipline... We don't give up, we look at every single one of those things, and every single one of those things gives you a
different picture of a kid. You might have a kid who isn't proficient and didn't show over a year's worth of growth, and is still reading at a third-grade level when they're in seventh-grade, or whatever it is. Through their efforts and our work, they went from fifteen referrals last year to two referrals this year. You can't tell me that kid's not successful. That's the approach that we use (Dr. Stewart, Interview, May 2, lines 388-398, 407-429).

Teachers Mrs. Howard, Ms. O'Connell, and Ms. Baker agreed that student achievement is most effectively determined by using multiple measures to determine individual growth. All three expressed the importance of classroom assessment as an accurate method of determining students’ skill attainment.

According to Ms. Fisher, the school's emphasis on character education greatly impacted student academic achievement:

Everything has to do with character ed. because it is integrated, it's part of how we do things, but we are very serious about rigorous academics and so it can be done through a character way of being, but we are still pushing kids ... beyond their comfort zone, pushing themselves to say, 'I can do more. I can challenge myself more academically' (Ms. Fisher, Interview, May 10, lines 652-656).

**Shared vision (1st level property).** As explained before, the unifying, “embedded” theme shared among all faculty and administrators was the school’s commitment to teaching character education (Mrs. Wright, Interview, May 6, line 667). Ms. Fisher said that school personnel emphasized the terms “respectful, responsible, and caring”:

Those three...words are really what we’ve built a lot around so really in classrooms and programs and the curriculum, in the day-to-day
interactions between people, you’re always really going to see things that are...centered around being respectful, responsible, and caring... We hold ourselves accountable to making sure that we’re living out what we’ve defined as really important terms for us (Interview, May 10, lines 37-42).

Mrs. Wright, Dr. Stewart, Mr. Bowers, and Ms. Baker expressed similar ideas. Mrs. Wright explained: “It is deeply a part of who we are” (Interview, May 6, line 670). Dr. Stewart claimed: “We all are very clear. We know exactly what we are trying to accomplish. The goals are very clear, very well-articulated, but we do have that opportunity to personalize that based on our individual students, out individual teachers” (Interview, May 2, lines 45-48). Mr. Bowers claimed that the staff was “all on the bandwagon” (Interview, April 6, line 500). Seventh-grade teacher Ms. Baker explained the culture of the school was based upon relationships and that the teachers felt “accountable” for the kids and felt “tied to them” (Interview, May 4, lines 261-262).

Subcategory: hiring practices. Ms. Fisher, Mr. Davis, and Mrs. Lincoln agreed that the hiring process required careful selection and great care; teachers were chosen based upon shared values, and Ms. Fisher considered it the “most important decision” she made as Head of School (Interview, May 10, line 736). Mr. Davis explained that school leaders often requested video lesson samples from perspective teachers so that they could examine “interactions between them and their students”, and that job candidates were chosen based on their character and understanding of Highland’s mission (Interview, May 6, line 209). Ms. Fisher, Dr. Stewart, and Mr. Davis each explained that the school often hired the school’s PSTs at the conclusion of their training, as this allowed school leaders and cooperating teachers to instill in them a commitment to the school’s values. Ms. Fisher stated that in the current school year, eight out of the nine PSTs at Highland applied for teaching positions for the 2016-2017 Academic Year. Mrs. Wright and Ms.
Ryan agreed that this meticulous hiring process usually resulted in the school hiring teachers that they could trust.

**Subcategory: accountability and standards.** As mentioned earlier, student achievement was measured through the examination of multiple measures. Mrs. Wright differentiated what she calls “hard data”, or test scores and grades, with “soft data”, which she described as “intuitive” in nature, focusing on students’ communication skills, creative thinking, and demonstrated leadership skills (Interview, May 6, lines 1870-1871, 1897). The teachers and PST participants each expressed finding the *Common Core State Standards* a helpful tool in focusing their teaching on the major content ideas and allowed them to easily differentiate lessons based upon their students’ needs (Ms. Baker, Interview, May 5; Ms. O’Connell, Interview, April 29; Mrs. Howard, Interview, May 5; Mrs. Morris, Dual Interview, May 3; Ms. Ryan, Interview, April 20; Ms. Lewis, Interview, April 27; and Ms. Miller, Dual Interview, May 3).

Teacher participants expressed the understanding that their instructional autonomy was coupled with accountability, and that their pedagogical approaches were carefully observed by teacher leaders (Ms. Baker, Interview, May 5; Ms. O’Connell, Interview, April 29; Mrs. Howard, Interview, May 5; Mrs. Morris, Dual Interview, May 3; Ms. Ryan, Interview, April 20; Ms. Lewis, Interview, April 27; and Ms. Miller, Dual Interview, May 3). Ms. O’Connell acknowledged that student test data was tracked by the office but had no knowledge of how the data was used in administrative decision making (Interview, April 29). When asked how she imagined school leadership measured student achievement, she stated that character was central to their assessment, but that academic achievement was primarily determined by the state assessment (Interview, May 5).
Though Highland was a charter school, it administered the state assessment to all students, just as TPS used the test. Ms. Fisher explained that the school was not required to go through the state's School Improvement Plan (SIP) since it was governed by the university sponsor instead of the state Department of Education. However, the school leadership had chosen to participate in the SIP on a voluntary basis. She explained that the school administration used its students’ assessment scores strictly to determine student growth, not solely for proficiency (Ms. Fisher, Interview, May 10). Dr. Stewart explained that the indication of a child’s proficiency on the test was far less important than the academic growth demonstrated from one year to the next:

[The state assessment is] still very important. There's no question. I personally think that just the straight, 'Is he proficient, or below, or whatever? What's his scale score?' That is less important, I think, than, ‘How did he do? Did he improve? Even if he's still below basic, is he showing progress?’ (Dr. Stewart, Interview, May 2, lines 508-511).

That did not render the assessment scores unimportant when it comes to reporting student achievement. Mrs. Lincoln explained the importance of published test scores, but that the school avoided pressuring the teachers to overemphasize test preparation in their classrooms:

There's definitely some pressure there, because that's how you're measured. Being, I think, a charter school and a school of choice, parents will look at that, too. If you're not performing, then they're not going to obviously probably be first choice here. Yeah, there's definitely pressure behind that, but I don't think if you would come in and ask any teacher if they feel major pressure from the test ... they want to do well as a teacher and they want their kids to do well, but in no way, shape, or form do we
teach to the test, or three months ahead of time cease everything that's happening, and all you're doing is test prep and all of that (Interview, May 10, lines 179-183).

However, teacher Ms. Baker and Ms. O'Connell expressed feeling pressure when it was time to prepare their students for the state assessment test. Ms. Baker claimed that there is “a lot [of pressure] on the teachers” (Interview, May 4, lines 225-226), while Ms. O'Connell described preparing her students for the test:

I think some of the problems come down with the assessments. I mean, very recently, we spent two weeks in one of our classes, reviewing skills and going through skills to prepare them for the [state assessment] test. And on the one hand, it was a great chance to help to review skills with them and everything. On the other hand, those were two weeks that I wondered if we weren't facing these high-pressured tests, is that how I would have chosen to spend those two weeks? Maybe not. But in that sense, I don't think it's the standards that are limiting so much as the pressure behind the assessment (Ms. O'Connell, April 29, lines 100-106).

**Subcategory: professional development.** Teachers and administrators spoke of the importance of professional development in developing instructional effectiveness. The statements made by all informants fell into two general areas which became the two properties for this subcategory: “Professional Development (P.D.) Focus” and “New Teacher Training”.

**P.D. focus (1st level property).** The teachers and administrators identified two major areas of professional development on which the school was focused during the 2015-2016 school year; those two areas were developing the school’s math program under the guidance of a university mathematics professor; and developing inquiry units across the curriculum, with a curriculum
consultant who traveled to the school once per month to guide the teachers in inquiry practice and backwards design.

The informants did not agree on whether the amount of formal professional development provided by Highland was sufficient for their growth as teachers. Mr. Bowers claimed that Ms. Fisher “does a great job of professional developing us. We find that it’s really valuable...it’s an ongoing process” (Interview, April 6, lines 447-450). Ms. Ryan and Mrs. Howard both expressed that the school provides a large amount of professional development. Ms. Ryan claimed that “this year was crazy with PD...We have been bombarded with PD because we are really trying to strengthen those two areas, in math and the project-based aspect” (Interview, April 20, lines 325, 333-335). Mrs. Howard claimed that there was “so much PD happening... in math” (Interview, March 24, lines 287-288). On the other hand, Ms. Baker and Ms. O’Connell felt that they did not receive enough professional development over the school year. Each expressed a desire for more formal professional development:

- [The administrators] give a lot of professional development to that project, so right now, it’s math. So I have gotten way less professional development as an English teacher because there’s a lot of their funding and time spent on math. My first year, I got a ton of professional development because I asked for it, and it was pretty much ‘if you ask, you will get’. I think they spent too much money that way, so they scaled it way back the second year. We got really no PD at all. This year, it was more ‘If I ask, and I propose, and I write a reason why and how I'm going to use it and push them more, I will get it.’ It is very much like ‘I have to
find it, I have to negotiate it. And then I have to push for it’ (Ms. Baker, Interview, May 4, lines 436-444).

- I feel like we really haven't had that much [P.D.] this year. We've had a handful of P.D. days, but not each one of those P.D. days actually included P.D. Some have just been more like - we've had meetings or so about whatnot. Yeah. So I - that is actually, that is one thing that I wish we had more of, is really like a true professional development because I think that's something that we don't do as well as we maybe could (Ms. O'Connell, Interview, April 29, lines 330-334).

**New teacher training (1st level property).** Administrators Ms. Fisher, Mr. Davis, and Mrs. Lincoln explained the structured professional development that the school provides its new teachers. Each new teacher, regardless of prior teaching experience, automatically receives three years of intense coaching by teacher leaders at Highland. Ms. Fisher described it as a way of scaffolding for new personnel:

> If you've made it past three years here, you've learned a lot and so you're ready to really clip those wings and get going, but those supports are still here. It's like, it's less structured, it's more as needed, but those supports really never go away. You still have access to all those same things and all those same people. It's just kind of in a different way. It's as needed and based on the individual a little bit more because even after year three, there are just different strengths and different challenges that each person has, but support is big (Ms. Fisher, Interview, May 10, lines 820-826).
As part of her new teacher training during her second year at Highland, Ms. O'Connell participated in a training program provided by the sponsoring university:

The first year is more of just almost - it was more of just like a reflection group that got together. It really wasn't much - I guess there was some professional development, but a lot of it was more just kind of reflecting on your own teaching... this year, I went through a program... where I had a coach from the university that came in and observed me three times. I would send a video of my teaching, basically set a goal with every sent video, and then she would come observe, give some feedback from the video and from her observations, and then there would be a reflection that I would turn in... so just a few months of having that person from the university coming in and doing some observing and feedback (Ms. O'Connell, Interview, April 29, lines 315-324).

Cooperating teachers Ms. Baker, Mrs. Howard, Ms. Ryan, and Mrs. Morris spoke briefly about their experiences training their PSTs over the school year. Mrs. Howard and Ms. Ryan each communicated great satisfaction with their current PSTs.

Mrs. Howard explained that she and her PST (Ms. Lewis) had a successful collaborative relationship and claimed that the lack of direct oversight from the university allowed them to tailor Ms. Lewis' training to meet her needs:

It's nice because my studio teacher is amazing and she's very reflective and really dependable, so it's nice because we have a great working relationship and we can decide that together. But if that wasn't the case I think it would be really frustrating because there's not a lot of opportunity
to give feedback to her superiors. Yeah so it works out for us. I'm fine with it. We can kind of take it on our own and do what we think is best (Mrs. Howard, Interview, March 24, lines 492-496).

Ms. Ryan expressed her desire to empower her PST (Ms. Tanner) so that her training at Highland would be beneficial:

I feel like she's [Ms. Tanner’s] going to go into her first year empowered and confident and like, 'Yeah, I already got my first year out of the way. And I learned with my teacher above me helping me, mentoring me.' I wanted that for her. And I hope she feels that way... we have great student teachers from [the University], so it's nice when you get great incoming pre-service teachers to be like, ‘Oh, this makes my job even easier.’ So, yeah, I can't say enough good things about that. It's been great to have her around. And she's very much so a part of the team too (Ms. Ryan, Interview, April 20, lines 107-110, 118-121).

Ms. Baker, on the other hand, had a much more difficult experience in the process of guiding her PST:

It's been a little tough. I think it's hard when you are - I've only been teaching for three years, so I'm still learning things every week or day or whatever. I think she's a very different personality than me, which I didn't even figure would play into being that relationship. I don't know; it’s been interesting. It's been an experience... I'm very into using technology and my room. She's kind of opposed - not opposed, but afraid of technology, which I think is a little frustrating for me... When you're in the zone of
teaching, you don't even think about most of the things that you're doing. And it's hard to back up and start from fresh and teach somebody things that are second nature to you... it's hard to teach somebody that (Ms. Baker, Interview, March 25, lines 546-551, 557-564).

All four cooperating teachers in the study claimed that they had received almost no guidance and no support from the university while they trained their PSTs. They described a clinical educator who often missed appointments; seemed distracted during classroom observations; and appeared uninformed about the university’s requirements of PSTs and their cooperating teachers (Ms. Baker, Interview, March 25 and May 5; Mrs. Howard, Interview, May 5; Mrs. Morris, Dual Interview, May 3; Ms. Ryan, Interview, April 29). Ms. Miller claimed:

I get the vibe from her that she doesn’t really want to be here. She has taken job interviews on the phone while she has been there as one of us. It’s been really interesting, and getting an observation from her is like pulling teeth (Dual Interview, May 3, lines 484-487).

Mr. Davis and Dr. Stewart described the school’s goal for providing additional training for the PSTs training at their site. Mr. Davis called the relationship between Highland and the university “a fantastic relationship to have”, as it provided a potential pool of teachers to hire (Interview, May 6, line 263). Dr. Stewart explained his twofold reason for this extra training:

Number one, selfishly, these people are a great pool to potentially replace teachers who leave, right? If they’re already here and we’re already doing this stuff, why would we not? It’s a cheap investment of our time and our
resources that potentially can lead to having better trained candidates for positions. Why not do it, right? Secondarily, we're a school. That's the whole point. That's why they're here, is to learn stuff. We kind of see it as a commitment to the field as a whole, to give these people as best a possible opportunity and as much training as we possibly can, based on the different initiatives and things that we have in place here. It needs to be a great opportunity for them, even if they don't end up staying for whatever reason (Dr. Stewart, Interview, May 2, lines 324-332).

Category 3: School Culture

The school’s culture seemed to directly influence the ways that the teachers and administrators at Highland approached instruction. This category is further subdivided into three distinct subcategories of data. "Diversity" refers to students’ culture, backgrounds, and learning needs, as well as teaching and administrative styles. "School community" refers to the partnerships and interpersonal relationships among students and between students and staff members. "Socioeconomic status" refers to one single facet of the student population which emerged repeatedly in interviews in response to questions about teachers’ instructional planning and students’ varied needs from the school staff.
Subcategory: diversity. The diverse student population was a common thread mentioned in interviews among teacher participants and administrators. Administrators Ms. Fisher, Mrs. Wright, and Mr. Bowers each discussed the fact that the students enrolled at Highland lived all over the city in contrast to the district’s traditional public schools, which generally served rigidly-defined geographic areas. Ms. Fisher claimed that there were approximately “28 or 30 zip codes” represented within the school (Interview, May 10, line 410). Mr. Bowers argued the importance of the school’s efforts in maintaining a close-knit community of students that lived in very different parts of the city (Interview, April 6). Mr. Bowers and Mrs. Wright claimed that the geographical distance between school families was mirrored within the diverse cultural and familial backgrounds of the school’s children.

Ms. Fisher, the Head of School, and teachers Mrs. Howard and Mrs. Morris each discussed the roles of family background, culture, race, and religion in the school’s social dynamic. Ms. Fisher explained that the students were eager to talk about their differences:
There were people who were families of police officers here. We have a ton of police officer families here and then there were people who were already feeling upset with police officers…there was (sic) all kinds of little microcosms of tension going on…I mean, that’s what’s so great about our kids, is that they wanted to come and they wanted to talk about it…This isn’t something they had to kind of put under the rug (Ms. Fisher, Interview, May 10, lines 532-535, 543-545).

Mrs. Howard clarified the fact that all families have their own inherent culture, even if they have not recently immigrated to the United States. Each student came to her classroom with a unique set of experiences and background:

Just our students in general come from many different types of families and even if they’re not from a different country, their family system might just be really different. Or the experiences they had (Mrs. Howard, Interview, March 24, lines 98-100).

Kindergarten teacher Mrs. Morris argued that it was important to teach all students, including the youngest, to celebrate the differences in each other:

We have a student that-his family is from Africa, and I think that they immigrated here through Catholic Charities, so he is very, very die-hard Catholic... he makes crosses out of Legos, and puts Lego people on it, and talks about--He is constantly talking about Jesus. We do have a lot of Muslim families, too. We let him do what he needs to, but then we have to help him back off a bit (Mrs. Morris, Dual Interview, May 3, lines 960-968).
Three administrators and four teachers spoke about diversity in terms of the variety of languages spoken in the homes of Highland’s students and how the number of English Language Learners (ELL students) impact classroom instruction. Mrs. Morris claimed that the school could never provide too much professional development for teachers, in terms of supporting ELL students, with nearly 35% of the kindergartners receiving ELL services (Dual Interview, May 3). Others spoke of the need to differentiate classroom instruction to accommodate the needs of their English Language Learners:

- They speak different languages. It’s like…Melting Pot-Crazy here… How many schools are like this? Not very many…You have to differentiate (Mr. Bowers, Interview, April 6, lines 528-530, 538).
- We’ve got almost 300 kids receiving English Language support. I mean, there’s just all kinds of different needs here… We’ve got 16 or 18 different languages spoken here (Ms. Fisher, Interview, May 10, lines 475-476, 132).
- We have a high ELL population. We have a high Special Ed population. A lot of those students are mainstreamed into the classroom. I want to see a lot of differentiation, supports in place for those kids (Mr. Davis, Interview, May 6, lines 476-478).
- I think a lot of my ELL learners…really depend on that other voice in their group, so they tend to choose [working with] a partner (Ms. Baker, Interview, May 4, lines 120-122).

According to the participants, the school’s diverse learners greatly impacted instructional practice and shape the teaching styles in individual classrooms. Mrs. Wright
described how administration and teachers are united in their commitment to meeting their students' diverse learning needs: “The way you think, the way that you learn, what you need and what she needs and what he needs are totally different, but we are going to find a way to meet them there” (Mrs. Wright, Interview, May 6, lines 1335-1337).

Mrs. Lincoln spoke of teachers choosing to work at Highland for the opportunity to work with the school's unique learners:

I think most teachers that are here are here because they have something that we feel that they can give to our kids because it’s a special group of kids. They are so diverse, and they are not cookie cutters. You can’t have a cookie cutter teacher (Mrs. Lincoln, Interview, May 10, lines 389-392).

Ms. O'Connell explained that the expectations she had for her students varied according to their strengths and learning needs; she did not feel compelled to gauge each student's achievement with the same measuring stick:

So…their achievement is going to look different for each one of those groups as well, and so…I guess my expectations might look a little bit different with the content, what am I looking for to say that ‘yes, they have achieved what I wanted them to’. It might look very different from class to class (Ms. O'Connell, Interview, April 29, lines 38-41).

Subcategory: school community. The close relationships among staff and students emerged frequently from the data and eventually gave rise to the subcategory “School community”. Participants spoke repeatedly about school initiatives designed to promote a sense of community within the school; examples of these programs include “Families”, or cross-age groups of students who met monthly with a teacher or staff
member; “Class Meetings”, which occurred every morning and throughout the day as needs arose; the school’s daycare center, which served the children of teachers and staff; and time set aside in the school schedule to allow for relationship building among students and staff.

Highland had implemented a school "family" program, in which children meet with students off all grade-levels and one teacher in groups the school calls "families". In a way very similar to a true family, this program provided each student an opportunity to form relationships with students of all ages and with a school staff member. All school personnel, including administrators, teachers, and support staff, played an active role in a school "family".

According to Ms. Fisher, visitors to the school often reported a "palpable…family feel" immediately upon entering the building (Interview, May 10, lines 341-342). She attributed this community feeling to the relationships cultivated by the school's "families" and class meetings, as well as the fact that the teachers' own children attend the school's daycare center:

[School "families" meet] only once a month, but gosh, it's made an impact and plus, other teachers-I mean myself down to our contracted custodians-they are all part of a family…I get to work with somebody I don't really get to work with every day, so from the adult perspective and the kid perspective, it's awesome...Even just our daycare, we intentionally put that daycare for staff...We've got it intentionally in the middle school building because we like what happens. It softens our guys. I mean, if you see a little train of the little guys walking through the middle school building, I
mean they're all like, 'Back up! Here come the little guys!'… They're totally focused on these little guys, so it just softens them… They love it, and these are the teachers' kids, and so how could it not feel like a family?… they have their family here… so it really forges really neat relationships with the teachers and the students, too, just by having the daycare here (Ms. Fisher, Interview, May 10, lines 420-422, 424-425, 430-457).

Mr. Davis, Mrs. Wright, and Ms. Fisher all emphasized the feelings of trust that developed within the school community through the cultivation of the school’s families. Mr. Davis claimed, "They understand they're safe to make mistakes and they're safe to fail because we're just going to continue working with them." (Interview, May 6, lines 410-411). Mrs. Wright explained that often students would approach a trusted teacher and share an idea for a service project; with the teachers' help, they carried out their plan in order to meet a perceived need in their community (Interview, May 6).

Participants reported that the school's community-forming programs had resulted in close, caring relationships between students, among students and staff members, among staff and parents, and between staff members at the school.

Ms. Baker discussed her own experience as a member of a family, and how the program had worked to nurture her relationships with children at Highland:

So it's a lot of team building, and we go outside…. They have been together for a while now… So that's kind of my way of building relationships with them as a teacher… And then in terms of- there's always new kids that are coming in from outside of our school. And that kind of
levels the playing field for them. Obviously, most kids know each other, and they are kind of the outsiders for a bit. But if we are all playing the same game, it gives them the opportunity to find their friends and who they get along with, what personalities they click with. So I think that's helped kind of dissolve the new kid syndrome a little bit (Ms. Baker, Interview, May 4, lines 21, 22, 27-33).

Pre-service teacher Ms. Lewis described how the school staff prioritized relationship building with all students:

They are really on the ball with that. It's like almost universal-How everyone-all the teachers, all the staff, even the custodial staff and the lunch providers-will talk to the kids and build relationships with them, outside of that atmosphere, so I think overall, the whole school is really on board with how important it is to build relationships (Ms. Lewis, Interview, April 27, lines 408-412).

According to Mrs. Wright, the relationship building had extended beyond the walls of the school, and it had impacted how school parents relate to one another:

[The parents] do an incredible job of outreach for the families that might not necessarily feel like that's their space for whatever reason because of cultural differences or whatever. A real collaborative relationship with those parents. We really want them to feel like their voices are heard, and they have come to us and they have said, 'We feel like this is missing.' Then we try to be responsive to that (Mrs. Wright, Interview, May 6, lines 1618-1626).
Classroom visits revealed evidence that the teachers strived to maintain close relationships with their students. Verbal praise was a frequent element in every classroom, and it was usually directed at individual students, rather than simply to the entire class. Students were typically praised for outward cooperation in classroom activities or for meeting general classroom expectations, and not generally for creative thinking or problem solving. Two exceptions that I observed occurred with Mrs. Morris' instructions to students to "kiss your brain" when each did well on individual assessments (Field Notes, April 13, line 12; Field Notes, May 4, line 8), and Ms. Ryan's exclamation that a student had written an "incredible" thesis statement (Field Notes, April 7, lines 25-26).

Praise was a particularly prominent feature in Ms. O'Connell's, Mrs. Morris', and Ms. Ryan's instruction. Ms. Ryan would often remind a student that she heard the student and loved him or her. Ms. Ryan and Ms. Miller each referred to students as "friends" when addressing their classes (Ms. Miller, Field Notes, April 7, lines 9, 10; Ms. Ryan, Field Notes, March 3, line 74; April 7, lines 8, 12; April 15, line 32).

Ms. O'Connell and Ms. Baker often asked students about their lives. Ms. O'Connell asked individual students about their plans over spring break and asked them to tell her about the book they were reading. In turn, she often spoke of her own life and would discuss the books she liked to read.

In return, students showed interest in their teachers' lives. One Monday, a child told Ms. Tanner that she had missed her on the previous Friday. [The pre-service teachers were not present at Highland on Fridays, as they attended classes at the college.] One student expressed concern for Ms. O'Connell when she had lost her voice, and another
student asked Ms. O'Connell if I was her cousin during one of my visits. One fifth-grader fist-bumped Ms. Ryan when he felt he had done particularly well on an assignment in class.

**Subcategory: socioeconomic status (SES).** The socioeconomic statuses of Highland's students were repeatedly mentioned as a factor impacting classroom instruction. Mr. Bowers, Ms. Baker, and Ms. O'Connell each explained that a significant number of students did not have reliable access to the internet outside of school. Ms. Baker and Mr. Bowers each estimated that approximately 20% of the student body could not access the internet from home (Ms. Baker, Observation, Feb 26; Mr. Bowers, Interview, March 3). Ms. Fisher pointed out that the student population was "very at-risk" with approximately four percent of the student body classified as homeless and seventy percent receiving free or reduced lunches (Interview, May 10, lines 468-469).

Mrs. Morris explained that students from high-poverty households often brought different needs than students from more affluent backgrounds. She did not believe that the universities adequately prepared their student teachers to meet the unique challenges and different norms that are inherent in schools serving low-income families (Dual Interview, May 3). She stated:

> I took a class on it...and learned...about how middle-income people and high-income people and low-income people, just your whole mindset is completely different. I think that is a big issue a lot of times, is that we have teachers who have been born and raised in a middle-income family, and they don't have the same knowledge and schema of a lot of our kids, and they don't know how to make a connection there. The kids, and even
sometimes the parents, they don't want anything to do with people who are of a different mentality. It's a total misfire of communication… I think that's a big issue, is that we don't have a lot of education for a lot of the teachers on that, on how to work with low, poverty students and families (Mrs. Morris, Dual Interview, May 3, lines 807-819).

Morris' statement communicates the fact that she believed her low-income students came to school with needs far different than children from more affluent families. She acknowledged the fact that most teachers at Highland [and perhaps in most schools] were raised in middle-class, middle-income households and may not have been well versed in the unique needs of children living in low-income, urban neighborhoods. As a veteran teacher, she had had experience with students of various backgrounds. To Morris, the "big issue" she described in the above quote was the fact that new teachers were entering classrooms without this awareness. She implied that this would be an essential topic for professional development for Highland's teachers.

**Category 4: Instruction**

Teachers and administrators frequently reflected on the many ways that classroom instruction was impacted by the school's leadership, professional autonomy, and school culture. This category is comprised of data which illustrates how the other categories are interconnected in ways that the informants believe impact the classroom teaching and teaching styles present in the classrooms. Included within this category are subcategories "Classroom Environment", which examines the classroom routines and the prevailing classroom structure observed by the researcher; "Instructional Strategies", which identifies the teaching approaches observed within the classroom, including project-based...
learning, student collaboration, and teacher-centered instruction; "Student Needs", which details the ways teachers' and administrators' decision making reflected their declared desire to meet the needs of their students; and "Technology", which encompasses the use of instructional technology, the expanding pool of technology resources, and factors that teachers and administrators believed would encourage or limit their own instructional technology use.
Figure 4. Category 4: Instruction
Subcategory: classroom environment. Teachers' classroom environments were characterized by highly established routines and individual classroom structure. The data which comprises this subcategory was largely collected through classroom observation and may be subject to researcher interpretation. However, the observational data was compared to comments made by the informants in their individual interviews; this was an attempt to provide triangulation and a more accurate understanding of what took place inside the classroom.

Class routine (1st level property). Teachers Ms. Baker and Mrs. Howard devoted much of their time at the beginning of the year establishing a consistent classroom routine. Ms. Baker stated that she would not teach academics until she had built a "culture set with [her] kids" and that her goal was to be "a teacher where [she] can leave the room and [the kids] don't need [her] to learn…The structure of the class is moving on its own" (Ms. Baker, Interview, March 25, lines 47, 48-52). Likewise, Mrs. Howard stated that she spent the first few weeks of the school year "establishing…classroom routines and expectations and practicing those things…doing a lot of almost – practice group work" (Interview, May 5, lines 76-79). Mrs. Howard claimed that "consistency and being firm" was very important so that there would not be an "element of surprise" for the students when it came to her expectations of them (Interview, May 5, lines 110, 116).

Though teaching styles varied widely, every teacher appeared to have established regular classroom routines which seemed to guide student action. All seven teachers employed specific actions to help students transition from one activity to another; these included clapping their hands in a familiar rhythm, counting down (backwards, from
either three or five), giving verbal instructions, and using a timer (either visible with the use of a projector, or simple buzzers). Five of the teachers (Ms. Baker, Ms. O'Connell, Mrs. Hanson, Ms. Boston, and Ms. Ryan) had a written daily agenda posted in a prominent place in the classroom. Elementary teachers Ms. Ryan and Ms. Boston employed the help of their students in maintaining classroom routine by assigning weekly jobs to the students. Verbal reminders and positive verbal reinforcement were tools used frequently in all seven classrooms, at all grade levels.

One notable observation I made was in regard to pre-service teachers. The three pre-service teachers in this study (Ms. Lewis, Miler, and Ms. Tanner) followed the classroom routines established by the classroom teacher: They mimicked their cooperating teachers in their methods of transitioning students from one activity to another, and they frequently made similar remarks when giving verbal reminders and praise.

**Classroom structure (1st level property).** The physical structures of the rooms and individual teaching styles varied widely across the seven classrooms I visited. During my initial classroom visits, I carefully noted the physical arrangement of the rooms and how the arrangement was used to support learning; I also noted the general teaching styles of the individual participants. I continued to observe these during subsequent visits to determine each classroom's norm. As a result, two second level properties, "Physical Structure" and "Teaching Style" emerged.

**Physical structure (2nd level property).** As shown in Appendix B, the individual classrooms were arranged differently. Often the physical structure of the classroom changed slightly, depending on the activity the teacher had planned for the day; see
Appendix C. Though the classroom setups reflected the teachers' individuality, there were several elements that most of the rooms shared. Among these were a large classroom rug (found in six of the seven classrooms), group seating (common in five classrooms), and flexible seating arrangements consisting of student seating other than the traditional chairs and tables or desks (found in four of the classrooms). In addition, teachers often adjusted the classroom setting to foster desired atmospheres for particular learning activities. During quiet activities, Ms. O'Connell, Ms. Baker, and Ms. Ryan frequently turned on soft music or lowered the lights in their classrooms. Students in Ms. Boston's, Ms. Baker's, Ms. O'Connell's, Mrs. Morris', Mrs. Hanson's, and Ms. Ryan's classes were allowed to sit in different areas of the rooms when working independently; in these six classrooms, students moved to the various places without any sign of confusion, apparently accustomed to this routine.

*Teaching styles (2nd level property).* Five of the classroom teachers and two pre-service teachers exhibited a variety of teaching styles. Due to scheduling conflicts, I was unable to visit Ms. Boston's classroom more than a few times and was only invited when students were writing essays on the Chromebooks. Therefore, I was unable to ascertain the teacher's dominant approach to instruction, though she did communicate her desire to foster student decision making and choice. Only Mrs. Howard appeared to rely solely on one particular teaching approach; she consistently used a didactic teaching (teacher-centered) approach, peppering it with small group work and student demonstrations. Her pre-service teacher, Ms. Lewis, demonstrated a teaching style that closely echoed Mrs. Howard's.
In most classrooms, teacher-centered instruction was used moderately, often as an introduction to student activity. See Appendix E for a description of teaching methods observed during the classroom visits. Project-based learning was used in a variety of ways, particularly in the middle school language arts classrooms, during which students were conducting research and producing a variety of artifacts to communicate their learning. Ms. Ryan and Ms. Boston employed this approach mainly in facilitating the writing process, teaching students to conduct research and craft essays based on their findings. Often the project-based learning approach was coupled with individualized student-teacher conferences during which the teachers checked student progress and provided specific feedback. This strategy was observed most often in the teaching sessions of Ms. Boston, Ms. Ryan, Mrs. Morris, Ms. Miller, and Ms. Tanner. All seven teachers created opportunities for students to work within small groups, thus rooting their lessons in social learning theory. All three pre-service teachers appeared to be at ease with this approach and assisted students in communicating with classmates for a wide range of purposes.

**Student engagement (1st level property).** Student engagement was discussed by administrators and teachers, though from very different perspectives. Administrators discussed student engagement in more broad terms, such as the role of student voice and relevant project-based learning in motivating students to learn. Teachers, on the other hand, referred to student engagement by specific teaching strategies, such as using student demonstrations, technology, and games to pique the interest of the cla52
Administrators Ms. Fisher and Mrs. Lincoln argued that student engagement naturally results from opportunities to have choice and voice in their learning. This often required the teachers to relinquish some of their own control of activities to the learners.

Ms. Fisher acknowledged that turning over control to the students could be daunting to teachers, and that each teacher was at a different comfort level with giving students choice in the classroom. She predicted that teachers would become more confident in doing this as they observe deeper learning and improved student achievement:

That engagement and that level of excitement is a result of them having a real voice in the learning. I mean, in some classrooms, it is much more obvious than in others, and I think … We've got a lot of different learners ourselves. We've got people who are still learning how to be comfortable with letting go of control, as far as teachers are concerned, to people who are masters at it and you can see that in the classrooms… Really what we are pushing everybody is in that direction of … that gradual release of control over to the kids… that you're really just guiding and helping them move obstacles out of the way, pushing their thinking, getting them the resources they need, and their results both academically and then just I think from a happiness and engaged learner kind of standpoint, will be much better (Ms. Fisher, Interview, May 10, lines 694-699, 708-712).

Like Ms. Fisher, Mrs. Lincoln acknowledged the struggle that teachers often face when learning to relinquish some control to the students. She described how the school's
focus on project-based learning was highlighting the students' desires to learn and abilities to problem solve:

I think teachers are teachers, and they like to have some sort of control over the situation. Really giving that autonomy to kids … is just a tough pill for a lot of teachers to swallow, because they wanted to get done what they need to get done, and how they kind of see it. I think this year and I would say going back a few years, too, when we first started this school, it was supposed to be project based with lots of student voice and all of that kind of stuff … I think it all really goes back to the kids need voice and choice to be involved in their learning, to have a more connected result with their learning, so they're truly learning... I'm seeing a shift in that of having that autonomy for the student, too (Mrs. Lincoln, Interview, May 10, lines 253-258, 260-263).

Creating and implementing project-based learning lessons appeared to be a high priority for the school, and its impact on student engagement was emphasized by Ms. Fisher, Mr. Bowers, and Mr. Davis. Like Mrs. Lincoln, Ms. Fisher describes how student engagement has greatly improved since the school recently renewed its focus on project-based learning:

Engaging them in the learning through these projects and this kind of project pedagogy is really also what's helping and …a couple of the ELA teachers up here in middle school are really doing ... They've adapted that whole expeditionary learning and ... so many changes are happening because of that, as far as engagement is concerned. I mean, kids are just
more excited about what they're doing, and they're doing really cool projects and the learning that's happening is phenomenal…They're actively engaged in the process of learning, instead of just trying to get the answer for the test (Ms. Fisher, Interview, May 10, lines 667-673, 682-683).

Mr. Bowers, Highland's technology administrator, detailed an example of how teachers' implementation of project-based instruction has impacted students' motivation for learning:

So in the inquiry PD, we have a new teacher… in the sixth-grade, and she wanted to take this museum project that she used in the past with other schools, and kind of move it into a more creative, make it more relevant to the students… We actually made it a legitimate museum pitch to investors who are considering building a new museum… hypothetically. So that made it more relevant to the students… So, within their presentation to the hypothetical investors, they can actually provide a real walkthrough of what the thing will look like... it was really successful because the kids really liked it, and we found the building of the digital museum was so relevant and so cool to the students that it actually impacted all the other work… This is like a real, professional thing, and that just came out of the inquiry PD coming in. She said 'Hey, I want to do this and I want to spice it up and make it more relevant', and we saw huge success (Mr. Bowers, Interview, March 3, lines 229-232, 235-237, 243-245, 252-254, 263-265).
Mr. Davis described his priority for student learning, emphasizing the importance of students' direct interaction with the content:

I want to see a lot of student interaction with the material. I think that giving the students something and then having them interact with it… Whatever that topic is for the day, you know, chunking it up for them, giving them something to work with and then adding some more to it and putting those supports in place for the students who need it (Mr. Davis, Interview, May 6, lines 472-476).

Teachers in the study also spoke about student engagement in less general ways. Mrs. Morris, Ms. Boston, Mrs. Howard, and Ms. O'Connell each mentioned the role of technology in grabbing students' interest in the content. Mrs. Morris discussed her integration of iPads into her learning centers because her kindergarteners are motivated to learn when using them:

I really like using technology with them. I feel like they're very good at it. We're actually to the point on our iPads where we have to restrict everything because they can do things that we don't even know how to do half the time. It is very high interest level for them. Anything that I can do, I try to incorporate (Mrs. Morris, Dual Interview, May 3, lines 1278-1281).

Ms. Boston identified "student choice" as the greatest influence on her third-graders' engagement:

Student choice. I try and give them as much choice as I can. For example, I do the workshop approach in reading and writing. I do a lesson with the
class, and then they have independent time; while they're working independently, I'm also meeting with groups. During that independent time, they get to choose the books that they read. I'm not saying, 'Here it is. You have to read this.' Nobody wants to do that. We're doing a lit study right now. I pull three or four choices, and then they vote as a group about what book they want to read (Interview, April 8, lines 847-856).

During classroom visits, student engagement level was typically noted in detail. My aim was to ascertain how teachers responded to student cues in their instruction. In other words, how responsive were the teachers in adjusting their teaching approaches when students were less outwardly engaged in the lesson? The field notes contain brief comments on the number of students appearing to be on task, the body language of learners during a lesson, and similar observations. The summarized data is found in table form in Appendix E. The data has its limitations, however, due to the fact that it is subject to researcher interpretation. While visiting classrooms, student activity was only noted in highly generalized forms in order to protect the privacy of all children. These data were gathered only to provide a sense of the effect of the teachers’ instruction on the overt activity of the students. In addition to this limitation, the data table is limited in scope. In addition, classroom visitations did not always begin at the very onset of a lesson, and duration of the lesson could not always be surmised. This data does not take into account any other factor that may influence observable student behavior. Only the field notes that provided detailed engagement data were summarized on the table. The result is a rudimentary understanding of the types of instructional approaches that seemed most
engaging to the students; any deeper analysis of student engagement cannot be derived from the collected data.

Generally, students appeared most engaged during student collaboration activities and project-based learning lessons. The exceptions were the class periods in which students were expected to work over long periods of time, independently, on their essay writing. During those periods, the third-grade students appeared to lose interest in the activity, and the teacher did not appear outwardly aware of the students' lack of engagement. She did not redirect student behavior and did not transition to a different activity for several minutes after almost half of the students were not working. Students outwardly appeared least invested in the teacher-centered lessons, whether it was entirely teacher-directed or included student demonstrations and work samples.

**Subcategory: instructional strategies.** The majority of teaching that I observed fell into three general approaches: project-based learning, during which students were creating a product based on their learning; student collaboration, which took many forms but always incorporated an element of collaboration between students; and direct (or teacher-centered) instruction, during which teachers were imparting basic skills to their students. Though often observed in varying degrees, teachers and administrators did not mention teacher-centered approaches when identifying the instructional approaches they deemed most effective.

**Project-based learning (1st level property).** School administrators frequently emphasized this teaching strategy as being the most engaging and the most relevant approach to teaching. Mr. Bowers, Mr. Davis, and Ms. Fisher noted a direct link to active engagement through inquiry to student achievement, while Mr. Davis and Mrs. Lincoln
stressed the importance of "choice" and "voice" in students' involvement in their own learning (Mr. Davis, Interview, May 6, line 121; Mrs. Lincoln, Interview, May 10, lines 260-261). Teachers Ms. Baker and Ms. Boston repeated echoed that idea in their comments on improving student engagement. In order for students to be truly engaged in their learning, Ms. Fisher insisted that teachers must give "that gradual release of control over to the kids" so that they are simply "guiding and helping move obstacles out of the way, pushing their thinking", and "getting them the resources they need" (Interview, May 10, lines 709-711).

The teachers spoke less often about project-based learning as an instructional strategy, except when they discussed the school's vision and professional development focus. Mrs. Morris mentioned the school's return to project-based learning as a means for inquiry; she explained that Highland's intention at its inception was established upon student-centered, project-based approaches but gradually moved away from that path. According to Mrs. Morris, Highland was only recently returning to its original intent, to engage students through projects and student-centered instruction (Mrs. Morris, Dual Interview, May 3).

Instruction involving student creation of projects was observed in five of the seven classrooms during my frequent school visits and was only notably absent in Mrs. Howard's sixth-grade math classroom and in Mrs. Morris' kindergarten classroom. However, my visits were often not scheduled to capture specific instructional strategies and were limited in scope and in time.
**Student collaboration (1st level property).** Though this approach was discussed far less in interviews, it was widely used in all seven classrooms, among teachers and pre-service teachers alike. In their individual interviews, both Ms. Baker and Mrs. Howard discussed their use of collaborative learning as a means for students to help their classmates master specific skills taught in class. This was a frequent approach in Mrs. Howard's and Ms. Lewis' teaching, as I observed student demonstrations being used in all of my visits to their classes. Ms. Ryan and Ms. Tanner also employed this approach when teaching polygons in their fifth-grade classroom.

Small group conversations were prominent features in several of the classes I visited. Ms. O’Connell and Ms. Boston frequently met with small "book clubs"; Mrs. Howard, Ms. Lewis, Ms. Ryan, and Ms. Tanner had students work in pairs or small groups in problem solving in their math classes; Ms. Baker often told students to "turn and talk" (Field Notes, Feb 23, line 148; March 1, line 78) or briefly discuss with a neighbor an idea brought up in class; Mrs. Hanson had her first-graders pair with a classmate and take turns reading aloud to one another.

The third major approach to student collaboration that materialized in the classrooms was the use of learning centers. Interestingly, this approach was used in both the kindergarten room, during which the students worked on various teacher-created activities, as well as the seventh-grade classroom, in which Ms. Baker required her students to create learning center activities for their peers to complete. The students in both classrooms were actively manipulating information and processing it in small groups.
**Teacher-centered instruction (1st level property).** This instructional strategy was never mentioned during interviews but was often observed during classroom visits. It was employed most frequently in Mrs. Howard and Ms. Lewis' sixth-grade math classroom, though their lessons deliberately incorporated an element of student collaboration. Ms. Baker and Ms. O'Connell used a teacher-centered approach less frequently, limiting its use to teach or review a skill before launching the students into a separate activity. Ms. Tanner and Ms. Ryan often would pause in student activity, call attention to class, and briefly employ teacher-centered instruction as an aid to guide the next stage of the lesson.

**Subcategory: student needs.** The subcategory "Student Needs" communicates the mission of teachers and administrators to meet the everyday instructional, social, and emotional needs of Highland's diverse student body. The data encompassed by this subcategory was the staff's implementation of the school's vision for character education in ways that responded to the diverse learning styles and cultures of the students. Data include a focus on student growth, instead of one-time test scores, as explained by Dr. Stewart and Mrs. Morris (Dr. Stewart, Interview, May 2; Mrs. Morris, Dual Interview, May 3); the influence of diversity on instructional decisions; and means of differentiating lessons to adjust to student needs.

Administrators Ms. Fisher, Mrs. Lincoln, and Mrs. Wright frequently emphasized the school's aim at focusing all policy-making on meeting student needs as well as the role of administrators in facilitating this. Ms. Fisher and Mrs. Wright spoke of the unified goal among all staff to consider students' needs first:

- We're here for the kids and not a teacher-first schedule or a teacher-first way of being. It's about the kids first. I would like very much for the
teachers' needs and wants to be aligned with that, so everybody's happy and feels like they can be successful, but it is really pushing people to think about what kind of structures we have in place. Are they really, truly about doing what's best for kids and hearing from kids first?....Character is something that …continues to…make sure that I'm doing my due diligence with holding myself accountable to that, as well as others (Ms. Fisher, Interview, May 10, lines 194-202).

- [The students] come with needs. They'll have meltdowns. They will have angry outbursts, but it is really nor directed at a willful kind of disrespect towards the teachers…I think everybody who works here has heard [Ms. Fisher] say, 'There is just nothing more important.' When you are fostering that within your teachers, it does affect the way that you treat each other (Mrs. Wright, Interview, May 6, lines 1788-1792).

Mrs. Lincoln's emphasis was on the teachers' response to children's needs, and how Highland's administration tried to support teachers' endeavors to meet the needs:

We really talk about basically, 'These are your goals for your kids.' They have their standards. They know academically what the kids need to meet. Then, really looking at the kids in front of them and seeing what would be best for those kids in front of them. Sometimes it is very much the resources that we have already offered up to them. They see it fitting with the kids, and they're good with that. Other times, it's not unusual for them to come and say, 'I think this box program would be a really great resource for me. Can we get it?'…We're pretty open if you can justify and show me
that it works for your kids, then let's give it a go (Mrs. Lincoln, Interview, May 10, lines 87-99).

In meeting student needs, teachers and administrators stressed the importance of focusing on student growth. Dr. Stewart, Mrs. Wright, and Mrs. Lincoln each explained that individual student progress was the measuring stick with which Highland measured student achievement and that it cannot be determined by a single criterion-based assessment. Mrs. Morris translated student growth in helping her own students acknowledge their own learning:

Then even just having a growth mindset, and helping them to celebrate mistakes, and anything like that, and just have them look at everything as a growth opportunity and an opportunity to learn from someone else would be the biggest thing (Mrs. Morris, Dual Interview, May 3, lines 1052-1054).

Mrs. Lincoln reminded me that the students were not "cookie cutter" kids, and that the teachers could not be "cookie cutter teachers" either (Interview, May 6, lines 391-392). Teachers Ms. Ryan, Mrs. Morris, Mrs. Howard, Ms. Baker, and Ms. O'Connell identified the needs of students as the primary influence on their own instructional decision making. Ms. Baker described what she felt that she needed to know about her students in order to make effective instructional decisions:

I think I always start in terms of IEPs, and ELLs, the legal things, what the kid is expected to have from the teacher. And then it comes down to actual levels in the classroom that I observe through my own assessments, so reading levels can be characterized in sixth-grade with their assessment,
but I really can get to know their true level by working with them. So I would say those accommodations plus their reading levels are the big thing that drives me. And then it's always personalities - my kids this year are very hands-on kids. They need to be touching things and moving…they are expecting to be touching things or typing or on a computer, or things are coming at them very fast and if it's not fast, they are bored. I think it's - I find out how they learn and always adjust to that, and it changes class to class, too (Interview, March 25, lines 135-145).

Mrs. Howard, Mrs. Morris, and Ms. Ryan also identified student needs as the most important influence on their instructional planning. Mrs. Howard spoke of student needs purely in terms of background knowledge:

The factor that influences my teaching the most would be my students. Second, I would say standards slash the big assessments-you know, like the [state assessment]. So I would say those are the main two factors, but of course mostly students because their backgrounds, their personal experiences, all of that stuff… and then here at this school - our students are so culturally diverse, so that makes a huge difference when I'm teaching - when it comes to background knowledge, and not just background knowledge as far as content goes, but just culturally even. So if we are doing a story problem that involve popping popcorn, we have to talk first about different ways to pop popcorn…some kids have maybe only seen it popped on a fire or only a microwave bags, compared to using an actual machine with seeds [gestures with hands to represent a round
container]. So I think that's probably one of the biggest differences. It's just their backgrounds as far as their home experiences, their cultural experiences, things like that (Mrs. Howard, Interview, March 24, lines 55-58, 80-88).

Mrs. Morris' and Ms. Ryan's responses echoed the thoughts of their administrators, as they described the school's commitment to meeting student needs and their own feelings of being supported by Highland's administration in planning for effective instruction:

- I know in [the nearby school district], it used to be that they had to be on almost the exact same lesson on the exact same day, and it's totally not like that here. Everything is seen as a resource, and again, whatever you see fit for you kids, whatever is going to work for your kids, you can do. You can adjust things; you can get rid of things; you can add things in.

  The decision-making process I form is very student-led, and then it really helps to give me all of those choices (Mrs. Morris, Dual Interview, May 3, lines 278-287).

- It's the needs of the kid first. Once their needs are met, let's push some academics, find a way to get their common interest going, and we have that. And, to me that's how kids learn. That's how our kids learn (Ms. Ryan, Interview, April 20, lines 246-248).

Like Mrs. Howard, Mrs. Morris, and Ms. Ryan, PST Ms. Lewis identified students' needs as the most important determining factor in her instructional planning:
I would say: 'What content do I want them to know? How would they best learn it? And, individually, what do I think they need?' So, I start with 'what do they need to know' with the content and then - the methods…I will just think next: 'How would they best learn this?' With the content, some methods won't work with all of that, or won't work as well with all of the content. So I will start there, what methods, and then individually, do I need to modify those methods even more for certain students or certain classrooms…I feel like there's a lot of room for creativity, there's a lot of room to be - actually to be student-centered, in whatever that means. So I think there's a lot of freedom, especially when it comes to the curriculum - like I said, there are a lot of expectations. The expectation is to be a student-focused teacher (Ms. Lewis, Interview, April 27, lines 394-399, 327-330).

According to Mrs. Howard, Ms. O'Connell, and Ms. Ryan, the diverse student body was split into various groups to facilitate differentiation in the classroom. Mrs. Howard and Ms. O'Connell explained that the sixth-grade ELL students were placed in one cluster so that teachers and support staff could more easily support their developing English proficiency as they learned the subject area content (Mrs. Howard, Interview, April 29; Ms. O'Connell, Interview, March 31). Ms. Ryan's fifth-grade class was also identified as the ELL cluster class, with 14 of her 22 students speaking a native language other than English; this arrangement allowed the ELL support staff to better support the teachers in differentiating for their English language learners (Ms. Ryan, Interview, April 20).
In addition to grouping the sixth-grade ELL students, Ms. O'Connell explained that the students had been placed into "leveled groups", based on academic readiness:

We do have now, starting in January, we started doing leveled groups, and so I do have a group of high-achieving students, a group of low achieving students, and a group of kind of middle. So, same thing, their achievement is going to look different for each one of those groups as well, and so I have to - so I guess my expectations might look a little bit different with the content: what am I looking for to say that 'yes, they have achieved what I wanted them to'. It might look very different from class to class (Ms. O'Connell, Interview, April 29, lines 36-41).

Differentiation, according to teachers Ms. Baker, Ms. O'Connell, Ms. Ryan, Mrs. Morris, and Ms. Boston, was key in meeting the widely-varied needs of the students at Highland and that the school's administration expected the teachers to tailor instruction to make learning accessible for all. Each teacher described a slightly different approach to how differentiation was implemented in her classrooms. One unifying theme, however, was the role of standards in helping them to plan for individualized student learning. Ms. O'Connell described how the Common Core allowed her to easily differentiate her instruction for each leveled group:

The curriculum that we use for language arts is all Common Core-aligned. And what's nice about that is that for my high (level) group, for instance, each lesson that I have there, it shows…: 'Here are the list of standards that the lesson is teaching to.' So typically what I do then, to narrow it from there, is… for my low-achieving group, look at one of those really
key standards, and I might scrap things that don't necessarily fall into those ones... so with my high (level) group it's great, because I can add those in, you know, and get them those. But with my low group, I really focus on those really key standards. So that's typically how I whittle it down from there. I start with my high group, and they are going to meet every single one that is outlined in the lesson for me, and then the low group I'm a kind of get rid of a couple of those that are just touched on and that are not, in my mind, the most crucial ones to look at (Ms. O'Connell, Interview, April 29, lines 54-65).

Like Ms. O'Connell, Ms. Baker shared her confidence in using the Common Core to help tailor her lessons to students' needs. She described how the standards provided rigor and a means to challenge her students:

I think as a third-year teacher, Common Core came out right when I started teaching. So it is all I know. I did not have to teach other standards. I like Common Core. I'm not, in any way, against it. I know there are a lot of people who are. I think it pushes our kids to think so much more than they ever have. It pushes my high [level] kids to not always be high. It pushes them to struggle… so I think teaching kids when they are twelve or thirteen about how to cope with failure and how to rebound from it is very much done with the Common Core because it is so easily differentiated. Because I can push my high kids with the same standards above their comfort zone, and I can also scale it down to my below-grade-level
readers, and make it attainable for them, too (Ms. Baker, Interview, May 4, lines 414-425).

Mrs. Morris explained that the standards ensured consistency in student learning and provided the learning outcomes so that she could focus on helping students find their own learning preferences:

If it works for them, it clicks in their brain, and that's all that matters, not getting the -The process can be different as long as the outcome is correct. I'd rather my students pick something that works for them. If they need to count on their fingers, fine. If you need counters, fine. If you can do it in your head, fine. Just as long as you can get there and you can show me that you can get it. I want them to be happy with what they are picking…

These standards are generally to keep everybody on the same page. I guess because there always have been standards on my teaching time that I can't imagine it without [them] (Mrs. Morris, Dual Interview, May 3, lines 1219-1229).

Ms. Boston explained that her third-grade students had grown accustomed to the idea that each student needed to approach learning in an individual way; for example, one student struggled with writing but was more confident when allowed to use technology to help him. The other students in the class had accepted the classroom accommodations without complaining:

Having worked with the older kids, and I don't know if it's an older kid - younger kid thing or if it's the difference between buildings, but I could have seen my former sixth-grade students: 'Why are they getting this every
day?' But we talk about what you need is for you, but what your neighbor needs is different for them, so you might have different things. You're all going to get what you need to help you be successful, and nobody has said anything. It is nice because technology is at a minimum. We only have so much, and I would love it if I could teach writing every day and they all had laptops in front of them, it would be amazing (Ms. Boston, Interview, April 8, lines 125-136).

Subcategory: technology. This final subcategory was my primary focus when I first began this research endeavor. Though technology was used, to some degree, in every classroom, it quickly became clear to me that it was simply a single force driving classroom instruction at Highland. Four first-level properties regarding instructional technology quickly emerged from the data: "Technology Use and Purpose", of which four major uses were identified; "Factors Influencing Technology Use", which was further subdivided into two second-level properties "Limiting Factors" and "Supporting Factors"; "Technology Resources and Equipment", which identified the main forms of technology used in Highland's classrooms; and "Technology Growth", which outlined the school's plan for purchasing more instructional technology.

Technology use and purpose (1st level property). Technology was used to some degree by each teacher and PST participant in the study, though the frequency of use and purpose varied. Technology administrator Mr. Bowers identified teachers' four main purposes to using technology in their classrooms, including facilitating student projects, long-term communications such as reading logs and daily warm-up exercises, teacher demonstrations and presentations, and teachers' administrative uses. Interestingly, each of
the technology-related activities I observed generally fell into one of the four major uses labeled by Mr. Bowers.

Frequency of use (2nd level property). Middle school principal Mr. Davis perceived widespread computer use by middle school students in every classroom. According to Mr. Davis: "Across the middle school we definitely ... you go into any classroom, you're going to see computers at use, almost in any grade level, any time you're going to see kids on a computer" (Interview, May 6, lines 140-142).

Teacher participants reported a wide range of frequencies regarding student use of classroom technology. Because computers were less readily available in the elementary school, the younger kids' use was generally less frequent than the middle school students. However, the three middle school teachers reported a much wider range of computer usage by the students in their classes. Mrs. Howard reported that students' use of computers in her math class was "just not something that is really important" to her; she claimed: "So I think when I'm introduced to [a technology], I'm like, 'Oh, that's great', but otherwise I don't think about it very often" (Interview, March 24, lines 427-428). In contrast, Ms. O'Connell communicated a desire to use technology more often in her language arts classroom: "I think it's very important, I would like to make it more important in my classroom. It's still kind of something that - we use it for this assignment, versus something that is just integrated every single day" (Interview, March 31, lines 344-346). Ms. O'Connell claimed that if the resources were more readily available and the students were more adept at technology, computers would become a tool used in her room every day. Ms. Baker, the seventh-grade language arts teacher, relied on daily
access to student computers and obtained a classroom set of Chromebooks through a Go Fund Me campaign two years prior to this study.

Four major uses (2nd level property). Mr. Bowers, the technology administrator at Highland, initially outlined four general ways that teachers most often used technology in the classroom. This claim was supported by data collected from interview transcripts and during classroom observations. Those four uses included student use of technology for the purpose of classroom projects; students' long-term communication through Google applications; teachers' use of technology for demonstrative or presentation purposes; and teachers' use of technology for administrative tasks.

Among this sample of teacher participants, middle school language arts teachers Ms. Baker and Ms. O'Connell appeared to use technology most frequently as a way to facilitate student projects. During my visits, Ms. Baker used Google Classroom and Google Drive frequently during her poetry unit. Students used a variety of websites and the Google platform to brainstorm activity ideas to teach their classmates about various aspects of poetry. The ultimate goal was for the students to create, implement, and assess learning station activities for their classmates to complete, and they relied heavily on teacher planning sites for inspiration. They communicated their ideas and provided peer feedback on Google Classroom.

Ms. O'Connell also used Google as a medium for student projects. Students worked individually or in small groups to create short video productions on Google We Video. By using this site, the students were asked to communicate the theme of a book they had read in class.
Google Drive was used frequently in the 3rd, 5th, 6th, and seventh-grade classrooms as a method for students to collect research and compose essays. Teachers Ms. Boston, Ms. Ryan, Ms. O'Connell, and Ms. Baker all assigned student writing assignments which were composed using this site. In addition, the teachers used the site to monitor student progress and to focus brief one-on-one conferences with their writers.

Mr. Bowers described several other examples that technology was helping to expand project-based learning within the school including the use of the school's recently-purchased green screen to compose and present news reports on current events; using three-dimensional modeling software to propose plans for museum exhibits; building plastic models using the three-dimensional printer; and the kindergarteners' student-created books on "teen numbers" (Interview, March 3, lines 712, 714, 723).

Only Ms. O'Connell and Ms. Baker used Google Forms for students to write periodic reading logs. I did not observe the other teachers using classroom technology for this purpose. Ms. Baker explained that the students' inequitable access to technology outside of school prevented teachers from requiring Internet usage outside of the classroom, and they did not regularly use it to communicate with students for instruction (Interview, March 25). Using technology for long-term communication with students did not appear to be a major priority among the teachers in this study.

In the seven classrooms I visited, technology was used most frequently by the teachers in order to demonstrate skills or to present content. As mentioned earlier, a teacher-centered approach was habitually used to teach specific skills, particularly in the areas of math instruction and vocabulary mastery. Mrs. Howard, Ms. Ryan, Ms. Miller, Ms. Tanner, and Ms. Lewis all used a projector with white board to demonstrate specific
mathematical skills; Ms. Baker and Ms. O'Connell used them for vocabulary review and interpreting poetry.

Technology was widely used among all teachers for administrative purposes. Ms. Baker explained that all teachers and administrators relied on Microsoft Outlook and Yammer for school-wide communications. In addition, grades and attendance were recorded electronically. Teachers were encouraged to broadcast their students’ projects online via the school's Twitter account. Electronic stopwatches were used in many classrooms to help teachers and students with time management during classroom activities.

Factors influencing technology use (1st level property). Administrators, teachers, and pre-service teachers frequently discussed the reasons they believed technology enhanced classroom instruction. These ideas formed the second level property "Supporting Factors". On the other hand, the teachers each communicated reasons that they did not use technology more frequently; these reasons comprise the second level property "Limiting Factors".

Supporting factors (2nd level property). Six of the seven classroom teachers, as well as two pre-service teachers, and four administrators, discussed a variety of reasons they perceived technology as an effective means to enhance teaching and learning. The most commonly identified reason was the belief that technology enhances student engagement. Ms. Baker noticed that her students are often very eager to help other students figure out technology:

I think because some of them are very confident with technology, they are more willing to kind of help out. And I'll say, 'Can I have some volunteers
to help out?" And I will have a ton of hands in the air, so they know that they know it, so I will let them run with it (Ms. Baker, Interview, March 25, lines 342-344).

Ms. O'Connell described how student engagement increased dramatically when technology was introduced into a lesson:

Even just with my interactive board, often times if I'm noticing the engagement level is low, simply saying something like 'Hey, who wants to come up here and highlight instead of me doing it?' …that can be a pretty quick response from them, that all of a sudden that interests us and…you have seen them typing their essays. That was the first essay that they typed, and they are like - to work, headphones in, and … I noticed with their headphones in, they are like zeroed in on their work. So I think technology plays a huge role, especially with the age that they are at, that's something… that plays a role in their engagement (Ms. O'Connell, Interview, March 31, lines 199-207).

Ms. Howard expressed her belief that simply viewing content on a screen would capture her students' attention:

I do feel like it's really important and the kids are so much more engaged when they can see it, whether it's in front of them, on their desktop, or just on the big screen. They are so much more engaged (Mrs. Howard, Interview, March 24, lines 295-297).

Third grade teacher Ms. Boston and kindergarten teacher Mrs. Morris noticed that their younger students were motivated to learn when they used technology:
- Technology is so powerful for kids. They love technology, whether it's a hand-held game, cell phones, tablets, whatever. They're so much more interested, and they can do so much. They've never written a research paper, so this year they were like, 'We're going to get on the internet and look up research?' Yeah. So they thought that was awesome. I'm like, 'You get to look up your research. You get to find your pictures and put it in, and you can organize your format and layout however you want.' They were just so excited. Whenever they can have the freedom to make those choices for themselves ... technology, you can do whatever you want with it (Ms. Boston, Interview, April 8, lines 254-268).

- As much as I can incorporate it, it's nice to do, yeah. It's high interest to them, and even just little things that we do. We'll take pictures and make little slide shows, and send them to the parents, and things like that. They love that. It's really beneficial all around (Mrs. Morris, Dual Interview, May 3, lines 1288-1291).

Teachers also cited their students' apparent comfort with technology as a reason to incorporate electronic devices in their classroom and claimed that instructional technology enhanced the relevance of lessons.

Pres-service teacher Ms. Tanner noticed that her fifth-graders were often steeped in technology when away from school on the weekends:

During class meeting we will talk like, 'What did you do this weekend?'
And I have kids that are like, 'I fixed my computer and had to take it apart and put it back together.' Or 'I made this YouTube video and posted it, and
I have this many followers.' …and they know more than I do for some things. They are on board, and then we have some friends that - they don't know how to bold the writing, their writing on the Google Docs or how to change the spelling if there's a red line under it. So it really ranges. But they are interested and I know that, if there was something I had to teach, they would be on board and ready to go. They could probably do it quicker than I could (Ms. Tanner, Interview, April 20, lines 339-349).

Other factors that supported the use of instructional technology included the teachers' desires to teach essential skills that were transferrable across discipline areas (Ms. Baker, Interview, March 25; Mr. Bowers, Interview, March 3; Ms. Miller, Dual Interview, May 3; Mrs. Wright, Interview, May 6); and the ease of helpfulness of different technologies in teaching (Ms. Baker, Interview, March 25; Ms. Boston, Interview, April 8; Mr. Bowers, Interview, March 3; Mrs. Howard, Interview, March 24; Ms. O'Connell, Interview, March 31). Finally, Mr. Bowers and Ms. Fisher described the aim of school administration to support teachers in their classroom technology use, both in terms of available support staff (Mr. Bowers, Interview, March 3; Ms. Fisher, Interview, May 10), and the available funding for technology growth (Mr. Bowers, Interview, March 3).

*Limiting factors (2nd level property).* The teachers also spoke of factors that limited the scope in which technology was used in classroom teaching. Several reasons were discussed, but the most frequently mentioned reasons were limited resources (described by Ms. Baker, Ms. Boston, Mr. Bowers, Ms. Miller, Mrs. Morris, Ms. O'Connell, and Ms. Tanner) and the lack of formal technology-related professional
development (mentioned by Ms. Baker, Mrs. Howard, Ms. O'Connell, and Ms. Tanner). Other limiting factors included inequitable student access to technology at home (Ms. Baker, Mr. Bowers, Mrs. Morris, and Ms. O'Connell); varied levels of teacher interest in technology (Ms. Baker, Mr. Bowers, and Mrs. Howard); difficulty in managing student activity (Mr. Bowers and Ms. O'Connell); teachers’ comfort levels in trying unfamiliar technologies (Ms. Baker, Mr. Bowers, Mrs. Howard); and the prioritizing of planning time to other tasks (Ms. Baker, Ms. Boston, Mr. Bowers, Mrs. Howard, and Ms. O'Connell).

**Technology growth (1st level property).** According to Mr. Bowers, Highland Charter School had identified the acquisition of technology for all grade levels as a high priority. He described the growth of technology resources as being "top-down, bottom-up", through which new technology was purchased at the upper and lower grades first, with more equipment provided in the middle grades at a later time:

So now we are kind of moving backwards, and moving forwards at the lower grade levels. So now, in the middle school, we have Chromebooks in 8th grade, in seventh-grade, and half of sixth-grade. The other half of sixth-grade, there are older Windows operating systems computers. And we're moving from the kindergarten up, so we're kind of closing the gap that way and providing hardware for fifth-grade. So that was our original plan to start with 8 and move backwards, start with K (kindergarten) and move upwards, and in fifth-grade right in the middle there, and they’re already good to go. So that's the plan that we came up with. In terms of hardware type, from the top down, to fifth-grade, that's all Chrome. From
the bottom up that was all touch space hardware, like iPads and Kindles and things like that. And there's various reasons for that, one of which being there is a dexterity piece that you really need to keep in mind for students… One of the decisions that I or we made, was that it would be easier to start of the lower grade levels with a touch interface because that gets students used to… interface navigation… and you're not tied to a mouse and the keyboard. It's more tactile. So that makes it more accessible for your younger students, and then as we move up, they kind of move into this space … where it's keyboard and mouse and those kind of things… We have one-to-one device to student for 8th and 7th, we have to two-to-one for 6th -sorry, two students to every device in sixth-grade. Fifth-grade is the same as sixth (Mr. Bowers, Interview, March 3, lines 76-86, 92-98, 118-120).

Mr. Bowers explained that it was the school's intention to gradually replace old equipment with newer technologies, and that goal required a realignment in funding and the hiring of additional support staff over the past three years. Ultimately, the goal was for every middle school student to have access to his or her own Chromebook (Interview, March 3). Mrs. Howard, Ms. Boston, and Ms. Baker each described experiences that illustrated the administration's intent to place technology into the hands of students and teachers. Ms. Baker had taken the initiative to seek ways to fund her classroom's technology resources:

So, my first year was 2013. I went a year without - with the technology they gave us. So it wasn't one to one, it was - we had our own computers
as teachers, and then we had I think I had like six desktops in my room, that sometimes works, sometimes didn't… that summer between my first and second years, so 2014-2015, that summer, I asked permission to put together a Go Fund Me and I raised the money myself, and then I brought the money to the school and asked if they would purchase this for me just so I wasn't liable completely for my computers, and they said yes. So they were purchased through the money I gave them (Ms. Baker, Interview, March 25, lines 248-258).

Mrs. Howard did not seek to use technology as extensively as Ms. Baker, but she found that the school leaders quickly supplied her requested interactive white board:

So I just got the interactive board this year because I asked for it, and that's another support. They were like 'Sure, here it is.' They are just so supportive about what we need. So like - in the summer when I told them I would love to have one of those interactive boards, I mean, I had it within a few weeks. Which was really great. I mean, they said 'We'll have to make sure we can get it in the budget'. So even if they can't, they are really open-minded and they will do what they can to help you get it, or at least at some point. They are so supportive. They really just listen to what you are suggesting, recommending, asking for (Mrs. Howard, Interview, March 24, lines 347-348, 419-424).

Ms. Boston had a similar experience when the fifth-grade teachers asked for new equipment to replace a set of old computers:
They've been adding to classrooms because I guess before there were no Chromebooks or iPads or anything; it was just a couple of desktops in each classroom. This year, our original computer cart had older laptops, and the batteries were dying all the time and they would crash and different things would happen. We said we need something better, and I think two weeks later, we had a brand-new cart of Chromebooks (Ms. Boston, Interview, April 8, lines 1139-1143).

Summary

Throughout this study, the data revealed a minute network among ideas and teacher practices and suggested that there were no clear-cut and simple answers to my research questions. In order to present the data in a concise and truthful fashion, I felt it was important to structure Chapter Four in a way that the data is revealed to the reader in a systematic way. I believed the most effective means of doing this is to walk the reader through the final coding system that was developed closely from the data itself. Chapter Five will be devoted to giving direct answers to the six research questions, and will explain how the literature can explain certain parts of the phenomenon while leaving other parts open to liberal interpretation.

Perhaps the most important finding that I have uncovered in this study is the fact that the teachers' and administrators' perceived autonomy played a key role in their willingness to try new instructional methods and seek out novel approaches. Conversely, newer teachers in the study craved more direction (and perhaps less latitude); a very high degree of autonomy appeared to overwhelm some of the less experienced participants.
Chapter 5: Discussion and Conclusions

Introduction

Since their emergence in the 1990s, charter schools have been viewed as an alternative to traditional public education. Though they are publicly-funded, these schools are characterized by less direct ruling by public school districts than their traditional public school (TPS) counterparts (Ni, 2012). As a result, the schools' governing bodies usually experience greater professional agency in building infrastructure, instructional practices, and in hiring and managing teachers.

Though charter schools are less bound by state regulations than TPSs, research has shown that they offer varying degrees of professional autonomy to the teachers they employ (Ni, 2012). Through their analysis of the 2011–2012 Schools and Staffing Survey (SASS), Roch and Sai (2015) found that charter schools operated by an outside management organization (MO) often afford their teachers less professional latitude than site-managed charter schools and district-managed charters. Mayer et al. (2013) discovered that teachers' instructional autonomy was directly related to the governing structure, school culture, and the degree of administrative support. Principals who supported teacher innovation and creativity increased the teachers' feelings of empowerment (Mayer et al., 2013).

Purpose of the Study

This research project examined the balance between teacher autonomy and administrative support in an urban charter school from varying perspectives, including those of administrators, teachers, and preservice teachers (PSTs). It was my goal to
uncover the different viewpoints of school personnel to determine how they believed that autonomy impacted instructional decision making and student achievement in their school. In addition, I hoped to understand which other perceived factors the participants believed had significant impacts on their own teaching practices. The research questions that guided the study included the following:

1. How are teacher autonomy and autonomy support by school leadership perceived by (a) classroom teachers, (b) preservice teachers, and (c) administrators at Highland Charter School?

2. To what degree do teachers at Highland Charter School believe professional autonomy impacts their teaching practices; and how do they feel this impacts student achievement?

3. How do teachers at Highland Charter School view their own autonomy in the face of the Common Core State Standards?

4. To what degree do the teachers believe classroom technology, and their perceived autonomy in using technology, impact their teaching styles?

5. What factors, other than teacher autonomy, do the participants believe have the greatest impacts on classroom instruction and teachers' decision-making?

This chapter was written to present a synopsis of the study and to discuss the major findings which emerged from this research. I will first revisit the data collection and analysis methods I followed. I will then present the major findings as they relate to the questions and the extant literature. Finally, I will discuss the conclusions drawn from the research and will offer recommendations for future study.
Setting and Participants in the Study

Setting

This research took place in a single school site, "Highland Charter School" (a pseudonym), a public charter school serving 900 students in a Midwestern city. The school included grades Kindergarten through the eighth grade. The student population was highly diverse, with nearly 300 of its students identified as English Language Learners; a large segment of students enrolled in Special Education services; and over 68% of the students receiving free or reduced lunches, as determined by financial need (Missouri, 2017a).

Designated a National School of Character by Character.org in 2011, Highland's mission statement read: "[Highland Charter School] will provide the children of [city] an individualized education rich in academics and character, so the children we serve today can be the leaders of tomorrow."

Highland's charter was overseen by a local university, which acted as a sponsor and liaison between the school and the state's Department of Education. The sponsor, "Brad Metsker" (an alias), was employed by the university to oversee Highland's adherence to its charter with the university, to assess the school's governance and daily functioning, and to provide support to Highland's administration. The bulk of the decision-making and policy-writing was undertaken by Highland's administrative staff.

Participants

Throughout this study, I relied upon the participation of seventeen informants. Included in this group are seven classroom teachers, five of whom have had five years' experience or less. Out of the seven classroom teachers, four were tasked with overseeing
the practical training of PSTs. Three PSTs participated in the study. A fourth PST began as a participant but dropped out of the study as she left Highland due to unknown reasons. Finally, I interviewed seven administrators, including the Head of School, the Assistant Head of School, the elementary and middle school principals, a teacher leader, the technology administrator, and Brad Metsker from the university. The pseudonym, role, level of experience, and background of each participant is found in greater detail on Table 3, on pages 112-113.

Data Collection and Analysis

Data Collection

This study is mainly informed by data collected through unscheduled and scheduled classroom visitations and scheduled individual interviews with each participant. The numbers of classroom observations and individual interviews varied by participant and was driven by the data generated. Originally, my intention was to follow each observation with an immediate interview, but teachers' differing schedules did not allow time for that to occur. However, the open-ended and semi-structured interviews, as well as the teachers' willingness to freely share their experiences, allowed me a deeper understanding of their own perceptions and motivations as related to their instructional decision making. The inclusion of interview transcripts and observational field notes forged a path for continuous triangulation of the data. My intent was to study these in tandem to eliminate as much researcher bias as possible.

Data collection took place beginning in January 2016, and ended in May 2016, as the school year was winding down. I typically visited Highland three or four days each
week, allowing one full day to concentrate on digesting the data I had amassed during the week. I spent the first three weeks in the middle school building before I moved on to the separate Kindergarten and elementary buildings. My hope was to spend longer periods of time in fewer classrooms so that I could better capture instructional practices that were typical or routine at each grade level.

Classroom observation data was collected purely in the form of field notes. In my notes, each participant was referenced by a pseudonym, which I created at the onset of the study. I did not record any class session, as I did not want to compromise the anonymity of any students. In addition, I took photos of each room so that classroom arrangements would not be forgotten over time. I took these photos only when the rooms were unoccupied.

With each informant’s permission, I audio recorded each interview. Upon leaving the school, I uploaded the recordings to my password protected Dropbox account for safekeeping. I then transcribed the recordings as close to the interview dates as possible.

In addition to the observations and individual interviews, I had originally planned on small focus groups and an anonymous online survey through the website Survey Monkey. However, the candidness of each participant meant that the focus groups were unnecessary. The one exception was a brief dual interview I conducted with the kindergarten teacher and her PST, which was scheduled as tandem purely for the sake of time. At that point, on May 3, the school year was beginning to wind down, and their schedules were hectic. The survey was answered by seven participants, none of whom were informants in my study. I did not find the responses to be generally helpful, so they were discarded.
Data Analysis

I followed a constant comparative approach, relying on grounded theory methodology, when analyzing my data. This iterative data collection and analysis proved instrumental, as the data ultimately allowed me to clarify my research questions and even led me to pursue a different avenue. In the beginning, my main interest was examining the school's use of instructional technology to engage student learning, but I quickly discovered that was only a small element of what makes Highland a unique place for its teachers. I thought that focusing solely on the school's use of technology would not capture the entire picture, and thus I expanded the study to investigate the roles of autonomy and other factors, including teachers' technology use, in instructional decision making.

All of my empirical data was qualitative in nature, and it required a detailed, line-by-line examination. Using Dedoose, an online, cloud-based analysis software, I began with open coding, carefully reading and rereading each passage several times in order to develop a rudimentary code book. As relationships among the data were revealed, I was able to refine the code book and begin axial coding, which is a much more discriminate process in which codes evolve into properties; related properties are arranged under subcategories and may even merge into single, broader properties; and subcategories are arranged according to their relationships under the major categories. Ultimately, four categories of data were identified and formed the cornerstone of my findings. The code book was an essential tool I used to discover the intricate network of relationships among the numerous ideas buried in the data. The code was revised dozens of times and was
considered incomplete until Chapter Four was finalized. The code book can be found in its entirety as Appendix B, beginning on page 287.

Discussion

In this portion of the chapter, I will discuss my interpretations of the findings as they relate to the five research questions in the study. For each research question, I will reflect on my interpretations before relating them to the extant literature, identifying areas that are supported or refuted by previous studies.

Research Question 1: Perceptions of Autonomy by the Different Players

The first research question, and certainly the broadest, asked: "How are teacher autonomy and autonomy support by school leadership perceived by (a) classroom teachers, (b) preservice teachers, and (c) administrators at Highland Charter School?" I begin with this question, as it seems to encompass the essence of the entire study. Its aim is to discover how each participant defines the term "autonomy", the degree to which they feel autonomous in their work, and the degree to which they feel autonomy is prioritized by school leaders.

Definition of "autonomy". Before examining teachers', administrators', and PSTs' perceptions of autonomy, I must emphasize that the term will be discussed in its broadest sense. It is not intended to evoke the same meaning as Ryan and Deci's (1985) definition of the term, in which "a person must also feel free from pressures, such as rewards or contingencies" (p 29). In other words, Ryan and Deci argue that true autonomy depends on the complete freedom of an individual to act or not to act (1985). This is in direct opposition to the way "autonomy" was most frequently used by the
participants. Perhaps a more precise term would be "agency". However, I have chosen to continue using "autonomy" with the reader's understanding of its fluid, less exact definition, as this is the term used most frequently by the study's participants.

**Different roles led to different meanings of "autonomy".** Though most informants in the study reported high degrees of autonomy in their work, they emphasized very dissimilar aspects of the term and described examples of their own professional autonomy in very different ways. It was clear that the participants' understanding of autonomy correlated with their role in the school, with administrators defining it in a more generalized sense and teachers more focused on their own teaching practice and in specific aspects of their practice. School leaders, such as Mrs. Wright and Ms. Fisher, referred to the collaboration and decision making shared among administrators and teachers. Ms. Fisher, the Head of School, emphasized her desire to include the diverse voices of administration and staff in nearly all of the major decisions she makes for Highland (Interview, May 10). Leaders often spoke of their autonomies being supported by the school's chief financial officer (CFO), who was quick to adjust the school's budget to support any initiative the school deems important (Ms. Fisher, Interview, May 10; Dr. Stewart, Interview, May 2; Mrs. Wright, Interview, May 6).

Teachers, on the other hand, were not likely to speak of professional agency in terms of the school's independence, nor did they mention the CFO's support of leadership personnel. They were primarily focused on their own individual roles as decision makers in curriculum design and the managers of their own classrooms. Interestingly, the PST informants rarely discussed teacher autonomy during their interviews. However, Ms. Lewis and Ms. Tanner each claimed they felt their voices were acknowledged by
administrators and teachers alike (Ms. Lewis, Interview, April 27; Ms. Tanner, Interview, April 20).

Nearly all administrators and teachers referred to "autonomy" in terms of instructional decision making. All six classroom teachers interviewed described great latitude given by their supervisors when they spoke of their own instructional decision making. The teachers and school leaders each seemed to agree that instructors were encouraged to try new techniques as long as they were chosen to meet students' learning needs. The overarching expectation was to design teaching to engage students and to encourage student growth; the leadership felt their job was to facilitate teachers' ability to do this by removing "obstacles" (Ms. Fisher, Interview, May 10, line 710; Mrs. Wright, Interview, May 6, line 148).

I believe the varied descriptions of "autonomy" by school personnel was telling. The differing areas of emphasis reveal the participants' priorities and level of experience. School leadership was most greatly concerned over the success of the entire school community and would discuss their professional agency in ways that allowed them to empower teachers to be creative and students to find their voices. They claimed that encouraging each person at Highland to make choices led to more effective teaching, greater academic achievement, and a stronger community for all students and staff.

Most of the teachers in the study had fewer than five years' teaching experience, and their daily focus remained on student learning in their individual classrooms. This would explain why they discussed their own professional autonomy, rather than an overall agency shared by members of the Highland community. Their preoccupation was the success of their own students rather than the school at large. In addition, for many
teachers, Highland was their first teaching experience, and Ms. Fisher was the only Head of School they had known. They had not experienced varying amounts of professional autonomies that would have come from working in different buildings or school districts, or even just under different school leaders.

Interestingly, teachers spoke of autonomy in terms of curriculum writing. They appeared to view their own active contributions into the school's PBL initiative as examples of their own agency. The leaders at Highland had contracted with a well-known pedagogy expert who met with staff monthly to develop PBL units in every discipline. In reality, this was one of the few areas in which teachers were directed to use prescribed methods in their teaching; however, they perceived this requirement as an opportunity to express their voices in curricular design.

Assuming that teaching experience at least partly dictated the varying views of professional autonomy, the fact that PSTs rarely mentioned it is not a surprise. Besides feeling that their opinions were valued, they did not discuss a level of agency to make broad decisions. I believe this is completely understandable for two reasons: First, the PSTs had not had prior teaching experience and had not come to Highland with clear expectations on their future decision making. Secondly, they were constantly guided by their cooperating teachers, who often helped them plan lessons or even supplied a template on which to plan their instruction. After each lesson, the cooperating teachers would critique their teaching and give detailed advice. Therefore, PSTs probably experienced very limited autonomy throughout their training.

**Administrative support of professional autonomy.** Administrators, teachers, and PSTs each provided a generous amount of insight regarding the support they believed
was supplied by school leaders. Almost all participants claimed to experience ample support in terms of coaching and resources, though two of the newer teachers expressed a desire for additional assistance in a few key areas. Overwhelmingly, though, participant responses implied that school leadership placed a high level of importance on professional autonomy and expected all teachers to make instructional plans independently.

Most participants agreed on two specific areas in which the administration supported its teachers' autonomy. Out of the thirteen staff members I interviewed, four teachers and five administrators identified the leadership's willingness to provide material resources as a primary means for supporting its educators. Often, teachers only had to ask for a specific item, and it would be granted to them, as in the case of Mrs. Howard's interactive white board and Ms. Baker's Chromebook cart. Ms. Fisher termed the administration's efforts to provide supplies "moving obstacles out of the way" (Interview, May 10, line 710). Interestingly, school leaders also stated that they felt supported in a very similar way, as the school's CFO was typically helpful in attaining resources that the school administration requested.

In addition to the resources Highland purchased, I learned that the university sponsor frequently offered training experiences and resources to the school. According to Mr. Metsker, the charter sponsor at the university, he and his assistant would often provide Highland's leaders with contacts who could provide professional development to their teachers (Interview, March 9). In addition, the school administrators all participated in character education training, which they used to transform the school community.
One thread of inquiry left unexplored was the extent to which this cooperation between the sponsor and Highland may have impacted administrators' and teachers' perceived autonomy. At this point, I can only speculate that the offered resources may have helped to facilitate autonomy as it would have provided opportunities for each staff member to strengthen essential skills, thus leading to feelings of greater competence. However, it may have had the opposite effect if school leaders felt compelled to utilize the resources offered by Mr. Metsker.

The second commonly identified area of support was in the form of hiring coaches and staff members to aid teachers in their instruction; teachers and school leadership seemed to agree on this as well. Five teachers each expressed appreciation for the curricular support and coaching provided to them by school leaders (Ms. Baker, Interview, May 4; Mrs. Howard, Interview, March 24; Mrs. Morris, Dual Interview, May 3; Ms. Ryan, Interview, April 20, and Ms. O'Connell, Interview, April 29). Pre-service teachers Ms. Lewis and Ms. Tanner also mentioned frequently engaging in helpful conversations with teacher leaders. Furthermore, all three PSTs described similar coaching patterns from the cooperating teachers who guided them in their training (Ms. Lewis, Interview, April 27; Ms. Miller, May 3; Ms. Tanner, April 20).

The administrative staff members I interviewed emphasized their efforts in providing support staff as a means of helping their teachers grow professionally. All seven administrators spoke of the desire of the school to provide teachers with coaches to help them identify and implement best teaching practices. Mr. Bowers and Mrs. Wright expressed their own eagerness to co-teach and to collaborate with teachers as a means to help them identify the most effective ways to meet students' needs. Ms. Fisher lightly
stated that sometimes there were "too many cooks in the kitchen" and that she needed to remind the eager coaches to "reel it in" (Interview, May 10, line 806).

Support often came in the form of collaboration among peers, rather than simply from leaders to teachers. Ms. Baker, Ms. Boston, Mrs. Howard, Ms. O'Connell, and Ms. Ryan each spoke of relying on their team teachers for support. This small group cooperation was intentionally nurtured by the school administration, as schedules were arranged to provide common plan times among teams, and teams were expected to formally meet twice per month. Similarly, administrators collaborated in small groups as part of the school-developed Leadership Development Institute, or LDI. These small LDI teams were designed so that leaders collaborated rather than make policy or program decisions independently.

The aim of the administrators to "empower" their teachers appeared to start with the leaders' own feelings of agency (Mrs. Wright, Interview, May 6, lines 208-209; Mr. Bowers, Interview, March 3; Ms. Fisher, Interview, May 10, lines 278-279). Their hope was that empowered teachers would then inspire the students to become leaders (Mr. Davis, Interview, May 6; Mrs. Wright, Interview, May 6).

The agreement between teachers and leaders regarding administrator's support at Highland reveals the school's intentionality in facilitating teacher creativity. Any level of autonomy experienced by classroom teachers was no accident but instead was carefully cultivated by the decision makers in the school. It was not the result of administrators' negligence or disinterest, but it blossomed from their aim to inspire teachers to be creative. The ultimate goal of teachers and administrators alike was to give students ownership over their learning by offering opportunities for voice and choice (Mrs.
Wright, Interview, May 10). By providing opportunity for choice to its teachers, Highland was modeling ways students could be empowered to make meaningful decisions in their learning.

**Not always enough support.** Two of the less experienced teachers in this study emphasized specific areas in which they believed they needed more guidance from administrators. Ms. O'Connell and Ms. Baker each expressed a desire for more formal professional development opportunities, with Ms. O'Connell emphasizing a need for more training in classroom technology and Ms. Baker arguing for more content-rich professional development in English Language Arts (ELA) (Ms. O'Connell, Interview, March 31; Ms. Baker, Interview, May 4). Also, Ms. O'Connell stated that she felt less supported in the new ELA curriculum, as school leaders had not yet become familiar with it; she believed that the classroom observations they performed were followed by vague feedback (Interview, April 29).

In addition to her teaching, Ms. Baker reported her need for more help in training her PST. She described feeling "overwhelmed" at the process of improving her own teaching while guiding a future teacher and claimed that she would often stay after school for "four extra hours after" to prepare for her dual role (Interview, March 25, line 480).

I still wonder if Ms. Baker and Ms. O'Connell asked their leaders for more guidance. Were the administrators aware that these teachers wanted more direction, or were these simply secret wishes? From my etic perspective, the school's lines of communication between teachers and supervisors seemed to remain open and relaxed, so the fact they felt a need for more support makes me wonder if they had simply not realized the need until they reflected upon it in our discussions. Perhaps, as new teachers,
they felt hesitant to express these wishes, or perhaps they were simply too busy to think about them. This is one question that remains unanswered.

**Major findings and connections to the literature.** Through this research, I have drawn three distinct conclusions regarding how autonomy was perceived by the study participants. First, the term "autonomy" appeared to have a range of definitions, largely determined by the role of the informant in the school setting. Administrators and teachers emphasized different contexts when discussing their own professional autonomy; surprisingly, the preservice teachers spoke very little about their own autonomy in the school. Secondly, all of the players communicated the importance of autonomy, but the teachers identified necessary boundaries to their agency. Finally, different players perceived varied amounts of administrative support in terms of their own decision making in the school, as the inexperienced teachers expressed a desire for more guidance in instructional planning.

**Varied definitions of "autonomy".** In this study, the term "autonomy" is fairly amorphous, as its definition varied depending on the speaker. Each participant implied a limit to his or her autonomy; where the perceived limits lay depended on the speaker's role at Highland.

School administrators spoke of autonomy in broader terms and often discussed policy making and group collaboration. Ms. Fisher described herself as the “superintendent for this little mini-district” and the “ultimate decision maker” (Interview, May 10, lines 256, 259). Mrs. Wright explained that the school's CFO would adjust the budget to support initiatives promoted by school leaders. All administrators discussed the
importance of involving teachers in decision making and curriculum design. Like 67% of U.S. charter schools, Highland is site-managed and not governed by a management organization (National Alliance, n.d.). Studies by Dee et al. (2002) and Quinn and Ethridge (2006) revealed a heavy reliance of site-managed charter schools on collaboration between leaders and teachers in developing school curriculum and programs. This reliance was consistently evident in the way that Highland used small group collaboration for curriculum design, uniting teachers and leaders in decision making.

Unlike school leadership who spoke of autonomy in terms of all staff members, teachers most frequently spoke of their own professional autonomy in terms of how it impacted their own classrooms. Specifically, they focused on the latitude granted by the school to infuse their own creativity in instructional planning. Additionally, each teacher spoke at length on their expected role as curriculum designers. Much like the schools in the Quinn and Ethridge (2006) study, Highland's leadership clearly did not focus on standardized testing to the point where teachers felt pressured to raise scores. Every teacher in the study described feeling trusted by their supervisors, and each described their ability to tailor their teaching to their students' diverse needs. All participants mentioned the school's focus on crafting child-centered curricula without limiting the teachers to traditional, didactic instructional practices.

The teacher participants spoke at length of their active role in curriculum design and explained that their participation was mandatory. None of the teachers referred to this compelled activity in terms of limiting their own autonomy; instead, it was discussed as a means of enhancing their own professional voices in the school.
Teachers' independence and their active roles in curriculum design were features carefully designed by the administration. School leaders spoke of carefully selecting teachers who would be independent thinkers and would be willing to create engaging learning experiences for their students. In this sense, the professional agency was not really "autonomy" in its narrowest definition, since teachers were compelled to do these things. However, it was perceived by instructors as autonomy, and it seemed to be a highly valued aspect of working at the school.

The preservice teachers rarely discussed their own autonomy in the school. Ms. Tanner and Ms. Lewis spoke of being included in the curriculum meetings, and Ms. Tanner felt trusted by her cooperating teacher to lead classroom instruction. Was "autonomy" absent from the PSTs' discussion because they did not perceive their own professional agency to the same degree as their cooperating teachers? Valencia et al. (2009) described an intricate network of relationships involved in student teaching and claimed that often the differing perspectives of the players lead to gaps in the training process. Anderson and Stillman (2013) found that often PSTs were expected to follow mandated curriculum and strategies with fidelity. Were Ms. Lewis and Ms. Miller expected to adhere to their cooperating teachers' approaches to teaching? Both PSTs seemed to closely echo their mentors' forms when conducting their lessons. Ms. Lewis' lessons were structured almost identically to those of Mrs. Howard. Ms. Miller and Mrs. Morris used almost identical phrases when addressing their kindergartners.

Cooperating teachers and PSTs at Highland each claimed to have had very little guidance from university personnel in the student teaching process. Extant literature has described a frequent lack of sufficient training on mentoring practices for cooperating
teachers, leading to an inadequate understanding of their supervisory roles (Anderson & Stillman, 2010; Roehrig et al., 2007; Russell & Russell, 2011; Schwille, 2008; Sim, 2011). In particular, cooperating teachers often need training in collaborating with PSTs so that they are teaching them to respond to student needs during instruction (Schwille, 2008). Anderson and Stillman (2013) found that infrequent site visits from TEP personnel often made it more difficult for PSTs to integrate learned strategies into their classroom teaching. If Ms. Lewis and Ms. Miller were simply mimicking their cooperating teachers' strategies, could that have been due to a lack of mentorship training offered to Mrs. Howard and Mrs. Morris, the cooperating teachers? Could it be resulting from infrequent attention of the university supervisor?

Another possible reason for this omission could lie in the PSTs' lack of teaching experience. Classroom teachers may have had a deeper awareness of teacher autonomy in general, in terms of professional latitudes that are typical or atypical in a classroom. In addition, they would have been more intimately acquainted with the school's infrastructure than the inexperienced PSTs who are present in the school for a limited amount of time. No matter how much voice the PSTs had in their own teaching, they would not have been as aware of school policy and would not have been present at all faculty meetings and training sessions. The PSTs likely had little to no prior experience in teaching, and this may have led to their lack of awareness regarding the professional autonomy afforded to all members in the Highland community.

**Administrative support and necessary limitations.** Teachers in the study discussed a need for a moderation of school leadership on their professional agency. They fully expected administrators to maintain high expectations for their teaching staff, and
they valued coaching and feedback provided by their supervisors. Mrs. Howard and Ms. Ryan each claimed that autonomy must be tempered with frequent evaluations in order to ensure accountability.

When considering the four types of motivation proposed by Deci and Ryan (2008), the teachers at Highland appeared to have experienced autonomy which was bounded by the school's prescribed goals. The staff and teachers acted under integrated regulation, a form of motivation that promotes action due to the individual's buy-in of shared values and goals. Throughout the study, teachers and administrators repeatedly discussed common goals related to cultivating relationships, building cooperative character among students and adults, and enhancing opportunity for student choice. This suggests that the staff at Highland shared common goals and frequently discussed the school's aims; also, the teachers' commitment to these aims seemed apparent.

Teachers and administrators at Highland seemed to agree that the school placed a high priority on providing support staff to guide teachers in their instructional decision making. Coaching and collaboration were widely implemented so that teachers were aided in developing their professional goals and felt coached in their efforts to achieve them. The 2013 study by Mayer et al. revealed that site-managed schools that failed to provide structures to support teacher decision making often resulted in power clashes between instructors and school leaders. This did not appear to be happening at Highland, as every informant reported an easy communication and ready collaboration between supervisors and classroom teachers. Teachers were carefully selected in the hiring process to ensure that the school's vision would remain intact. Similar to the case study illustrated in Quinn and Ethridge (2006), Highland's leaders maintained a heavy reliance
on each teacher to craft child-centered curricula and creative learning environments; similarly, teachers at Highland reported feeling a sense of community and personal investment in the school.

Though teachers felt entrusted and supported by school leaders, there were two aspects in which they believed they needed more guidance. Cooperating teachers expressed a need for clear guidelines in training their PSTs. Teachers also expressed a desire for more formal, didactic training in classroom-related technology.

Whether these teachers asked for the extra guidance remains unknown, but I was under the distinct impression that they had not. They only expressed their wish after reflecting deeply on their experiences, and Ms. Baker hesitated very slightly before expressing her uncertainty regarding her roles as teacher and trainer. Wilkinson (1994) discovered that novice teachers often hesitated to ask for guidance in their fears of being seen as incompetent; she found they wanted to make as many decisions as possible to impact their own classrooms and teaching practices. Is this the reason Ms. Baker and Ms. O'Connell felt they did not always receive the guidance they thought they needed?

Cooperating teachers Mrs. Howard, Ms. Baker, Ms. Ryan, and Mrs. Morris each described a lack of guidance in balancing their classroom teaching and their mentoring roles. None of these informants believed they completely understood the university's expectations of their own work, and not one could describe the expected training outcomes for their PSTs. Of the four cooperating teachers, three (Mrs. Howard, Ms. Baker, and Ms. Ryan) had five years' teaching experience or less. Ms. Baker repeatedly spoke of feeling overwhelmed by her dual role as an inexperienced classroom teacher (with two years' experience) and as a trainer. She described the balance between her roles
as "exhausting" (Interview, March 24, lines 123,130) and described a need for more administrative oversight to ensure that she was meeting the needs of her students and her PST (Interviews March 24, May 4). Ms. Baker's apparent lack of confidence in her dual role seemed to have impacted her own satisfaction in her work; this relationship could be explained by Ryan and Deci's SDT model (2000).

Though the importance of mentoring in PST training is widely established (Levine, 2011; Roehrig et al., 2007; Russell & Russell, J., 2011; Valencia et al., 2009), cooperating teachers are often uniformed of the training requirements and their roles as mentors (Roehrig et al., 2007; Russell & Russell, 2011; Valencia et al., 2009). Since the training experience relies on a cooperative relationship between three players (the university, the cooperating teacher, and the PST), there is often some sense of ambiguity in each of the roles, which increases the imprecision of the training experience (Valencia et al., 2009). Valencia et al. also discovered that often the ambiguous role of the mentor resulted in lost opportunities for PSTs' professional growth. I wonder if the ambiguity and imprecision may have been underscored at Highland, where less experienced teachers were chosen to act as PST mentors. Anderson and Stillman (2013) discovered a general lack of understanding of training requirements among the cooperating teachers in their study. Similarly, Roehrig et al. (2007), Russell and Russell (2011), and Sim (2011) found that often cooperating teachers at several schools received insufficient training on mentoring.

Teachers in this study reported a desire for additional support in ICT implementation. Ms. O'Connell, Mrs., Howard, and Ms. Baker each discussed a need for formal training in incorporating technology meaningfully into their lessons. According to
each of these teachers, the combined lack of knowledge of some technologies and an already packed schedule resulted in limited use of student technology in their classrooms. Each expressed a desire for more didactic coaching from the technology administrator at Highland, as they may not have the available time or inclination to teach themselves how to incorporate potentially valuable technological tools into their teaching. Tondeur et al. (2008) discovered that one of the most significant barriers to classroom ICT integration was the teachers' "limited ICT skills" (p. 216). Ms. Baker professed a high level of comfort in her own technology use but later claimed she could not foresee a valuable use of interactive white boards in her ELA classroom. This may highlight a need for enhanced training opportunities aimed at combining content and pedagogical knowledge with technology proficiency, as illustrated by Mishra and Koehler's (2006) TPACK model.

It is clear that professional autonomy and personal choice were highly valued by all personnel at Highland. School leaders intentionally nurtured opportunities for teachers to be involved in decision making. Teachers felt their voices were heard by decision makers. However, at times, it appeared that new teachers occasionally felt overwhelmed by their own independence. I wonder if their supervisors were aware of these feelings, or if the new teachers hesitated to express them in fear of being viewed as less competent.

**Research Question 2: Perceived Impact of Autonomy on Instruction and Achievement**

This second research question was aimed at uncovering how perceived autonomy impacted instructional decision making. I asked the participants to reflect on their own decision making and its ultimate impact on student learning. The research question I hoped to answer was: "To what degree do teachers at Highland Charter School believe
professional autonomy impacts their teaching practices; and how do they feel this impacts student achievement?"

**More freedom in meeting student needs.** Five teachers, four administrators, and both PSTs identified autonomy as a contributing factor to improved teaching and enhanced student learning (Ms. Baker, Interview, May 4; Ms. Boston, Interview, April 8; Mr. Davis, Interview, May 6; Ms. Fisher, Interview, May 10; Mrs. Howard, Interview, May 5; Ms. Lewis, Interview, April 27; Mrs. Lincoln, Interview, May 10; Mrs. Morris, Dual Interview, May 3; Ms. O'Connell, Interview, April 29; Ms. Ryan, Interview, April 20; Ms. Tanner, Interview, April 20; Mrs. Wright, Interview, May 6). Each of these participants described ways that their professional latitude impacted instruction, though from slightly differing standpoints.

All of the participants seemed to acknowledge the critical value of differentiation in meeting Highland's diverse students' needs. Ms. Boston labeled her ability to make adjustments in her lesson "responsive teaching", as she was able to change the course of her teaching in response to students' learning (Ms. Boston, Interview, April 8, line 293). Several informants spoke at length about their administrators' trust in their ability to make instructional decisions based on their children's needs and described collaborative planning efforts among teachers.

Ms. O'Connell expressed appreciation for the school's priority for all grade level teams to form relationships with their students at the beginning of the year. She explained that having a couple of weeks to focus on relationship building allowed her to create learning activities based on her students' interests (Interview, March 31).
The teacher informants conveyed their desire to contribute to their school's curriculum writing. Instead of viewing it as an obligation, they seemed to value the opportunity to help shape the school's learning program. A highly collaborative effort involving all teachers, it was identified by all participants as a means for enhancing their own agency as educators. It allowed for an environment in which resources could be used at a teacher's discretion, and planning occurred in terms of meeting children's learning needs rather than sticking to a prescribed list of lessons. School leaders were eager to supply requested resources to encourage teacher creativity and innovation.

Administrators each expressed the necessity of teachers' professional autonomy in meeting student learning needs. It was a goal of school leadership to foster instructional autonomy, to "inspire them to be creative with the kids" (Mr. Davis, Interview, May 6, line 50), and the administration is very "deliberate" in listening to teachers' voices (Mrs. Wright, Interview, May 6, line 502). Ultimately, by providing teachers a high level of professional autonomy, the school was aimed at meeting the kids' needs first (Mrs. Fisher, Interview, May 10).

In determining student achievement, Highland's administration focused on individual growth rather than simply comparing isolated test scores. Leadership argued that this holistic approach alleviated some stress from standardized testing, and that the multidimensional approach to assessment allows the school to "develop students who are creative thinkers" (Mrs. Lincoln, Interview, May 10; Mrs. Wright, Interview, May 6, line 1834). However, Highland considered standardized test scores as a definite factor in determining student success, though the school had selected a testing program designed to track academic progress over the course of every school year (Dr. Stewart, Interview,
May 2). Mrs. Lincoln posited that the school's focus on growth over proficiency allowed teachers to facilitate true learning without focusing only on "test prep and all of that" (Interview, May 10, line 183).

Interestingly, teachers Ms. Baker and Ms. O'Connell had a different perception on Highland's testing. Both teachers clearly felt under pressure for their students' performance on the test (Ms. Baker, Interview, May 4; Ms. O'Connell, Interview, April 29). What remains unclear, and unexplored in this research project, is whether these perceptions were influenced by the teachers' inexperience, as these teachers were in their third and second academic years, respectively. Did these two teachers perceive a greater emphasis on test scores than their more seasoned colleagues, or did school leaders communicate an urgent need for proficient scores on the test? Was the stress these teachers recounted merely a product of inexperience, their own desire for perfection, or a lack of clear communication between school leaders and teachers?

Teaching practices. All administrators and teachers described effective teaching practices in terms of project-based learning. Though teacher-centered instruction was frequently observed in most classrooms, and across the grade levels, the teachers did not mention the approach when they discussed their teaching strategies and priorities (Ms. Boston, Interview, April 8; Ms. Baker, Interviews, March 25 & May 4; Ms. Ryan, Interview, April 20, and Ms. O'Connell, Interview, April 29). The school administrators each communicated the importance of project-based instruction in all classrooms, in terms of student academic growth and engagement (Ms. Fisher, Interview, May 10; Mr. Davis, Interview, May 6; Mrs. Wright, Interview, May 6; Mrs. Lincoln, Interview, May 10; Mr. Bowers, Interview, April 6).
Highland's commitment to project-based learning was a fairly recent initiative and appeared to drive the bulk of the school's professional development. I wonder if the teachers believed that this was the only truly effective teaching strategy. Did they feel that other approaches, including teacher-centered methods, were less effective and thus not worth mentioning? With five of the teachers in the study having five years' teaching experience or less, it is possible that they did not yet feel secure in their teaching styles. Perhaps they felt there was only one "right" way to teach and did not understand how different approaches could be utilized effectively. Only Mrs. Howard, the sixth-grade math teacher who seemed to consistently rely on teacher presentations and demonstrations, spoke of using this approach to promote student learning (Interviews, March 24 & May 5).

The teachers' professional autonomy clearly impacted their confidence in their teaching. Mrs. Morris, a sixteen-year veteran teacher at Highland, explained that being "left to [her] own devices" prompted her to research best practices and different teaching approaches and led to a deeper understanding of effective instruction (Dual Interview, May 3, lines 116-117). Ms. Baker readily admitted to her lack of experience and feeling intimidated by her autonomy at first, but claimed that her voice in curriculum development has helped instill a sense of confidence in her ability as a classroom professional (Interview, May 4).

**Major findings and connections to the literature.** This work revealed teachers' perceptions of their own autonomy; through careful analysis of the data, I have drawn one solid conclusion and raised two more questions. In this research, all of the participants communicated a belief that Highland's leadership allowed a broad latitude in
meeting students' needs; this agency seemed to have been experienced by administrators as well as classroom teachers. However, the perceptive impact of autonomy on their instruction was not well-defined; instead, the data has elicited questions regarding the veracity of the teachers' views. Finally, the data hints at teachers' increasing confidence as a possible result of their autonomous decision making, but I did not collect enough data to make a reliable assertion.

*Freedom to meet students' needs.* Highland's teachers and administrators each professed the importance of student voices in their learning. The school administrators claimed to nurture their teachers' creativity in meeting students' needs and communicated their desire for teachers to foster critical thought and increased independence in their student learners. Ms. Fisher, Mr. Davis, and Mrs. Wright each emphasized the importance of teacher engagement and claimed that excited teachers would empower their students. Mr. Davis claimed that the administration "want(s) to inspire [the teachers] to be creative with the kids" (Interview, May 6, line 96).

Deci and Ryan's SDT (2000) identifies autonomy as one of three innate psychological needs critical to motivating human behavior. Highland's leadership prioritized promoting student voice in classroom instruction and expected teachers to facilitate learning that encourages students to express their own voices. Administrators Ms. Fisher, Mr. Davis, and Mrs. Wright each explained that student learning increased tremendously when students were allowed some autonomy in the process. Guay et al. (2008) reported a greater level of student achievement and deeper levels of learning in classrooms where student autonomy was nurtured.
Highland's aim at empowering teachers closely resembled a site-managed Florida charter school aimed at supplying its teachers with abundant amounts of professional freedom with the ultimate goal of growing student inquiry (Quinn & Ethridge, 2006). Teachers in the study reported feeling high levels of trust from their supervisors, and they transferred that trust to their students.

Though charter schools were initially developed in order to nurture creative teaching strategies (Preston et al., 2012), there has been debate over how successfully the schools transfer the administration's autonomy to the teachers and then to the students (Carruthers, 2012; Crawford, 2001; Dee et al., 2002; Ni, 2012; Preston et al., 2012; Quinn & Ethridge, 2006; Thaman, 2015). Charter schools governed by school districts typically allow greater range of teacher latitude than organization-based schools (Ni, 2012). Site-managed charter schools place all decision-making responsibilities on school personnel, often organized into collaborative teams (Dee et al., 2002). Highland, as a site-managed school, relied heavily on its teachers for curriculum development and maintained small planning teams consisting of administrators and faculty. Each teacher was compelled to participate in curriculum development.

Overall, the teachers in this study professed a deep appreciation for their professional latitudes and for the trust placed on them by their leaders. Generally, the reliance of the school on teacher input seemed to be a great motivating factor that encouraged the instructors to seek out novel ways to meet their diverse students' needs. Often, they would collaborate with their colleagues "outside" of their scheduled meeting times, and I would frequently witness them discussing new ideas during their breaks and
plan times. The leaders at Highland clearly understood how placing trust in their workers motivated them to work harder.

**Teaching practices.** In the study, nearly all of the participants emphasized the importance of project-based learning in student achievement. Each teacher claimed to focus heavily on this approach, and every teacher appeared to equate it with effective instruction. However, much of the teaching I observed in all classrooms was teacher-centered, during which the learners' attention was directed at the instructors. Thus there is a discrepancy in the teachers' claims and their actual approaches.

Highland's aim to prioritize project-based learning was supported by a plethora of research. The positive impacts of student collaboration and student choice on learning has been widely documented (Brindley et al., 2005; Brindley et al., 2009; Cooper, 2012; Rowe et al., 2013). Social constructivism, espoused by Bruner (1977, 1986) and rooted in Vygotsky's zone of proximal development (1930/1980), argues that learning and development are highly social processes and require students' active wrestling with concepts while collaborating with peers and more knowledgeable adults.

Every administrator and teacher in this study spoke of their desire to engage learners in project-based instruction. Teachers claimed that the approach laid the foundation for their teaching. However, much of the lesson delivery I observed did not involve students' cooperative manipulation of content. Though this difference in intent versus reality was apparent in the research, the data collected did not address the root for this discrepancy. Could this be simply due to the fact that my classroom visits were limited in number, as shown in Appendices D and E? Could this be a symptom of a hidden communication issue, in which the novice teachers did not fully understand the
tenants of project-based learning and misinterpreted the approach to include teacher-directed instruction? They may not have truly understood how project-based learning differs widely from other approaches. Perhaps they felt pressured to teach using one approach (project-based learning) but did not feel prepared to teach in that manner. Many of the teachers were still novices and were actively building their teaching repertoire.

Mrs. Howard, a sixth-grade math teacher, used teacher-centered instruction most frequently when observed over the course of this study; she had just recently began teaching this discipline. She, as well as other inexperienced teachers, may have not had the chance to develop a solid pedagogical content knowledge (PCK) as proposed by Shulman's work (1986). Perhaps the school's emphasis on that strategy made them believe it was the only "good" teaching approach, and thus the "right" answer when I asked them to discuss how they effectively reached their diverse classes. It is possible that they simply did not yet understand that a balance of different teaching approaches, including didactic teaching, could (and should) be used to ensure that all students are learning. This division between priority and practice would possibly be an interesting vein to follow in a future study.

The administration's insistence that instruction was rooted in project-based learning practice leads me to wonder if the teachers' professional autonomy was far more limited than what they perceived. According to the SDT model, the motivation to act is dependent upon the satisfaction of a person's three innate needs: his or her need for autonomous decision making, feelings of competence, and interpersonal relatedness (Deci & Ryan, 2000). One type of motivation identified in this model is integrated
regulation, which occurs when a person is not fully autonomous but instead acts according to a shared set of goals (Deci & Ryan, 2000).

Therefore, was the teachers' actual autonomy in this study pertinent, or was the perceived autonomy more important, as that factor would more directly guide the players' actions? Since the perception was likely to drive action, I felt that perception was more important in this study than the reality.

The participants’ confidence levels and feelings of competence seemed to be impacted by their professional latitudes at Highland. The positive correlation of an individual's autonomy on his or her feelings of competence is illustrated in the SDT model (Ryan & Deci, 2008). The data in this study hinted at the idea that the teachers' confidence in their teaching may have been enhanced by their feelings of being trusted by school leaders to make their own decisions. Mrs. Morris described feeling highly competent as she had been "left to [her] own devices" (Dual Interview, May 3, lines 116-117). Ms. Baker explained that her involvement in curriculum writing lessened her own anxiety in meeting the standards. Ms. Boston briefly mentioned being trusted by administrators to employ her prior experience as a literacy specialist in teaching her third-graders. This evidence whispers a possible connection between the participants’ perceived autonomy and their confidence levels, but I do not believe it is sufficient to draw a conclusion.

**Research Question 3: The Effect of the Common Core on the Teachers' Autonomy**

**Major finding and connection to the literature.** The third research question was aimed at determining whether teachers at Highland believed the *Common Core State Standards* impacted their professional autonomy to plan and implement instruction. This
question could only be answered during interviews and was not dependent upon classroom observation. Since I addressed this question only once with each participant, the data I collected was limited. Thus, the project is lacking enough evidence to derive a clear conclusion. However, the participants' responses hinted at a shared view of the CCSS as a helpful tool for planning rather than a limitation to professional agency. In addition, the data suggested that administrators and inexperienced teachers might have viewed standardized assessments very differently.

In this study, teachers and PSTs each claimed that the *Common Core State Standards* was a helpful tool in lesson planning, as it helped them to focus their teaching and differentiate instruction for their diverse learners (Ms. Baker, Interview, May 5; Ms. O'Connell, Interview, April 29; Mrs. Howard, Interview, May 5; Mrs. Morris, Dual Interview, May 3; Ms. Ryan, Interview, April 20; Ms. Lewis, Interview, April 27; and Ms. Miller, Dual Interview, May 3). Similarly, McLaughlin and Overturf (2012) found that the teachers in their study used the *Common Core* as a tool for deepening critical thinking by pushing students to construct inferences and conduct investigations into the content.

When considering Ms. Baker's and Ms. O'Connell's desire for additional guidance in their planning, the fact that they professed an appreciation for the *Common Core* may have demonstrated their need for structure within autonomy. The standards would have helped them to focus their teaching and would have given them a benchmark for their students. This might have felt like a lifeline of sorts, given the vast amount of material available to use in the classroom and the teachers' freedom to determine their classes' paths through the subject area.
Administrators described a multidimensional approach to determining student achievement and insisted that success was not limited to test scores. Though standardized tests were an important source of data, the school also considered attendance, behavior, and student creativity (Mrs. Wright, Interview, May 6; Dr. Stewart, Interview, May 2). Formative assessment data also gave school personnel important insight into student learning and was intended to drive instruction; Mrs. Lincoln claimed that standardized testing did not determine the teaching that occurred in the classroom (Interview, May 10). Dr. Stewart argued that a student's proficiency on a standardized test was not nearly as important as the individual's academic gains (Interview, May 2).

Although Mrs. Howard, Ms. O'Connell, and Ms. Baker each stated the importance of multiple measures to determine student growth, Ms. Baker and Ms. O'Connell expressed a feeling of anxiety when discussing the role of standardized testing in their classrooms. Ms. Baker claimed "a lot [of pressure] on the teachers" (Interview, May 4, lines 225-226), and Ms. O'Connell recounted how she typically spent two weeks of instructional time solely preparing the students to perform well on the test (Interview, April 29). Since Ms. Baker and Ms. O'Connell were the teachers with the least amount of teaching experience in this study, I wonder if the stress they described stemmed from a lack of understanding of the administration's view on assessment. Did the administrators sufficiently communicate their approach to their least experienced teachers? Or was there an assumption that all personnel understood the role of the tests? Could it be that some supervisors placed greater emphasis on test scores than others? The more experienced teachers in this research study (Ms. Boston, Mrs. Morris, and Ms. Ryan) did not communicate feelings of stress when speaking about standardized tests.
Though the original intent of charter school reform was to exchange state accountability for increased autonomy (Thaman, 2015), they were still subject to performance oversight by the sponsoring entity. In addition, Mrs. Lincoln explained that the school is still under "some pressure" because parents would use school achievement as a determining factor in choosing a school for their children (Interview, May 10, line 332).

**Research Question 4: Classroom Technology Use and Teacher Autonomy at Highland**

As I explained in Chapter 4, the original purpose of this project was centered on teachers' and preservice teachers' use of ICT as a means to engage students. However, it soon became apparent that this was only a small detail in a much larger story. Simply reporting on the Highland's technology use would not adequately capture the unique and rich learning environment of the school. From my first visit, it was clear that investigating the apparent undercurrents of autonomy, as experienced by administrators, teachers, and PSTs, would better describe the varied experiences of the participants. Technology, though still an important aspect, became relevant in terms of the degree of autonomy teachers perceived in its use and the extent to which it impacted their instructional decision making.

Data collected through classroom observations and semi-structured interviews revealed two findings in regard to technology and its role in the teachers' autonomy. First, it appeared that the participants usually felt the school placed few demands on both the extent and the purpose for using ICT in the classroom. Secondly, technology use was generally purposeful and seemed to be regarded as a tool for meeting teacher-defined
goals, rather than simply for enjoyment. In other words, teachers' ICT use appeared to be a means to an end, rather than the end itself.

**Autonomous use of ICT in the classroom.** Technology, though constantly present to some degree in all classrooms, was used to varied extents by teachers and PSTs. Since computers were less readily available in the elementary classes, student use was generally much more frequent and varied in the middle school. Teachers seemed to place a wide range of importance on technology use in the classroom, suggesting that school leaders did not direct the teachers on a prescribed frequency or purpose for ICT in their lessons.

**Administrative support of ICT use.** Head of school Ms. Fisher and technology administrator Mr. Bowers claimed that supporting teacher use of ICT was an important priority at Highland. School leaders chose to provide support staff and a growing cache of digital resources to allow teachers to enhance their instruction (Mr. Bowers, Interview, March 3; Ms. Fisher, Interview, May 10). According to Mr. Bowers, any technology-related professional development was intended to be optional and guided solely upon the faculty's needs and professional goals (Interviews, March 3 & April 6). Instead of requiring teachers to build specific skill sets in ICT, school leadership decided to provide resources to their staff and allow each instructor to decide when and how to implement them. Therefore, much of the school's ICT-related professional development occurred in the form of optional teacher workshops or as one-on-one collaboration sessions between Mr. Bowers and a teacher.

According to four participants, technology use at Highland may have been limited by the administration's lack of oversight, as the school offered little formal training in
digital tools (Ms. Baker, Interview, March 25; Mrs. Howard, Interview, March 24; Ms. O'Connell, Interview, March 31; Ms. Tanner, Interview, April 20). All four of those participants expressed a desire for additional training in using unfamiliar or novel technology tools in their classrooms and expressed some degree of reluctance to figure out the tools on their own. Since these teachers claimed to want to learn new technologies, I believe some of their mild reluctance would have been alleviated with formal technology training. On the other hand, would supplying teachers with formal training diminish some of the professional autonomy they greatly valued?

The technology administrator, Mr. Bowers, explained that his goal was to maintain teachers’ autonomy by purposefully crafting a purely optional stance on technology-related professional development. He argued that technology was not a requirement for high quality teaching and that teachers should not be required to incorporate digital resources in their classrooms (Interview, March 3).

Other limitations to technology-related autonomy. Though teachers did not believe their ICT-related instruction was prescribed by administrators, they perceived limitations to their autonomy which stemmed from other factors. The factors mentioned most frequently included limited digital resources; inequitable student access to technology outside of school; varied levels of teacher interest in technology; difficulty managing students' online activities; and the prioritizing of teacher planning to other tasks (Ms. Baker, Field Notes, Feb 26; Ms. Baker, Field Notes, March 1; Ms. Baker, Interview, March 25; Ms. Boston, Interview, April 8; Mr. Bowers, Interview, March 3 & April 6; Mrs. Howard, Interview, March 24; Ms. O'Connell, Interview, March 31; and Ms. Tanner, Interview, April 20). In other words, effectively employing ICT in an
engaging way was not as simple as just choosing a lesson, turning on a computer, and setting the students to work. It required much more planning than that, and the teachers seemed to view technology as a tool to use meaningfully rather than casually.

**Purposeful ICT integration.** Classroom technology use appeared to be more directly governed by individual teachers' professional priorities and preferences. Middle school teachers expressed the widest range of perceived importance of their technology use. Interestingly though, Mrs. Howard, the math teacher, admitted that learning new technologies was "not something that [was] really important" even though "the kids [were] so much more engaged" when ICT was used in her class (Interview, March 24, lines 427 & 295). Ms. Baker and Ms. O'Connell each professed placing a great amount of importance on technology as a tool for engagement and learning, both claiming that ICT enhanced the authenticity and relevance of their language arts lessons. Two years prior to the study, seventh-grade language arts teacher Ms. Baker had actively lobbied for, and won, the school's permission to crowdfund a cart of Chromebooks for her classroom. Sixth-grade language arts teachers Ms. O'Connell expressed the desire to eventually use computers on a daily basis so that it would seem "pretty standard for [the kids]" and not just a "novel, big exciting thing" (Interview, March 31, lines 470-471).

**Reasons for ICT use in classrooms.** Often, the teachers' plans to embed technology into the classroom rested on their perceptions of student interests and needs. Kindergarten teacher Mrs. Morris, third-grade teacher Ms. Boston, and sixth-grade teacher Ms. Baker each spoke of the powerful impact digital tools had on their students' engagement in learning. Ms. Boston argued that technology was "so powerful for kids" and discovered that offering digital tools to one particularly reluctant learner had a
tremendous impact on the student's achievement (Interview, April 8, line 254). Mrs. Morris and Ms. Baker agreed that incorporating technology in meaningful ways instantly raised student engagement levels in their classrooms (Mrs. Morris, Dual Interview, May 3; Ms. Baker, Interview, March 25).

Though student engagement was mentioned most commonly as a teacher priority for implementing classroom technology, it was not the only recognized benefit. Teachers also mentioned technology as means for enhancing relevance in instruction, as students are generally surrounded by technology out of the classroom (Ms. Baker, Interview, March 25; Ms. Tanner, Interview, April 20). Several participants described using digital tools to teach students how to transfer essential skills across discipline areas (Ms. Baker, Interview, March 25; Mr. Bowers, Interview, March 3; Ms. Miller, Dual Interview, May 3; Mrs. Wright, Interview, May 6). Finally, several teachers identified the usefulness of ICT in their own planning and delivery of instruction (Ms. Baker, Interview, March 25; Ms. Boston, Interview, April 8; Mr. Bowers, Interview, March 3; Mrs. Howard, Interview, March 24; Ms. O'Connell, Interview, March 31).

I believe the varied benefits identified by teacher participants suggest that they were highly reflective practitioners. Even their hesitance to try something unfamiliar shows that they did not take their lesson planning lightly but instead were highly methodical and deliberate in their instructional design.

**Major uses of ICT at Highland.** Mr. Bowers, the technology administrator at Highland, claimed that teachers' use of ICT could be categorized into four general uses, including facilitating student projects, teacher demonstrations and classroom presentations, long-term communication between students and teachers, and classroom
administrative uses (Interview, March 3). Each of the ICT-related activities I observed at Highland fell neatly into one of those four general categories, though I saw little evidence of computers being used for long-term communication. This provides more evidence that the teachers were highly intentional in their implementation of digital resources; technology was not viewed as simply a tool for engagement but fulfilled a very practical daily role in the classrooms.

_Student projects and research._ Among this sample of teachers, I observed only two middle school and two elementary teachers offering technology as a tool for project-based learning or student-led research in their classrooms. In these classrooms, students were searching for meaningful information online and were using the Google platform to communicate ideas, share documents, and produce new media (Ms. Baker, Field Notes, Feb 26, March 1, March 25, March 29; Ms. O'Connell, Field Notes, March 29). Both language arts teachers used Google Drive as a platform on which their students wrote essays; however, Ms. O'Connell admitted that many of the students were not skillful typists, so she often had the students handwrite their papers (Interview, April 29).

Among the elementary teachers I observed, Ms. Boston, Ms. Ryan, and PST Ms. Tanner assigned the use of laptops in student writing. In these third-grade and fifth-grade classrooms, the students used Google Drive to compose narrative essays and conferenced one-on-one with their teachers throughout the editing process (Ms. Boston, Field Notes, March 4 & April 6; Ms. Ryan & Ms. Tanner, Field Notes, April 7 & April 15).

_Demonstrations and teacher presentations._ Technology was used in six of the seven observed classrooms as a means for didactic teaching. Mrs. Howard, Ms. Ryan, Ms. Tanner, Ms. Miller, and Ms. Lewis all used a projector to demonstrate mathematical
skills. Often, student volunteers were asked to show their classmates how to apply various logarithms using a document camera and white board, allowing the teachers to directly guide the instruction for the rest of the class. Ms. Baker and Ms. O'Connell used a projector to review vocabulary words and to demonstrate how to interpret poetry. I did not observe Mrs. Hanson, the first-grade teacher, using technology; however, my time in her classroom was very limited due to scheduling constraints.

It was evident that the teachers felt most comfortable when using technology in teacher-centered instruction, rather than placing the digital tools in the hands of the students. This echoed Mrs. Lincoln's sentiment that teachers often struggle to turn over some control to their students and act as facilitators of learning (Interview, May 10).

*Classroom administrative tasks.* This was perhaps the one major purpose of technology that was mandated by school leaders. School-wide, teachers used Microsoft Outlook and Yammer to communicate with colleagues and Google to email parents. Grades and attendance were recorded electronically. In addition, most teachers used electronic stopwatches to manage time spent on classroom activities.

*Major findings and connections to the literature.* Through this project, I have drawn two conclusions regarding teacher autonomy and classroom ICT use at Highland. First, there were few demands placed upon teachers by their leaders regarding technology use; therefore, teachers applied digital resources at varying frequencies and with different purposes. Secondly, the teachers' uses of technology were intentional; in other words, ICT was typically viewed as a tool rather than the centerpiece of instruction.

*Autonomous use of classroom technology.* It was evident that the teachers at Highland felt no compulsion to use technology in order to meet school leaders'
expectations. The only digital tools mandated by the school involved certain administrative tasks, such as recording grades and reporting attendance. Therefore, the autonomy teachers experienced in creating and implementing instruction using ICT could be identified as intrinsic, according to Deci and Ryan's SDT model, as all actions were driven by the teachers' personal inquisitiveness (2008).

Highland's lack of mandated technologies was intentional and designed to give teachers agency to exercise creativity in lesson design. Ms. Fisher and Mr. Bowers each spoke of the desire to support teachers' technology use by providing needed resources and support personnel, but allowing teachers to explore ICT in their own ways (Mr. Bowers, Interview, March 3; Ms. Fisher, Interview, May 10).

The need for additional professional development. Though Highland intended to encourage educator exploration into technology by providing material resources for classroom use, teachers in the study often felt unprepared to implement ICT in novel ways. Ms. Baker, Mrs. Howard, Ms. O'Connell, and Ms. Tanner all spoke of the desire for more technology-related professional development. They claimed that having the physical tools for integrating ICT was simply not enough, since they often did not have the time to explore the tools on their own. Each argued that they would be more likely to place different technologies into students' hands if they received more structured professional development (Ms. Baker, Interview, March 25; Mrs. Howard, Interview, March 24; Ms. O'Connell, Interview, March 31; Ms. Tanner, Interview, April 20). This discovery echoed findings by Garcia-Valvarcel et al. (2014), Hughes and Ooms (2004), and Tondeur et al. (2008). Each of these studies concluded that simply supplying the material resources to teachers often will not encourage them to incorporate technologies
into the classrooms. Participants in Garcia-Valcarcel et al. (2014)'s study claimed that instruction involving ICT required a large amount of planning time from the teacher. Hughes and Ooms (2004) found that the lack of time to explore ICT was cited as "the 'biggest issue' related to using technology" in the classroom (p. 401).

Staples et al. (2005) claimed that professional development opportunities designed to support ICT use must be made available to school staff; however, this is often not the case, as the focus tends to be strictly on providing the digital tools with little emphasis on training (Hammond, 2014; Hughes & Ooms, 2004; Staples et al., 2005). Tondeur et al. (2008) discovered that the number of in-service training sessions had a significant impact on teachers' ICT use in the classroom.

With the few opportunities for ICT-related formal professional development, the middle school teachers expressed some hesitation in trying out unfamiliar resources. Mrs. Howard claimed that she hoped to integrate varied technologies into her lessons but that it wasn't a current priority for her at the time of the study; she had no previous experience teaching mathematics and was focused on learning the best ways to teach her discipline (Interview, March 24). Ms. O'Connell struggled to find ways to meaningfully integrate ICT in her classroom so that it was a helpful tool rather than a novelty (Interview, March 31), while Ms. Baker could not imagine an effective use for an interactive white board in a language arts classroom (Interview, March 25).

This hesitance might be explained by the SDT model (Deci & Ryan, 2000), as the innate human need to feel competent is one of the three key factors that directly influence a person's motivation to act. Mrs. Howard, Ms. Baker, and Ms. O'Connell were all three fairly inexperienced teachers. Each had communicated some degree of uncertainty in
their own work: Mrs. Howard's assertion that teaching mathematics was new to her; Ms. Baker's feeling of being overwhelmed by balancing the demands of learning curriculum, developing her own teaching style, and training a preservice teacher; and Ms. O'Connell's desire for detailed feedback from her supervisors (Mrs. Howard, Interview, March 24; Ms. Baker, Interview, March 25; Ms. O'Connell, Interview, March 31). Aelterman et al. (2016) concluded that even experienced teachers with an extensive teaching repertoire must feel that their need for competence is met in order to embrace change.

Mrs. Howard's and Ms. Baker's hesitation to try certain unfamiliar technologies may also have indicated some weakness in their technological-pedagogical content knowledge, as proposed by Mishra and Koehler's (2006) TPACK model. I think this is likely the case, as both teachers were highly reflective, motivated practitioners who were driven to build meaningful lessons. Often, classroom technology is not considered in relation to the pedagogy and content knowledge bound within a school discipline. Instead, it is seen as a separate entity (Mishra & Koehler, 2006). "Good teaching with technology" requires teachers to be adept at using a technology (technological knowledge, TK), have a strong command of the content area (content knowledge, CK), a deep understanding of the pedagogy of teaching that particular discipline (pedagogical content knowledge, PCK) and can determine the most effective ways to use technology tools to effective teach that discipline (Mishra & Koehler, 2006, p. 1029). Mostmans et al. (2012) emphasized that lack of pedagogical understanding often underlies the introduction of ICT in the classroom, which promotes a "rather traditional, ex-cathedra teaching approach" (p. 104).
Other limitations to ICT use in the classroom. In addition to the desire for formal ICT training, study participants indicated that their autonomous use of classroom technology was limited by lack of physical resources, inequitable student access to technologies at home, and prioritizing other planning tasks. Tondeur et al. (2008) found that 50% of the teacher participants in their study cited the unavailability of resources as the greatest barrier to integrating ICT in the classroom; likewise, it was the limitation most often mentioned by informants in this study.

Purposeful use of ICT in the classroom. Data collected throughout the study reveal the teachers' intentional use of technology. It is evident that the participants used the digital resources as tools for achieving self-defined goals, and did not simply use it solely for the purpose of including technology in their lessons.

ICT as a tool for student engagement. Study participants all recognized several benefits of integrating technology meaningfully in the classroom. The most frequently cited benefit was the shared belief that student engagement increased dramatically when digital tools were used in lessons. This idea was demonstrated in Mouza's (2008) study, in which students in a laptop-equipped classroom were engaged in long-term projects and were more actively involved in their investigations.

Collaboration is a key element in the social constructivist stance of Vygotsky (1930/1980) and Bruner (1971, 1977, 1996), which is designed to require active participation of all students in the learning process (Ligorio et al., 2005). Technology has been long recognized as an effective tool for building collaboration among students (Craft, 2012; Rowe et al., 2013).
**ICT as a tool for lesson relevance.** Extant literature has argued that the effective use of ICT in student collaboration enhances the relevance of classroom learning (Brindley et al., 2009; Craft, 2012; Craft et al., 2008; Ligorio et al., 2005; Trilling & Hood, 1999). Student research using digital resources is a major element in the *Common Core State Standards* (NGA & CCSSO, 2016). A 2016 study by the NCES revealed that 95.0% of United States fourth-graders and 98.3% of U.S. eighth-graders had access to a digital device at home (NCES, 2016b). Another report by the same agency showed that 100% of 5-17 year-old students had regular access to the Internet, with 89.2% of them having Internet in their homes (NCES, 2016a). Research by Prensky (2001) indicated that today’s students think radically differently than students from previous generations. Gilbert (2007) argued that our world is currently built on knowledge societies, focused on the acquisition of knowledge as an essential commodity, thus emphasizing the essential role of digital resources.

**ICT as a tool for teaching transferrable skills.** Throughout my classroom observations, the teachers often used technology as a tool for teaching skills. Often, the digital tools were used to introduce a concept, via didactic teacher presentation, and then students were asked to apply the skills in various ways. Though my visits were finite in number and spread only over a scant three months, I observed students using technology to produce information in four classrooms: Students created brochures and shared ideas on Google Classroom in Ms. Baker’s seventh-grade language arts class (Field Notes, Feb 23, Feb 26, March 1, March 29); they wrote essays and created videos in Ms. O’Connell’s sixth-grade language arts class (Field Notes, March 24, March 29, March 31); and they constructed essays on Google Drive in Ms. Boston’s third-grade class and
Ms. Ryan's fifth-grade class (Ms. Boston, Field Notes, March 4, April 6); Ms. Ryan, Field Notes, April 7, April 15). This is in contrast to the study conducted by Warschauer et al (2004), in which low-SES classrooms generally relied on technology solely for student remediation and low-level research.

**Major uses of technology in Highland classrooms.** Technology administrator Mr. Bowers identified four broad ways teachers at Highland generally used ICT in their classrooms. These include student-driven projects and research, teacher demonstrations and presentations, teachers' administrative tasks, and long-term student-teacher communication (Interview, March 3). Throughout my classroom observations, I noted that technology was almost always used by teachers to present material; also, students sometimes used laptops to conduct research, construct projects, and write essays. I rarely observed teachers using computers for administrative tasks, and only Ms. O'Connell and Ms. Boston used computers to communicate with students in the form of long-term reading logs. Unlike the schools studied by Warschauer et al. (2004), students at Highland used ICT to edit and analyze their work and critiqued the work of classmates using the Google platform. Similarly, ICT-related activity in the classrooms I observed differed from those in the Greenhow et al. (2009) study, during which low-SES students used technology to consume information and rarely to produce information. Perhaps this was an indication of how rapidly technology trends in education change.

**Research Question 5: Additional Factors that Impact Instructional Decision-Making**

Though teacher autonomy remained my primary focus throughout this research endeavor, it was clear that other factors impacted the participants' instructional decision-making.
making at Highland. Three themes were repeatedly exposed during the many conversations with teachers, PSTs, and administrators. In response, I developed a fifth research question: "What factors, other than teacher autonomy, do the participants believe have the greatest impacts on classroom instruction and teachers' decision-making?" This question is important to the study because its answer brings a more complete understanding of how informants made professional choices and how they reflected on the impact of those decisions on classroom instruction.

Ultimately, three additional factors seemed to drive teachers' instruction at Highland. These include the school's principal aim to promote character education through all aspects of the school day; the shared vision to enhance critical thinking through a project-based learning approach; and the immense diversity among the school's student population.

**Highland's vision for character education.** All of the study participants recognized character education as the school's primary mission, underlying every program and connecting all individuals within the school. Head of School Ms. Fisher and teacher coach Mrs. Wright identified it as a "turnaround model", through which Highland's students had attained improved achievement scores and on which the school's strong community was built (Ms. Fisher, Interview, May 109, line 217; Mrs. Wright, Interview, May 6). All administrators and teachers were active participants in professional development centered on character education; the school was partnered with a local university which provided school leaders ongoing training in that arena.

The school communicated its commitment to character education to the extent that ten study participants identified it as a central mission of the school, to which all
instruction was aimed at supporting (Ms. Baker, Mr. Davis, Mr. Bowers, Ms. Fisher, Mrs. Howard, Mrs. Lincoln, Mrs. Morris, Ms. O’Connell, Dr. Stewart, Mrs. Wright, Interviews). In addition to continued professional training on the subject, the school’s infrastructure was designed to allow time for staff and students to build relationships. Teachers were expected to have meaningful, student-driven class meetings on a daily basis. In addition, the student body was organized into cross-age groups, or families, that met once a month in an assigned classroom; every adult in the building led one of the families and retained the same students throughout their years at the school.

The mutual respect between students and teachers was a constant, almost tangible presence in the school. As an outside observer, I noticed a profound feeling of community during my first visit, and it was persistent throughout my return trips to Highland. During my many hours at the school, I never witnessed an outward sign of disrespect between teachers and students, and I rarely heard disagreements between children. It seemed that every child felt valued, and there was definitely a feeling of harmony and cooperation in every classroom. I was honestly amazed at this, as I did not expect this feeling in such a large school.

Highland’s teachers were encouraged to support student-driven social projects to benefit the community. Mrs. Wright described situations in which students would perceive a social need and elicit help from faculty and other students to address that problem (Interview, May 6). During one classroom observation of a fifth-grade classroom, two students from a neighboring class came in and asked Ms. Ryan’s students for help in their “Pay it Forward” campaign (Field Notes, April 19).
The school’s intent to build community seemed to have reached beyond its campus and into the students’ families. Mrs. Wright described how Highland’s parents typically reached out to incoming families to be sure they felt included in the school community. Often, parents would approach school leaders with ideas on ways to improve the school for all students (Interview, May 6).

**Project-based learning at Highland.** During the 2015-2016 school year, the school was aimed at developing project-based learning (PBL) experiences to engage all of its learners. With Brad Metsker’s help, the school had elicited the assistance of an outside consultant who was well-known for this instructional approach. Under the consultant’s guidance, teachers met regularly in small teams to design inquiry units to promote student engagement and critical thinking. School leaders expressed their aim for cultivating opportunities for student choice and emphasized the importance of teachers acting as facilitators of learning (Mr. Davis, Interview, May 6; Ms. Fisher, Interview, May 10; Mrs. Lincoln, Interview, May 10; Mrs. Wright, Interview, May 6).

Administrators and teachers at Highland identified PBL as an essential tool for engaging students in their own learning. Ms. Fisher described students steeped in inquiry as “actively engaged in the process of learning” as they are “doing really cool projects” (Interview, May 10, lines 682, 683). Ms. Boston claimed that providing opportunities for student choice raised student engagement dramatically in her third-grade classroom (Interview, April 8). Mr. Bowers described several instances of PBL in which the relevance of content was greatly enhanced, and student innovation was used to deepen their own thinking (Interview, March 3).
Throughout my classroom observations, I noted that PBL was used in a variety of ways, especially in two of the three middle school classrooms. In the sixth- and seventh-grade ELA classrooms, students were conducting research and producing several different artifacts to communicate their learning with their classmates, including short videos, new learning center activities, and brochures (Ms. Baker, Field Notes, Feb 26 and March 1; Ms. O’Connell, Field Notes, March 31). Elementary teachers Ms. Boston and Ms. Ryan employed this approach mainly in teaching the writing process; in their classrooms, students were conducting research and reporting on their findings (Ms. Boston, Field Notes, March 4 and April 6; Ms. Ryan, Field Notes, April 7). Please see Appendices D and E, pages 303-306 and 307-308, respectively, for a complete list of PBL observed in the classrooms.

Project-based learning was not the only teaching strategy followed by the teachers in this study. However, it was the single approach discussed by teachers and administrators when they described their own views on effective instructional strategies. Interestingly, it was emphasized by all teachers, including Mrs. Howard, who seemed to rarely apply PBL in her instruction. In this study, I did not probe into the incongruity, but this could be an interesting follow up study. Were many of the teachers inexperienced enough that they misunderstood the purpose behind Highland’s endorsement of PBL? In other words, did they believe that effective teaching occurred primarily during PBL? If this was the case, why didn’t they incorporate a greater amount of PBL into their lessons?

**Diverse student population.** Highland Charter School was unique among schools in the city in the fact that it had a highly diverse student population. In the 2015-2016 academic year, it served 900 students, 22.3% of whom were enrolled in the English
Language Learners (ELL) program, and 16.2% receiving special education services (Missouri, 2017a). According to Ms. Fisher, in 2016-2017, the school’s ELL program served almost 300 students (Interview, May 10). Please refer to Table 1 on page 110 for the school’s demographic data in comparison to other schools in the city.

The diverse student population was often discussed by informants in the individual interviews. Unlike the TPS in the surrounding school district, Highland’s students lived all over the city, rather than a specific neighborhood. School leaders Mr. Bowers and Mrs. Wright pointed out that this wide geographical distance between school families was mirrored in the many different languages and ethnicities represented by the school (Mr. Bowers, Interview, April 6; Mrs. Wright, Interview, May 10). Mr. Bowers argued that this underscored the importance of building a close-knit school community for the students and their families (Interview, April 6).

**Differentiation.** The teachers spoke at length about differentiating their instruction to meet the varied needs of their students. Often, teachers improvised during their lesson implementation, identified by Ms. Boston as “responsive teaching” (Interview, April 8, line 575; Mrs. Howard, Interview, March 24; Ms. Ryan, Interview, April 20). Ms. O’Connell and Ms. Baker explained that they regularly incorporated varied expectations and approaches for their different learners, according to the individual learning styles and needs (Ms. Baker, Interview, May 4; Ms. O’Connell, Interview, April 29). Ms. Baker claimed that students’ reading levels and learning preferences drove much of her instructional decision making; she explained that she only got to know their differences through building relationships with her children over the course of the school year (Interview, March 25). This echoed the views of Mrs. Howard,
who revealed that cultural differences prevented her from assuming that her students all shared common life experiences (Interview, March 24).

According to the teachers, the school administration supported their attempts to differentiate instruction for their diverse learners. Ms. Ryan, Mrs. Howard, and Ms. O’Connell each described how the school’s grouping of ELL students into clusters helped the teachers plan their lessons, allowing them to better support these students’ growing English proficiency (Mrs. Howard, Interview, April 29; Ms. O’Connell, Interview, March 31; Ms. Ryan, Interview, April 20). Ms. O’Connell’s sixth-grade students were further divided into “leveled groups”, allowing her to plan her learning objectives according to her students’ current reading levels (Interview, April 29, line 36). Ms. O’Connell and Ms. Baker professed that the Common Core added an additional layer of support when they identified learning objectives for their students; Ms. O’Connell said that their new standards-aligned curriculum allowed her to easily adapt the standards for the different reading levels (Ms. Baker, Interview, May 4; Ms. O’Connell, Interview, April 29).

*Multiple measures of achievement.* As teachers adapted their instruction for many different learning needs, the administrators chose to measure student achievement through several different means. The school was focused on student growth, rather than simply on proficiency. Student growth was determined not just by test scores, but also by reading levels, attendance, and behavior. Dr. Stewart explained: “We don’t give up. We look at every single one of those things, and every single one of those things gives you a different picture of a kid...” (Interview, May 2, lines 212-213). Mrs. Lincoln, the elementary principal, claimed that “the true stuff is more the formative assessment and
the day-to-day” rather than just the test scores, since the formative piece steered instructional decision-making (Interview, May 10, lines 313-314).

**Major findings and connections to the literature.** Throughout this project, it became clear that teacher autonomy was a strong driving force that shaped teacher decision making. However, it was not the only factor that affected their practice. Three other factors emerged from the data as apparent influences that impacted instruction. These included the school’s ongoing and shared commitment to character education; the focus on the project-based learning approach as inspiration for all children; and the diversity among the students at Highland.

**Character education at Highland Charter School.** The character education program at Highland seemed to be pervasive, an integral part of the school’s mission rather than just a simple initiative. The comprehensive program supplied opportunities for relationship building among students and adults and seemed to encourage teachers to support student initiative in service projects. The head of school professed a reliance upon school leaders and teaching staff to plan and carry out Highland’s program (Ms. Fisher, Interview, May 10), and parents were often seen as stakeholders in the success of the program (Ms. Fisher, Interview, May 10; Mrs. Wright, Interview, May 6). Highland was careful to gauge student success through multiple measures with an emphasis on individual growth in academic and social areas. Dr. Stewart explained that a student’s test scores could fall well below proficiency, while the student exhibited success in other ways (Interview, May 2).

All of these are concrete evidence of Highland’s deep commitment to character education. According to the publication *Eleven Principles of Effective Character*...
Education: A Framework for School Success by the nonprofit group Character.org (2016a), there are eleven critical elements that every successful character education program intentionally implements: a clear set of values developed and promoted by school stakeholders; a comprehensive program that encourages student reflection; integration of values within all aspects of the school; relationship building among all people in the school; encouraging students to design and implement service projects; academics which meet the needs of diverse learners; behavior correction that is positive and not rewards-focused; active participation of all stakeholders; open communication between school and home; ongoing and varied assessment of school’s success in character education (Character.org, 2016a).

In addition to these eleven principles, Highland appeared to address the PRIMED framework by Berkowitz et al. (2016), which identifies six critical components for effective character education, including prioritizing it in the school’s mission; relationship building as a key goal supported by school infrastructure; a focus on intrinsic motivation rather than extrinsic rewards; continuous “modeling of shared values, by adults, older students, and all real and fictional characters”; empowering students to express their voices; and pedagogy focused on developmental needs of all students (p. 13).

As I stated before, the school culture at Highland was one of mutual respect between students and adults, among the staff, and among the students. It seemed that interpersonal relationships were among the highest priorities in this community. There seemed to be little reluctance among students to participate in class, perhaps due to a
learning environment in which they felt safe to take chances. There was little talk of grades or failure in the classrooms I visited.

**Project-based learning.** Highland’s emphasis on PBL was deeply rooted in the idea that learning is a social construct. The social constructivism of Vygotsky and Bruner postulate that all learning occurs within some type of social context and that students are highly dependent upon interaction among more knowledgeable peers and adults (Bruner, 1971, 1977, 1986; Vygotsky, 1930/1980). Overall, the project-based learning approach requires students to effectively communicate their learning and to discuss findings with their peers. According to Vygotsky’s zone of proximal development, student interactions lead to a more sophisticated understanding of a concept, thus moving the child along a continuum of development (Vygotsky, 1930/1980).

Highland’s leaders and teachers aspired to create opportunities for student voice through PBL. This autonomy is a critical element in Deci and Ryan’s SDT model, which argues that a person’s motivation to act is directly related to the individual’s innate needs for autonomy, relatedness, and feelings of competence (1985). If the SDT model is accurate, then encouraging students to make their own choices should be a powerful tool in motivating them to learn. This explains why PBL is widely accepted as a best practice in classroom education, where “best practice” describes methods that are based on years of research in pedagogy and development and that are identified in standards documents produced by nationally recognized organizations (Daniels & Bizar, 2005, p.11). Rowe et al. (2013) claimed that introducing activities involving student interaction results in students taking ownership over the learning process, and places the teacher in the role of facilitator.
Interestingly, the school’s emphasis on PBL instruction was one area in which teachers were directed by administrators to utilize a particular teaching approach. This was also one area in which teachers expressed their agency in teaching creatively and in developing engaging learning activities. It was the single teaching style that the teachers identified as effective instruction, yet it was not the only approach that was used on a regular basis. The reason for this is unclear. I wonder if the teachers were misunderstanding the tenets of PBL and thus categorized their didactic approaches as examples of this strategy. Could this be another example of novice teachers’ hesitance to seek assistance from more knowledgeable colleagues, as Wilkinson (1994) discovered in her study?

*Diverse student population.* The student population at Highland was highly diverse, with students from “28 or 30 zip codes” around the city (Ms. Fisher, Interview, May 10, line 10). This is in stark contrast to extant literature. Frankenberg, Siegel-Hawley, and Wang (2010) asserted that charter schools tend to serve less diverse student populations than traditional public schools. This is in opposition to Welner (2013), who contended that charter schools tend to invent themselves in terms of their niches, serving a particular “type” of student (p.1).

**Conclusions**

**Implications**

There are lessons to be learned from school leadership and faculty at this school. Autonomy and administrative support were highly prioritized by school leadership. Character education was the central mission of the school and was interwoven into every
lesson and activity. I believe this unique combination of autonomy, administrative support, and relationship building may be key to improving education for highly diverse and underserved student populations. When students' voices are valued and a safe learning community is established, they are more likely to take an active role in their own education.

Albeit a unique school, Highland can provide a picture of possibility: how teacher autonomy, when coupled with a supportive administration and a clear vision, can lead to instruction that meets the needs of a highly diverse student body in an urban community. The lessons can be applied to a variety of school contexts. My hope for this study is that it might provide a jumping-off point for future research into the professional decision-making of new teachers and PSTs in low-income urban areas when teacher creativity and innovation is encouraged by their leaders. I hope this report may provide the reader with ideas on ways school administrators can cultivate an environment which balances teacher agency with school support.

**Recommendations for Future Research**

The current educational climate in the United States is ripe with constant change, and this provides fertile ground for researching the best ways to meet standards while encouraging teacher creativity. The scope of this particular study was limited by time and resources. Thus, a deeper examination of how PSTs and new teachers understood administrative expectations would address the many questions left unanswered by this project. For example, why did the PSTs rarely mention autonomy? Why did the teachers share a narrow understanding of the term, while administrators applied it in a broader
sense? Why was PBL the only teaching method discussed by participants when they were asked to describe effective teaching?

Furthermore, I learned that the university sponsor of Highland was quick to provide additional resources and support school leaders. The sponsor, Mr. Metsker, claimed that other charter sponsors in the area did not do this quite so extensively (Interview, March 9). I wonder if Highland's access to Mr. Metsker and the help he provided had a direct impact on the professional agency Highland's personnel experienced. In other words, was the additional assistance perceived by school administrators as supporting or limiting their own autonomy? If there was an impact, how did the personnel believe it affected their work?

I would recommend further studies examining teacher autonomy in site-managed and organization-managed schools within a close geographic range and serving similar demographics. Though there is extant literature comparing teacher agency in site-managed, district-managed, and organization-managed schools, these studies did not focus only on schools within the same metropolitan region, and with similar student characteristics.

There have been several studies on teacher autonomy, and the extant literature is plentiful. However, I have found no studies directly comparing perceptions of teachers, their administrators, and PSTs regarding professional agency, particularly in schools serving lower-SES communities. I think a study on this topic could spark important discussions about ways school personnel can work together to address the persistent achievement gap.
Finally, I believe we need further investigations on the experiences of newer teachers (those with fewer than five years' teaching experience) in charter schools as they train PSTs. Do less experienced cooperating teachers at other charter schools have similar experiences as their counterparts in TPSs? What challenges do they face, and how prepared do they feel in meeting those challenges? Do charter schools tend to have a solid support system in helping cooperating teachers instruct their PSTs, as Highland does; or is Highland unique in its mission to provide professional development to all personnel, including PSTs? Finally, do charter sponsors typically get involved in PST training?

**Concluding Remarks**

I am grateful for the many lessons that Highland and its personnel taught me. It is clear that the school leadership, teachers, and PSTs were united in a deep commitment to their children and families.

Though this case is highly situational, there are important lessons that can be taken away from this study. First, it is clear that professional autonomy was highly prized by all players and was a great priority of school leaders. It was a powerful tool for empowering administrators, teachers, and students at Highland. In this study, administrators felt the school's board of directors supported their autonomous decision making, while teachers expressed feelings of agency in designing engaging lessons for their diverse learners. Even the least experienced teachers claimed that their own agency enhanced their desire to develop creative, meaningful learning experiences. School leaders and teachers described their goals to transfer autonomy to their students to
empower them to become active learners. Students appeared to have ownership over their learning experiences, and engagement among children and teachers was usually very high. I observed very little off-task behavior during my many visits to Highland classrooms.

Secondly, Highland prioritized relationships over nearly everything. The school schedule was designed so there was ample time allotted to focus strictly on building bonds between adults, among adults and students, and with students' families. There was a tangible feeling of community that was evident from my first visit. Every informant spoke at length about the relationships they formed with other adults and with the students. During my many hours as a visitor, I observed a cooperative community in which students were actively engaged in learning.

Finally, this combination of autonomy, administrative support, and relationship-building had clear educational benefits; students were clearly engaged in their classrooms, and they appeared to value the many opportunities to express their voices in the classroom. From my first visit, it was clear that the adults and students had built strong relationships and shared mutual respect. Perhaps this helped the students feel supported in their learning endeavors and encouraged them to take active roles in their learning.

Highland's leadership was intentional in maintaining a balance of professional latitude tempered with a solid support structure. Empowering the teachers seemed to enhance their instructional creativity as they actively sought ways to instruct their students.
References


Berkowitz, M. W., Bier, M. C., & McCauley, B. (2016, July). *Effective features and practices that support character education*. Unpublished manuscript, University of Missouri-St. Louis, St. Louis, MO, & Wasatch Academy, Mount Pleasant, UT.


Missouri Comprehensive Data System. (2017e). *Raw data: Student demographics (District) [Table]*. Retrieved from https://mcds.dese.mo.gov/quickfacts/Pages/Student-Characteristics.aspx


National Alliance for Public Charter Schools. (2014). *Total Number of Charter Schools: 2012–2013*. Available at:

http://dashboard.publiccharters.org/dashboard/schools/year/2013


https://www.publiccharters.org/about-charter-schools/charter-school-faq

National Center for Education Statistics. (2016a). *Number and percentage distribution of 5- to 17-year-old students, by home internet access, race/ethnicity, and locale:*
2015 [Table]. Retrieved from
https://nces.ed.gov/programs/digest/d16/tables/dt16_218.70.asp


National Center for Education Statistics website:
http://nces.ed.gov/programs/statereform/tab3_5.asp#f1


Appendices

Appendix A: Consent Form

Informed Consent for Participation in Research Activities
The Use of Information and Communications Technology (ICT) by Pre-service Teachers
and Classroom Teachers

Participant ___________________________________________ HSC Approval
Number ______________________
Principal Investigator ___Kristen Levin___________ PI’s Phone Number xxx-
xxxx

1. You are invited to participate in a research study conducted by Kristen Levin under
the supervision of Dr. Gayle Wilkinson. The purpose of this research is to discover
how pre-service teachers (PSTs) and their cooperating classroom teachers employ
information and communications technology, or ICT, in urban classrooms, and how
they reflect on their ICT planning.

2. a) Your participation will involve
   - Interviews with Kristen Levin, discussing issues related to your use of information
technology in your classroom; your technology-related decision making; and the
perceived impact of technology on your teaching and your students’ learning.
Interviews will be audio recorded and transcribed immediately. The transcriptions
will be stored electronically, under password protection. Your name will be replaced with a pseudonym to enhance confidentiality.

- Sharing lesson plans (in whatever form you currently use) for study of trends in classroom technology use. Notes will be written by the researcher, and excerpts from your lesson plans may be identified in the research. All names will be removed.

- A possible focus group meeting in which you discuss classroom technology with other study participants (colleagues) from your school. This session will be video recorded and stored under password protection. The recording will be transcribed, with all participant names removed.

- Scheduled classroom observations (by Kristen Levin), in which instructional practices involving technology will be studied. These observations will not be recorded. The researcher will be taking field notes based upon the observation. No names will be included in the notes.

- An optional survey will be offered to all personnel within the school. The data collected from the survey has two purposes: to give the researcher a clearer idea on how ICT is used building-wide, and to identify potential participants for the study. The survey will be in electronic form and is anticipated to take approximately fifteen minutes to complete.

All interviews, focus group meetings, and observations will take place within your current school building, and when possible, within your classroom, or a convenient location in your building. It is my hope to observe your teaching over the course of approximately four to six weeks, and follow each observation with a brief, open-ended or semi-structured interview. This will allow me to ensure that I fully understood the instructional practices you used in the lesson. If possible, I would like to view weekly copies of your lesson plans (in whatever format you currently use; this is strictly for the purpose of identifying technology trends in the classroom).

Up to 30 participants may be involved in this research. There will be two study sites in this research.

a) The amount of time involved in your participation will be as brief as possible: Each observation will be followed by a brief interview which will last thirty minutes or less. There will be up to five observation-interview sessions in this project. A possible focus group session, scheduled in advance, will last approximately one hour. The total estimated amount of time you will invest in this project is up to four hours. For your time, you will receive a set of technology resources compiled by Kristen over the course of the semester. In addition, any participant who completes the semester’s research will be entered into a drawing for a $100 Amazon gift card.

3. You may be asked to participate in a small focus group discussion, involving teacher participants. Participants will be asked not to share any parts of the discussion outside of the class meeting, but I cannot guarantee that every participant will comply. There is a very mild risk of discomfort from the meeting, though the questions will be
carefully written to avoid asking participants to share embarrassing or damaging information about themselves or others. The sessions will be recorded and transcribed, with the data stored electronically under password protection. The identities of all participants will remain as confidential as possible. All names and locations will be replaced with pseudonyms in all published documents and presentations. In this discussion, you will be welcome to participate to the extent you are comfortable and may refuse to comment on any of the questions.

4. The possible benefits to you from this research are an increased understanding of your own technology use; the discovery of available technology tools to enhance classroom instruction; and the sharing of colleagues’ ideas and perceptions involving technology use in teaching.

5. Your participation is voluntary and you may choose not to participate in this research study or withdraw your consent at any time. You will NOT be penalized in any way should you choose not to participate or withdraw.

6. By agreeing to participate, you understand and agree that your data may be shared with other researchers and educators in the form of presentations and/ or publications. In all cases, your identity will not be revealed. In rare instances, a researcher’s study must undergo an audit or program evaluation by an oversight agency (such as the Office for Human Research Protection). That agency would be required to maintain the confidentiality of your data. In addition, all data will be stored on a password-protected computer and/ or in a locked office.

7. If you have any questions or concerns regarding this study, or if any problems arise, you may call the Investigator, Kristen Levin, at 314-xxxx-xxxx, or the Faculty Advisor, Dr. Gayle Wilkinson, at 314-xxxx-xxxx. You may also ask questions or state concerns regarding your rights as a research participant to the Office of Research, at xxx-xxxx.

I have read this consent form and have been given the opportunity to ask questions. I will also be given a copy of this consent form for my records. I hereby consent to my participation in the research described above.

_____________________________  ________________
Participant's Signature  Date
Signature of Investigator or Designee

Date
### Appendix B: CODE BOOK:

#### Category 1: Conditions Supporting Self-Determination

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>1st Level Property</th>
<th>2nd Level Property</th>
<th>3rd Level Property</th>
<th>Dimensions</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy / Independence</td>
<td></td>
<td></td>
<td></td>
<td>prescribed to very autonomous</td>
<td>“Curricular decisions, time allocation decisions with regard to classes, class placement decisions. The teachers play a role in one year’s class to the next year’s class. They are the ones saying, ‘This kid should go here, and we want to do this with this’, whatever” (Dr. Stewart, Interview, May 2, lines 179-182).</td>
</tr>
<tr>
<td>Autonomy Support</td>
<td></td>
<td></td>
<td></td>
<td>trivial to essential</td>
<td>“We really expect our teachers to come with their autonomous thinking. We talk very specifically to the new team members that we bring in and we talk to them about not wanting them necessarily just to assimilate” (Mrs. Wright, Interview, May 6, lines 948-950).</td>
</tr>
<tr>
<td>Autonomy Support: Importance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“I think that, if used properly, teacher autonomy can be a powerhouse thing. I think also that it can get abused, if not used properly. So sometimes it’s important for administrators…to make decisions for the common good…and then allow teachers to make some decisions for themselves there. I’m grateful that I have autonomy because I participate in curriculum writing, as does every single teacher at our school” (Ms. Ryan, Interview, April 20, lines 222-229).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“I might not have the time or willingness to really go in and figure it out… It’s, ‘Here’s this idea, but it’s still figuring it out on your own’. So it would be nice if there was more” (Ms. O’Connell Interview, April 29, lines 332-335).</td>
</tr>
</tbody>
</table>
### Autonomy / Independence

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>1st Level Property</th>
<th>2nd Level Property</th>
<th>3rd Level Property</th>
<th>Concept</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy Support: Examples</td>
<td>not supportive to highly supportive</td>
<td>“This year, our original computer cart had older laptops, and the batteries were dying all the time and would crash…We said we need something better, and I think two weeks later, we had a brand new cart of Chromebooks” (Boston Interview, April 8, lines 1140-1143).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Empowerment</td>
<td>highly restricting to highly inspiring</td>
<td>“The teachers have a lot of freedom to create engaging lessons for the students that will keep them…really focused on their work as well. I think that’s kind of the idea. If they have some of that autonomy, it’s going to get their creative juices flowing” (Mr. Davis Interview, May 6, lines 93-96).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>Unsatisfied to Highly Satisfied</td>
<td>“I appreciate my job here...It’s fun. Working here is fun. And you know that you are appreciated” (Mr. Bowers, Interview, April 6, lines 45-451, 558-559).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Impact on Students</td>
<td>minimal to great impact</td>
<td>“At first, it’s very overwhelming though because you almost want more structure as a new teacher, but I think when you find the right people and resources—which we have a lot of them here—it becomes projects that I can implement and tweak every year. Or I don’t have to teach the same thing every year, depending on the kids I have” (Ms. Baker Interview, March 25, lines 96-99).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subcategory</td>
<td>1st Level Property</td>
<td>2nd Level Property</td>
<td>3rd Level Property</td>
<td>Concept</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Autonomy/Independence</td>
<td>Impact of Autonomy</td>
<td>Teacher Challenges</td>
<td>Time Invested</td>
<td>minimal to overwhelming amount of time</td>
</tr>
<tr>
<td>Autonomy/Independence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>very inexperienced to highly experienced</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subcategory</td>
<td>1st Level Property</td>
<td>2nd Level Property</td>
<td>3rd Level Property</td>
<td>Concept</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------------------</td>
<td>--------------------</td>
<td>--------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>Autonomy / Independence</td>
<td>Impact of Autonomy</td>
<td>Teacher Challenges</td>
<td>Ease of Communication</td>
<td>no communication barriers to numerous communication barriers</td>
</tr>
<tr>
<td>Sense of Trust</td>
<td></td>
<td></td>
<td></td>
<td>incapable to highly capable</td>
</tr>
<tr>
<td>Interpersonal Communication</td>
<td>Relationships among staff</td>
<td></td>
<td></td>
<td>isolated to highly connected</td>
</tr>
<tr>
<td>Subcategory</td>
<td>1st Level Property</td>
<td>2nd Level Property</td>
<td>3rd Level Property</td>
<td>Dimensions</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------------</td>
<td>--------------------</td>
<td>--------------------</td>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Interpersonal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>Coaching</td>
<td></td>
<td></td>
<td>ineffective to highly effective</td>
</tr>
<tr>
<td></td>
<td>Collaboration</td>
<td></td>
<td></td>
<td>individual effort to cooperative effort</td>
</tr>
</tbody>
</table>
## Category 2: Leadership

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>1st Level Property</th>
<th>2nd Level Property</th>
<th>3rd Level Property</th>
<th>Dimensions</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership Training</td>
<td></td>
<td></td>
<td></td>
<td>ineffective to highly effective</td>
<td>“Ms. Fisher has ...LDI (Leadership Development Institute)… She’ll take a curriculum hardliner ... someone more like me and a few other people... and we have conversations about performance events” (Mrs. Wright, Interview, May 6, lines 1847-1850).</td>
</tr>
<tr>
<td>Vision/Goals</td>
<td></td>
<td></td>
<td></td>
<td>isolated to integrated approaches</td>
<td>“This was really about ... character education and so, a couple of years in, this was where we really morphed into our core values and started building everything around respect, responsibility, and caring, not just this one little idea of anti-bullying” (Ms. Fisher, Interview, May 10, lines 107-109).</td>
</tr>
<tr>
<td>Vision/Goals</td>
<td></td>
<td></td>
<td></td>
<td>low to high achievement</td>
<td>“You might have a kid who isn’t proficient and didn’t show over a year’s worth in growth… (but) they went from fifteen referrals last year to two referrals this year. You can’t tell me that kid’s not successful…Sometimes you need a measure to tell you that you’re on the right track with a kid who, with sort of objective measures, MAP score or whatever, appears not even close to the right track” (Dr. Stewart, Interview, May 2, lines 426-430, 463-465).</td>
</tr>
<tr>
<td>Shared Vision</td>
<td></td>
<td></td>
<td></td>
<td>disjointed to united</td>
<td>“We hold ourselves accountable to making sure that we’re living out what we’ve defined as really important terms to us” (Ms. Fisher, Interview, May 10, lines 40-42).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“We are all very clear. We know exactly what we’re trying to accomplish. The goals are very clear, but we do have that opportunity to personalize that ...” (Dr. Stewart, Interview, May 2, lines 45-50).</td>
</tr>
</tbody>
</table>
### Category 3: School Culture

| Professional Development | Focus of PD | minimal to abundant
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>imprecisely to very precisely communicated</td>
<td>“Very much in the first year they go through a new teacher process. They have seminars once a month, coaches who come in. It tapers off a bit on the second year, and then the third year” (Mr. Davis Interview, May 6, lines 226-228). “There have been a few times where...it was questionable if my clinical educator was going to show up to my observations all the time, and if she was going to show up, she would actually be present in my meeting, and knowing what I am teaching” (Ms. Tanner, PST Interview, April 20, lines 98-101).</td>
</tr>
<tr>
<td></td>
<td>single measure to multiple measures</td>
<td>“Student growth we measure in a lot of different ways. We do some standardized stuff, like NWEA and all of that, but I think the true stuff is more the formative assessment and the day-to-day, because to me that really drives the instruction” (Mrs. Lincoln, Interview, May 10, lines 312-315).</td>
</tr>
<tr>
<td>New Teacher Training</td>
<td>hiring practices</td>
<td>undiscerning to highly selective</td>
</tr>
<tr>
<td></td>
<td>“When it comes right down to it, through our hiring process, we really are searching for people who get it, what we’re trying to do here” (Mr. Davis Interview, May 6, lines 177-179).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>accountability and standards</td>
<td>“I think...when our school is on a certain project, they give a lot of professional development to that project, so right now it’s math...It is very much like ‘I have to find it, I have to negotiate it. And then I have to push for it” (Ms. Baker Interview, May 4, lines 436-444). “So this year we have been bombarded with PD because we are really trying to strengthen those two areas, in math and project-based aspect” (Ms. Ryan Interview, April 20, lines 333-335).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table: Subcategory Dimensions

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>1st Level Property</th>
<th>2nd Level Property</th>
<th>3rd Level Property</th>
<th>Dimensions</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diversity</td>
<td></td>
<td></td>
<td></td>
<td>homogenous to highly diverse</td>
<td>“When you walk through these halls you see pretty much every social, economic, religious, life circumstance” (Mrs. Wright, Interview, May 6, lines 1319-1320).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“You are going to school with kids of all different backgrounds, all different religions. They speak different languages. It’s like…Melting Pot-crazy here” (Mr. Bowers, Interview, April 6, lines 527-529).</td>
</tr>
<tr>
<td>School Community</td>
<td></td>
<td></td>
<td></td>
<td>weak to deep interpersonal connections</td>
<td>“Even just our daycare…It softens our guys. I mean, if you see a little train of little guys walking through the middle school building, I mean they’re all like, ‘Back up! Here come the little guys!’ … They’re totally focused on these little guys… Their kids are engaged with their kids, so it forges really neat relationships with the teachers and the students, too” (Ms. Fisher, Interview, May 10, lines 430-438, 455-457).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“There are tiny little kids out on the basketball court with these big kids, and they are all supporting each other” (Mrs. Wright, Interview, May 6, lines 1329-1330).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“These kids need a counselor and a nurse and a parent and a teacher, and you are everything. You are their parent a fair amount of time” (Ms. Baker, Interview, May 4, lines 310-311).</td>
</tr>
<tr>
<td>Subcategory</td>
<td>1st Level Property</td>
<td>2nd Level Property</td>
<td>3rd Level Property</td>
<td>Dimensions</td>
<td>Examples</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>low to high SES</td>
<td>“We’ve got about 70 percent free and reduced (lunches), so...”</td>
</tr>
</tbody>
</table>
**Socioeconomic Status (SES)**

| there's definitely some socioeconomic challenges there… I think we're probably down to … four percent of our students are considered homeless, so whether they're truly in shelters or they're doubled up with families” (Ms. Fisher, Interview, May 10, lines 469-474). |
| "People don’t talk about it, that it’s hard to teach at a high-poverty school, and that there’s completely different norms for kids who come from high-poverty background” (Mrs. Morris, Dual Interview, May 3, lines 801-803). |
### Category 4: Instruction

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>1st Level Property</th>
<th>2nd Level Property</th>
<th>3rd Level Property</th>
<th>Dimensions</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Environment</td>
<td></td>
<td></td>
<td></td>
<td>Inconsistent to well-established</td>
<td>“So they should be able to do procedures on their own, they should be able to walk in and get started and moving. I should just be very much like problem solving, kid by kid, as needed, but otherwise the structure of the class is moving on its own” (Ms. Baker, Interview, March 25, lines 49-52).</td>
</tr>
<tr>
<td>Classroom Structure</td>
<td></td>
<td></td>
<td></td>
<td>Physical Structure</td>
<td>“...Especially in my reading classes, it should be kind of a more relaxed environment, and I think that influences my teaching style as well” (Ms. O’Connell, Interview, March 31, lines 55-56).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Highly Structured to Flexible</td>
<td>“…A lot of the classrooms now have the flexible seating where there’s kids sitting on the floor, or kids in chairs, or kids on the balls, or standing, or all of that” (Mrs. Lincoln, Interview, May 10, lines 96-98).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Teaching Style</td>
<td>“It's not always like, 'This is what we’re doing, and you will follow this.’ It's more like, 'This is what we want to get to', and the kids might go lots of different ways to get there, but this is the end result” (Mrs. Lincoln, Interview, May 10, lines 263-265).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Very Relaxed to Highly Formal</td>
<td>“Teacher goes to the boy’s desk, crouches down, and tells him how proud she is of him.” (Field note, Ms. Ryan, Field Notes, March 3, line 95).</td>
</tr>
<tr>
<td>Student Engagement</td>
<td></td>
<td></td>
<td></td>
<td>uninterested to engrossed</td>
<td>“They're actively engaged in the process of learning, instead of just trying to get the answer for the test. I think that is for sure contributing to the trajectory continuing to grow” (Ms. Fisher, Interview, May 10, lines 682-684).</td>
</tr>
<tr>
<td>Subcategory</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Level Property</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; Level Property</td>
<td>3&lt;sup&gt;rd&lt;/sup&gt; Level Property</td>
<td>Dimensions</td>
<td>Examples</td>
</tr>
<tr>
<td>------------------------</td>
<td>--------------------------------</td>
<td>--------------------------------</td>
<td>--------------------------------</td>
<td>------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Instructional Strategies</td>
<td></td>
<td></td>
<td></td>
<td>rarely to widely used</td>
<td>“Kids are just more excited about what they're doing and they're doing really cool projects; and the learning that's happening is phenomenal. They're retaining knowledge in a really different way than, “Open your book to page 12”” (Ms. Fisher, Interview, May 10, lines 672-674).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ineffective to effective use</td>
<td>“One girl stands up and walks over to another girl student to show her how to solve the problem” (Field Notes, Mrs. Howard, March 8, lines 94-95).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>rarely to widely used</td>
<td>“...Sometimes I have to explain something or teach them or model something, but overall I like to keep that part short so I can say “okay you try this” and they work in groups. They work with each other, they talk to their peers...And I also try really hard to have the students leading that discussion as well” (Mrs. Howard, March 24, lines 247-251).</td>
</tr>
<tr>
<td>Teacher-Centered Instruction</td>
<td></td>
<td></td>
<td></td>
<td>rarely to widely used</td>
<td>“Mrs. Howard is showing student how to divide fractions...She tells students to do the first step (invert) independently. She asks students which function has a relationship with division” (Field Notes, Mrs. Howard, Observation #3).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>“Ms. O'Connell writes ‘transition’ on IWB (Interactive White Board) with IWB pen)...Students are supplying her with examples of words or phrases that act as transition, and she writes them on board” (Field notes, Ms. O'Connell, Observation #10, line 30).</td>
</tr>
</tbody>
</table>
### Student Needs

- **marginal to highly significant**

### Technology

#### Technology Use and Purpose

| Frequency of Use | infrequent to daily |

#### Four Major Uses

- **Narrow use to widely used**

- “Are they really, truly about doing what's best for kids and hearing from kids first? I think character is something that, in this journey and this process that continues to keep me fired up about that and make sure that I'm really doing my due diligence with holding myself accountable to that, as well as others” (Ms. Fisher, Interview, May 10, lines 198-202).

- “But we talk about what you need is for you, but what your neighbor needs is different for them, so you might have different things. You're all going to get what you need to help you be successful, and nobody has said anything” (Ms. Boston, Interview, April 8, lines 127-130).

- “Although even though there's a curriculum, we are able to differentiate it to our kids’ level so it's more of a structure, not an expectation, I suppose” (Ms. Baker, Interview, March 25, lines 112-113).

- “Across the middle school we definitely ... You go into any classroom, you're going to see computers at use, almost in any grade level, any time you're going to see kids on a computer” (Mr. Davis, Interview, May 6, lines 140-142).

- “One thing I've always used the whole time I've been at [Highland], whether in science or in math is that ELMO where they can put their work and it gets projected... even in times where we are doing guided notes, that was so helpful because the students are able to see it and do it themselves and especially for those visual learners and that was just amazing” (Mrs. Howard, Interview, March 24, lines 276-280).
<table>
<thead>
<tr>
<th>Subcategory</th>
<th>1\textsuperscript{st} Level Property</th>
<th>2\textsuperscript{nd} Level Property</th>
<th>3\textsuperscript{rd} Level Property</th>
<th>Dimensions</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Factors Influencing Technology Use</td>
<td>Supporting Factors</td>
<td>slight to strong influences</td>
<td></td>
<td>“You release student potential. You connect with them. Kids who maybe aren’t finding their niche somewhere else, they find it through technology” (Mrs. Wright, Interview, May 6, lines 719-720). “...My kids this year are very hands-on kids. They need to be touching things and moving... They are expecting to be touching things or typing or on a computer, or things are coming at them very fast; and if it’s not fast, they are bored” (Ms. Baker, Interview, March 25, lines 140-144). “Technology is so powerful for kids. They love technology, whether it’s a hand-held game, cell phones, tablets, whatever. They’re so much more interested, and they can do so much” (Ms. Boston, Interview, April 8, lines 254-256).</td>
</tr>
</tbody>
</table>

<p>| Technology  | Limiting Factors                   | removable to fixed                  |                     |            | “So, my first year was 2013. I went a year without - with the technology they gave us. So it wasn’t one to one, it was - we had our own computers as teachers, and then we had I think I had like 6 desktops in my room, that sometimes works, sometimes didn’t” (Ms. Baker, Interview, March 25, lines 248-250). “It is always kind of daunting, knowing that I can’t see all of their screens, and there’s always stuff that goes on” (Ms. O’Connell, Interview, March 31, lines 347-348). |</p>
<table>
<thead>
<tr>
<th>Subcategory</th>
<th>1st Level Property</th>
<th>2nd Level Property</th>
<th>3rd Level Property</th>
<th>Dimensions</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology</td>
<td>Technology Growth</td>
<td></td>
<td></td>
<td>slight to great</td>
<td>“So it is in the past year to year-and-a-half there has been a lot of new technology, so I think you can definitely tell that it is something that they are working on and something that they are trying to improve. So I would say that’s what they’re doing well right now is working to figure it all out and working to get it all there” (Ms. O’Connell, Interview, March 31, lines 464-467).</td>
</tr>
</tbody>
</table>

“So now, in the middle school, we have Chromebooks in 8th grade, in seventh-grade, and half of sixth-grade... And we're moving from the kindergarten up, so we're kind of closing the gap that way and providing hardware for fifth-grade. So that was our original plan: to start with 8th and move backwards, start with kindergarten and move upwards, and in fifth-grade right in the middle there, and they’re already good to go” (Mr. Bowers, Interview, March 3, lines 77-83).
### Appendix C: Classroom Arrangement

<table>
<thead>
<tr>
<th>Teacher/ PST</th>
<th>Grade Level/ Subject Area</th>
<th>Physical Classroom Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mrs. Howard/ Ms. Lewis</td>
<td>6th-grade math</td>
<td>The walls of the room are painted blue, with the front wall containing the dry erase board a light blue and the other three walls a darker medium blue. The room is set up with two rows of tables: 4 tables in the row closest to the board and 2 tables in the row furthest from the board. There is a math vocabulary Word Wall posted prominently near the board. A laminated teacher-made banner with the words &quot;WORK HARD, BE NICE&quot; is hung over the board, and there are encouraging posters throughout the room. The corner nearest the door (opposite wall from the windows) holds a small classroom library and a smaller teacher's desk for the PST's use. Each student table has a small plastic bin holding notebook paper, laminated multiplication tables, and laminated copies of role descriptions (for cooperative learning groups).</td>
</tr>
<tr>
<td>Ms. Baker</td>
<td>7th-grade language arts</td>
<td>Room is painted a light blue. The students sit at individual desks, which are arranged in a &quot;U&quot; shape, with two rows of desks on the sides, facing inward, and a single row in the back, facing the front of the room. There are different large flags which are draped under the overhead lights. The effect is a softening of the overhead lights, when they are (rarely) turned on. There are five lamps scattered around the room. The lamps provide the main source of light. As you enter the classroom, the dry erase board is on the left wall, and there is a wall of windows and coat hooks directly across the room. Along that wall is a large area rug with desk chairs and beanbags for the students' use. The teacher uses a kidney-shaped table positioned in the corner to the right of the classroom door. Near her desk is a classroom library. To the left of the door is a wall of closets and a wheeled cart of Chromebooks in the corner. Teacher has several handmade canvases with encouraging phrases decorating the walls and a Word Wall hung in the back of the room.</td>
</tr>
<tr>
<td>Ms. O'Connell</td>
<td>6th-grade language arts</td>
<td>There are five student tables which seat up to four students. Overhead lights are usually turned off, and there are strands of small white lights strung in zigzag patterns across the ceiling. There are three table lamps and a floor lamp scattered around the room. The walls are painted a deep purple. When you enter the room, a white dry erase board dominates the left side of the room, and there is a wall of windows and coat hooks directly across from the classroom door. Above the windows hang a teacher-made Word Wall. To the left of the door is a wall of closets, and to the right is a small classroom library with bean bag chairs. There are two sections of the dry erase board which are permanently set up to display the daily lesson objectives and activities. There is a smaller section of the board labeled &quot;What is [Ms. O'Connell] reading?&quot; and a title of the book.</td>
</tr>
<tr>
<td>Mrs. Morris/ Ms. Miller</td>
<td>Kindergarten</td>
<td>When you enter the room, the room is set up with different areas set up as stations. These stations are labeled &quot;Art&quot;, &quot;iPads&quot;, &quot;Math&quot;, &quot;Me&quot;, &quot;Books&quot;, &quot;Writing&quot;. To the right of the room, near the door, is a table with soil and artificial plants. The right wall is dominated by a dry erase board with a projector, and a large rug is placed in front of the wall. There are small child-sized plastic rocking chairs without legs (resembling curved toboggans) in primary colors and an adult-sized rocking chair. Just beyond the rug is a low set of bookshelves which separates the rug from the space beyond, a corner which is arranged as a classroom library. Directly across from the classroom door is a long wall</td>
</tr>
<tr>
<td>Teacher</td>
<td>Grade Level</td>
<td>Classroom Description</td>
</tr>
<tr>
<td>------------------</td>
<td>-------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Mrs. Hanson</td>
<td>1st-grade</td>
<td>The room is painted white. There are large windows along the wall opposite from the classroom door. To the right of the windows is a door with a screened outer door, opening onto a small enclosed courtyard. In front of the window, near the left corner, is the teacher's desk. As you enter the room, there are four low tables to the right, with large carpet squares for student seating. Each table has a baskets of crayons and markers and jars of scissors and glue sticks. On the left wall are cubbies with a dry erase board above them. The day's agenda is written on the board. There is also an announcement that is a student's birthday. Next to the cubbies is a Word Wall. The center of the room has a large carpet with a teacher's chair at one end.</td>
</tr>
<tr>
<td>Ms. Boston</td>
<td>3rd-grade</td>
<td>The room is painted yellow. There are 6 tables in primary colors and four crates of supplies and a throw pillow backed with MDF to create student stools. In the center of each table are four plastic bins of supplies. Each bin is labeled with a student's name. Across from the classroom door is a long wall dominated by a long dry erase board. The teacher displays the day's agenda and the learning objectives on that board. There is a large blank space with a projector pointed at it. To the left, in the back corner, are sets of low bookshelves set up in a V shape. This carpeted area is the classroom library and contains an easel on which the teacher has written a list of &quot;Writing Expectations&quot;. There are teacher-written lists hung high on the walls surrounding the classroom. These poster display grammar rules and different aspects of the writing process.</td>
</tr>
<tr>
<td>Ms. Ryan/ Ms. Tanner</td>
<td>5th-grade</td>
<td>The room is painted in a light brown color. As you enter the room, there is a Promethean board set up on the wall to the right, with a large area rug placed in front of it. Between the Promethean board and the doorway are two rows of coat hooks, one a few inches above the other, for students' coats. The teacher's desk is to the immediate left of the doorway. A coat tree stands behind it. The wall directly across from the doorway has a row of windows. Looking to the left, there are rows of student desks facing the Promethean board. The desks are arranged in pairs, in three distinct rows, with one grouping of three desks. (There are a total of 22 desks.) Near the far right corner (below the windows) is a low couch. To its left is a kidney-shaped table with a teacher's chair and a few student chairs placed in front of it. Along the back wall, to the left of the teacher's table, is a large dry erase board. The overhead lights are used some of the time (approximately half of my visits).</td>
</tr>
</tbody>
</table>
## Appendix D: Room Arrangement and Classroom Activity

<table>
<thead>
<tr>
<th>Teacher / Pre-service Teacher</th>
<th>Date/ Start Time of Visit</th>
<th>Room Arrangement</th>
<th>Class Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mrs. Howard</td>
<td>March 3, 9:46&lt;br&gt;March 3, 10:07&lt;br&gt;March 8, 11:26</td>
<td>Students in tables of 3-4. Overhead lights are turned on.</td>
<td>Teacher-centered instruction: Students are working in small groups for periods of time between segments of instruction and student demonstrations.</td>
</tr>
<tr>
<td>Mrs. Howard/ Ms. Lewis</td>
<td>March 23, 11:03&lt;br&gt;March 23, 11:19</td>
<td>Students in tables of 3-4. Overhead lights are turned on.</td>
<td>Teacher-centered instruction: Students are working in small groups for periods of time between segments of instruction and student demonstrations.</td>
</tr>
<tr>
<td>Ms. Baker</td>
<td>Feb 23, 10:07&lt;br&gt;Feb 23, 11:16</td>
<td>Students at their seats in U-formation. Overhead lights off, lamps are turned on.</td>
<td>Individual student work on Chromebooks. Then teacher uses document camera for Teacher-centered instruction lesson.</td>
</tr>
<tr>
<td></td>
<td>Feb 26, 9:41</td>
<td>Students at their seats in U-formation. Each student is using a Chromebook. Quiet music is playing in the background. Overhead lights off, lamps are turned on.</td>
<td>Students are working individually on Google Classroom, then on Quizlet. This is the &quot;workshop&quot; class, a class devoted mainly to project-based learning.</td>
</tr>
<tr>
<td></td>
<td>Feb 26, 10:06</td>
<td>Students start at their seats with Chromebooks, then they rotate to 3 different areas of the room, in small groups, for 15-minute time periods. Overhead lights off, lamps are turned on.</td>
<td>Students are first working individually on a warm up activity on Google Classroom. The teacher sets up small groups by having students count off by 3's. Then students are sent to three areas of the room for &quot;Vocabulary Stations&quot; to begin their unit on poetry.</td>
</tr>
<tr>
<td></td>
<td>March 1, 10:05</td>
<td>Students at their seats in U-formation. Video is playing on the projector. Overhead lights off, lamps are turned on.</td>
<td>This is the &quot;transition group&quot; (Teacher explains it is what the school calls a &quot;homeroom&quot;). Students are allowed to quietly watch the video (from &quot;CNN for Kids&quot; website) or work individually on homework assignments.</td>
</tr>
<tr>
<td></td>
<td>March 1, 11:16</td>
<td>Students at their seats in U-formation. Each student is using a Chromebook. Overhead lights off, lamps are turned on.</td>
<td>ELL class. Students begin working on Google Classroom. Then teacher displays answers and reads all of them out loud. Teacher-centered instruction: Brief instruction on website, then individual work on computers. Students share their findings. Whole class discussion on working environments.</td>
</tr>
<tr>
<td></td>
<td>March 25, 1:40</td>
<td>Students are working quietly. There is occasional murmuring. The timer is</td>
<td>In a previous class, students had created learning center activities on poetry for their classmates to follow.</td>
</tr>
<tr>
<td>Date</td>
<td>Time</td>
<td>Activity Description</td>
<td>Notes</td>
</tr>
<tr>
<td>----------</td>
<td>-------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Ms. Baker</td>
<td>March 29, 10:07</td>
<td>Students at their seats in U-formation. Each student is using a Chromebook. Overhead lights off, lamps are turned on.</td>
<td>Students begin with Google Classroom (for 6 minutes). Then teachers introduce students to brochures and their layouts and gives directions for project (5 minutes). Students work individually on projects (creating brochures to advertise the clothing industry).</td>
</tr>
<tr>
<td>Ms. O'Connell</td>
<td>Jan 27, 10:05</td>
<td>Students are sitting at tables. Projector displays a screenshot of Obama and the title &quot;My Education, My Future&quot; from the website whitehouse.gov. Students are working quietly. Quiet music. Overhead lights are off. String lights and lamps are on.</td>
<td>Then teacher shows a video of Obama’s speech and goes over the directions to the corresponding test. Students view the speech then silently answer the questions on the test while quiet music is playing. Students are given three options when finished (to read, to write in journals, or to work on homework).</td>
</tr>
<tr>
<td>Feb 2, 10:49</td>
<td>March 9, 9:25</td>
<td>Students are sitting at tables. Overhead lights are off. String lights and lamps are on. Overhead projector displays poem.</td>
<td>Teacher-centered instruction with interactive white board with students filling ion paper copies. Small group discussions in intervals.</td>
</tr>
<tr>
<td>March 23, 9:45</td>
<td></td>
<td>Students are sitting at tables. Overhead lights are off. String lights and lamps are on. Quiet music is playing.</td>
<td>Students work independently (on assignments or reading books). Teacher is leading a discussion with a book club (four students). A teacher aide walks around the room to assist individual students.</td>
</tr>
<tr>
<td>March 23, 10:08</td>
<td></td>
<td>Students are sitting at tables. Overhead lights are off. String lights and lamps are on. Quiet music is playing.</td>
<td>Students work independently. Then teacher displays assignment on board. Students are going to individually read an article and discuss it in small groups. This is an assessment with given criteria.</td>
</tr>
<tr>
<td>March 24, 11:54</td>
<td></td>
<td>Students are sitting at tables. Overhead lights are off. There is a document of vocabulary displayed on the board. The laptop cart is out (It appears the students had been using the laptops, though they are not using them now.)</td>
<td>Teacher-centered instruction: Teacher is leading a lesson on vocabulary terms. Then independent work: Students will illustrate a vocabulary word with drawings. Teacher explains a project the class will be starting next week and gives final announcements.</td>
</tr>
<tr>
<td>March 29, 11:15</td>
<td></td>
<td>Students are sitting at tables. Overhead lights are off. String lights and lamps are on. Quiet music is playing.</td>
<td>Students work independently on drafting essays (written on paper). Teacher is meeting with one book club (four students).</td>
</tr>
<tr>
<td>Date</td>
<td>Time</td>
<td>Description</td>
<td>Event</td>
</tr>
<tr>
<td>------------</td>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>March 31,</td>
<td>11:20</td>
<td>Students are sitting at tables. Overhead lights are off. String lights and</td>
<td>Teacher-centered instruction: Teacher leads discussion about using</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lamps are on. Quiet music is playing. Laptop cart is out.</td>
<td>transitions in writing and citing sources. Then students retrieve</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>laptops and type their essays.</td>
</tr>
<tr>
<td>Mrs.</td>
<td>April</td>
<td>Overhead lights are on. Students are scattered around various areas in the</td>
<td>Children are working at centers: working independently on iPads;</td>
</tr>
<tr>
<td>Morris/Ms.</td>
<td>7, 10:55</td>
<td>room. There are no students sitting in their small round tables.</td>
<td>working with Ms. Miller; at the &quot;art&quot; center; reading books on the</td>
</tr>
<tr>
<td>Miller</td>
<td></td>
<td></td>
<td>rug; and working on math. The students each have a laminated</td>
</tr>
<tr>
<td></td>
<td>April</td>
<td>Overhead lights are on. Students are seated on the rug in front of the board.</td>
<td>Teacher-centered instruction lesson: Ms. Miller leads the students in a</td>
</tr>
<tr>
<td></td>
<td>13, 9:34</td>
<td>Ms. Miller is standing in front of them. The projector is on. Mrs.</td>
<td>lesson on shapes. She is using the document camera and colorful plastic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Morris is working at her desk.</td>
<td>shapes. The students take turns placing the shapes on the correct spot</td>
</tr>
<tr>
<td></td>
<td>April</td>
<td>Overhead lights are on. Students are scattered around various areas in the</td>
<td>Students are working in the various centers. Ms. Miller is sitting at</td>
</tr>
<tr>
<td></td>
<td>13, 10:30</td>
<td>room. There are no students sitting in their small round tables.</td>
<td>the table, administering a reading assessment to 4 students. Mrs.</td>
</tr>
<tr>
<td>Mrs.</td>
<td>April</td>
<td>The overhead lights are on. The students are seated at their tables, and the</td>
<td>Students are working independently, finishing a project. They place</td>
</tr>
<tr>
<td>Hanson</td>
<td>8, 9:23</td>
<td>teacher is walking around the room.</td>
<td>their finished work in a tray. Students choose a reading partner. They</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>are given the option of reading in the garden. Students then gather</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>on the rug for a whole group lesson on the life cycle of plants. (They</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>take turns &quot;teaching&quot; the teacher.) Students arrange cards depicting</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>the stages of the life cycle.</td>
</tr>
<tr>
<td>Ms. Boston</td>
<td>March</td>
<td>The overhead lights are on. Students are sitting at the tables with laptops.</td>
<td>Students are logged on to the class Google Drive account, writing their</td>
</tr>
<tr>
<td></td>
<td>4, 9:42</td>
<td>A few students are sitting in other locations (in the rug next to the</td>
<td>research essays. They are working independently, taking turns meeting</td>
</tr>
<tr>
<td></td>
<td>April</td>
<td>library, on a chair in the back of the room). There is an open laptop cart</td>
<td>with the teacher.</td>
</tr>
<tr>
<td></td>
<td>6, 9:25</td>
<td>near the classroom door. Teacher is sitting at her table, using her laptop.</td>
<td>March 4: After an hour of independent working, the teacher tells the</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>class they can either go online on the Raz Kids website or read a book.</td>
</tr>
<tr>
<td>Ms. Ryan/</td>
<td>March</td>
<td>Students are seated at desks. There is a timer counting</td>
<td>Students are working with a partner on a polygons lesson.</td>
</tr>
<tr>
<td>Ms. Tanner</td>
<td>3, 11:08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date</td>
<td>Time</td>
<td>Activity Description</td>
<td></td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>--------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Ms. Ryan/</td>
<td>April 7</td>
<td>Students move to rug for Whole class instruction. Students wait quietly for instruction.</td>
<td></td>
</tr>
<tr>
<td>Ms. Tanner</td>
<td>11:30</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Students move to rug. Teacher and PST present a Teacher-centered instruction lesson together on the polygons sheet. PST is writing down student answers on the easel. Pairs of students take turns presenting their work to the class.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Whole class instruction: Students are participating in a fractions relay race. Groups are cheering their teammates as they run to the dry erase board and multiply fractions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>April 7</td>
<td>Students are participating in a fractions relay race. Groups are cheering their teammates as they run to the dry erase board and multiply fractions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1:15</td>
<td>Students wait quietly for instruction. Ms. Tanner gives direction on typing their essays using Google Drive. Students work independently on their essays, with Ms. Ryan and Ms. Tanner meeting individually with students who need help.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>April 13</td>
<td>Teacher-centered instruction: Ms. Ryan is leading the class in a lesson on multiplying mixed numbers. Ms. Tanner is grading papers. Students return to seats to work independently.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11:07</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>April 15</td>
<td>Students are listening to an audiobook and following along in their books. Occasionally, the teacher pauses the recording to ask the class a question. Then, she leads the class in a brief discussion about the writing process. Students are writing their conclusion paragraphs for their essays on paper and will eventually type them. Teacher puts on music for a &quot;dance break&quot; and then give students their earned free time on the laptops.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1:24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix E: Researcher-Perceived Levels of Student Engagement during Classroom Visits

<table>
<thead>
<tr>
<th>Teacher/ PST</th>
<th>Activity</th>
<th>Approximate Duration</th>
<th>Level of Engagement *</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ms. Baker</td>
<td>Teacher-centered instruction (Poetry)</td>
<td>30 minutes</td>
<td>1</td>
</tr>
<tr>
<td>Ms. Baker</td>
<td>Quiet, Independent Reading</td>
<td>17 minutes</td>
<td>3</td>
</tr>
<tr>
<td>Ms. Baker</td>
<td>Student-Created Learning Stations (cooperative learning)</td>
<td>40 minutes</td>
<td>3</td>
</tr>
<tr>
<td>Ms. Baker</td>
<td>Project-Based Learning (creating brochures, using technology)</td>
<td>44 minutes</td>
<td>3</td>
</tr>
<tr>
<td>Ms. Baker</td>
<td>Video</td>
<td>10 minutes</td>
<td>2</td>
</tr>
<tr>
<td>Ms. Baker</td>
<td>Google Classroom (vocabulary lesson)</td>
<td>23 minutes</td>
<td>3</td>
</tr>
<tr>
<td>Ms. O'Connell</td>
<td>Independent silent reading and Google Classroom (Reading Logs)</td>
<td>35 minutes</td>
<td>3</td>
</tr>
<tr>
<td>Ms. O'Connell</td>
<td>Independent work (reading, writing essays with technology)</td>
<td>30 minutes</td>
<td>2</td>
</tr>
<tr>
<td>Ms. O'Connell</td>
<td>Reading Group (Teacher and 3 students---small group discussion)</td>
<td>24 minutes</td>
<td>3</td>
</tr>
<tr>
<td>Ms. O'Connell</td>
<td>Independent Work (no technology)</td>
<td>15 minutes</td>
<td>2</td>
</tr>
<tr>
<td>Ms. O'Connell</td>
<td>Teacher-centered instruction (transitions in writing)</td>
<td>11 minutes</td>
<td>2</td>
</tr>
<tr>
<td>Ms. O'Connell</td>
<td>Project-based learning (essays, with technology)</td>
<td>49 minutes</td>
<td>3</td>
</tr>
<tr>
<td>Ms. O'Connell</td>
<td>Teacher-centered instruction (future assessment directions)</td>
<td>12 minutes</td>
<td>2</td>
</tr>
<tr>
<td>Ms. O'Connell</td>
<td>Independent work (test preparation, quiet music, no technology)</td>
<td>25 minutes</td>
<td>1</td>
</tr>
<tr>
<td>Ms. O'Connell</td>
<td>Project-based learning (cooperative learning optional, creating videos using We Video, a Google application)</td>
<td>55 minutes</td>
<td>3</td>
</tr>
<tr>
<td>Ms. O'Connell</td>
<td>Teacher-centered instruction (vocabulary)</td>
<td>unknown (6 minutes observed)</td>
<td>3</td>
</tr>
<tr>
<td>Ms. O'Connell</td>
<td>Video then subsequent paper test</td>
<td>Video: 3 minutes</td>
<td>2</td>
</tr>
<tr>
<td>Mrs. Howard</td>
<td>Teacher-centered instruction with periods of small group work (fractions)</td>
<td>48 minutes</td>
<td>2</td>
</tr>
<tr>
<td>Mrs. Howard</td>
<td>Teacher-centered instruction with periods of small group work (fractions)</td>
<td>19 minutes</td>
<td>2</td>
</tr>
<tr>
<td>Mrs. Howard</td>
<td>Teacher-centered instruction with periods of small group work (fractions with paper manipulatives)</td>
<td>53 minutes</td>
<td>1</td>
</tr>
<tr>
<td>Ms. Lewis (PST)</td>
<td>Teacher-centered instruction with periods of small group work</td>
<td>unknown (15 minutes observed)</td>
<td>1</td>
</tr>
<tr>
<td>Teacher</td>
<td>Activity Description</td>
<td>Duration</td>
<td>Level</td>
</tr>
<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>-------</td>
</tr>
<tr>
<td>Ms. Ryan</td>
<td>Cooperative Learning (pairs)—polygons</td>
<td>unknown (24 minutes observed)</td>
<td>2</td>
</tr>
<tr>
<td>Ms. Ryan</td>
<td>Independent reading (silent)</td>
<td>unknown (7 minutes observed)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Audiobook (students following along in their books)</td>
<td>8 minutes</td>
<td>1</td>
</tr>
<tr>
<td>Ms. Ryan</td>
<td>Project-Based Learning (Independent essay writing on computers)</td>
<td>unknown (30 minutes observed)</td>
<td>3</td>
</tr>
<tr>
<td>Ms. Tanner (PST)</td>
<td>Cooperative learning (relay race—fractions)</td>
<td>Unknown (20 minutes observed)</td>
<td>3</td>
</tr>
<tr>
<td>Ms. Boston</td>
<td>Project-Based Learning (Independent essay writing on computers)</td>
<td>Unknown (88 minutes observed)</td>
<td>1</td>
</tr>
<tr>
<td>Ms. Boston</td>
<td>Project-Based Learning (Independent essay writing on computers)</td>
<td>74 minutes</td>
<td>2</td>
</tr>
<tr>
<td>Mrs. Morris</td>
<td>Learning Centers (independent and paired work)</td>
<td>unknown (26 minutes observed)</td>
<td>3</td>
</tr>
<tr>
<td>Ms. Miller (PST)</td>
<td>Teacher-centered instruction (shapes) with student demonstrations</td>
<td>13 minutes</td>
<td>3</td>
</tr>
<tr>
<td>Ms. Miller (PST)</td>
<td>Learning Centers (independent and paired work)</td>
<td>unknown (24 minutes observed)</td>
<td>3</td>
</tr>
</tbody>
</table>

* Levels of Engagement: 1 = low (<75% of students appear to be on-task); 2 = moderate (75-90% of students appear to be on-task); 3 = high (>90% of students appear to be on-task)

Note: This chart does not represent all classroom visits and only includes visits/ portions of visits during which student engagement was noted in great detail.