GENIUS HOUR: EDUCATOR PERSPECTIVES ON NAVIGATING THE PROMPTS, PROMISES, AND PREDICAMENTS OF IMPLEMENTING INTEREST-DRIVEN LEARNING IN PUBLIC SCHOOLS

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GENIUS HOUR: EDUCATOR PERSPECTIVES ON NAVIGATING THE PROMPTS, PROMISES, AND PREDICAMENTS OF IMPLEMENTING INTEREST-DRIVEN LEARNING IN PUBLIC SCHOOLS

BY

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ABSTRACT

Recent studies on student engagement suggest that students become decreasingly engaged as they proceed through their secondary-level school experience (Gallup Inc, 2015; Hodges, 2018; Washor & Mojkowski, 2014; Yazzie-Mintz, 2007). The consequences of low student engagement or disengagement in schools can be significant, leading to poor academic performance and the potential for dropping out of school (Geraci et al., 2017; Loeb, 2016; Shernoff, 2013; Yazzie-Mintz, 2010). However, the literature suggests numerous teaching practices, including inquiry-based learning rooted in student interests, can create conditions for high levels of student engagement (Boss, 2017; Garcia et al., 2014; Newmann, 1992; Shernoff et al., 2014). One such approach attracting attention in practitioner trade books is Genius Hour, a classroom practice that enables students to develop and explore their own inquiry question about a personally meaningful topic. Yet, this instructional practice has not been the subject of much educational research. This multiple case study (Yin, 2018) employed thematic analysis (Braun & Clarke, 2006) to explore how six secondary-level educators implemented Genius Hour in their classrooms and illuminate their experiences facilitating this approach to interest-driven learning. Findings revealed that teachers used similar Genius Hour practices but varied in how they shaped their program around student interests, local communities, or specific course content. Further, teachers perceived that student engagement was high when learners participated in Genius Hour, yet the practice did not serve as a “silver bullet” to address all engagement issues. Finally, teachers reported that internal and external school stakeholders had a significant impact on their experiences with Genius Hour in their classroom.
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DEDICATION

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Chapter 1

Introduction and Overview of the Study

This study investigated the experiences of six teachers who have implemented Genius Hour, a practice focused on providing time and structures for students to explore interests during the school day. The purpose of the study was to gain deeper insight on how teachers structure the Genius Hour process for students while also illuminating the various perceptions of the process and their experience. In this study, Genius Hour is defined as classroom practice devoted to enabling students to develop and explore their own inquiry question about a personally meaningful topic.

There are at least four recent issues that indicate that Genius Hour is an important area for research. First, there have been numerous studies over the last decade that indicate our students have become more increasingly disengaged from school as they progress through the K-12 system (Eller, 2013; Gallup Inc, 2015; Hodges, 2018; Washor & Mojkowski, 2014). One common finding across these studies is that students feel that the school experience is not relevant or personally meaningful. Genius Hour may help to bridge this current gap.

A second concern is that public school districts are spending a great deal of time and resources on improving student access to technology; however, there is much debate over how technology should be utilized in school contexts (Holland, 2016; Kamenetz, 2018; Sauers & McLeod, 2018; Watters, 2014). One approach described as “substitution” (Puente, 2006, 2010) is when digital tools are used to provide the same textbooks, nightly writing assignments, and/or multiple choice assessments that were used in printed contexts; in this approach, technology serves as a substitute for paper-based texts and
assignments in schools. An alternative approach, using Puenteďura’s model, would be a “redefinition” of instruction, where educators leverage technology to redefine learning experiences in ways that are only possible through digital technology, while also enabling students to build critical skills and dispositions needed to thrive in the 21st century. While substitutive learning experiences would likely reinforce deficits in student engagement, Genius Hour can potentially serve as an opportunity for redefining instruction to meet the demands of growing up and learning about life in a digital society.

Thirdly, given the problem of student engagement and the incoming onslaught of technology within schools, particularly due to recent investments from federal COVID dollars (Coldewey, 2021), educators could be better served by having knowledge and access to programs, resources, and practices that address both the need to better engage students and leverage technology. One such framework is Connected Learning (Ito et al., 2013a, 2020), which proposes that learning can be powerful when it focuses on students’ personal interests, the ability to build relationships, and the opportunity for future career and civic growth. Research centered on dimensions of connected learning (Garcia et al., 2014; Ito et al., 2015, 2020; Maul et al., 2014) point to its potential for helping schools and teachers address issues of relevance, engagement, and technology integration for learning, although most of these studies have been conducted in out-of-school settings.

A fourth concern is that while public information on Genius Hour in trade books, Tweets, and blogs suggests that it is a purposeful approach to engage students, integrate technology, and provide learning experiences aligned to principles of connected learning principles (Ito et al., 2013a, 2020; Jenkins et al., 2015), Genius Hour has not been the subject of academic research. For these reasons, this study is designed to explore teacher
perceptions of the Genius Hour experience to help researchers and educators better understand the successes and challenges of the phenomenon in secondary school contexts and its potential alignment with connected learning.

**Statement of the Problem**

In January of 2016, Gallup (2016) released findings from its annual national poll of over 800,000 students in Grades 5-12. The survey was designed to measure four aspects of the student experience including A, B, C, and D. Survey results linked to student engagement were cause for concern. Only half of the students surveyed reported feeling engaged, with 21% of respondents meeting the criteria for actively disengaged. In fact, engagement, defined as the “the involvement in and enthusiasm for school” (Gallup, 2016, p. 1), declined at each grade level, beginning from Grades 5-6, and continuing on before bottoming out in Grade 11. Almost half (44%) of respondents were neutral toward or disagreed with the statements “At this school, I get to do what I do best every day,” “I have fun at school,” and “In the last seven days, I have received recognition or praise for doing good schoolwork.” Further, from 2012 to 2015, engagement levels at each grade were down across the board, while active disengagement rose in that time from 16% to 21% of respondents and has trended downward according to each of the last four surveys (Gallup, 2013, 2014, 2015, 2016).

The Gallup findings are supported by a litany of student engagement research (Conner & Pope, 2013; Shernoff, 2013; Shernoff, Csikszentmihalyi, Abdi, & Anderson, 2014; Shernoff, Csikszentmihalyi, Schneider, & Shernoff, 2003). Yazzie-Mintz (2010) found that 2/3 of over 300,000 high school students surveyed report being bored each day in school; 17% reported being bored in every class. Between 2006-2009, more than
40% of high school students surveyed responded that they did not feel like they were an important part of their school community. Among the most common reasons students listed for going to school were extrinsic factors such as eligibility for college (73%), parents (64%), and career (67%) while less than half responded with engagement-based reasons such as what they learn in class (41%) and because they enjoy being in school (36%). Furthermore, a survey of college freshmen found that 42% reported being frequently bored in their high school classes (Sax et al., 2004). Conner and Pope (2013) also found that 2/3 of the over 6,000 secondary students they surveyed did not meet the criteria for fully engaged while 21% were deemed reluctantly engaged. For high school students, school is the time of the day when they are least engaged (Larson & Csikszentmihalyi, 1984). If there is one silver lining to the research, however, it is that it suggests that elementary students are far more likely to report being engaged in school and at far higher levels than older students (Conner & Pope, 2013; Gallup, 2013, 2014, 215, 2016; Li & Lerner, 2011). However, data on secondary students suggests significant engagement issues in need of resolutions, such as low levels of engagement or disengagement, have been linked to negative outcomes such as decreased academic success and higher likelihood of dropping out (Bridgeland, DiLulio Jr, & Morison, 2006; Cooper, 2014; Rumberger, 2011; Shernoff, 2013; Steinberg, 1997b; Yazzie-Mintz, 2010).

Student engagement data and the perils of disengagement are especially concerning given that the stakes of education are increasing each year, as our world and economy continues to shift due to the increasing availability and complexity of technology. The Internet, for example, has increased access to information and enabled people to learn and connect in ways they never could before (Ito et al, 2013; Thomas &
Brown, 2011). People can use search engines to instantaneously find information on demand, share their findings via a blog or a message board, and have exchanges with others who have similar or opposing ideas. Economically, the job market is rapidly changing while the future of work and the skills required for the future economy are uncertain (Dondi et al., 2021; Herold, 2017). Even if job types stabilize, past trends have shown that young adults (ages 25-34) changed jobs every 3.2 years, although that figure may be high due to the recession of 2008 (Gou, 2014). As individuals shift jobs or experience rapid change within their current position, they will likely have to learn new skills. Thus, learning “how to learn” becomes more essential. Schools will have to provide opportunities for students to develop tools that help them become life-long learners, able to adapt and embrace change (Fullan 2011; Taleb 2012; Thomas & Brown, 2011). Furthermore, students will likely need opportunities to identify and cultivate their strengths in order to truly thrive in this new economy (Zhao, 2012a; Zhao et al., 2015, 2019).

While the impetus to change school is based on engagement data and the shifting economy, it’s not clear that existing efforts have been effective. School districts have responded to the impending digital shift by increasing access to the Internet and digital devices (USDOE, 2015). The Emergency Connectivity Fund provides access to more digital tools as well (Coldewey, 2021).

Despite the investments, survey data from The Gallup Poll (2015) suggest that technology has not had the impact on engagement that was desired. This could be, in part, because of what Papert (1980a, 1993) termed instructionism, which focuses on using technology to improve content delivery or instruction to the student; thus creating a
scenario where the computer is “programming” the child rather than the child learning to program the computer. The digital experience may be more personalized for students compared to whole group instruction, but Downes (2014) argued, the instructional product is still very “off the shelf” and lacks the uniqueness that makes learning personal. Thus, to make the most of students’ learning experience with technology, schools need empirical research that introduces new ways to think about utilizing technology to prepare students for life in the 21st century while also engaging and helping them to identify their interests and strengths.

Thus, the question remains: How can teachers design learning experiences that are engaging and personally meaningful for adolescents while also preparing them to use technology to help them become life-long learners? One potential solution is a structured, self-selected inquiry process called Genius Hour. Genius Hour is rooted in research encapsulated in Daniel Pink’s (2009) synthesis on engagement and motivation. Building on Deci & Ryan’s (1985, 2000, 2005) Self-Determination Theory, Pink (2009) argued that intrinsic motivation consists of three factors: autonomy, purpose, and mastery. Genius Hour also seems to reflect several underlying principles of constructionist learning (Papert, 1991) and Connected Learning (Ito et al. 2013), which focuses on interest-driven, peer-supported learning that aligns with academic, civic or career opportunities.

According to several trade books (Juliani, 2014; Krebs & Zvi, 2015), Genius Hour is designed to provide one class period per week for students to first explore an area of interest over a period of time and then create both a product and a presentation as artifacts of their learning. While versions of Genius Hour are increasing in schools, and
stories have been shared via books, Twitter, and blogs, to my knowledge, the practice has been the subject of only limited research (see Ginsberg & Coke, 2019).

Teachers and students have reported anecdotes via digital media, and many have expressed enjoyment with the process. However, no formal research has been conducted to describe the phenomenon’s implementation or to outline a common Genius Hour experience for participants. Additionally, while connected learning research (Ito et al., 2013) has captured the possibilities of youth engaged in interest-driven pursuits, recent literature most often focuses on learning in out-of-school settings. Genius Hour may potentially be a means of embedding connected learning into school settings. An investigation into this method of learning could also offer further insight into a teaching approach that is both an engaging learning experience and an opportunity to enhance digital literacies.

**Research Questions**

This study is centered on two research questions:

1. How do six secondary-level teachers from different school settings describe their implementation of the Genius Hour process in their classrooms?

2. What are the perceptions of teachers around the design and implementation of a Genius Hour project?
   a. What are teachers’ perceptions of the challenges and benefits of planning and implementing a Genius Hour experience?
   b. What are teachers’ perceptions of the challenges and benefits for students who participate in a Genius Hour experience?
c. How do teacher experiences in Genius Hour classes compare to their other experiences in traditional classroom settings?

**Overview of Research Design**

This qualitative, multi-case study (Yin, 2018) applied within case and cross-case thematic analysis (Braun & Clarke, 2006) to explore how teachers structured and implemented Genius Hour as well as their perceptions and experiences of the process. A qualitative design was selected in order to better understand both the practices used and meaning ascribed to the Genius Hour phenomenon (Creswell, 2013). This study purposefully focused on educator experiences from across the country to maximize variation of the cross-case comparison (Merriam, 2009). The individual within case analysis (Yin, 2018) highlighted the unique implementations, motivations, and experiences of six educators who adopted Genius Hour. Given that much of what has been written about Genius Hour has been written in trade books, this study makes its contribution to the field by applying a researcher’s lens through which the practice can be viewed (Patton, 2015). A synthesis of my findings reveals options and considerations for structuring the Genius Hour process as well as insights into the intrinsic and extrinsic factors that shape the educators experience.

**Methods and Procedures**

**Participants**

Six secondary level educators from public, non-charter schools were selected to participate in this study. As part of the recruitment process, 13 secondary-level educators submitted a form that provided their school, content area, and grade level taught, as well as their consent to participate in the study. Student demographic data and state
achievement score data was obtained from the National Center for Education Statistics Database (NCES, 2018) and logged. The final purposive sample included three middle school educators and three high school educators. It also contained three educators who identified as male and three who identified as female. Additionally, the sample consisted of educators from various disciplines and geographic settings who taught in schools that had varying racial and socioeconomic demographics.

**Data Sources**

Data was collected in the early months of 2018. Educators were first asked to share with me any materials they used to support students through the Genius Hour process. Then, each teacher participated in a one-on-one interview with me that lasted anywhere from 45 to 75 minutes. All participants were interviewed via a semi-structured interview protocol that provided flexibility to ask follow up questions based on their initial responses (see Fisher & Frey, 2014). Audio for all interviews was recorded.

The 18 interview questions were structured into five phases. The first phase addressed their motivations for starting Genius Hour, and the second phase explored their implementation process. The third phase focused on the educators’ successes and challenges while the fourth phase addressed the scaffolding materials that they provided to students. The final phase of the interview focused on their lingering concerns, aha moments, and any insights they wanted to share but were not asked.

**Analysis**

Data analysis followed the thematic analysis process as outlined by Braun and Clarke (2006). Their six step process includes (1) getting familiar with the data, (2) initial code generation, (3) searching for initial themes, (4) reviewing, revising and
consolidating themes, (5) naming and defining the themes, and (6) producing a report (Braun & Clarke, 2006; Maguire & Delahunt, 2017; Peel, 2020). The thematic analysis was conducted twice, first for the within-case analysis that culminated with a report on each case as found in Chapter 4, and then for the cross-case analysis, with findings reported in Chapter 5.

To get familiar with the data, I listened to the interviews, and also had the audio files sent out for transcription. Once the files returned, I listened to the interviews again while reading through the transcription of the interview, editing the text where needed. I reviewed my field notes from each interview to recall initial impressions while listening to participant responses.

For step two, I began to generate codes, first using an open coding process (Maguire & Delahunt, 2017; Merriam, 2009; Saldaña, 2016) to make notes in the margins of each transcript, using the digital commenting tool in Microsoft Word. As I progressed, I sought to use the participants own words as codes, thus adopting an In Vivo coding process (Saldaña, 2016) where applicable.

The third step in the thematic analysis is searching for themes which Braun and Clarke (2006) describe as the process of reflecting on the relationships between clusters of codes. In this phase, I created two concept maps, one for the educator process and one for the educator experience in NVivo, a qualitative coding software program. Generating visual representations and diagrams, like a concept map, is a commonly used step at this phase in the thematic analysis process (Braun & Clarke, 2006; Nowell et al., 2017). The concept map enabled me to consolidate more than 900 open codes into a more manageable set of initial themes and codes for a subsequent review of the data.
The fourth step in the thematic analysis is reviewing the themes by returning back to the raw data to ensure the theme is truly representative of the text (Braun & Clarke, 2006; Maguire & Delahunt, 2017; Nowell et al., 2017). To do this, I uploaded the interview transcripts into NVivo and converted the concept maps into nodes that could be used to tag data with relevant themes, sub-themes, and codes. I first reviewed the entire data set to ensure that each theme was present beyond the initial open coding session and deleted themes that did not hold up under the review (see Nowell et al., 2017). I then used NVivo to recode each interview transcript according to themes that remained from the initial data review. During this phase, several themes were further consolidated and a handful of new themes were added, as is consistent with the thematic analysis process (Braun & Clarke, 2006).

In the fifth step of thematic analysis, I gave final labels and operational definitions for each theme coded in the within-case analysis. To begin this process, I created an outline for each case (i.e., teacher) which included major themes, and sub-themes with data supporting each theme. Then, I used NVivo’s Query search to find every interview transcript coded with that theme. After reviewing the coded transcripts, I developed an integrated operational definition for each theme and sub-theme and generated a chart to organize all codes and sub-codes for easy access and review. In the sixth phase, I synthesized the themes into six individual case narratives (Braun & Clarke, 2006). Cases were written up with a similar structure which focused on four major themes and related subthemes.

Upon completing the six-step process for the within-case thematic analysis, I shifted my focus to the cross-case thematic analysis, using a consolidated thematic
analysis process. Given my familiarity with the data, I expedited step one and used the crosstabulation feature in NVivo to generate a total frequency and a within-case frequency for each code and theme from the individual case analysis. The crosstabulation allowed me to expedite my search to focus on codes and themes present in three or more of the cases.

To generate themes in Step 3 of the cross-case analysis, I first created a MindMap to cluster the initial iteration of themes, and then used an Excel file to simplify the common themes into revised clusters. After refinement, findings consisted of five overarching themes, 13 major themes and 37 sub-themes, which were then defined in the Excel spreadsheet (Braun & Clarke, 2006; Nowell et al., 2017). The write up of step six took the form of the cross-case analysis that is reported in Chapter 5.

Throughout the process, I took active steps to ensure credibility and trustworthiness of my findings. In the early stages of designing the study, I documented and saved the interview questions, recruitment tweets, and forms and selection criteria so that future researchers may be able to replicate my study or build upon it. During data collection and analysis, I took notes on my thinking and shared my research process and initial findings with fellow researchers and my dissertation advisor (Guba & Lincoln, 1981). To strengthen the credibility of my interpretations, I shared findings of the within case analyses in Chapter 4 and the cross-case analyses in Chapter 5 with all six teacher participants. All six teachers responded and universally confirmed that the findings represented their experience, which Merriam (2009) suggests is a sign of trustworthiness.

Organization of Dissertation
This dissertation is organized into six chapters. Chapter 1 outlines the problem at the center of this study along with a short summary of the research, the purpose, and the significance of this study. A short overview of the methods and data analysis is also provided. Chapter 2 introduces the theoretical frameworks guiding this study and reviews relevant literature surrounding student engagement and Genius Hour as a form of inquiry-based instruction. Chapter 3 details the methodology used in this study. Chapter 4 reports findings from the individual case analyses and Chapter 5 presents thematic findings from the cross-case analysis. In Chapter 6, I discuss findings from this study, introduce a metaphorical model for thinking about the Genius Hour experience, and offer recommendations for future implementation and action.
Chapter 2

Review of the Literature

This chapter presents contemporary research connecting issues surrounding student engagement, teacher practice, and inquiry-based teaching. It begins with an overview of three theoretical frameworks that shaped this study’s focus on interest-driven inquiry. Then, I provide an overview of the literature around student engagement in schools, with a primary focus on the concept of “flow” (Csikszentmihalyi, 2008; Shernoff et al., 2003), which is a high-level state of engagement. Afterward, I examine instructional practices found to increase the likelihood that students will experience a flow-like state, including those centered on inquiry-based learning. The link between engagement and inquiry provides a rationale for structuring inquiry-based learning opportunities in school settings.

Next, I introduce key practices highlighted in existing trade books and other publications focused on Genius Hour, an inquiry-driven approach where teachers empower students to choose a personally relevant topic to investigate. Given that it is a fairly new practice, at least in nomenclature, it is worth exploring how different teachers enact and perceive the Genius Hour experience in different contexts. A focus on the teacher experience is critical because their perceptions ultimately determine whether Genius Hour will be pursued and maintained as a practice to share with students. This chapter ends by posing a potential relationship between the conceptual framework of Connected Learning and findings from the various bodies of research introduced. The conclusion also serves as a springboard to identify the lingering questions that lead to the present study. A visual model of the literature review structure can be found in Figure X,
with each of the circles serving as a roadmap from one complex body of work to another in a logical sequence.

Figure 1

A Visual Model of the Literature Review
Theoretical Frameworks

The initial frame for this study was grounded in social constructivist learning theory. Social constructivism recognizes the important role that interests, peers, community, and culture play in an individual’s learning and development (J. Bruner, 1960; J. S. Bruner, 2003; Dewey, 1938; Vygotsky, 1978). Constructivists believe that people create their knowledge by making meaning from both their individual and social experiences. In terms of teacher practice, socially constructed learning can manifest itself in the form of student-centered teaching, an approach “where students exercise a substantial degree of responsibility for what is taught and how it is learned…. Guided by teachers, students learn content and skills through different tasks such as going to activity centers in the room, joining a team to produce a project, and conducting independent work” (Cuban, 2005, p. 3). Thus, Genius Hour provides a rich area of exploration as student interests drive their learning experience and this study attempts to capture the teacher’s role in this process.

Given the use of digital technology in Genius Hour and its overlaps with principles of connected learning, connectivism (Siemens, 2004) is a second useful theoretical frame. Connectivism is the theory that learning and knowledge creation comes from interacting with and locating information via one or several networks, in both digital and real-world contexts. Additionally, connectivism assumes that knowledge is dynamic and constantly changing; thus, learning is dependent on one’s ability to locate and evaluate information for relevance, accuracy, and credibility (Kop & Hill, 2008). This study will explore the extent to which the Internet and digital networks shape the structure of Genius Hour projects. Further, this study will examine teachers’ perceptions
of how students utilize both digital and analog networks as part of their inquiry process.

Finally, this research is informed by Papert’s (1991) theory of constructionism. Like constructivism, constructionism shares the belief that knowledge is constructed rather than transmitted. However, constructionism extends tenets of constructivism by suggesting that one learns best through the creation of a public artifact of learning, rather than through an abstract construction of ideas located solely in the mind. Accordingly, this learning theory informs the study of student-centered creation aspects of inquiry as part of the Genius Hour experience. Constructionism provides a rationale for exploring how teachers structure the design of student end products as well as their perceptions of the process and its result.

These three theories also provide the rationale for applying principles of connected learning (Ito et al., 2013b, 2020) to any resulting interpretations of the Genius Hour experience. From my perspective, connected learning is a conceptual framework that links the three theoretical frameworks together. Connected Learning is situated at the intersection of learner interests, relationships with peers and mentors, and opportunities to engage in real world career and civic learning experiences. Connected Learning embraces the social aspect of learning and the value of creating objects to think with and share amongst a network of individuals who have similar interests. The end products are often a result of a shared inquiry or exploration around a topic of interest. Connected Learning environments also feature four critical design principles including: 1) sponsorship of youth interests by adults or organizations; 2) shared practices of learning about and engagement with an area of interest that exist over an extended period of time; 3) shared purposes which foster belonging and a shared culture amongst participants; and
connections across settings so that learners have pathways to opportunities and
mentors within an extended network (Ito et al., 2020).

Thus, the concept of Connected Learning weaves together a focus on interest
powered and peer supported learning experiences that address a shared purpose by
engaging in real-world and civic activities in ways that align with social constructivist
assumptions about teaching and learning (Dewey, 1910; Vygotsky, 1978). Additionally,
the shared purpose element of Connected Learning includes an emphasis on making and
creating, which directly aligns with Papert’s (1991) views of constructivism.
Furthermore, the Connected Learning element of “connection across settings” dovetails
nicely with connectivism (Siemens, 2003). Thus, Connected Learning is a useful
framework for reflecting on the nature of any Genius Hour experience as I will do in
Chapter 6.

**Conceptualizing Student Engagement**

The body of work related to student engagement is rich with research and
conceptualization as practitioners and scholars seek to characterize the construct of
engagement (Brush & Saye, 2008; J. O. Conner & Pope, 2013; Fredricks et al., 2004; Li
& Lerner, 2011; Schlechty, 2011a; Shernoff et al., 2003). For example, Schlechty (2011a)
defined engagement as an experience where students found the work to be meaningful,
interesting and challenging. In addition to the concept of engagement, Schlechty also
provided a multi-tiered pathway of potential learning states. These included states such as
*strategic compliance*, which is participation to meet extrinsic goals and expectations, and,
moving further away from engagement, the state of *ritual compliance*, which is
participation without meaning other than to avoid punishment. Additionally, Schlechty
argued that as students become decreasingly engaged, they might enter a state of 
retreatism, which involves the rejection of perceived irrelevant and unreachable goals 
and refusal to participate, or even a state of rebellion, which is the outward rejection of 
the goals and the implementation of the student’s own agenda by disrupting class. 
Schelcthy’s continuum is a useful guide for practitioners as it provides an accessible 
conceptualization of engagement and helps to delineate engagement from compliance and 
disengagement(J. O. Conner & Pope, 2013). However, the Schlechty’s model is rooted 
more in his experience as an educator and consultant than literature and his work has 
mostly been limited classroom-based articles (A. Baker, 2017).

A more research-driven definition of engagement is exemplified in Fredricks et 
al’s (2004) work, which took a tri-dimensional construct approach. Under this approach, 
engagement consists of three components: the emotional, the behavioral, and the 
cognitive. Behavioral engagement addresses the extent to which a student is willing to 
exert effort to complete a task, comply with school rules, and/or participate in school- 
based activities. Emotional engagement addresses the affective domain of engagement, 
which includes student interest in tasks, as well as feelings of happiness, anxiety, 
boredom, and/or sadness when participating in a task. Fredricks and colleagues 
incorporate notions of “flow” (Csikszentmihalyi, 2008) into their emotional construct; 
however, as suggested previously, flow is a much broader than just emotional 
engagement. Cognitive engagement is the value a student places on learning in terms of 
investment of psychic energy, flexible problem-solving abilities, and a desire for 
challenge and effort towards mastering the material or skill as opposed to just completing 
the work. These three dimensions of engagement clearly align with conditions of flow,
which also require a willingness to participate in a task, a level of concentration and effort while working on the task, and a high level of interest in the task itself.

Building on the model proposed by Fredricks et al. (2004), Conner and Pope (2012) designed a similar conceptualization for engagement. They identified three constructs, including the behavioral, cognitive, and affective domains. While the behavioral and cognitive domains carry over from Fredrick’s model, Conner and Pope’s model replaced the term “emotional” with the affective domain. Conner and Pope defined the affective domain as “interest and enjoyment of the tasks” (p. 1429) and the behavioral domain as “the willingness to exert effort to complete a task” (p. 1429). Cognitive engagement, from their perspective, was defined as “valuing and caring about the work” (p. 1429). Using those constructs, Conner and Pope developed seven typologies that integrated into one, two, or all three types of engagement.

Table 1

*Connor and Pope’s (2013) Typologies of Engagement*

<table>
<thead>
<tr>
<th>Typology</th>
<th>Domain &amp; Type of Engagement</th>
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<tbody>
<tr>
<td></td>
<td>Affective</td>
</tr>
<tr>
<td></td>
<td>Enjoyment of the Work</td>
</tr>
<tr>
<td>Fully Engaged</td>
<td>*</td>
</tr>
<tr>
<td>Purposefully Engaged</td>
<td>*</td>
</tr>
<tr>
<td>Rationally Engaged</td>
<td></td>
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<tr>
<td>Pleasurably Engaged</td>
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<tr>
<td>Busily Engaged</td>
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<tr>
<td>Mentally Engaged</td>
<td>*</td>
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<tr>
<td>Recreationally Engaged</td>
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</table>
Conner & Pope’s (2013) definition of full engagement aligns closely with the aforementioned flow as student engagement (Csikszentmihalyi, 2008; Shernoff et al., 2003, 2014). That is, a student’s interests are conceptualized as a driver for sustained effort and personal growth. Conner and Pope’s model is also useful in that it describes different states of engagement that students may experience while participating in a school learning activity. While the student experience is beyond the scope of this study, it is useful to recognize that students could be experiencing a partially engaged state where only one or two factors of engagement are present.

Looking across these models, the Fredricks et al (2014) and Conner and Pope (2013) literature provide valuable insight into the research-based conceptualization of engagement, particularly because they examine engagement in a school context. Yet, to a certain extent, what Schectly (2011) may lack in terms of a research base, the aforementioned authors lack, to a certain extent, a practitioner’s insight, particularly regarding actions that teachers that could use to cultivate (or stifle) engagement in school. To bridge the gap between research and practice more fully, it is useful to look to Csikszentmihalyi and Shernoff’s (2003, 2014) concept of student engagement through Csikszentmihalyi’s (2008) “flow” concept, which provides terminology for understanding deep engagement which educators can use to intentionally design for flow. Both Fredricks et al and Conner and Pope’s research is rooted in flow theory and serve as a natural bridge to the study of engagement used herein. That is, for the purposes of this study, I will define student engagement using Shernoff & Csikszentmihalyi’s (2009) conception as informed by flow.
Engagement as Flow

As discussed earlier, Csikszentmihalyi’s (2008) “flow” concept is the highest form of engagement, which is reached when an individual is deeply absorbed in a task due to the intrinsic enjoyment that it brings. Flow was developed from thousands of interviews and through a methodology called the Experience Sampling Method, an approach where individuals were “pinged” multiple times during a day and asked to complete a short survey about their current work and their level of enjoyment in the task (Larson & Csikszentmihalyi, 1984; Shernoff, 2010). Flow is described as an “autotelic experience” where one sets his or her own goals (Csikszentmihalyi, 2008, p. 67). The autotelic experience is spurred by intrinsic motivation where the enjoyment comes from participation in the action itself and not from a reward or extrinsic factor that may result from participating in the task, such as receiving an award or achieving a victory.

Flow has several distinct conditions that define the experience, as they are also the conditions that make an experience enjoyable. Csikszentmihalyi (2008) contrasted enjoyment, (i.e., satisfying a need in a way that fosters self-growth by going beyond what one was capable of doing before) with pleasure (i.e., a feeling of temporary contentment but one that does not lead to psychological growth). According to Csikszentmihalyi, the eight elements of flow include:

1. An appropriate challenge that an individual can realistically meet.
2. The ability to fully concentrate on the task at hand.
3. A task with clear goals that are meaningful to the individual.
4. An opportunity to obtain regular feedback from the environment, others, or from self-reflection.
5. A task that requires full concentration so that an individual does not exert effort worrying about irrelevant concerns that enter his/her consciousness.

6. A feeling of being in full control of his or her thoughts and actions.

7. A perception of time passing quickly during the task.

8. Upon completion, a feeling of growth as result of the experience, while still avoiding a great deal of self-focus during the task.

Csikszentmihalyi (2008) argued that the contextual factors of a task can either serve to enhance or discourage one’s ability to find flow. Interest in the task is a critical component to flow, as intrinsic motivation is a critical component of the autotelic experience. Secondly, flow experience occurs when we are focused on skill development and not outcomes. Mental energy focused on the outcome and not the immediate feedback causes the sense of self to be reintroduced to the process and takes individuals out of flow. Finally, flow conditions occur when we become more complex, or grow, as a result of participating in the activity.

Conversely, flow can be stymied when social and environmental factors cause us to become self-aware and thus, mental energy is drawn away from the task and on to our status. In turn, when we are unable to concentrate on a task, flow becomes impossible. Entropy of the mind (Csikszentmihalyi, 2008), or the natural disorganization of the mind, also hinders flow. In this condition, thoughts shift from worry to worry and require some other task in order to reorganize the mind.

Flow is achieved and maintained by finding the appropriate level of challenge for one’s skill level and then improving that skill as a result of the challenge (Csikszentmihalyi, 2008; Shernoff et al., 2014; Shernoff & Csikszentmihalyi, 2009).
order to reach flow, the challenge level must slightly exceed the individual’s skill level, causing growth, akin to Vygotsky’s (1978) concept of the Zone of Proximal development (Shernoff et al., 2014). However, different combinations of challenge and flow result in different psychic states. When an individual’s skills greatly exceed the level of the challenge, the individual becomes bored with the task. Conversely, an individual with a low skill level who is facing a challenge will feel anxiety toward the tasks. In a case where the task is not meaningful, and one has both low skills and the challenge is low, he or she will feel apathy toward the task.

In understanding the conditions for flow, educators can begin to think about ways in which their lessons and units can be designed to create a learning environment where flow is likely to occur. Shernoff and Csikszentmihaly (2003, 2014) provide a concept of student engagement that crystalizes the idea for educators, and their recommendations provide practices that enable educators to move from an idea of “flow” to actionable strategies.

**Flow and Student Engagement**

Csikszentmihaly and Shernoff (2010; 2014) used flow theory and research with students in schools to conceptualize student engagement as three factors: concentration, interest and enjoyment. *Concentration* is defined as the student’s full mental absorption in the task, like that of flow theory. *Interest* is the student’s intrinsic motivation to participate in the task because it is personally meaningful to the student. Interest helps to focus and sustain effort in the school task. Finally, *enjoyment* is the student’s positive feeling or association with the project or task and the sense of accomplishment he or she feels because of this growth.
Several in-school factors can provide the conditions for students to reach this high level of engagement (Shernoff, 2013; Shernoff & Csikszentmihalyi, 2009; Shernoff et al., 2014, 2003). These factors fall under an umbrella called environmental complexity, which consists of environmental challenge and environmental support. *Environmental challenge* is characterized as the importance of the challenge presented to the student, the meaning that the challenge has for the student, and the clarity of the goals to meet said challenge. *Environmental support* addresses the student’s motivation where teachers foster the student’s autonomy and desire for competency. High environmental support includes specific feedback regarding student progress towards goals and positive relationships between students and peers. In essence, this type of engagement provides opportunity for both work and play (Shernoff et al., 2014).

**Benefits of Engagement for Learners in School Contexts**

If student engagement is characterized by students experiencing high levels of interest, concentration, and enjoyment, it is important to also consider the impact that “flow” engagement can have on the student. One of the primary benefits of being “in the flow” is academic. Research suggests that there is a positive relationship between engagement and reported grades (Larson & Csikszentmihalyi, 1984; Li & Lerner, 2011; Shernoff & Schmidt, 2008). There is a tendency for fully engaged students to also have higher GPAs, take more advanced courses, cheat less, and have less physical and emotional symptoms of stress than those students who are reluctantly engaged (J. O. Conner & Pope, 2013).

Engagement also provides students with benefits beyond the classroom. Csikszentmihalyi (2008) argued that flow-level engagement enables the student and
person to feel “whole” as their feelings, thoughts and actions are all in line. Teens desire the chance opportunities to prove themselves as skilled, respectable members of the community and receive recognition and feedback on their contributions (Shernoff et al., 2014). Flow-based experiences provide a rich context to provide students with opportunities to demonstrate not only what they have learned but also make them feel engaged through their ability to make a positive contribution. These opportunities stem from flow experiences and encourage future students to investigate and take on more complex challenges within their area of interest. Additionally, student engagement can be beneficial for a student’s social health as lasting friendships are built on common interests where peers support one another to complete challenges in shared areas of interests (Csikszentmihalyi, 2008).

Finally, and perhaps most importantly, student engagement is generally associated with higher levels of students’ overall health and well-being (Lewis et al., 2011). Students who had positive ties to their school and were engaged were less likely to engage in drug and alcohol abuse (Guo et al., 2001; Li & Lerner, 2011) and also less likely to experience symptoms of depression (Li & Lerner, 2011). Given the benefits, teachers would be wise to seek out practices and projects that enable students to engage in meaningful, peer-supported challenges that also benefit the community.

**Impact of Disengagement in School Contexts**

In contrast to the host of benefits linked to high levels of student engagement, there are several negative student outcomes related to disengagement with the most prominent being students dropping out of school (Bridgeland, DiIulio Jr, & Morison, 2006; Cooper, 2014; Rumberger, 2011; Shernoff, 2013; Steinberg, 1997b; Yazzie-Mintz,
2010). Yazzie-Mintz (2007), for example, reported that 22% of the 81,499 high school students surveyed have considered dropping out of school. Sometimes, students experience disinteresting coursework that leads to instances of, or even day to day, short-term disengagement with school. If not addressed, disengagement can increase to the point of strong reoccurring negative associations toward school (Shernoff, 2013). While dropping out is often associated with students perceiving that school is too difficult, about one-third of students who drop out do so because the work is not challenging (Yazzie-Mintz, 2007). Dropping out leads to additional problems as the lack of academic credentials can lead to economic disadvantages later in life, including increased cases of poverty, especially in under-resourced urban areas (Shernoff, 2013).

Other times, disengagement manifests itself in visible negative behaviors that stop short of dropping out of school. For instance, disengagement is related to both occasional and chronic absenteeism and tardiness (Finn, 1993; Finn et al., 1995; Finn & Rock, 1997; Loeb, 2016; Shernoff, 2013). While absenteeism and tardiness impact the individual, student disengagement can also take the form of behaviors that impact other students, such as classroom distractions and fighting with classmates. In turn, the academic performance of an individual student and their peers may suffer even if disengagement does not lead to a student dropping out of school. Disengagement has also been linked to a student’s out-of-school life experiences, including negative behaviors such as the use of drugs and alcohol, depression, and frequent sexual risky activity (Steinberg et al. 1996).

Sometimes the impact of disengagement is more subtle. While not a disruption to the school environment, some disengaged students have mentally checked out. In a study of 20,000 high school students, nearly one third reported they were disinterested in
school and coped with their feelings by “goofing off with friends” (Steinberg, 1997, p. 19). Cheating on assessments and copying homework also becomes more common when students are disengaged (J. O. Conner & Pope, 2013; Steinberg, 1997; Yazzie-Mintz, 2007). For those students who are academically successful, but affectively disengaged, school becomes a means to an end where learning is secondary to completing tasks and moving on to the next assignment (Pope, 2001). Thus, while these students may have satisfactory grades, their long-term retention of material and attitudes towards academic learning may suffer as a result.

**Causes of Disengagement in School Contexts**

The causes of disengagement are wide ranging. One clear cause is boredom. In fact, in a nation-wide study of 42,754 American high school students (Yazzie-Mintz, 2010), approximately 66% of students reported that they experienced boredom nearly every single day in school and almost half reported being bored every single day in school. Further, approximately 17% of students surveyed said they were bored in every single class. The most common cause of boredom was the lack of interesting material in class, with over 80% of students providing this response. However, Yazzie-Mintz (2010) and other researchers (Cooper, 2014; Shernoff et al., 2014; Shernoff & Csikszentmihalyi, 2009) have reported other causes of disengagement, including a perceived lack of course relevance, mismatches between students and levels of challenge, a lack of positive relationships with teachers and peers, and finally, specific teaching practices. Research related to each of these causes is discussed next.

**Lack of Relevance**
Research suggests that students came become disengaged when content is not relevant. Relevance is best defined as course content that directly relates to the student’s life and culture and provides a meaningful context for learning (Cooper, 2014; Ito et al., 2013b; Shernoff et al., 2003). In a survey of 81,499 American high school students, 49% of students reported irrelevant course material as a cause of their boredom in class (Yazzie-Mintz, 2007). Furthermore, of the 22% of students who have considered dropping out of school, 60% said it was because they didn’t see the value in their work in school (Yazzie-Mintz, 2007). Other research revealed that students feel as though they have better options in how they use their time, especially in out of school settings (Newmann, 1992; Washor & Mojkowski, 2014) including family interactions, peer interactions, sports, and jobs (Shernoff, 2013).

Even when disengagement doesn’t lead to dropping out of school, students who perceive that school lacks relevance may become minimally, or merely behaviorally engaged. In these situations, students complete an assigned task to appease the teacher, but their effort does not result in enduring learning (J. O. Conner & Pope, 2013; Cooper, 2014; Shernoff et al., 2003; Shernoff, 2013; Shernoff et al., 2014). Additionally, social media and the Internet provide tempting options for students to pursue their own interests, both in and out of school, rather than engage in assigned school work (Shernoff, 2013).

In informal learning contexts, such as libraries and afterschool programming, teens are finding ways to use social media in more relevant ways, (Ito et al., 2009, 2013b; Ito & Martin, 2013); however, schools have yet to find a way to leverage technology for student engagement on a regular basis (Ito et al., 2020). Instead, students are often asked
to take part in school tasks from which they may benefit down the road, but those tasks are not perceived to have much connection to their everyday lives (Shernoff, 2013).

**Mismatched Challenge**

Students’ perceptions of the level of academic challenge can also play a factor in disengagement. As mentioned earlier, students who have considered dropping out of school mostly do so because school was too challenging; yet, over 20% of those surveyed suggested that they were not challenged enough and were bored (Yazzie-Mintz, 2010). As Shernoff, Abdi, Anderson, Csikszentmihalyi (2014) have noted, challenges that exceed one’s skills lead to anxiety, while challenges that are far below one’s skill level often lead to boredom. A student’s enjoyment of a task, and of school more generally, is related to finding challenges that help build relevant skills. Unfortunately, disengaged students report feeling that they are unsupported and unchallenged by their teachers (Shernoff, 2013; Shernoff et al., 2014).

Furthermore, certain types of challenges and related assessment practices can lead to a disengaging framing of those challenges regarding accomplishing learning goals. *Mastery-based learning goals*, for example, frame school-based challenges as those focused on skill development and personal growth, which in turn, serves to tap students’ intrinsic motivation (Shernoff, 2013). *Performance goals*, on the other hand, focuses on competence, particularly in comparison to others. When school challenges are framed to focus on performance goals, attention is sometimes drawn away from the challenge itself and towards the self in relation to others. Consequently, a student’s fear of losing self-esteem in relation to their peers can increase their disengagement with the task (Shernoff, 2013). Thus, educators designing learning experiences to foster student engagement must
monitor to ensure students have the requisite skills to complete their given task or provide supplementary support to build the necessary skills.

**Relationships**

Research also suggests that when students do not feel that they have strong in-school relationships, they are more likely to be disengaged (J. O. Conner & Pope, 2013; Shernoff, 2013; Shernoff et al., 2014; Shinn & Yoshikawa, 2008). Students who have little interaction with their teachers and do not feel supported by them are more likely to feel less engaged than those who have high-frequency, supportive interactions (Bodkin, 2021; Cooper, 2014; Fredricks et al., 2004; Shernoff, 2013). Yazzie-Mintz (2010) reported that 39% of surveyed students who considered dropping out of school did so, in part, because they did not like their teachers. A student’s perceived lack of support from peers and the larger school community has also been found to be a factor in predicting student engagement levels (Conner & Pope, 2013).

**Teaching Practices**

A fourth potential cause of student disengagement is linked to certain kinds of teaching practices. Some of the least engaging teaching practices include more passive forms of learning, such as lecture-based or video-based instruction (Shernoff et al., 2014). Additionally, activities based on pre-reading assignments or those that allow students to complete their homework during class time were also found to be less engaging (Shernoff et al., 2014). In general, research has suggested that tasks can also decrease student engagement when they a) do not require high concentration, b) do not require students to have clear personal goals for an activity, or c) do not enable students to obtain feedback on their performance toward meeting those goals (Shernoff, 2010, 2013; Shernoff &
Csikszentmihalyi, 2009). Prescribed curricular programming resulting from No Child Left Behind (2002) policies and constraints on teachers’ autonomy have also been attributed to student disengagement (Newmann, 1992; Shernoff, 2013). As a result, these conditions have not only lead to disengaged students, but also to students who fail to retain content over extended periods of time; disengaged students often lose their understanding of content in a matter of months (Lieberman, 2014; Pope, 2001).

Being aware of the signs and causes of student disengagement aids teachers in achieving what Taleb (2014) would refer to as the “via negativa,” or life steps to avoid harm, or in this case, to avoid disengagement. However, merely identifying the causes of disengagement and preventing them from occurring is necessary, but not sufficient, to ensure that students stay in school and deepen their knowledge of important content. Teachers must also be skilled in implementing strategies or practices that increase student engagement.

**Teacher Practices Designed to Promote Student Engagement**

Teachers, as designers of the learning environment, play a critical role in creating the conditions for student engagement in their classroom. However, as Schelctly (2011) and Conner and Pope (2013) both note, students may appear engaged, but could be busily engaged, looking studious, or simply complying with what has been requested of them. Six teacher practices that have been found to promote these three dimensions of student engagement include: 1) establishing positive relationships with students; 2) creating personally relevant and sufficiently challenging learning opportunities; 3) designing work and play opportunities that foster flow; 4) creating opportunities for hands-on interactive work; 5) facilitating the social nature of work; and 6) encouraging students to explore
areas of personal interest. Next, I outline research supporting each of these teacher practices.

**Positive Relationships**

Meaningful relationships are a cornerstone of student engagement (J. O. Conner & Pope, 2013; Klem & Connell, 2004; Li & Lerner, 2011; Roorda et al., 2011; Shernoff, 2013; Shernoff et al., 2014). On a basic level, teachers can provide a source of social and emotional support as students mature and learn to figure out social interactions. On a larger scale, a student’s attitude toward a content area can be determined by how they perceive a teacher’s level of care toward them. Conner & Pope (2013) found that when students felt like their teacher cared for them, their levels of affective, behavioral, and cognitive engagement increased. The need for positive relationships also includes the need to have positive relationships with peers and the teacher. The leader of any classroom community plays a critical role in helping students develop norms for respecting each other and ensuring those norms are followed (see also Ritchhart, 2015). Teachers can also cultivate relationships with their students through regular and respectful inquiries into students’ interests and activities outside of school. Further, showing students that you have a sense of humor has also been shown to increase student engagement (Shernoff et al., 2014).

An additional benefit of building positive relationships is that teachers can use their knowledge of each student to design effective learning opportunities. Shernoff (2014) noted that student engagement was higher when tasks were both challenging and relevant to students’ daily lives and they can demonstrate their competency in the desired area. As mentioned earlier, student engagement is high when the learning environment...
has high environmental complexity, which combines relevant challenges aimed toward personally meaningful goals and teachers who provide support by fostering student autonomy and meeting the need for competence (Ryan & Deci, 2000a; Shernoff, 2013; Shernoff et al., 2014). Similarly, a learning experience designed for student engagement should require concentration from students that yields enjoyment and provides intrinsically motivating opportunities for students to work toward long-term goals. In addition, teachers can provide opportunities for flow by designing “work-like and play-like aspects” of their class activities, since “researchers have found that both processes are integral parts of optimal engagement in the learning process” (Csikszentmihalyi & Schneider, 2000; Rathunde, 1993, p. 217).

**Key Instructional Practices**

In addition to efforts to promote relationship-building in their classrooms, teachers can also employ specific instructional practices to increase student engagement. First, learning opportunities that provide affordances for hands-on work as well as interactivity for students have been reported to increase student engagement (Shernoff et al., 2014). Second, connective learning design with high peer-to-peer and student-to teacher interaction was shown to increase engagement (Cooper, 2014). Most relevant to the present study are instructional practices associated with inquiry-based learning, particularly those that encourage projects which allow students to explore an area of interest within the teacher’s content area that have also been found to increase engagement (Wehmeyer & Zhao, 2020).

**Inquiry-Based Learning**
Given the literature on the importance of student engagement, and the potential for inquiry to foster student engagement, it becomes important to explore the ways in which educators can structure inquiry projects to capture student interests while also developing students’ depth and application of knowledge. The next section synthesizes the body of research related to inquiry-based learning and the various ways that inquiry might be structured to support students, in particular, as they engage in inquiry with digital tools. While the open-ended nature of inquiry topics one might explore during Genius Hour provides a potential opportunity to harness the power of intrinsic motivation, a lack of appropriate structures or methods to scaffold the inquiry process may lead to anxiety or boredom, which in turn, can prevent students from reaching a state of flow.

**Defining Inquiry**

Inquiry-based learning has a long history in the United States, with roots tracing back to the work of John Dewey (1938/1986). Dewey (2013) believed that inquiry, or the need to investigate, was one of four impulses for student learning; the other three included an interest in communicating with others, the desire to construct or make something, and, finally, the need for artistic expression. Notably, Dewey (2004) was critical of transmission forms of education, which sought to impart static knowledge into the minds of students. Instead, as Friesen (2013) noted, Dewey believed that inquiry should be used not just for the acquisition of knowledge, but rather, for specific purposes in life and thus aiding the student’s ability to understand the world around them.

Dewey (2004) believed that education was not merely preparation for life, but rather, the means through living life itself. Thus, education, and therefore, inquiry in
schools, should be rooted in the student’s natural interests (Dewey, 1986). While interests are important, Dewey (2013) also posed that inquiry is not a random pursuit of fleeting or momentary objects of curiosity. Consequently, Dewey argued teachers have a responsibility to provide structure and guidance while also introducing learners to new, undiscovered topics. Cook and Brown (1999) elaborated on Dewey’s vision by defining inquiry as “that aspect of any activity where we are deliberately (though not always consciously) seeking what we need, in order to do what we want to do” (p. 62). Dewey’s (1986, 2004) concept of productive inquiry drew on one’s desire to design a question or topic for inquiry; more importantly, productive inquiry followed a purposeful process to reach definitive conclusion at the end of the process. In productive inquiry, a learner uses relevant disciplines, tools, heuristics, or rules of thumb to investigate a topic and its concepts (S. D. Cook & Brown, 1999). The knowledge used or produced in this process is not static and inquiry is not merely a way to hoard information; rather, inquiry is a tool for achieving goals or constructing new knowledge.

**Structuring Inquiry**

Given the importance of teachers knowing how to foster productive student inquiry in ways that promote student engagement, the emphasis then shifts to defining the processes of productive inquiry. In schools, inquiry can take on various forms with different levels of scaffolding (Banchi & Bell, 2008; R. L. Bell et al., 2005; Coiro et al., 2016a). Bell, Smetana and Binnis (2005) categorize inquiry-based learning activities as one of four levels of varying complexity. The first is a *confirmation activity* where the question, methods, and solution are all known in advance, such as a science lab experiment that demonstrates a concept from the textbook. Slightly more complex is
structured inquiry, where the teacher provides both the question and the resources, but students are allowed some modicum of choice and the product outcome is not predetermined. At the third level is guided inquiry, where the teacher provides the question, but students make their own choices with respect to procedures and resources to answer their questions, and then they present their findings. Finally, there is open inquiry, where students select the question, procedures, resources, and method of communicating the information. Selection of the most appropriate level of inquiry support likely depends on each students’ skillset and the extent to which the removal of scaffolds to engage in more complex levels of inquiry creates unnecessary levels of anxiety or hinders progress (Friesen et al., 2013).

Scholars have introduced several methods that educators can use to integrate inquiry-based practices into their instruction. Friesen et al. (2013) describe several approaches including authentic pedagogy (Newman et al., 1996), discipline-based inquiry (Galileo Educational Network, 2008), project-based learning (Thomas & Mergendoller, 2000; Thomas, Mergendoller, & Michaelson, A., 1999), problem-based learning (Barrow, 2006) and design-based learning (Barron & Darling-Hammond, n.d.; Ideo Inc., 2012). While the models are numerous, inquiry is better seen not as simply a method or a tactic, but rather as the process by which learning occurs (Bruce & Bishop, 2008). Thus, the question becomes how to achieve productive inquiry through an appropriately structured process?

From my review of different conceptualizations of inquiry (e.g., Alberta Education, 2004; Bruce & Bishop, 2002; Bruce & Bishop, 2008; Coiro et al., 2016; Ideo Inc., 2012; Learning et al., 2004; Thomas & Brown, 2011), the following five elements
are somehow represented in each: 1) questioning, 2) researching, 3) constructing, 4) sharing new knowledge, and 5) reflecting on the experience. It’s important to note that these five components are ordered in a manner consistent with how the inquiry process is structured in the literature; however, as Bruce and Bishop (2008) point out, inquiry is a complex process and does not always conform to imposed linear or cyclical structures. In the next section, I elaborate on each inquiry component in more depth and then point out how each is linked to the literature on student engagement (J. O. Conner & Pope, 2013; Csikszentmihalyi, 2008; Shernoff, 2013; Shernoff et al., 2014; Shernoff & Csikszentmihalyi, 2009) and connected learning (Ito et al., 2013b; Jenkins et al., 2015).

**Questioning**

Although it may be self-evident, one of the first phases of inquiry is the questioning phase. Typically, in education settings, questions are established by the teacher and tied to curriculum goals. In modeled or structured inquiry, teachers design open-ended questions for students. In guided inquiry settings, teachers may give students the autonomy to generate their own related sub-questions or revise the current guided question. In some less structured forms of guided inquiry, students may be able to form their own questions or select their own topic within the confines of the course content or the course topic. In these settings, students may also be able to revise questions as they get deeper into the inquiry process. In open inquiry settings, students would be responsible for formulating the inquiry question and they may have moderate to little guidance from the instructor or teacher. In these scenarios, it is important to remember that sometimes these initial questions take time to develop and emerge in order to accurately articulate the problem or concern (Bruce & Casey, 2012).
Across the literature, however, the need for generating questions to frame the inquiry is critical. While the teacher can serve as a catalyst in the questioning phase, the direction of the inquiry should originate from each student’s authentic interests and concerns in order to maximize student investment in learning (Bishop et al., 2009; Bruce & Bishop, 2008; Bruce & Casey, 2012). Bruce and Bishop (2008) link this state to what Dewey (1938) termed an “indeterminate situation,” in which a life experience influences a person’s desires, knowledge, or skills for participation in or understanding of life. Similarly, inquiry is most meaningful when students perceive the question or topic to be centered on a real problem or relevant question (Friesen, 2013). In addition, meaningful inquiry results from open-ended inquiry questions where exact answers are not always known in advance, and the initial process of brainstorming multiple questions can yield more creative thinking later in the inquiry (Lehman, 2014). Finally, quoting Olds, Schwartz, & Willie (1980, p. 40), Bruce and Bishop discuss the “enormous pedagogical difference between answering someone else’s question and formulating your own” with the latter being a far more engaging and enriching process for the learner. Yet, as Berger (2014) found, learners of all ages can benefit from scaffolds in the question-building process that help them to develop deep, but specific questions can guide their inquiry.

Regardless of the form of inquiry (structured, guided, or open), the questioning phase can be engaging for students as it represents a form of connected learning by purposeful design. No matter the level of support provided, student engagement is most likely to occur when the topic is relevant and meaningful to the student (Conner & Pope, 2013; Shernoff, 2013; Shernoff et al., 2014; Yazzie-Mintz, 2007). Guided inquiry approaches that feature open questions and more student-centered designs provide
students with agency over the inquiry questions, thus enabling students to select and
design an inquiry question of their choice. In more highly structured inquiry designs,
teachers can poll students or consider their understanding of student interests before
determining the established inquiry question. In doing so, even though teachers have
control over the question, linking the inquiry to student interests can increase the
likelihood of engagement (Coiro et al., 2019).

Furthermore, the goal of interest-powered learning, which is a core principle of
the connected learning framework (Ito et al, 2013), can be met through the inquiry
question development process by empowering students to design relevant questions. The
question design phase of inquiry can also meet the academically oriented dimension of
connected learning when the inquiry question is connected to the curriculum, career
exploration, and/or opportunities for civic action. Finally, a shared question, developed or
selected collaboratively with students, can also provide the impetus for peer-supported
learning, since developing a shared question together can ideally lead to the co-
construction of a shared process and/or product.

*Investigating*

After a question is developed, the inquiry process then moves to an investigative
phase during which learners seek resources to answer their question. Sources can take a
wide variety of mediums including digital and print (Casey & Bruce, 2011). These may
be provided by the teacher as part of structured or even guided inquiry approaches or
curated by the student in open approaches to inquiry. Oftentimes, an investigation will
require interactions with other individuals, particularly members of one’s community
(Bruce and Bishop, 2008; Bruce & Casey, 2012). While this phase typically results in
locating resources that answer one’s question, the investigation may result in revising the inquiry question due to a better understanding of the topic at hand.

The investigation phase can prove to be a challenging process for students, particularly in digital spaces (Coiro, 2003; Coiro, Dobler, & Pelekiti, 2019; Leu et al., 2004, 2013). Investigation requires students to be able to locate potentially relevant sources of information and then discern the quality of the information considering both the author’s and the piece’s reliability, accuracy, and perspective. This requires students to understand how search engines work, how to evaluate search results, and then how to navigate a website to locate the needed information and information about the author of the piece (Cho & Afflerbach, 2015; Coiro & Dobler, 2007; Dobler & Eagleton, 2015). Should students be able to complete those steps effectively, then they will also need to comprehend the claims and evidence presented in each author’s argument (Bråten et al., 2009). Finally, and perhaps most challenging, investigation requires the ability to synthesize information across multiple and sometimes conflicting ideas to construct an understanding of the text (Cho, 2014; Kintsch, 1998, 2005).

Additionally, students may need support in selecting appropriate digital tools to help organize information and compare ideas as part of the process of synthesizing their findings (Coiro et al., 2016, Kiili et al., 2016). The speed of finding digital resources is matched by the complexity of making use of these resources as part of any inquiry process. Thus, when exploring teacher experiences with inquiry, particularly in digital spaces, it is critical to closely examine the investigation phase of the inquiry process for the presence (or absence) of these challenges, and what steps, if any, teachers take to address them.
Much like the questioning phase, the investigation phase of inquiry can be engaging and the teachers’ intentional choices for instruction can reflect principles of connected learning. Deep engagement that leads to flow is the result of an experience that is inherently meaningful and the challenge of the task is proportional to, or slightly higher than, the skill level of the student (Csikszentmihalyi, 2008; Shernoff et al., 2014). Thus, teachers can make the investigation phase engaging by pairing challenging situations with appropriate scaffolds, particularly for inquiry that involves digital investigations. The active nature of investigation combined with student’s control over the process can provide a context for engaging learning (Shernoff & Csikszentmihalyi, 2009). Additionally, adding collaborative components to the investigation can make the inquiry process more engaging and also align with the peer-supported principle of connected learning (Ito et al., 2013b). That is, allowing students to work together to investigate a topic or providing space for them to discuss emerging findings are consistent with peer supported learning.

Creating

Across the literature, the investigation phase is followed by a constructive phase. During this phase, students construct meaning from their investigation and then decide on a course of action. Creating in digital forms of inquiry draws on practices in what Jenkins (2009, 2015) calls a “participatory culture,” characterized by low barriers for expression, a sense of social connectivity and civic engagement, a focus on meaningful creation, and opportunities to share creations with a larger audience. In many instances, the creation is a physical product such as an essay, video, website, or poster board. A creation may consist of original student work or could be an amalgamation, as students remix existing
products into a new item that addresses the topic of inquiry (Belshaw, 2014). Creation can also take the form of community or civic action, as learners seek to effect positive change in their town, city or state (Hobbs & Moore, 2013). Casey (2013) argued that learner participation was the ultimate goal in any learning environment. By providing opportunities for participation that value learning, autonomy, and agency, student creations become more personal and engaging (Ryan & Deci, 2000b, 2016; Zhao, 2012b).

Thus, in school contexts, the creation phase can serve multiple purposes. While inquiry is a deeply personal process, it is also a social one, where individuals collaborate and participate to construct meaning (Bruce and Bishop, 2008). In one respect, through a constructionist lens, the product becomes “an object to think with” as the learner makes his or her learning visible to himself and the world (Papert, 1987, p. 11). Additionally, as students engage in creation, they are not only actively constructing and refining meaning from earlier aspects of the inquiry, but they are also expanding their knowledge and affordances of different tools and discovering new approaches for future inquiry and creation (Belshaw, 2014). Further, as learners interact with their creation, they develop a deeper understanding of how the creation answers or does not answer their questions of inquiry. Additionally, the creation serves as a piece for others to interact with or a means of communicating one’s understanding of a question or topic. Creations that attempt to be communicative often consider the creators’ intended audience to clearly communicate ideas.

Creation is also directly aligned with the literature on engagement and connected learning. Research shows, for example, that students are most engaged when they
participate in hands-on learning activities that are relevant to their interests (Conner & Pope, 2013; Ito et al., 2020; Resnick, 2014; Shernoff et al., 2014). Additionally, creation is linked to the production-centered component of connected learning that suggests when students learn by creating and tinkering, learning is both resilient and engaging for the student (Ito et al., 2013). Furthermore, when these products are shared on digital media platforms, they may also be considered as leveraging connections in openly networked contexts, thus deepening the link between models of productive inquiry processes and connected learning.

**Discussing**

The fourth component of inquiry across the literature is discussing or sharing of one’s learning or product. The timing of this discussion component varies across different inquiry models; some models structure discussion before the creation phase, others position discussion after the creation phase, and other models center discussion throughout the entire inquiry process. The location in the inquiry phase may be as fluid as the phases themselves. Across the literature, however, inquiry is depicted as a social process where ideas are shared.

Schofield & Honoré (2011) note that learners in Generation Y, or those born after 1981, prefer to have the opportunity to learn with others. In the early investigative stages, discussion can occur to construct understanding and interpretation of topic-related information. Conducting a discussion *prior* to creating can be beneficial to consider alternate perspectives and uncover potential misconceptions through the help of a teacher, peer, or mentor. Discussion can also take place *during* the creation phase as well, when
an individual seeks feedback on their emerging product to revise or reconsider the product.

In design thinking models (Ideo, 2012), the purpose of the product is not to solve or address the topic of inquiry, but rather to stimulate discussion on how the product or prototype can be improved. Additionally, the discussion phase can serve to incorporate the social aspects of a cognitive apprenticeship (A. Collins et al., 1991) where learners are empowered by collaborating and observing others. These discussions could take place face-to-face in class, or as part of participation in an online community. If the latter is the case, students may need assistance in engaging in productive dialogues in digital spaces in order to advance their own knowledge while also work to build community (Dennen, 2005). Moreover, the larger goal of discussing is not just to meet one’s individual needs, or to affirm or correct their inquiry, but also to help improve one’s community through sharing of the knowledge constructed (Bruce & Bishop, 2008; Bruce & Casey, 2012; Casey & Bruce, 2011).

Like the other phases of productive inquiry, discussion in inquiry is a social practice of learning that is consistent with research on student engagement and connected learning. Interpersonal interaction is crucial for student engagement (Shernoff, 2010, 2013). Discussion is a form of peer supported learning that is a hallmark of connected learning, as students aid each other in their inquiry-based learning process (Ito et al., 2013b, 2015, 2020). Discussions between learners and their peers, or learners and their teachers, can lead to higher levels of engagement (Wu et al., 2013). However, it should be noted that interactions should be positive in nature and productive in moving the inquiry forward (S. D. Cook & Brown, 1999). Furthermore, when these discussions take
place between individuals of different cultures, ages, or geographic location as they work toward a common goal, inquiry learning can also meet the shared purpose aspect of connected learning (Ito et al., 2013a). In this way, inquiry may foster a sense of connection and belonging as individuals welcome opportunities to work with others focused on a shared interest that they can learn from and can also contribute knowledge.

**Reflecting**

The final component of inquiry is reflection. Reflection is perhaps the most important phase as it marks both the end and the potential beginning of inquiry (Coiro et al., 2016a). While sometimes positioned at the end of the inquiry cycle, reflection is most useful when embedded into the entire inquiry process (Coiro et al., 2019); thus, productive inquiry processes align with Schon’s (1983) ideas of “reflection on action” which takes place after the process has been completed, and “reflection in action,” which involves thinking about one’s actions while in the midst of the process. In the latter form, reflection may come during the investigation, such as a means of reframing an interview question to obtain a better understanding, or reflection may happen during the creating phase as students tinker and experiment with their product and evaluate the impact of their actions. Additionally, discussions provide opportunities for feedback from others which can lead to reflection in the moment or “food for thought” during a more formalized process later.

Reflection at the end of the inquiry process serves as the determinate for further action. Bruce and Bishop (2008) describe reflection as the process through which a learner determines if the indeterminate situation (Dewey, 1938) has become determinate
or complete. In other words, if the learner is still unclear about some aspects of the inquiry question, they can reflect to determine what further actions or inquiries are necessary. Additionally, engaging in reflection means processing what new skills have been developed or what new concepts have been learned along the way. Reflection also considers how the action or product might be able to scale or be shared with a larger group of people, so that they themselves or others may benefit from the learning resulting from inquiry (Ideo, 2012). Further, the process of reflection asks learners to consider not just the internal impact, but also the external impact of their inquiry on others (Coiro et al., 2016a, 2019; Hobbs, 2017). According to Thomas and Brown (2011), reflection ideally leads to one’s next question rather than a finite answer. The goal of reflection, and more broadly inquiry-based learning, is to create opportunities for continuous learning that keep the inquiry going. Thus, the central focus of productive inquiry is one of sustained learning rather than a fixed time experience.

Although reflection is not a specific component of engagement or directly linked to principles of connected learning, the literature in both areas recognizes the importance of reflection in learning. For example, Ito et al (2013) argue that learning does not occur merely by doing or taking action, but also by reflecting on one’s experience and constructing meaning from it. Furthermore, digital tools can better enable the reflection process (Coiro et al., 2019; Hobbs, 2017; Hobbs & Coiro, 2016). Finally, Csikszentmihalyi (2008) cited reflection, in concert with action, as crucial to constructing meaning from life. He also argued that reflection, particularly that which is detached from emotion, often yields optimal decision making. Thus, reflection is a key component not just to inquiry, but to sustainable engagement and connected learning.
**Barriers to Inquiry-Based Learning**

Despite the many potential benefits, teachers report significant perceived challenges that limit the usage of inquiry-based instructional practices (see, for example, DiBiase & McDonald, 2015; Edelson et al., 1999; Miranda & Damico, 2015; Quigley et al., 2011a; Trautmann et al., 2004). Among the most frequently cited barriers to implementing authentic inquiry reported by teachers included: a) a focus on high-stakes state assessment and mandated curricula that accompany the tests, b) a perceived lack of class time or preparation time, c) negative student dispositions towards inquiry, d) a lack of prior knowledge about students’ area of interest; and e) teachers’ internal factors, such as perceived lack of personal competency with inquiry-based teaching or dealing with classroom management issues. Research confirming each of these barriers to inquiry-based learning is discussed next.

*State testing and curriculum coverage*

Teachers reported that state and district curriculum mandates were a consistent hindrance to implementing inquiry-based learning. The impact was made impeccably clear in DiBiase and McDonald's (2015) survey of 275 middle school educators in North Carolina. Over 90% of those surveyed expressed the belief that “inquiry was an (1) effective teaching tool, (2) important instructional strategy to use in the classroom and (3) effective method for developing problem solving” (p. 88). Yet, when it comes to assessing student performance, 84% of those surveyed were uncertain that inquiry was an effective teaching method for school-based final assessments and only 40% of teachers believed that students would be prepared for these assessments if they utilized inquiry regularly.
Related to instruction and assessment practices, across the literature, teachers reported a concern that the volume of material proposed by local and district curricular guidelines required to prepare for high-stakes tests made it challenging to carve out appropriate time for inquiry (DiBiase & McDonald, 2015; Miranda & Damico, 2015; Quigley et al., 2011a). Teachers still felt compelled to prioritize learning activities for state assessment goals over inquiry-based learning, even if they believed that long-term learning from these practices was beneficial (Trautmann, MaKinster, & Avery, 2004). Teachers also reported feeling this pressure more strongly in core courses as opposed to electives. Teachers have consistently struggled to negotiate the optimal use of effective inquiry-based instructional practices while still meeting external curricular and high stakes achievement mandates.

**Students’ lack of motivation**

A second challenge to implementing inquiry-based instructional practices stems from students’ lack of motivation. From the teacher’s perspective, positive student dispositions are critical to successful inquiry. The nature of inquiry requires learners to exert more effort than in a traditional classroom (Edelson et al., 1999). In order to sustain this effort, students must be deeply invested in all aspects of the inquiry process, including efforts to generate relevant questions, investigate possible solutions, and consider implications of their inquiry.

Yet, teachers have expressed concerns that student perceptions of their school work and their teacher’ expectations for what they should be able to do may not be congruent with the skills needed for inquiry (Trautmann et al., 2004). Inquiry requires students to be able to manage extended learning activities over long periods of time.
(Edelson et al., 1999), but traditional classroom practices may not require students to frequently manage long-term projects. In addition, teachers worry that students lack organizational skills and the ability to manage multiple resources and the end products of their inquiry (Edelson et al., 1999; Trautmann, et al., 2004). In a survey of over 200 teachers in North Carolina, for example, DiBiase & McDonald (2015) found that 78% of teachers surveyed believed that students would have difficulty constructing meaning from inquiry. Teachers have also reported believing that students were not ready to deal with ambiguous answers and, instead, they preferred to have worksheets that can be completed (Trautmann, MaKinster, & Avery, 2004). Teachers even believed that high achieving students sometimes shied away from inquiry work and toward assignments involving rote memorization, which provided less ambiguous pathways to pleasing teachers.

**Time commitments for inquiry**

Separate from concerns about needing to prepare students for year-end assessments, teachers also reported concerns about finding time for inquiry. Teachers reported that their school schedules did not lend enough time to efficiently execute the inquiry process (Edelson et al., 1999). In a study of 305 teachers, 68% of those surveyed identified lack of time as the greatest obstacle to inquiry implementation (Gejda & LaRocco, 2006). Elsewhere, teachers expressed concerns that students would spend a great deal of time completing the inquiry only to come up with the wrong interpretation (Trautmann, MaKinster, & Avery, 2004). In addition to execution time, teachers reported feeling that the planning time required for inquiry also deterred them from implementation (DiBiase & McDonald, 2015; Trautmann et al., 2004). Thus research suggests that teachers preferred inquiry-based learning kits as opposed to open inquiry...
processes in order to save on preparation time (Jorgenson & Vanosdall, 2002). Given these concerns, teachers are often likely to conduct inquiry in a scripted or highly structured manner.

**Individual teacher perceptions**

A fourth challenge to adopting inquiry-based instructional practices may have less to do with external factors such as assessments, curriculum, and time, and more to do with individual teacher factors. When asked about inquiry-based practices, teachers have expressed fear of losing control of their classroom, including control over student learning outcomes and/or student behavior as a reason for not utilizing inquiry in their classrooms (Quigley et al., 2011b). Similarly, DiBiase and McDonald (2015) found that 61% of teachers thought their students would mismanage the time allotted for inquiry. Even if student behavior was excellent, teachers felt responsible for student learning and were reluctant to relinquish control of the learning environment by having learning objectives that were not fully clear (Trautmann, MaKinster, & Avery, 2004). Finally, another crucial factor is a teacher’s level of comfort with teaching about the inquiry process or their depth of knowledge about subject areas connected to their students’ interests. If teacher believe their knowledge of inquiry processes or content to be lacking, they may be less inclined to implement inquiry practices in their classrooms (DiBiase & McDonald, 2015; Miranda & Damico, 2015).

To summarize, there are myriad factors that impact why teachers choose not to implement inquiry-based learning in their classrooms. State and district curriculum mandates, perceived lack of time, expectations of student behaviors, and their own perceived limitations are some of the many reasons why teachers opt to not implement
inquiry. Additionally, researchers believe the practice of inquiry-based learning is wisely avoided as it provides too little guidance and more opportunities for misunderstanding as compared to direct instruction and guided feedback (Kirschner et al., 2006).

However, concerns over inquiry-based learning may be based on teachers’ misconceptions of its implementation, which may ignore or not understand how the regular use of scaffolding and learner supports can be intentionally integrated into the design of inquiry-based instruction (Hmelo-Silver et al., 2007). What’s clear, however, is that if inquiry is to be effectively utilized by teachers, they will need a process that will help provide a means to address both curricular pacing and classroom management. Additionally, a model of productive classroom inquiry would ideally be flexible enough to integrate student interests with curricular goals and provide guidance for how to infuse technology while also being dynamic enough to be in line with the technological constraints of a given school. In 2016, an early version of Personal Digital Inquiry [PDI] (Coiro et al., 2016a) was proposed to address many of these concerns, and in 2019, the PDI framework and related practices was further elaborated in a book for elementary school teachers (Coiro et al., 2019). However, little empirical work has been conducted to study the impact of guided and open inquiry-based instructional practices, especially in middle and high school classroom contexts.

Limitations of Curriculum-Based Inquiry

Inquiry-based instructional practices are both engaging and aligned with the principles of connected learning. Various models found in the literature provide needed structures designed to address teacher concerns regarding meeting curricular objectives.
From my own experience, I believe there are also limitations to current frameworks that do not fully address aspects of connected learning and issues of engagement.

First, the focus or driver of many inquiry projects are curricular objectives, which feature important content, but do not necessarily take student interests into account. Thus, instead of striving to making interest-based learning a more academically oriented endeavor, most approaches to inquiry-based learning prioritize academic first, and interest second. As a result, middle and high school students are not typically afforded agency to choose their courses, nor do they have input into course syllabi, and therefore, course content, or topics, they deem interesting and/or personally meaningful. Notably, what teachers believe to be interesting or personally meaningful to students may not, in fact, be of interest to their students. Thus, the interest-driven component of connected learning may not be met by even the most well-intentioned users of inquiry-based learning. In turn, valuable student interests are typically left on the fringe or undercultivated, because teachers perceive that student interests will not align with the curriculum.

Another limitation is the implementation and structure of inquiry in schools. Often, in schools, inquiry manifests itself as guided inquiry or heavily structured inquiry that leaves few opportunities for students to choose a topic of interest or present their findings in an authentic way. Due to curricular requirements, common rubrics, or teacher preferences, even a guided inquiry design can more closely resemble a structured inquiry in a school setting. The use of tools for creation may be limited by the teacher’s knowledge of and level of comfort with a given tool. While these situations may give the appearance of choice, the choices are limited and may not align with student interests or
preferences for learning. Consequently, it is possible for students to engage in some form of inquiry-based learning throughout their school experience without ever being given the opportunity to conduct an open inquiry, which is most like the type of open-ended problem-solving experiences they may be asked to perform in the real world.

Finally, while many aspects of the inquiry process are consistent with connected learning, the alignment is not completely congruent. First, while school inquiry is often peer-supported learning, it does not necessarily include a “shared purpose” in which friends, family, teachers, and community members share in the inquiry. Instead, the shared purpose would likely not extend beyond those who were part of the class and thus, there are limited opportunities to connect with others who share an interest in the inquiry topic or who could contribute to the inquiry process.

Further, the openly networked component of connected learning may be lacking in school-structured inquiry practices. Openly networked settings provide the necessary digital tools and pathways to deepen interest. Yet, a school-based inquiry experience may not have the technology needed for the student’s choice of production or it may not provide a pathway of supported inquiry beyond the time allotted by the teacher. Thus, sustained deeper learning experiences may not be possible.

And third, a personal digital inquiry (PDI) framework calls for creation and making for real audiences, whereas the production-oriented principle of connected learning requires that created products be circulated to intended audiences for feedback. In school contexts, the audience may be artificially constrained to that of the teacher or peers, thus limiting the student’s opportunity to share their products with a wider audience outside of their classroom. Thus, PDI offers a compelling, yet incomplete,
framework from which to align classroom practices with the core principles of Ito’s (2013) connected learning.

Nevertheless, there are degrees of freedom with instructional practices that may expand PDI beyond its curricular-oriented foundations. Perhaps students have interests that are unmet or unacknowledged, despite the best efforts of educators, given curricular constraints. Perhaps there is an approach similar to PDI that situates itself first, from student interests and then, provides an avenue to fully address what students believe to be relevant to accomplish their learning goals. Such approaches to inquiry have the potential to expand in ways that more closely align with principles of connected learning, enabling the student to interact and share with others beyond his or her classmates. One potential version of PDI is emerging in pockets across the country and it’s called Genius Hour.

**Genius Hour**

**Definition**

Genius Hour is a classroom practice devoted to enabling students to develop and explore their own inquiry question about a personally meaningful topic (Krebs & Zvi, 2015, 2020; Wettrick, 2014). During the Genius Hour experience, district-initiated and/or curriculum specific learning objectives are deprioritized, and the focus is designed to center primarily on what students want to learn. Krebs & Zvi (2015) note that Genius Hour has often been referred to with different labels, including Curiosity Friday, Passion Project, Hour of Wonder, Google Time, Innovation Week, Innovation Day or 20-time. The latter, 20-time, is used in reference to Google’s 20% time which allowed employees to use 20% of their time for projects not related to the company’s goals (Brookhouser, 2015; D’Onfro, 2015; Juliani, 2014). The linkage to Google is often utilized to lend
credibility to a seemingly unconventional approach to learning. Google founders, Larry Page and Sergey Brinn (2004), interestingly cited their Montessori education experience and their ability to “do what you think is the best thing to do” as the impetus for their 20%-time initiative amongst Google employees. They noted that creative, useful solutions come out of following one’s interests and sought to create the time and environment where employees’ creativity could be sparked to improve the company.

**Design Options**

When implementing Genius Hour, teachers have several preliminary choices to make before structuring the overall process. One crucial choice should be centered on the idea of collaboration. Some trade books suggest that students may collaborate, but they should be encouraged to have their own inquiries and products (Juliani, 2014; Krebs & Zvi, 2015) while others recommend a collaboration-focused approach (Brookhouser, 2015). Other considerations included the extent to which technology, state standards, and parents or mentors play a role in the formation of Genius Hour. These choices mirror those considerations of a PDI approach since technology and standards play a role in the design process for the inquiry. Decisions around how students will collaborate also reflect practices aligned to the Connected Learning Framework, particularly in regards to the potential for involving adult mentors in order to pursue an inquiry with a shared purpose (Coiro et al., 2016a; Ito et al., 2013b, 2020).

**Structure**

Once the design principles are determined around if students will work together and which tools and learning standards might be woven into their work, popular trade
books suggest that generally, Genius Hour follows a particular structure. The first phase includes an introduction to the process, the brainstorming of ideas, and general strategies to build students’ motivation. The second phase is often referred to as “the launch”, during which students learn about any ground rules that will guide the project, including an outline of final requirements, suggestions for narrowing down their choices to a single topic or inquiry question, and receiving final approval of the process before they begin their inquiry. The third phase involves student actions which includes conducting research, planning their outcome, and designing their final product. The fourth phase is when students present and/or share their learning and the final phase involves some type of reflection and assessment of the work completed. More details about each phase of the Genius Hour structure are provided next.

**Phase 1. Introduction**

Often, the process of Genius Hour is new to students, so teachers typically spend part of the first session explaining what Genius Hour is and why it matters. Teachers will sometimes attempt to build interest and inspiration by sharing digital media of students engaged in their own interest-driven projects (Ginsberg & Coke, 2019; Krebs & Zvi, 2015). Juliani (2014) wrote that he also uses the introduction as a time to brainstorm topics of interest. Others use this time to have students begin developing potential inquiry questions. Educators note that sometimes students require scaffolding to brainstorm topics and could benefit from participating in brainstorming as a whole class activity (Brookhouser, 2015).

**Phase 2. Launch**
Once students have a chance to brainstorm their interests and inquiry, teachers begin the shift toward putting the project in motion. Early in the launch phase, the literature suggests educators lay out any ground rules for the project. Juliani (2014) wrote that he requires a written plan of action. In some trade books, formal research that is documented by students and reviewed by teachers is a mandatory part of the launch process (Brookhouser, 2015; Ginsberg & Coke, 2019; Juliani, 2014; Wettrick, 2014). From Wettrick’s perspective, research is not only a mandatory component, it should also include an emphasis on contacting experts in order to broaden their understanding and ideally, obtain a mentor for the project. Much of this process mirrors the “Wondering and Discovering” phase of Personal Digital Inquiry (Coiro et al., 2019) as well as the investigation phase of the inquiry process. For other educators, formal research during the Launch phase is optional, particularly if students choose to center their inquiry on learning or creating through action (Krebs & Zvi, 2015).

**Phase 3. Pitch**

Another common phase in the literature around Genius Hour is the “Pitch” process. During this phase, students provide a single slide or short oral presentation on their topic. Pitches are either made in one-on-one or small group meetings with the teacher or in front of the whole class. If the latter approach is used, teachers frame the process around the idea of an elevator pitch, or a distillation of their idea into a compelling story. The idea is that the individual would be able to sell or “pitch” their idea to a key decision maker during a short, chance-encounter elevator ride that had the potential to become a life-changing experience. The purpose of the pitch process is to get
feedback and help students improve their project through scope, clarity, or a new idea in general.

**Phase 4. Action**

After the launch, students are allotted time to work. The work timeframe typically lasts six to eight class periods, if Genius Hour is offered part of a class; an entire course devoted to Genius Hour typically lasts multiple weeks. Work time is used to focus on a combination of the research process, students’ end product, and/or their presentation (Brookhouser, 2015; Ginsberg & Coke, 2019; Krebs & Zvi, 2015; Wettrick, 2014). Some educators require students to maintain a blog or other digital journal to document how they use their time or to document their thought processes as a form of reflection (Juliani, 2014; Wettrick, 2014). Some students may be able to swap the blog for a portfolio. Teachers may choose to keep the blogs private or to share student blog posts with external audiences (Wettrick, 2014). This phase aligns with the “Create and Take Action” phase of the Personal Digital Inquiry framework and inquiry cycle.

**Phase 5. Presentations**

A unifying practice across trade books and limited Genius Hour research is the importance of sharing one’s learning (Brookhouser, 2015; Juliani, 2014; Krebs & Zvi, 2015; Wettrick, 2014). Often teachers frame their presentation as a TED-style talk adopted from pop culture, but sometimes teachers require components that ask students to demonstrate a product they created or speak from a typical slide show in which they share their learning with others (Juliani, 2014). Student presentations are typically presented to the class, but some educators advocate inviting the community to attend the presentations. Across the board, the literature suggests that teachers, and sometimes
peers, provide students with feedback on the project, particularly constructive criticism on the students’ presentation style and demonstrated skills.

**Phase 6. Reflection, Self-Assessment, and Educator Assessment**

The final assessment can take a multitude of formats. Krebs & Zvi (2015) required that students self-assess their work prior to meeting with the teacher. For Krebs & Zvi, the final product does not receive a grade. Juliani (2014), on the other hand, asked students to reflect on their process, somewhat deemphasizing the project. Teachers may scaffold this process with rubrics, sentence starters, or reflection questions, for example, and students may be asked to consider their growth in a wide variety of areas, such as creativity, innovation, and/or intrinsic motivation. Although reflection is most certainly a focus at the end of the Genius Hour experience, students are also encouraged to use their blogs or journals to reflect on their work throughout the other phases.

**Summary**

Although Genius Hour is framed as a new phenomenon or practice, to a certain extent, the literature suggests that the actual practice closely aligns with the inquiry processes outlined above. That is Genius Hour integrates aspects of wondering, discussion, investigating, creation, taking action, sharing one’s work, and reflection across the process. The variation at this juncture appears to be the extent to which students’ interests drive their projects as well as the role of external partners as mentors and sources of information.

Given these differences, guiding principles of Connected Learning (Ito et al., 2013b, 2020; Ito & Martin, 2013) can be a useful framework to articulate how teachers might more intentionally integrate student interests, relationship-building, and college
and career related opportunities into their classroom instruction. The link between Genius Hour and Connected Learning is further intriguing as most of the interest-driven learning exemplars in the framework take place in out-of-school contexts. It’s also worth noting that popular trade books about Genius Hour reflect just a handful of teachers who implement the process and while their writing is useful for helping to understand the structure of Genius Hour, it’s also a limited perspective that could benefit from more empirical research in school-based contexts. Thus, this study seeks to further unpack how other educators are implementing the Genius Hour experiences in middle and high-school classrooms.

Chapter 2 Summary

In this chapter I first reviewed the theoretical frameworks that shape and inform this study, including social constructivism, constructionism, connectivism and connected learning. Next, I provided several models for conceptualizing student engagement in learning (Conner & Pope, 2013; Fredricks et al., 2004; Schlechty, 2011b), before describing Shernoff’s three-part conceptualization of student engagement (including the presence of interest, concentration and enjoyment in a task) that extended Csikszentmihalyi’s (2008) theory of engagement called flow. I then outlined the conditions for flow as well as the conceptualization of student engagement. In the next section, I reviewed both the benefits of engagement as well as the consequences and causes of disengagement (Roorda et al., 2011; Shernoff, 2010; Shernoff & Schmidt, 2008; Washor & Mojkowski, 2014; Yazzie-Mintz, 2007, 2010). I then introduced teaching practices designed to foster engagement, including a deeper focus on inquiry-based teaching practices (Banchi & Bell, 2008; Bruce & Casey, 2012;
Coiro et al., 2019) and limitations of the practice (T. Bell et al., 2010; Quigley et al., 2011a; Trautmann et al., 2004).

Toward the end of my review, I synthesized existing trade book literature on Genius Hour to highlight the impetuses and design structures for the process (Ginsberg & Coke, 2019; Juliani, 2014; Krebs & Zvi, 2020; Wettrick, 2014). I concluded Chapter 2 with a discussion of where Genius Hour sits within the existing inquiry and connected learning (Ito et al., 2013a, 2020) research as well as the direction of this study. My review of the literature suggests that there is a gap in exploring the range of practices teachers use while facilitating Genius Hour. Furthermore, there is limited literature on the teacher experience, both the benefits and drawbacks. This study sought to shed light on the Genius Hour process and teachers’ perceptions of the endeavor. In Chapter 3, I will detail the methods in this qualitative study of how secondary teachers structured Genius Hour and their experiences when implementing the practice.
Chapter 3

Methods

The purpose of this study is to explore how secondary-level educators structure the Genius Hour process and their perceptions of the experience. The study focuses first on the teachers’ descriptions of the process or phases of Genius Hour implementation in their classes. The intent of this phase was to uncover both the universal and unique aspects of implementation across the six participating teachers. The second component of this study sought to explore teachers’ perceptions of the Genius Hour experience. Areas of interest centered on each teacher’s motivations for initiating Genius Hour in their classroom, what they perceived as the positive benefits of Genius Hour for both themselves and their students, and what difficulties both they and their students encountered as part of the experience. In summation, the study sought to develop a more concrete understanding of how six teachers in different secondary school contexts implemented a potentially nebulous process while also uncovering the wide range of perceived experiences that result when educators embark on this unconventional teaching process.

Design

This qualitative, multiple case study was designed to capture the lived experience of each of the six participating teachers. Data from each participant was written up as an individual case to capture the ways that each teacher implemented and experienced their unique collection of Genius Hour practices. Case analysis yields a rich description of the phenomenon for each of the educators and gives the reader deep insight into the particularities and complexities for each (Yin, 2018).
While each case is an important unit of analysis, it is equally, if not more critical, to examine the Genius Hour experience at the collective level to gain a better understanding of the practice as an entity. Thus, the thematic analysis methodology (Braun & Clarke, 2006; Maguire & Delahunt, 2017; Peel, 2020) was applied to generate a comprehensive, cross-case examination of the Genius Hour experience. The thematic analysis methodology is commonly used in qualitative research because its structured process and flexible design aids the researcher in the identification of cross-cutting themes within a data set (Nowell et al., 2017). Furthermore, the process also yields a thick, rich description of the phenomenon being studied while supporting the researcher in uncovering similarities, differences, and novel insights across cases (Braun & Clarke, 2006). Given the aforementioned benefits and its prior use in qualitative education research (Jurow et al., 2008; Lin, 2019; Maguire & Delahunt, 2017), thematic analysis was deemed a prudent methodological choice.

The cross-case analysis focused on four major themes that were consistent or divergent within cases and then five major themes across the cases. To increase the diversity of perspectives and participants, I aimed to use a nation-wide sample of teachers. This approach, while limiting my accessibility to each educator’s classroom practice, helped broaden the range of perspectives considered and the school contexts in which Genius Hour takes place. To compensate for the lack of access to the classroom, and in turn, the ability to observe the actual practice, the design of the study focused on the teacher experience to live comfortably within the constraints of this design limitation.
Researcher Positionality

It is critical to note my positionality as the researcher because it shapes my approach to the study’s design and procedures for collecting and analyzing the data (Guba & Lincoln, 1981; Merriam, 2009). At the time of writing, I was a white male doctoral level researcher, living in the Northeast region of the United States, and engaged in the public education system as an instructional technology administrator. My socio-economic status could be described as upper-middle class. Previously, for three years, I worked as a middle school history teacher. I am, and have always been, intrigued by the idea of interest-driven learning and the role that technology can play in supporting that opportunity. I am an avid self-directed learner myself. To some extent, the topic of this dissertation study also mirrors my own education pathway, as my interests in sports lead me to pursue an undergraduate Sport Management degree and my interest in education lead me to a master’s degree in the Art of Teaching. Additionally, midway through my doctoral program I worked with my major professor to brainstorm the Personal Digital Inquiry (PDI) (Coiro et al., 2016b) model that sought to structure curricular, school-based inquiry projects around student interests. In this study, I sought out individuals who shared this area of interest, many of whom were connected to this study through digital and social media.

To the extent possible, I have aimed to remain objective in my design and analysis of the data. I have relied on advisors and the participants themselves for their feedback on the process and final dissertation write-up to ensure that the claims and interpretations outlined in the chapters that follow factually represent the ideas and perspectives of those interviewed and are not just reflections of my own positionality.
(Maxwell, 2013; Nowell et al., 2017). Additionally, at the end of this chapter, I outline the steps taken to increase the trustworthiness of this study.

Sample

Recruiting Participants

Study participants were recruited primarily through Twitter via Tweets containing a link to the consent form and using hashtag #GeniusHour and #20time. Twitter was selected as the primary recruiting pool because it provided access to an active nationwide community of teachers engaged in implementing the Genius Hour process in different teaching contexts.

Figure 2
Genius Hour Recruiting Tweet

Consent was collected via a password protected Google form (See Appendix A) that also provided an overview of the study. The top half of the form outlined the study’s purpose which was to investigate the experiences of teachers who have facilitated student-led inquiry projects that utilize digital technology. The form identified secondary teachers, or those who teach students in grades 6 - 12, as being eligible to participate in
the study. Secondary level educators served as the focal point because teachers in middle and high school settings often interact with students who are increasingly disengaged (Gallup Inc, 2015).

Recruitment tweets (See Figure 2) were sent out 12 times over a one-month period in January 2018. The tweets were then Retweeted or shared by members of the Genius Hour online community. The IRB-approved recruitment Tweets were also shared during Genius Hour Twitter chats. During these chats, interested Twitter participants engaged in a facilitated conversation with each other about Genius Hour. One member of the community posted questions, one every few minutes, related to the topic while other members shared insights and replied to Tweets from other participants. Each post contained #GeniusHour which enabled community members and those interested in the topic to follow along or search for the content at a later time. Twitter chats usually lasted an hour synchronously.

Additionally, following Patton’s (2015) recommendations, I contacted several teachers directly to recruit them to participate in the study. These educators had shared their use of Genius Hour on an online public forum or had informed me that they had previously conducted Genius Hour with students. These individuals received an email or direct Twitter message informing them of the study with a link to the consent form. These individuals were approached for the purpose of maximum variation (Glaser & Strauss, 2010), increasing the pool of potential participants while also increasing the geographic, gender, and/or experiential diversity of the applicant pool.

**Final Sample**
The recruitment process resulted in 14 total responses and consents to participate in the study. 13 of the applications met the secondary-level requirement within the month-long response window. As part of the recruitment process, educators were asked to provide the following information on the form:

- their name
- the name of their school
- the grade level at which they taught
- the content area(s) that they taught
- the city & state of their school
- the number of Genius Hour projects that they had completed.

In February of 2018, I reviewed the student demographic data from each of the 13 consenting teachers using data from the National Center for Education Statistics (NCES, 2018). The school’s size, geographic locale, socio-economic and ethnic composition of students and available achievement data were logged into a spreadsheet for comparison with the rest of the participant data. The goal was to identify and select teachers who were conducting Genius Hour not only in different geographic settings, but also in a wide range of school settings.

From the pool of 13 eligible educators, six secondary-level teachers were ultimately selected to participate in the study. The sample consisted of three teachers from the middle school level and three from the high school level so that the sample would not skew the results toward one academic level or the other. Of the six, three of the teachers identified as male and three identified as female. The six teachers came from five different states representing regions on the east coast and west coast as well as from
mid-western United States. The sample did not contain any teachers from the south or southwestern United States. The intention was to develop a purposive sample of educators that maximized the variation from the available pool (Glaser & Strauss, 2010; Merriam, 2009; Patton, 2015).

At the time of the study, the largest school in the sample consisted of over 3000 students while the smallest was just over 600 students, as shown in Table 2. The percentage of students who received free or reduced lunch ranged from as high as 84% in one school and as low as 5% in another school. All six of the selected teachers had facilitated two or more Genius Hour projects. Of the initial six teachers who were selected, three did not respond to requests for interviews, so three additional teachers were selected from the pool of 13. These three additional teachers were selected based on the gender composition of the existing pool and the desire to increase the diversity of school contexts included in the study.

Table 2

Table of Participants and Background Information

<table>
<thead>
<tr>
<th>Name (Pseudonym)</th>
<th>Grade</th>
<th>Subject Area</th>
<th>State</th>
<th>Last Genius Hour</th>
<th>Duration</th>
<th>Number of Iterations</th>
<th>School District</th>
<th>Ratio of 2015-16 Free &amp; Reduced Lunch Students</th>
<th>Achievement Data</th>
<th>Demographics (2019)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WALTER</td>
<td>10</td>
<td>ELA</td>
<td>CA</td>
<td>More than 12 months</td>
<td>5 - 11 weeks</td>
<td>6 or more times</td>
<td>City: Small</td>
<td>950/3558</td>
<td>2016 Smarter Balanced ELA 88%, Math 63</td>
<td>55% Asian, 24% White, 15% Hispanic, 3% two or more races</td>
</tr>
<tr>
<td>FLOSSIE</td>
<td>8</td>
<td>SCI</td>
<td>IL</td>
<td>More than 12 months</td>
<td>5 - 11 weeks</td>
<td>2 - 3 times</td>
<td>Suburb: Large</td>
<td>547/676</td>
<td>2016 PARCC M/A14%</td>
<td>87% Hispanic, 8% White, 3% Black</td>
</tr>
<tr>
<td>RITA</td>
<td>9</td>
<td>ELA</td>
<td>MA</td>
<td>Less than 3 months</td>
<td>12 weeks or more</td>
<td>4 - 5 times</td>
<td>Rural: Fringe</td>
<td>0/618</td>
<td>2016 MCAS ELA 98%,</td>
<td>90% White, 4% Hispanic, 2% Asian</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Math 92%</td>
<td></td>
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<tr>
<td>CLETE</td>
<td>6</td>
<td>SPED</td>
<td>NJ</td>
<td>3 - 6 months</td>
<td>12 weeks or more</td>
<td>2-3 times</td>
<td>Rural: Fringe</td>
<td>40/815</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1% Black</td>
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</tr>
<tr>
<td>ORRIN</td>
<td>7</td>
<td>SS</td>
<td>NJ</td>
<td>7-12 months</td>
<td>5 -11 weeks</td>
<td>4-5 times</td>
<td>Suburb: Large</td>
<td>16/662</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>70% White</td>
<td></td>
<td></td>
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<tr>
<td>HENRY</td>
<td>10</td>
<td>ELA</td>
<td>PA</td>
<td>3 - 6 months</td>
<td>12 weeks or more</td>
<td>4-5 times</td>
<td>Suburb: Large</td>
<td>248/1820</td>
<td></td>
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<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>85% White</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. A: Subject definitions English (ELA), Science (SCI), Special Education (SPED), Social Studies (SS)

B: Definitions drawn from the National Center for Education Statistics.

- **City – Small (13):** Territory inside an Urbanized Area and inside a Principal City with population less than 100,000.
- **Suburban – Large:** Territory outside a Principal City and inside an Urbanized Area with population of 250,000 or more.
- **Rural – Fringe:** Census-defined rural territory that is less than or equal to 5 miles from an Urbanized Area, as well as rural territory that is less than or equal to 2.5 miles from an Urban Cluster.

C: Achievement Data with the names of or acronyms of the state assessment. Smarter Balanced Assessment, Partnership for Assessment of Readiness for College and Careers (PARCC), Keystone Exams (Keystone) and Massachusetts Comprehensive Assessment System (MCAS)

### Data Collection

Once the six participants were selected, each teacher was sent an email to request an individual interview at a time of their convenience. Each interview was scheduled for an hour, but the actual interviews ranged in length from 49 minutes to 78 minutes. Once the teacher committed to a date and time for the interview, they were contacted via Google Hangout to initiate the interview. Google Hangout was a form of a video call that allowed participants to share both voice and video during a conversation. All interviews
took place with both audio and video, however only the audio for each interview was recorded using QuickTime. Study participants were notified that only the audio was being recorded as well.

Prior to the start of the interview, each participant was given a written overview of the study. This overview included reminders that we would be discussing the teacher’s experience with Genius Hour, that they were free to stop the interview at any time, and if they had any questions, they were free to ask them before we started or during the interview.

The interview (See Appendix B) consisted of 16 semi-structured questions and some unscripted follow-up questions that were asked or indirectly addressed during the interview. Interview questions were developed in direct relation to the research questions and sub-questions. The first phase of questions explored how teachers learned about Genius Hour and their motivations for implementing it into their classroom. The second set of questions addressed the teacher’s implementation process. This set of questions began with a question about how the teacher structured the Genius Hour process, but it was purposely left open-ended to not influence the teacher’s response. The next question asked the teacher to reflect on his or her perceived role during Genius Hour, which included what actions or supports they would and would not have provided when facilitating the process.

The third phase of the interview questions explored the successes and challenges that the teacher both experienced personally and observed of their students. The success question was kept open-ended and did not differentiate between the teacher’s personal success and the teacher’s perceptions of students’ success. If participants asked if the
question addressed students or teachers, they were told both. Otherwise, the questions remained open to interpretation. The challenges segment was split into specific questions regarding both teacher challenges and perceived student challenges. Study participants were asked specifically about observed or experienced challenges in relation to brainstorming topics, conducting research for the project, and creating and presenting the final product.

The fourth phase asked teachers to discuss any scaffolding materials and projects they provided to me in advance of the interview. The participant was asked to tell me about each of the items that were shared with no other context or qualifier added. The fifth, and final phase of the interview included a set of semi-structured questions. Participants were asked to reflect on their initial concerns before starting Genius Hour and then their lingering concerns after completing the process. Additionally, participants were asked to identify any significant learning or “ah-ha” moments they discovered about the Genius Hour process that came because of their experience. They were then asked about what recommendations or insights they would share with teachers starting the process. Finally, participants were asked how their teaching practice in Genius Hour compared to that of their practice during non-Genius Hour teaching time.

At the close of the interview, participants were given the opportunity to share any additional comments they thought were important, but not addressed by an interview question or that did not come up during the interview. At the end of the interview, I thanked the teacher for their time and the audio recording ceased. During the conversation, I took notes about topics or phases of interest that emerged from the conversation. I kept these notes for later review.
Data Analysis

As mentioned earlier in the chapter, the research questions sought to address the practice of Genius Hour and the lived experience of the participants. Thus, a flexible analytical approach was needed to enable me to analyze the data and address both research questions. Thematic analysis (Guba & Lincoln, 1981; Merriam, 2009) was selected for several reasons. First, the method is designed specifically to capture and analyze the lived experience of a study’s participants (Braun & Clarke, 2006; Creswell, 2013). Secondly, its flexible approach enabled me to bridge the gaps between multiple theoretical approaches. Additionally, the thematic analysis offered a clear, concise, six-step process to derive meaning from qualitative data in a way that has a valid methodological approach. Finally, thematic analysis has been used in the education research community to explore phenomenon in secondary education and adult perspectives (Armendariz, 2017; Braun & Clarke, 2006; Jurow et al., 2008; Lin, 2019).

The sections that follow outline the application of thematic analysis methodology to the data set. First, I define each of the six steps of the thematic analysis (Braun & Clarke, 2006; Maguire & Delahunt, 2017) and how they were applied to the data set to develop the within case analysis that is outlined in Chapter 4. Next, I outline how the thematic analysis method was reapplied to the data set to examine the cross-case Genius Hour experience. This second analysis is written up in Chapter 5.

Within Case Thematic Analysis

Phase 1: Getting Familiar With The Data

The first step of thematic analysis is to become familiar with the data as a whole (Braun & Clarke, 2006; Maguire & Delahunt, 2017; Peel, 2020). Accordingly, after
conducting the interview, I listened to recordings of each interview and sent the data out for transcription. After the transcriptions were returned, I read through each interview once without audio and then a second time with the audio simultaneously, making revisions in the written transcript, as needed, to match the audio recording more accurately. All told, there was 131 pages of interview transcripts and more than 50,000 words in the corpus of data. Additionally, I reviewed my field-notes from the interview prior to beginning the coding process. Then, I stepped away from the data for two weeks prior to moving on to Phase 2.

**Phase 2: Generating Initial Codes**

In the second phase of analysis, I began tagging critical elements of the data set that addressed the research questions and identified data excerpts for deeper analysis later in the process. I read each interview transcript independently and generated initial codes by reading through each line of the interview transcript. I applied an open coding process to generate initial codes from the text and begin the process of analysis (Maguire & Delahunt, 2017; Miles & Huberman, 1994). The structure of the interviews led to the generation of open codes that deductively reflected either a theoretical approach or an interview-question driven approach to initial coding (Boyatzis, 1998; Hayes, 1997) since the initial codes were related to answers contextualized by the design of the interview questions. However, I also remained open to the possibility that additional codes would emerge out of the course of conversation and not directly from the structure of the interview question.

Thus, the analysis also involved an inductive, bottom-up coding process rooted in the data (Braun & Clarke, 2006; Maguire & Delahunt, 2017). When possible, In Vivo
coding was used to capture the words or phrases used by participants to become part of the analysis (Saldana, 2009). In the initial coding process, interview excerpts were highlighted and annotated with a comment in Microsoft Word. As shown in Figure 3, for example, you see the transcript with time stamps and highlighted text. Each piece of highlighted text is a coded portion of the interview transcript with a comment in the margin. In several instances, the open codes were taken right from the participant’s own words, thus the In Vivo approach to derive codes such as “student passions” and “teacher as curator.” Other times, data was coded more interpretively, so that “things you wouldn’t normally see in a Social Studies class” was coded as “Non-traditional approach to education.” This process of applying both In Vivo and interpretive coding to each transcript was repeated for all six teacher interviews. In total, over 900 open codes were generated across the six interviews.

The comments in each Microsoft Word document were then exported into a single Google Sheet, and the content of each interview transcript served as one column in the spreadsheet. The transfer to a spreadsheet format served two purposes: first, it helped me to organize the large volume of open codes in one location, and second, it facilitated the process of searching for initial themes.

**Figure 3**

*Example of Open Coding in Word*
Phase 3: Searching for Themes

In the third phase of analysis, I shifted my focus from generating codes to examining codes in search of broader themes. According to Braun & Clarke (2006), during this phase, the researcher reflects on the relationship between clusters of codes and begins organizing them under overarching initial themes.

A first pass at generating initial themes came from reviewing the codes in the spreadsheet in a search for patterns. At that point, three initial themes were identified: Teacher Successes, Teacher Challenges, and Process, as they were directly aligned to the research question. Next, the search function in NVivo was used to locate any open code that referenced teacher-perceived success, challenge, or process. Open codes aligned to one of these three initial themes were color coded red, orange, and green respectively, as depicted in Figure 4. Five additional initial themes were inductively identified from this
first review of open codes: accountability, reflection, influences, state standards, and student agency. Ultimately, this color-coding system proved to be too unwieldy for the purposes of consolidating codes into themes, and I created a different system for organizing the data.

**Figure 4**

*Example of Organizing the Initial Themes in a Google Sheet*

Using Braun & Clarke’s (2006) suggestion that visual representations can help organize codes into broader themes, a second iteration of initial theme generation was developed using NVivo’s (QSR International Pty Ltd, 2020) digital concept mapping tool. Two concept maps were generated, with each aligned to a research question. The first map was designed to organize open codes related to research question one on the teacher process while the second map focused on the teacher experience. In the Process Map (see Figure 5), initial themes included *Time Allotment, Prompts, Brainstorming,*
Pitches, Researching, End Products, Conferences with Students, Guiding Structure and
Class Type. Sub-themes were placed under these preliminary themes.

**Figure 5**

*The Process Concept Map*

To create the Teacher Experience Map (see Figure 6), I reviewed the Google Sheet with the original open codes. *Teacher successes, teacher challenges, reflection, and accountability* were carried over from the initial approach and remained at the thematic level. The code of *state standards* was subsumed under accountability. All data cells were reviewed to generate potential themes and sub-themes. Preliminary major themes included the following: *Influences, Teacher Role Relationships with Other Adults, Observations of Student End Products, Perceptions of Students, and Teacher Motivations.*

Sub-themes or codes were added underneath the initial themes. For example, under the theme *teacher success*, the sub-theme *skill development* was identified with codes including “storytelling”, “sales”, “research”, “self-direction”, “question development” and “goal setting”. Additionally, under the theme of *teacher challenges*, new sub-themes, such as “logistics”, “students”, “lack of knowledge”, “project management” and “school structures” were added to the concept map. All major themes
had one to two layers of applicable sub themes or codes, as shown below in the excerpt from the Teacher Experience Map.

**Figure 6**

*The Teacher Experience Concept Map*

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**Phase 4: Reviewing Themes**

The fourth phase of the thematic analysis method involved a detailed review of initial themes across all six cases. The review included a two-part process. In the first iteration, initial themed codes were referenced against their corresponding data source to ensure that data supported the analysis and that data coalesced into a cogent pattern directly linked to each theme. In the second part of the thematic review, I examined the data set in its entirety to ensure that each theme existed beyond just the initially coded data. I also used this second review as an opportunity to re-code data that may have been overlooked during the initial coding process.

With the initial search for themes within the six cases better organized into a concept map, I reviewed the themes, underlying sub themes, and codes against related data for accuracy and for further consolidation. During this review and reflection,
existing themes were first consolidated into four themes: *Successes, Challenges, Accountability*, and *Influences*. Upon further reflection, because accountability was most often discussed by teachers in the context of a challenge they had experienced, accountability was folded under the *Challenges* theme. Additionally, the *Influences* theme was reframed into a theme labeled as *Drivers* to better capture themes that focused on internal factors and the teacher’s perceived role in Genius Hour in addition to the external influences. Major themes identified in the Process map (Table 3) remained intact, as they were constructed in Phase Three.

**Table 3**

*Four Major Themes*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process</td>
<td>Phases and or structures teachers use to organize the implementation of Genius Hour in their classroom</td>
</tr>
<tr>
<td>Successes</td>
<td>Teacher perceived positive outcomes of the process, products, personal experience, or student experience.</td>
</tr>
<tr>
<td>Challenges</td>
<td>Teacher perceived and articulated obstacles that he or she encountered related the process, products, personal experience, or student experience.</td>
</tr>
<tr>
<td>Drivers</td>
<td>The contextual factors, people or resources that influence the teacher’s Genius Hour experience.</td>
</tr>
</tbody>
</table>

At this point, initial themes were reviewed for alignment with the four primary themes. For example, the *Successes* theme yielded the sub-themes of *student engagement, social benefits for students, out-of-school benefits, student-related successes, teacher-related benefits*, and *skill development*. Further, the *Challenges* theme yielded new sub-themes including *logistical challenges, student-related challenges, project management challenges*, and *teacher-centered challenges*. Within each sub-theme, there were several codes that were then used to reanalyze data in part two.
In the second iteration of reviewing within-case themes, all six interviews were analyzed a second time using the new theme structure. Each interview was reread with a clean copy and re-coded using the new theme structure and associated codes (See Figure 7). When applicable, new thematic codes were added during the second reading. For example, under the Successes theme, the sub-theme of “Quality Student Product” was identified as a code to capture examples of projects that teachers thought replicated the best product outcomes of Genius Hour. Similarly, the Process theme was revised to add the “Time Allotment” code to note the duration of the Genius Hour process in terms of weeks. Additionally, the re-analysis enabled me to cross-reference themes across the interviews and differentiate between themes that were present in some cases, themes that were present in most of the cases, and themes that cut across the entire corpus of data.

The end result of this two-stage coding process provided clarity on the themes and a more crystalized narrative structure for the data (Braun & Clarke, 2006).

Figure 7
Example of Interview Transcripts with Thematic Coding stripes in NVivo
Phase 5: Defining and Naming Themes

Phase Five of the thematic analysis focused on finalizing themes and their definitions and generating a thematic map of elements that shaped the phenomenon of study (Braun & Clarke, 2006; Maguire & Delahunt, 2017). In this process, the nature of each theme and sub-theme is identified by articulating the meaning of each, particularly in compliment or contrast to other existing themes.

Accordingly, an outline process was used to define and name the resulting themes. For each case or interview, an outline was created in Microsoft Word so that all data related to a theme or sub-them was added to the document and the linked with a corresponding interview quote. Theme and sub-theme data were extracted via a Query search in NVivo. Organizing the themes, sub-themes, and related data excerpts provided the dual benefit of viewing theme-based data in one location, while also building the structure for the narrative component of the write up in Phase Six.

Upon completion of the outlines for all six interviews, I reviewed each narrative outline at the thematic level, the sub-thematic level, and then the coded level, in order to generate an integrative operational definition that applied to all data assigned to that code. Definitions were generated from data selections both within the case and across all the cases where the theme, sub-theme or code was present. A full definition of each theme, sub-theme, and code can be found in Appendix C.

Phase 6: Writing Up Each Case Narrative

Once themes have been defined and named, the final step in a thematic analysis is to construct a written report. A thematic analysis report often takes the form of a narrative
as the purpose of the report is to weave a cogent story rooted in the data (Braun & Clarke, 2006). The narrative is supported by relevant excerpts that are neatly embedded into the narrative to highlight the themes (Braun & Clarke, 2006; Maguire & Delahunt, 2017).

Thus, the report from my within-case thematic analysis took the form of stories for each individual case. Each story began with a narrative that explored the Drivers theme, as these themes uncovered the teacher’s reasons and rationales for implementing Genius Hour. Next, the story moved to the Process theme and subthemes, to illuminate the actions by which teachers implemented Genius Hour in their classrooms and structured their process for students. The close of each case narrative focused first on the theme of Successes which outlined the perceived benefits of implementing Genius Hour and concluded with an exploration of the Challenges themes.

Cross-Case Thematic Analysis

Phase 1. Getting Familiar with The Data

For the cross-case application of thematic analysis, I reviewed the data by working backwards. First, I read the individual case summaries to get a feel for the data through fresh eyes. Then, I reviewed the individual case outlines to review transcript quotes that informed the narrative summary for each case. Next, I generated a query in NVivo using the crosstabulation function to identify codes that were frequently used across all six cases.

Phase 2. Generating Initial Set of Common Codes

In this phase, I began with the crosstabulation output generated from NVivo which listed the frequency of each code within each case and included all themes, sub-themes and codes. I tabulated the total frequency for all codes that were used across the
corpus of data. I purposefully looked for sub-themes that had a high frequency not just within cases, but across multiple, or ideally, the majority of cases. I placed initial codes that had potential to be conceptualized into an Excel spreadsheet. These codes were present in a minimum of three of the six cases, with the majority of codes identified in all six cases. These initial codes included context, inspiration, administrative support, colleague support, student engagement, waning interest, and the Game of School, among others. As a transition step toward Phase 3 of the cross-case analysis, I generated a simple MindMap (Figure 8) for the purpose of beginning to cluster codes into themes.

Figure 8

A Mind Map of Initial Thematic Clusters For The Cross-Case Analysis
Phase 3: Searching for Cross-Case Themes

Unsatisfied by the Mind Map process, I shifted my focus to generating a new Excel spreadsheet that organized all the major codes into larger themes, or topics that could be transformed into themes later in the analysis. The process of searching for themes involved rereading interview transcripts with the coded stripes within NVivo data window. Initially, I focused on frequent codes from the initial frequency crosstabulation, but I also sought to drill down into sub-codes that could serve as sub-themes for deeper analysis.

Several of the initial major codes identified in Phase 2 carried over to Phase 3 as potential themes. These included Inspiration, Limitations, Engagement, Procrastination, Orientation, and Approach to the Genius Hour Structure. New potential themes were also identified at this stage and included topic-based vs. inquiry-based approaches to Genius Hour and teacher definitions of success.

At this point, I began to group initial themes across the six cases into larger broader themes. One initial grouping was labeled “The Self,” which focused on the teacher’s experience and another grouping was labeled, “The Students,” which focused on the teacher’s perceptions of students during the process. A third grouping, identified as “Structure,” which focused on how the teacher implemented the process, was used to organize codes and preliminary themes centered around the teacher’s design and planning of Genius Hour.

Next, it became apparent that several preliminary themes did not neatly fit into the coding structure. These codes and preliminary themes included data coded as the game of school, parents, administrators, and colleagues. Given the ample number of codes and
potential themes available, I felt as though I had reached a saturation point and that clarity would come from reviewing the themes and taking another pass at creating an organizational map in Excel.

Phase 4: Reviewing the Themes

During this phase, I began to organize codes into a more organized overarching theme or topical clusters. I also sought to use this phase of analysis to better discern the nuanced similarities and divergent thematic clusters across the six cases. As mentioned in Phase 3, the Self, the Student, and the Structure were all solidified from the initial search for themes. Under the overarching theme of “The Self”, the major themes of teacher inspiration and teacher limitations were identified. Under the overarching theme of “The Student”, I organized the themes of student engagement, student procrastination, and waning interest. I also added a new major theme which was “definitions of success.”

During Phase 4, I also generated two new overarching themes to address the orphan preliminary themes of parents, colleges, administrators, and the Game of School. The first three were clustered into a new overarching theme identified as “The Stakeholders”, while the Game of School was placed in a cluster of its own, and preliminarily titled “The Situation” to reflect the idea that the Genius Hour experience was situated in a particular context, which was that of public secondary schools.

I then reread the transcribed and coded data to ensure consistency of the themes across the data set. I also began further refining the themes to identify sub-themes within each major theme; this helped to link the cases together or identify some divergence between the cases. For example, within the motivation theme, in three of the cases (i.e., Walter, Henry and Clete), teachers discussed some sort of internal inspiration for
implementing Genius Hour. Additionally, in five of the six cases, teachers identified an external entity such as an author, an organization, or an event, that led them to try Genius Hour. As I read through the transcripts, I used the Excel sheet to note the frequency of each coded sub-theme and the cases for which those potential sub-themes were present.

The divergent thematic clusters also introduced several other overarching themes and major themes. While they will be discussed more fully in Chapter 5, I note them here for clarity. One of the most pronounced differences was related to how different teachers oriented themselves when embarking upon the Genius Hour experience. When looking at the guiding scope of the project, educators appeared to take one of three thematic approaches. One sub-theme was content-oriented, where the Genius Hour was embedded within the curricular objectives of the academic class. In two different cases, I noted a community-orientation theme, where the purpose of Genius Hour was to provide a benefit to someone beyond oneself. A third and final theme across three cases was an open-ended approach, where students were given wide latitude to explore just about any topic, idea or project they chose.

Other major areas of difference clustering centered on the Genius Hour format, or how the educator shaped the project around a choice-based format theme, a process-based format theme or an open-ended format. A third variation across the cases was related to the ways in which teachers defined success when looking back at their experiences. Details of these differences across cases will be described in Chapter 5.

**Phase Five: Defining and Naming Cross-Case Themes**

With the five overarching themes, 13 major themes, and 37 sub-themes now identified across the cases, I returned to the Excel chart to finalize the naming
conventions and definitions of each. Some of the coding structure and thematic
definitions carried over from the individual case analysis. However, the major themes of
Guiding Orientation and Guiding Approach were now organized under the overarching
theme of “The Structure,” and the Game of School major theme was now organized under
the overarching theme of “The Situation.” In all instances, the definitions and naming
conventions were checked across the coded transcripts to ensure that the definitions
reflected the ideas as described by participating teachers.

Related to the Game of School theme, sub-themes and definitions drew from the
In vivo coding approach (Saldaña, 2016) applied to interview transcript data. The major
theme “Game of School” was referenced in several transcripts, while the sub themes of
“serious work” and “told what to do” reflected direct quotes from participating teachers.
During this fifth phase of thematic cross-case analysis, I sought to generate
comprehensive definitions that were true to descriptions of the participants’ experiences,
while also capturing the commonality embedded within the theme.

It was also during this time that several of the major and sub themes shifted in
category and/or definition. The major theme of Parents, for example, was relabeled as
Families to be more inclusive of care giver reactions to Genius Hour. Another change
came when aiming to gather comments and themes describing the format of Genius Hour.
Two sub-themes were more straight forward. Two teachers used an approach that was
coded as process-based, because they framed their Genius Hour experience around a
structured, self-designed, or externally designed process. Another teacher employed a
choice-based approach, where students chose their end product and were gradually able
to choose the topic of investigation. The third approach coded as a theme was originally
titled a “flex blueprint,” as the educators essentially followed the Genius Hour formats found in the literature (Brookhouser, 2015; Krebs & Zvi, 2015; McNair, 2017; Wettrick, 2014). However, a clearer label for this third format was that the approach was “Interest-driven”, because the students’ interests shaped the format of the Genius Hour process in those classrooms.

**Phase 6: Producing the Report**

Informed by each of the previous phases of analysis, the reporting of major themes across the six cases was ultimately structured around five overarching themes: *The Self, the Students, the Structure, the Stakeholders*, and *the Situation*. Each major theme will be structured as a section of the narrative write up of the cross-case analysis findings in Chapter 5. Sections of the narrative will define the details of each major theme and related sub-themes. The opening introduction of Chapter 5 will note the aforementioned tensions within each theme, as well as the convergent and divergent clustering of cross-case themes within the six cases.

Within each overarching theme section and major theme report, I will elaborate with a summary of how the theme manifested itself in each case where that theme was identified. Where possible, quoted excerpts from relevant teacher interviews were added to emphasize or provide clarity around the theme. The paradoxes were acknowledged in each subsection as well as the divergence and convergence of themes, where appropriate. The write-up in Chapter 5 concludes with a holistic summary of themes across the six cases while once again calling attention to the convergence and divergence of perceptions and Genius Hour practices across the six participating teachers.

**Trustworthiness**
Designing for trustworthiness is essential to a quality qualitative research design. To ensure trustworthiness for this study, several approaches were utilized in accordance with Lincoln and Guba’s (1981) Four Dimensions Criteria in qualitative research, which includes steps to ensure the credibility, transferability, dependability, and confirmability of the findings.

Credibility, which can be defined as the degree of certainty that the study’s findings are accurate, was integrated into the study’s design in several ways. The primary means of credibility was member checking, in which the subjects of the study read the researcher analysis to confirm and give feedback on its validity. The narrative report of the individual case analysis was sent to all of the teacher participants along with a copy of the themed report of the cross-case analysis. I received a response from five participants and incorporated their ideas into the findings. The revisions were minor and did not require any significant change to the analysis. Universally, they reported that both Chapter 4 and Chapter 5 reflected their experiences, which as Merriam (2009) suggested, is as a sign of trustworthiness. In addition, direct quotes from the teacher interviews were used as frequently as possible to support claims embedded into each of the two findings chapters.

Issues of dependability, or the researcher’s ability to generate reliable data, was addressed through a dependability audit, in which I reviewed steps taken in the data collection process, the accuracy of interview transcriptions and the maintenance of the case data once it was established. As recommended by Nowell (2017), preceding details throughout this methods chapter were also structured to clearly outline and define processes for selecting participants, conducting teacher interviews, and coding for themes.
across several different digital platforms, including Microsoft Word, Google Sheets, and ultimately, NVivo.

Transferability, or the potential for generalization of the phenomenon of the study, was established by two means. First, rich, thick descriptions of each case are provided for each teacher in Chapter 4. While the themes shaped the write up of each case, I believe that each narrative report includes ample descriptions and supporting quoted excerpts to document my claims. Additionally, a second layer of analysis was conducted in a cross-case analysis, as reported in Chapter 5, to identify and investigate themes that were noted across multiple cases.

Confirmability, or the objectivity of the findings, was achieved via external confirmability audits. I met with several fellow researchers and my doctoral advisor to share initial findings and evidence that supported these initial findings. Feedback was solicited and themes were refined based on their responses.

Overall, addressing these four criteria with reliable practices enhances the quality of the overall study and provides the reader with a level of trust that the findings represent actual aspects of the comprehensive Genius Hour experience across six secondary public-school contexts.

**Chapter Summary**

Using a purposive sampling method, I identified and recruited six secondary level educators from a wide range of academic disciplines, school contexts, and geographic locations to participate in this study that explored teacher experiences implementing Genius Hour. Participants shared guiding resource materials and were then interviewed to
discuss their experience and related materials using a semi-structured interview process. The interviews were then transcribed, reviewed, and revised for accuracy.

The interview transcripts were analyzed using a thematic analysis to generate individual, within case findings for each participant as well as a cross-case set of findings across all participants. The thematic analysis methodology was selected for its clear structure, flexible implementation, and its ability to cultivate convergent and divergent themes from the data. The result was thick, rich description of both the individual participant experiences with Genius Hour as presented in Chapter 4 as well as holistic descriptions of Genius Hour across the cases, which is shared in Chapter 5. Both Chapter 4 & Chapter 5 were shared with all participants, five of whom reviewed and positively responded that the descriptive findings reflected their experience.
Chapter 4

Case-Study Findings

This chapter presents six individual cases of teachers who facilitated Genius Hour in their classroom. The case studies were constructed after individual interview transcripts were analyzed via a thematic analysis (Braun & Clarke, 2006, 2013; Creswell, 2013). In the final phase of the thematic analysis, the researcher constructs a narrative that integrates identified themes into a more structured whole. This “write up” phase can take a variety of formats, including a case study approach (Nowell et al., 2017; Peel, 2020). Case study approaches can provide a useful and flexible yet rigorous structure to explore a phenomenon and draw out critical themes (Merriam, 2009). As Yin (2008) noted, the case-based approach aids the researcher in navigating complexity in the real world and it is critical that each case be treated as its own singular entity (Stake, 2006). For those reasons, the first write up of the thematic analysis was written as six individual cases. The second write up of the thematic analysis took the form of a cross case analysis (Yin, 2018) which is provided in Chapter 5. The thematic analysis sought to answer two research questions:

1. How do six secondary-level teachers from different school settings describe their implementation of the Genius Hour process in their classrooms?
2. What are the perceptions of teachers around the design and implementation of a Genius Hour project?
   a. What are teachers’ perceptions of the challenges and benefits of planning and implementing a Genius Hour experience?
b. What are teachers’ perceptions of the challenges and benefits for students who participate in a Genius Hour experience?

c. How do teacher experiences in Genius Hour classes compare to their other experiences in traditional classroom settings?

This chapter presents common themes found across the six teacher interviews through the frame of individual educator cases. Findings for each case are organized in four sections, with numerous sub-themes described in the context of each section.

- **Overview & Drivers**: This section provides contextual information about the educator and his or her teaching context as well as a description of relevant drivers, or factors, people, and/or resources that influenced the teacher’s Genius Hour experience.

- **The Process**: This section discusses the practices and/or structures the teacher used to organize the implementation of Genius Hour in their classroom.

- **The Successes**: This section highlights numerous sub-themes related to what the teacher perceived as positive outcomes of the Genius Hour process, products, personal experience, or student experience.

- **The Challenges**: This section addresses the major themes and sub-themes related to the teacher’s perceived and articulated obstacles that they encountered related to the process, products, personal experience, or student experience.

Chapter 4 serves in compliment with Chapter 5, which reports the findings from a second thematic analysis across all six cases and highlights convergent and divergent major themes and sub themes across the corpus of data. The two chapters, in concert,
provide a comprehensive analysis of the six cases as both individual entities and a collective whole.

Case One: Orrin

Overview & Drivers

Orrin (late 40s) was a former middle school history teacher who now works as an assistant professor. Our interview focused on his time using Genius Hour in a middle school context, but he would occasionally refer to how he implemented the process in his higher education classes. At the time of the interview, Orrin reported that he facilitated 4-5 cycles of Genius Hour. His previous K-12 teaching took place at an east coast middle school of approximately 600 students with approximately 70% students who identified as white, approximately 10% identified as Asian and 10% identified as Hispanic. Approximately 3% of students qualified for free or reduced lunch. Orrin’s Genius Hour experience as a middle school teacher was prompted by seeing another teacher in another district implement it in his classroom, which alleviated his own personal concerns about implementation. “I think, me personally, I needed to see it in action before I adopted it,” Orrin explained. “I needed to actually be in a classroom watching (Teacher X) do 20 (Genius Hour) Tuesday before I had (Genius Hour) Wednesday.”

Orrin implemented Genius Hour in his middle school classroom because he enjoyed it and he continues to enjoy the experience as part of his higher education courses as well. While facilitating Genius Hour as a middle school teacher, he saw his role as a curator of resources and a coach or manager of student projects. He generally found his administrators supportive of his work as they had heard of Genius Hour at conferences or other events. “The administrators like it because they attend meetings,”
Orrin explained. “Genius Hour is out there. It's not just some crackpot idea that I heard about on the internet. If the administrators go to like ASCD (Association for Supervision and Curriculum Development), which is their organization, they have conversations about Genius Hour. They know what it is. My assistant principal mentioned it at the beginning of the year.” Orrin had discussed Genius Hour with his middle school colleagues, and, in his opinion, they seemed receptive to the idea. However, while they did not formally implement Genius Hour in their classrooms, he believed they might offer something similar such as “choice time.”

Orrin reported, that overall, parents had few, but mixed reactions, to their experiences with Genius Hour. One parent expressed pleasure in seeing a different side of her daughter because of the project, while other parents expressed frustration over the amount of homework. Importantly, Orrin noted, Genius Hour homework is never assigned, so in reality, the students are choosing to work on the project.

The parents think that the students have homework, a lot of homework, but I'm like, “No, they're just choosing to do this project at home…Like, this child is spending hours and hours building this Minecraft map for their project, but I'm not assigning it. They want to do it. If anything, it kind of seems like a lot more work for the students, but it's because it's meaningful work; it's not rote work. That was the parents' response, often.

Orrin fully believed in project-based learning and the importance of providing students with choice, so he perceived that his typical classroom practice was like that of his Genius Hour projects. He also believed in the importance of connected learning, particularly social media, to support the work of interest-driven learning. He explained
that the goal of Genius Hour was “bringing in the principles of connected learning. That's exactly what it is. You're taking the students' interests out of school, informal learning settings, what they like to do online or in libraries or museums, bringing that into the classroom, into formal spaces. If students are really into pixel art and going into pixel art websites, or they're going into Comic-Cons and stuff, how do you bring that into the classroom?”

**Process**

In Orrin’s seventh grade history classroom, Genius Hour took the form of three curricular-aligned projects throughout the school year, with each project gradually increasing the opportunity for student agency. The final project allowed students to select any topic that would not be taught until high school, and then demonstrate their learning by engaging in the Genius Hour process. Orrin would first introduce the project and then students were given an opportunity to pick from a menu of end products which included TED style talks, green screen videos, video games and books. “…The menu of choices is technically limited,” Orrin clarified.

One thing that was advised to me was to always have, like, ‘You can do this, you can do this, you can do this,’ or question marks [which meant] ‘Propose a topic to me.’ Most students won't even pick that, but it's just nice to have that out there. It's like this illusion of openness, but it's not really. It's just a bunch of choices, and then there's the question mark choice.

Most of the research consisted of resources that Orrin provided, and to a far lesser extent, he sometimes approved student-located research later in the process.
Well, I had sources for them. I used ... for immigration, for example, we had sources from Games for Change. We had sources on the website for kids and libraries and stuff to do that. That was a set of online sources, but really, you know what I used? I used [the website] BrainPOP. If you go on BrainPOP, there is like 900-plus videos on different topics.

At the end of each class, students filled out an “Exit Ticket” which outlined the work they completed during the class period. Projects were presented to peers in both a “peer review” format of playtesting (games) and an in-class presentation of their work. The in-class presentation served as the culminating project. Orrin expressed an interest in having the outside community attend these final presentations in the future.

**Successes**

Personally, Orrin found the experience enjoyable and very rewarding. Implementing Genius Hour also enabled him to build better relationships with students as he began to learn more about their interests. Providing an example, Orrin explained, “So, some kids are really interested in like stop-motion with LEGO, so use that to make your project. You also get to know your students better, because you get to know what their passions are. They're always talking about things, you know, so let's bring those passions into class.”

The student-related benefits were significant for Orrin. He suggested that Genius Hour yielded higher engagement from students, particularly as evidenced from their requests for additional Genius Hour classes, their expressed disappointment that class was ended, and the willingness to work in his room during non-class hours to complete
their projects. He also noted, as an aside, that the engagement phenomenon was also
displayed by his college students as well.

[The students] would enter the class saying, every day, “Is this 20 percent
time day? Could this be 100 percent time? Could we do this today?” I
can't break students out ... like, in the three-hour higher ed class, when
they're working for 30 minutes and I say, “Okay, five minutes to go,” they
report that they hate when I say, “Five minutes to go.” They're literally in
that flow state. They don't want to stop working.

Orrin observed a wide variety of skill development including entrepreneurial
skills, writing skills and collaboration skills, as students engaged in the Genius Hour
experience. The projects also allowed students to connect with the wider world as 10% of
the students had a mentor in the community to support their project, while others shared
their projects more publicly on digital platforms like YouTube, MineCraft, or Kickstarter.

One example of a quality product that integrated collaborative work across
multiple platforms was a student designed book about the electoral college; it was
initially funded through Kickstarter, illustrated in by a contractor in Indonesia, developed
in consultation with a mentor, and then published on Smashwords. Orrin described this
example as “a real-world project.” He continued:

She [the student] crowdsourced money. She crowdsourced funds. She
outsourced art globally, around the world; she had to go on Google Earth
to see where Indonesia was. She haggled back and forth with the artist,
and then she published a real book. She's 12 at the time. The successes are,
I'm giving a 12-year-old an experience you can put on a CV and resume
that many adults don't have; real-world experience in a seventh-grade history class.

Other students worked together to write a collaborative 7,000-word piece of fan fiction. According to Orrin, 60-70% of the projects were “way above and beyond what you would expect a child to produce, like way above and beyond.” Orrin observed quality work from all segments of his student populations. “I would say even a child who was in special education...they produced really good work.”

Challenges

Orrin’s challenges in implementing Genius Hour ranged from the fitting Genius Hour into the traditional structure of school, to issues around project management, and the unconventional nature of this type of work. School structures appeared to constrain creativity, as Orrin reported that this type of work was difficult to assess with traditional school rubrics.

It’s always a struggle with rubrics. Just in general, it is, balancing creative learning and really great outcomes on projects. The easy part is like, “Is it (the project) aligned to the content, to the standard? Could you do the reflections?” That part's not so hard, but like their individual projects and having them make it on their rubric, that's more tricky, because you don't want to be ever like, “Did your thing have five of this, three of this or none of this?” That's kind of constraining.

Additionally, Orrin felt constrained in terms of content as student projects are not supposed to address anything in the Grade 8 standards. “You're restricted by the standards, too. I can't teach past the Civil War in seventh grade. It's very awkward,
because I can't teach too much about what eighth grade is going to teach, because they need to show progress from student growth, right?"

Although the importance of the Partnership for Assessment of Readiness for College and Careers (PARCC) was emphasized in his school district, Orrin described these Genius Hour projects as the “anti-PARCC.” He explained further:

Actually, I kept telling the students that I'm not the PARCC and that these projects aren't the PARCC, that all of your phones have apps that get updated all the time, and that's what you're doing. In the real world, everything's a prototype and everything's an alpha and a beta.

Orrin reported an additional challenge was related to students’ perceptions of school, including their initial desire for worksheets, tests, and homework assignments like they received in their other classes. “A couple students, at first, had some resistance, because they are used to the game of school: worksheets, tests, homework and more tests. But they all drank the Kool-Aid eventually.”

For other students, Orrin felt an unwillingness to bring their interests into the class. He also found it challenging to make the other 80% of his class time with students, the other four days of the week, live up to the 20% of the week students were working on their Genius Hour projects.

Other challenges to implementing Genius Hour in his seventh-grade classroom were more logistical. Some students lost their access to technology while others were overwhelmed by the number of possibilities for their projects. Orrin explained that other students lost interest or pivoted from project idea to project idea and then, they found it hard to complete their project within the allotted timeline. He elaborated:
Students will decide to change their mind in the middle of a project. Like, a student was doing something, and I kept seeing him draw these Choose Your Own Adventure books on the back of his paper. I said, “Why don't you go on the interactive fiction site and make that your project?” I had to really convince him, like, “You're doing this anyway. Why shouldn't that be the project?” So pivoting was another thing, but that's what you want students to do, because that's called the real world.

Orrin also recognized the limits of his own knowledge as well as the limits of his personal network to provide mentors to students when he could not support their work. Orrin lamented:

So, you know, if a student is into whatever sort of topic, I would have them mentored by a Skype speaker, directly. It's hard to scale. That's the issue. I can't do that 120 times. You know, like, a student was really into watching YouTube videos, so I had her Skype with a YouTuber. I forgot her name, but yeah, I can't do that ... you can't ask every YouTuber to Skype with every child, too. But certainly a few. …That's the other flip side.

**Summary**

Despite early hesitation, Orrin’s experience facilitating Genius Hour was significant as it afforded him the opportunity to bring principles of Connected Learning to his classroom. He believed his curricular-based approach increased student engagement by empowering them to produce meaningful work and collaborate with external partners. Orrin’s experience was not without challenges.
He encountered resistant students and families, splintered project groups and personal difficulties assessing work and connecting students with mentors. On balance, Orrin found the process rewarding, so much so that he continued to implement Genius Hour as a college professor.

Case Two: Flossie

Overview & Drivers

Flossie (late 30s) was a former middle school science and reading teacher who, at the time of this study, was serving as an instructional coach in a school district in Midwestern United States. Our interview focused on her time implementing Genius Hour as a middle school teacher in 2015 and she has facilitated 2-3 cycles of Genius Hour. Her middle school enrollment was almost 700 students where approximately 80% of students received free or reduced lunch. 87% of students identify as Hispanic, 8% as white and approximately 3% as Black. Flossie started her Genius Hour journey after hearing about it at an EdCamp session that provided participants with planning resources created by public school educator and Genius Hour blogger Joy Kirr. “I actually attended an Edcamp and it was a science teacher in Downers Grove that's since retired that was talking about using it in her classroom, so that's how I started,” Flossie explained. “She introduced me to the Joy Kirrr resources, and then I just started kinda spiraling from there and trying it out with my students.”

One of the driving impetuses for Flossie’s implementation of Genius Hour was her belief in providing students with agency over their learning. From her perspective, Flossie felt that she offered more opportunities for student choice than her counterparts. She preferred instructional practices that offered learners the opportunity to explore their
interests and empowered students to leverage technology in ways that promote learning autonomy.

So, I think it (Genius Hour) helps shift that mindset of like, ‘Oh yeah! I can just… what do I wanna learn about? I have the tools that I can learn about. I can read anything I want, and I can do it right now. I don't have to wait until I'm an adult to be a web designer, or to be a video game designer. I can actually do that now, because I have the resources to do that.’ I think that was a big "a-ha" moment, just letting them have that learning autonomy.

Flossie saw her role during Genius Hour as that of a curator of resources to meet student needs while also serving as both a motivator, for when students got stuck, and a task master, to ensure they kept making progress on their projects. In general, Flossie’s approach to teaching aligned with her typical classroom practice which she described as hands-on:

I would say there was components [between Genius Hour & her traditional practice] that were similar. I try to do units more project-based or challenge-based units; try to keep personalized learning and the students’ interests in mind in my science class. But, I also had my own objectives and standards that they had to learn. If they didn't care at all about climate change, then they're not really gonna enjoy the project where they have to make an impact against it. So, it [Genius Hour] was definitely driven by standards and content within science, but I tried to give them these opportunities to pull them in, to get them motivated about
something, and then have choice on how they wanted to express their learning.

In her experience, both as a team leader and as an instructional coach, Flossie felt that educators had varied amounts of buy-in when implementing Genius Hour. Her impression was that some teachers treated Genius Hour as a time where students could do whatever they wanted.

If the teachers weren't behind it, then it was like, "Oh yeah, okay, we have this hour a day you can go work on a project that you want instead of ... trying to get the students to think deeply and really motivate them to follow a passion and follow through with it. [In these case], you could see the difference in the students' products.

While her team of eighth grade teachers tried Genius Hour while she was the team leader, they did not continue the project after she left. Flossie found school administration to be supportive in the sense that they provided teachers with the autonomy to try Genius Hour.

We had pretty good administration and we had that homeroom time where we had freedom to do what we needed to do, so I knew that would be something that administration would be on board with. We definitely shared it with them like, "Hey, I'm gonna try this out," and they [the administrators] would pop in and see how it's going and that kind of stuff, but we had a lot of freedom with that.

In Flossie’s experience, parents did not have a reaction to Genius Hour when she was facilitating it at the middle school level. However, she noticed that parents were very
impressed when they saw student projects at the elementary school where she was a coach.

Yeah, with the middle school, I don't really recall any sort of parent reaction. However, when they implemented it school wide at the elementary school two years ago, they did the parent night, and the parents were really impressed, and every kid had very uniquely different topics. You could just tell they [the children] were really passionate, talking about and showing their expertise in that area, so their parents were really impressed with that.

Process

For Flossie, her personal experience facilitating Genius Hour took place in the 2014-2015 school year, in a 45-minute “study hall / SEL” type class consisting of her homeroom students. The Genius Hour process lasted approximately nine weeks and she managed 25 students and approximately 20 projects. Students had regular access to internet connected devices for their work. For Flossie, her Genius Hour kick off consisted of an introduction featuring the Kid President (SoulPancake, 2013) video on changing the world and a provocation asking students what they would like to study to change the world. Flossie elaborated:

Kinda kick them off as like, the future's up to you, you are gonna be the ones that are gonna solve world problems and we wanna give you this space to follow your passion, so what are you passionate about?

Students were given two weeks to develop a topic they wanted to explore and to then turn that topic into an essential question. Once the question was developed, students
created a plan of action to be “pitched” to the teacher for approval. The pitch addressed the guiding question, the audience for the project, and how the student planned to present his or her findings. This information was placed into a Google Document which also served as the student’s research repository. For the remaining five to six weeks, students were able to work at their own pace with some teacher check-ins & meetings to discuss their progress. The culminating activity involved an in-class presentation that took the shape of either a TED-style talk or a stop motion video, depending on what students decided.

**Successes**

During the interview, Flossie noted several successes from her multiple implementations of Genius Hour. Some successful projects included a student who built a website for his grandfather’s restaurant and another student who took an interest in eating healthier and turned it into an edible food the student called smoothsicle, a frozen smoothie made from real fruit. Another notable project was a student who created a video on pitching mechanics and grips in baseball. From Flossie’s perspective, these projects were successful because they reached outside audiences (restaurant), they had the potential to have live-long benefits (smoothsicle), and they allowed the teacher to be a learner (pitching video). In general, all these projects had the additional benefit of providing the teacher with the feeling of inspiration. She explained:

To see another student that's trying to make a website for his grandfather's restaurant is really validating, it's like, showing them that this can really have real life implications and just giving them the time and space to do
that was really fulfilling as a teacher, to be able to direct them in those various paths.

Flossie also believed the Genius Hour project had other benefits. For example, one group that focused on a Lego Mindstorms project brought together students who did not typically work together, which provided an opportunity to build collaboration skills.

So like, the Lego Mindstorms. I remember three students were always huddled around a table and knew what was ... knew the whole process, were trying to figure out,” [They wondered] "Well, how does this work?"
and this program wasn't working on the computer, so they had to figure that out, and they were just really great at problem solving. So they were working through all these challenges. It the group [of students] was three people working together that normally would not have chosen to work together, so it was really great to see them even struggle through it.

Flossie also perceived Genius Hour as an opportunity for students to explore interests and engage in topics that were meaningful to them in a low-risk environment or without teachers telling the student to “put away” their topic of interest.

I think on a positive side, it'd be a time for them to really dive into something they're passionate about. I remember one student with special needs was really into origami, so he just got to dive further into that. It was probably something throughout his day, people were probably saying, "Put it away, put it away," but this was a time where he could just full-on dive into.
Challenges

Despite these successes, Flossie’s implementation of Genius Hour also posed multiple challenges. From a process perspective, Flossie explained how some students had difficulty generating a topic of interest and other students would lose interest in the topics they selected. “Getting the students to get their topic was definitely the hardest part,” Flossie said. “And then, you always had the students, too, who never got their topic rolling.” Once the project started, she found that students would sometimes procrastinate if she didn’t regularly monitor their work.

A second challenge she observed during Genius Hour was that the students’ research often lacked quality sources without additional support from the teacher. Thinking back, probably the quality of the sources would have been one of the most challenging parts of the research…If you're doing science research, you might give them five or seven sites to use on a topic, but since they're all in different areas, you can't help them curate that. So, I think taking more time to even add a lesson in there - mini-lessons about reliable sources and where we can get relevant information - would be really beneficial with the research part.

Another challenge Flossie faced was managing students and ensuring that they stayed on task.

Every class period you're meeting with students, you have to be on, and be creative, and willing to question and coach them through. So it's not just a class period like, "Oh good, it's Genius Hour, I'm gonna go grade papers," because then the kids are just gonna go do whatever they want. You really
have to keep them focused on their goal and continue to develop that with them throughout that time.

Flossie also found that students had difficulty narrowing the scope of their project to something reasonable, given the time and school constraints. Flossie elaborated,

The time constraint too, if there's a time constraint, they don't get to their product in time, so some of them were just talking about what they would do. You know, they wanted to learn a new language, but their presentation was sometimes about the research they had done, instead of actually showing that they learned some of this new language, or sometimes they might bite off more than they could chew within that timeframe too.

Additionally, students would occasionally fail to meet the goals of their project. “In theory, it sounds like, ‘Well, this is perfect for every single kid!’ But it wasn't always perfect for every kid. You'd have those kids that would kind of fumble through a topic, and then switch and pick a different topic, and then never really settle on something and never create a product,” she explained.

School-based issues also posed several challenges. For instance, students would lose Genius Hour sessions due to assemblies or snow, which posed the added challenge of long gaps between sessions, which could stall momentum. Students would also lose their research if it wasn’t recorded on digital platforms.

The kids would get rolling with something and get rolling with research or things like that, they didn't document where they were, and I'd notice they'd come back in and they'd start searching some of the same stuff
again; going back and doing some of the same things they'd already done
the week prior, so that was a challenge.

Flossie also described how students sometimes struggled with the agency provided and
didn't know what to do in a context that was less structured than their other classes.

Students don't often know what to do with that time if they're not given
that, so just structuring to think in that way, especially by middle school,
you kinda lose some of that creativity…So, they begin to just think like,
‘Okay, well, I come to school, you tell me what to do, I do it, and I get
good grades.’

Other students did not see the relevance of Genius Hour in the relation to their
perceptions of school. As Flossie explained,

One of the middle schoolers came up to me and said, ‘Well, I don't
see how this is gonna help me in my real life.’ And, that really
struck me, cause I was like, of anything you do, this is your time to
find something that's going to help you in your real life, so it's
really my role to help him find that passion.

Finally, Flossie noted the natural desire of some educators to try to align Genius
Hour into the state or district standards and she pushed hard to ensure that student agency
was at the forefront as opposed to the standards. Thus, students would be able to select
projects and topics beyond the scope of the curriculum. Still, she noted that she felt the
need to “hold students accountable.” One additional challenge was the scheduling of
Genius Hour as she and her colleagues found that students seemed less focused during
their initial sessions on Friday afternoons as opposed to earlier in the week.
Summary

Flossie’s approach to Genius Hour was driven by her personal commitment to ensuring students had opportunities to explore their passions. She demonstrated leadership in bringing her colleagues along to the idea of offering Genius Hour to the rest of the students on her team. She noted numerous successes including inspiring projects from students, new friend groups emerging out of projects, and the rewarding feeling of creating an opportunity for interest-driven learning in her classroom.

Flossie also encountered difficulties along the way. Student project groups would splinter as interest in the topic would dwindle. Some students struggled with the open-ended nature of Genius Hour and the agency provide as part of the process. They would need additional monitoring, especially regarding how to select valid and reliable research sources and time management. Finally, while Flossie was able to convince her colleagues to try Genius Hour on her teaching team, the project was abandoned once she departed for a new role in the district.

Case Three: Henry

Overview & Drivers

At the time of the study in 2018, Henry (late 40s) was a high school English teacher for a gifted and talented program at a high school on the Eastern coast of the United States. He was actively facilitating Genius Hour in his classroom and had implemented 4 – 5 cycles of Genius Hour. The school enrollment was 85% White with the remaining 15% comprised of equal proportions of students identifying as Asian, Black and Hispanic; less than 15% of students receive free or reduced cost lunch. In the 2018 school year, over 85% reached proficiency on state ELA and Math assessments. In
reflecting upon his multiple iterations of Genius Hour, Henry described his long-time
desire to provide students with opportunities to explore their interests, originally calling
his practice Passion Hour. He was recruited into his current position from the district’s
middle school to provide students with a “different” learning experience centered on
seminar-style teaching and his own interests in design thinking. Henry explained,

When I first heard about it [Genius Hour], I stumbled on a blog post that
AJ Giuliani had done about 20 Time. I was like, wow, this is really
interesting, but I had just moved from 20 years of teaching at the middle
school level to teaching this new course at the high school to gifted kids. I
said to myself, in order to convince myself that I was going to be okay in
this position, I can do different because I've done different for 20 years.
The course that I taught was largely self-created. I can do different.

Henry’s initial attempt at Genius Hour emanated from his reading of
formula for future-ready innovation*. An avid reader, authors inspired much of the
implementation of Genius Hour in his classroom. Henry elaborated, “I've looked at a lot
of the things that other people have done, adopted some of those, but basically the way
it's structured is, I used Kevin Brookhouser's Bad Idea Factory to start things off.”

Henry’s other motivation for implementing Genius Hour was aimed at re-
imagining the school experience for students to create a deeper, more relevant learning
experience and creating opportunities for them to reach “flow” as described by
Csikszentmihalyi (2008). The key, as Henry explained, is rooted in optimal ambiguity, or
what he described as the “interstitial state between those where they're not quite sure
where to go, but with just a little bit of pushing and a little bit of working things out, they can find where they need to go.” Henry continued by clarifying that,

Flow...is the kind of thing that I want to provide in my classroom. An environment where students are so involved that they don't want to leave, that they feel that there's enough light and heat and power behind them that the fire ...

In the title of their book, Steel of Fire ... that the fire is theirs and they're in charge.

Further, Henry viewed Genius Hour as a means for improving the community, while also teaching his students about design thinking. He suggested, “I see design thinking as a heuristic that drives 20 Time. It certainly drives a lot in the business world, don't get me wrong, but for me design thinking is a heuristic. It's a way to guide self-guided learning.”

As a result of his initial implementation of Genius Hour in his ELA courses, Henry created a separate, semester-long course specifically for high school students to engage in interest-driven learning. As it turned out, he realized that monitoring 85-100 student projects was too much to handle.

One of those years, I did them with both my 9th and 10th grade classes. I had five classes going at once, and I vowed I would not do that again. I teach gifted students, so in the state of Pennsylvania, gifted classes are mandated to be capped at 20 students each. I'm somewhere between 85 and 100 students, but trying to project manage that many kids is not an easy thing.
When conducting a Genius Hour class, Henry saw himself as having many roles including that of a facilitator, a guide, a motivator, a connector, and a coach. He believed that Genius Hour was similar to his typical teaching practice during non-Genius Hour days.

Generally, the administration was supportive of Henry’s work, particularly the superintendent who recruited him for his current position and encouraged him to create a “different” learning experience for students. As Henry explained,

Yeah. They came to me at the end of the 2012-2013 school year, I think it was, and they were like how would you feel about teaching gifted at the high school? …When I asked my superintendent, at the time [she was] the assistant superintendent, I'm like, ‘Look, what is your vision for this new course that you want me to teach?’ The first words out of her mouth were different. She wanted to be different.

The central office administration also supported his work by featuring student projects in the district’s annual report. Henry perceived his colleagues to have mixed reactions to his work. He found guidance counselors to be supportive in selling the class to students, while he believed that many of his colleagues thought he was “wacky, maybe didn't know what he was doing, or whatever.” He expressed feeling isolated in this work.

I remember I was at the copy machines one time, and there was this one math teacher and he's like, “Hey, how's that new class going? The kids teaching themselves?” I didn't know what he meant, and then I'm walking away and I'm thinking oh, I see. You're criticizing. Kids can't teach themselves? Is that the
implication? Are the kids teaching themselves? Yeah, I think there was some pushback on that.

**Process**

Henry believed that Genius Hour was best offered as a separate class rather than with a once-per-week model. “Doing this one day out of the week in one class is a recipe for just stagnation and procrastination. It just breeds procrastination. For as much success as I have had, I have also had plenty of kids who just wait around and twiddle their thumbs,” Henry opined. His Genius Hour projects in his English classes would typically run from February through May.

Secondly, he believed that the best projects were collaborative in nature, but with no more than three students in the group.

The best projects are ones where they're working with partners. At least, no more than two other people. Three's an optimal number for groups when you're doing this kind of work. Ideally, those three people have a different skillset.

In Henry’s classroom, the Genius Hour process began with a brainstorming session called the “Bad Idea Factory,” where students were asked to generate ideas that wouldn’t improve the community or ideas for projects they wouldn’t enjoy. Henry found that students sometimes had difficulty coming up with project ideas at the start. The assumption was that generating “bad ideas” would help break the mental block for students so that it became easier to brainstorm viable projects.

Once the bank of ideas was generated, students were then tasked with developing an inquiry project based on improving the community. Students used a design thinking
model through the duration of the process, which continued through a researching process that culminated in an annotated bibliography. “I'm looking for them to do research and to do some background work to find out the extent of the problem, who is receiving the effect (of their project), and who their users would be at that point,” Henry elaborated.

After researching their proposed idea, they pitched their project to Henry and their peers to obtain feedback and garner the class community’s approval. The pitch was framed as “Here's what I'm thinking of doing. Here's why I want to do it. Here's why I'm the person who should be doing it. If I don't do it, it's going to get even worse, so please allow me to do this project,” Henry explained. Henry was quick to note that the classroom community did not “accept things carte blanch,” and ensured both he and classroom peers challenged the proposed project in order to improve it. “We try to negotiate a little bit of push back and a little bit of tussle,” Henry said.

After approval was received, the students began working on their projects and blogging about their progress. Henry spent time during class checking in with students to provide mentoring, resources, or coaching. The process ended with a 5-10 minute in-class presentation. Assessment was based on three factors: the original project pitch, the student’s reflection blogs, and their final presentation.

Yeah. Blogs are the way that I hold them accountable for showing me the work that they've done…The assessment is never on the success of the project. The assessment is on process and blog posts. I mean, the blog posts are the way that you hold them accountable for doing things weekly. In the end, it's really a presentation score…In an age where access to information is ubiquitous, it is not
what you know, but the story that you can tell about what you're doing with what you know that really matters.

**Successes**

When discussing successes, Henry often focused on the opportunities Genius Hour projects created beyond the course. Several students had parlayed their projects into scholarships or admission to specialized programs at higher education institutions. In one instance, a student’s blog netted her a full scholarship and a research stipend; in another, a student was admitted into a selective collegiate course on Design Thinking based on their experience in the Genius Hour class. In discussing the impact of his Genius Hour course, Henry shared, “It worked. I have a couple of students for whom it worked brilliantly, and they've put it on their transcripts, and they've gotten scholarships that have specifically mentioned the work that they did in that kind of class.”

Even when the Genius Hour projects didn’t yield access to selective opportunities or financial benefits, Henry reported that students obtained new mentors because of their experience. He also articulated other perceived benefits from the Genius Hour implementation. Skill development was one area of success as students cultivated their skills in collaboration, self-direction, and storytelling.

What can you do? How are you going to differentiate yourself? What's the story you're going to tell? All the things I've been talking about in relationship to why I do (Genius Hour), why I do design thinking. Those are the key pieces.

Further, Henry saw Genius Hour as an opportunity to “learn from failure” as he noted that some of the best learning experiences came from projects that didn’t work out.
I'm not going to say that everything's a success. I would say that the best failures are the ones where the reflections are deep, and the students really understand why they failed and have a plan for moving forward if they were to do it again. There are plenty of students who fail, and they know why they failed, but they maybe see this class as this is the only time I'm going to get to do this so it really doesn't matter. That's okay, because at least they had the experience, right?

Henry also expressed that the students’ positive experience was a success for him on a personal level, and that his trust in students often yielded personal awe. “When we trust our students, empower them to take charge of their learning and provide the necessary guidance, they will astound us.”

**Challenges**

When discussing the challenges of Genius Hour, Henry first outlined personal difficulties with the process. He noted that he found it challenging to support and manage projects of the 85 – 100 students in his course. Sometimes, he explained, students had difficulty generating a topic. Even when students have selected a topic, Henry has observed them procrastinating during class after losing momentum in the week between Genius Hour classes; in some instances, students’ interest in the topic decreased, particularly as the project became more difficult.

Henry also found it difficult to give the blog postings and daily student conferences the time they deserved. He also lamented that he would often lack the knowledge to support students’ projects or the network of people with the expertise that he could connect students with to support their projects.
The problem was I realized, and the students realized, is that while I may know a lot of things, I don't know everything, and we needed more mentors. We needed more ways for the students to find mentors who would at least be able to meet with them two times or so, and just push them along and say, ‘Hey, what you're doing is great and I'm doing that in my work at X University’.

Other issues Henry encountered were related to student and school contextual factors. Henry perceived that many of his students were often over scheduled with AP courses and homework, which cut into their available time to work on their Genius Hour projects outside of course time.

Most of my kids are so busy with AP classes and other things that having them do that on their own, and as homework above and beyond the novels we might be reading or the independent reading that they're doing, even if I tie that in with their projects, it's really burdensome. Even if I have just honors kids and they're not in the gifted program, they're still really busy, too. You look at what high school kids are doing nowadays versus say when I was in high school back in the 80's. I don't know how they hold it together to tell you the truth. Most of the kids I have are such high achievers and are constantly away after school doing something that it seems to me that they need more class time to do that.

Henry also lamented that some students’ need to feel perfect also sometimes hindered progress on their projects.

When Ellen turned out that stop motion animation on the five stages of grief that you watched, that's after Ellen literally almost having a
breakdown because she's such a perfectionist that it took her the better part of that project just to get to what it is I want to do and how am I going to do it, and where am I going to find the time?

Additionally, Henry noted that the open-ended nature of the class ran contrary to his perception of the rest of the students’ school experience which can be very directive as students played what he called “the game of school.”

There's a big deal of confusion because students are like, what is this? The way (author) Don (Wettrick) describes the class, it's sort of like a Seinfeld class. Seinfeld was a show about nothing, right? Essentially, this is a class that's about nothing. The students are the ones who figure out what it's going to be about. That's a huge paradigm shift for them. All paradigm shifts are huge, but that's a shift for them because they're like you mean you're not going to tell me what I'm supposed to do? No, I'm not going to tell you what you're supposed to do, but what I will do is help you do the things that you want to do.

Along similar lines, Henry noted the tension of his efforts to hold students accountable for their time through blog reflections with his desire to build a gradeless course that focused on feedback and student-teacher conferencing.

**Summary**

When asked for advice for teachers considering starting Genius Hour, Henry said “I am a lone gunman, and I don't think that that's a great way to do that. I would also say try to make your peers, the other teachers, aware of what you're doing and why you're doing it. Don't just be the outlier, the purple cow in the corner of the field. This quote
encapsulates much of Henry’s experience with Genius Hour. While Henry enjoyed facilitating Genius Hour and his students’ have found success both in his classroom and beyond, he found the experience to be somewhat isolating. Support from administration did not translate to support from his colleagues; thus, he felt like a single, unique “purple cow” in his context.

Case Four: Walter

Overview and Drivers

Walter, who was in his late 40s at the time of this study, was a veteran educator with over 25 years of experience teaching on the West Coast of the United States. He implemented Genius Hour in his 10th grade English classes at a large high school with over 3500 students, 25% of which received free or reduced lunch. The majority of students or 55% identified as Asian descent, 24% as White, 15% as Hispanic, and 3% as two or more races. In the 2018-19 school year, 85% of students at Walter’s school scored as proficient or higher on the state ELA assessments, and 68% of students scored proficient or higher on math assessments.

Walter’s interest in Genius Hour initially stemmed from his experience as a learner. He once approached his English teacher about earning credit by performing spoken word poetry at an open mic night. The teacher agreed, and Walter brought his grade up from an F in the process. Once he became a teacher himself, Walter decided that his students deserved a similar opportunity. “When I started teaching, I was like, you know what? I need to give that opportunity to all my students. All of my students have some kind of thing that they like or that they're good at, but aren't necessarily given that chance,” Walter explained.
Walter’s journey to Genius Hour started with an original approach he called the “150-point project.” The endeavor involved an open-ended project where students were tasked with creating a project that involved reading, speaking or writing that they believed was worth 150 points. No other guidance was given. He ran the project for 15 years and noticed that the projects were getting progressively worse.

I did that for, I don't know maybe 15 years, maybe more. Around. Then I would get some really bad stuff, like some really, really bad stuff. The bottom line was when I had three boys who turned in a cake in the shape of my head and somehow thought that that was worth 150 points. It was hard for me to say it wasn't, because I really hadn't given them any guidelines or directions.

At the same time of the breaking point of the 150 Point Project, Walter learned about Genius Hour through Google Teacher Academy and several EdCamps. Genius Hour resonated because it provided added structure which he felt was necessary for interest-driven learning. Walter’s process of implementing Genius Hour was also influenced by the work of author Kevin Brookhouser (2015) and the career guidance writings of Georgetown professor Cal Newport (Newport, 2018). Newport advocated that, somewhat contrary to ethos of Genius Hour, individuals should focus on identifying and cultivating unique useful skills that benefit society instead of following their passions. “We look for the need, right?” There's a need, like Cal Newport. You get inside, get inside you see what's the need is and then you collaborate,” Henry explained.

Improving the community was a focus of how Walter designed the structure of Genius Hour in his 10th grade English classroom, even if the work included some small
acts of civil disobedience. “I mean, they [students] gotta learn how to take control of their environment a little bit and I think that's okay. If we're going to be an active citizen, sometimes we're going to do things we're not supposed to do, but we just have to think, what's the hierarchy of not supposed to do this.”

When coordinating a Genius Hour experience, Walter wore several hats including that of a mentor or a coach. He believed that his way of teaching Genius Hour was consistent with his non-Genius Hour teaching in that he offered students in both contexts the creative freedom to demonstrate understanding of course content. This approach was an evolution from earlier in his career when he gave traditional assessments in the first half of the year and more creative projects in the second half. He found that this split approach had a negative impact on his more creative students who would struggle in the first half of the school year; in turn, he felt this resulted in students having final grades at the end of the school year that did not reflect their overall ability. Walter elaborated:

I used to give quizzes that were multiple choice in nature, like complete answers. I would do the 150-point project in the second semester, and I might do a lot of more than one project in the second semester. I started discovering that the kids who were rock stars in that stuff were not necessarily my best students in their first semester. I'd already given them a B, which then shut them out of the school that they wanted to go to. I was like, why am I doing this?

From Walter’s perspective, support from the school community had been mixed. Some colleagues had adopted forms of Genius Hour in their own classroom, but they had not reached out to Walter to collaborate, which, he lamented, ended up limiting his own
personal growth. Although Walter has shared materials and ideas with teachers in what is known at their school as the Innovation Symposium, he explains,

Nobody's approached me to help them in their classroom. There are some teachers who took it and kind of made it their own...[but] it'd be neat to have other people doing it and to learn from them and have them challenge me. It'd be cool.

From Walter’s perspective, much of his colleague’s implementation focused on check points and holding students accountable for deadlines rather than interests and process. In addition, he felt that while administrators provided teachers with a great deal of freedom and latitude to try new ideas, they would sometimes prohibit student projects. As Walter explained,

The number one derailment of any innovation project is going to be an adult to stand in your way. We've had problems time and time again with somebody in administration coming into our department, who for whatever good reasons, don't want the kids to start on the process of whatever they want to do. I beg the kids, come up with something that's not going to require an adult supervisor.

Parents, Walter believed, were generally supportive of Genius Hour because the project was graded, but they often needed convincing that the work would help to put their child in a better position to be accepted into the college of their choice. “I do have to give them points, because points are the currency on papers that allows them to buy time from their parents after class. Their parents will not give them the time to work on this project if I'm not giving them money in the form of points,” Walter said. He later
continued, “I think it's a function of this school. This school's like, grades are a huge commodity in this campus, [and] so is getting into higher level schools.”

Process

Genius Hour took place as part of Walter’s 10th grade English class and occurred once per week over periods ranging from six months to as short as a 30-day, four class session sprint. Walter used a metaphorical process called “Idea Farming”, which was adapted from Kevin Brookhouser’s (2015) approach to Genius Hour and focused on seeding a solution to a need or problem within their school community. Students began by brainstorming as many needs as possible. This process also included a “Cowpie Kitchen”, based on Brookhouser’s Bad Idea Factory. The point of the “Cowpie Kitchen” is to break down potential creative blocks that come from students fearing that their authentic ideas will be rejected by peers. The ideas created in the Cowpie Kitchen are intentionally not useful or counterproductive. Once students have generated bad ideas, and had some laughs, he then asks students to generate potential ideas that would solve the problem. Sometimes, Walter noted, a “bad idea” is revised by a student into a useful one.

The next step was for students to choose a project and present their “crop” to a small group for scrutiny and feedback in a process called “crops vs. crows.” According to Walter, this process was designed to improve students’ original ideas, spark new interests, and inspire new coalitions as students see a project that they would like to join. “It's a good way for me to see all the projects,” Walter said when discussing this phase. “What's even better is the kids who maybe are not 100 percent into their project, but they
see somebody else's and maybe they want to go in that, or they have a good idea for how to solve a problem or whatever. It's just becomes this community [of] how can we help?"

After this point, students shared their “crop” with the whole class by offering a brief presentation that outlined the what, why, who, where and how of their project along with a current plan or timeline. The next step was the action and research phase, also known as “Let it grow, let it grow” where students worked on their projects, individually or in small groups of 2-3 students. During this time, Walter would meet with students to give feedback and proposed “What If” questions to help improve projects. During this phase, students also completed three blog posts, which included one post about the launch of their project, one at the midpoint, and one final reflection.

The Genius Hour experience culminated with an evening Innovation Symposium where students gave a round table talk about their project or gave a more formal TED style talk on the main stage. Students also had the option to just present to other peers in their classroom. Parents were invited to attend the public symposium. In the future, Walter would like to have the event at a bigger venue and invite more of the school community to attend.

Successes

Walter referenced a number of successful projects from his Idea Farming projects. These included for instance, a group of students that successfully lobbied the district to create a girls freshman water polo team, a student who planned an ice cream social for a local nursing home, and another group of students who painted inspirational quotes in the school parking lot. Each of these projects had an impact outside of the classroom community and Walter reported that, beyond the products, the Genius Hour structure
helped him to get to know his students better and enabled him to see students in a different light. “I always have a couple of kids who can't come up with an idea. I have to sit down with them, I find out what they're into. That's not necessarily to end up with an idea, it's just [a way] for me to get to know them better.”

Walter was particularly impressed with a student who struggled with other course material, as detailed next.

The project where I had the girl do the ice cream social. Super proud of her. This is a kid who's getting a D, just terrible writer and ... good girl, just terrible writer. I remember I did a project where I had to find quotes in the book, like by reading. She just went to a quote site, right, and just pulled the quotes there so she didn't have to read. There is so much paperwork that she had to get through there for a senior citizen to allow an ice cream social. She had to be incredibly persistent. She had to go meet with every person, had to fill out paperwork - a ton of paperwork she had to fill out. She had to know the food allergies for every person, like 80 people. She had to know every one's food allergies, and what they could and couldn't eat. She just put everything all together.

Walter relayed that the student reported the event was "one of her greatest experiences ever,” and that he later experienced the ice cream social with his father as the nursing facility made the ice cream social an annual tradition.

In addition to successful projects, Walter found that Genius Hour had other benefits. He believed that the process enabled his students to grow in important ways.
[I enjoyed] showing kids what they can do and seeing that blossom into other things. A lot of times it's not the project itself that changes things, it's the process of the project and they see they can tackle other things. In that sense, it's kind of really important to do this when they're still just sophomores or juniors, because then as seniors they can kind of sprout something else.

Walter believed that Genius Hour also supported students in their presentation and storytelling development skills, as students had to present their ideas and their process multiple times in a compelling format to different audiences. He also noted that, as their teacher, he became emotionally invested in the projects. “You've got to help the kids emotionally. There are moments above everything else, but [this] gives them steps, or helps them discover the steps. You will be emotionally invested in this project in a way that you would not be with a test.”

Challenges

In addition to the quality of the projects and the numerous benefits, Walter outlined several logistical hurdles they needed to overcome, including how students learned to navigate school bureaucracies to complete their endeavors. The idea farming process, for example, and resulting student projects were sometimes at odds with school policy and/or administrator desires. In turn, student projects become more complicated or even blocked by “an adult getting in the way.” Walter also feared that, at some point, a student request or project might be cause for administration to shut down the process entirely. He wanted to ensure that no student “does anything that they'll never allow me to do it again…. Like, I don't want to get in trouble. Legally, I don't want a kid to get
hurt. There have been sometimes at the point of, like, a lot of kids want to do things with the homeless... Not a situation I want to put those kids into and I've also had a lot of kids want to do like prank stuff,” he explained.

These social videos where they pretend to be homeless, or they pretend to do something mean and they want to see how people react to it. I can't control some of these people yelling at one of my students or wanting to fight them over their embarrassment. I've got to be careful that the stuff they want to do is not going to get them hurt.

The school context can also provide additional challenges. Walter explained that students, particularly those who are successful, would sometimes dismiss the value of this work or encounter inertia due to the open-ended nature of the project. These feelings, Walter believed, were often the root cause of the 5% of projects that bomb.

It will be like five percent of super A students, who are either completely overwhelmed with the freedom of the project or are willingly saying this is stupid and I'm going to make sure that you look like crap trying to do something like this. It's the same kids, I have kids who literally name their blog, this is stupid and I hate you.

Other students use their Genius Hour time to do work from other classes, which can be disappointing for Walter. “…Giving kids innovation time and watching them study for a quiz that's due the next period. It doesn't feel good, not good at all.,” Walter lamented.

I know they’re finding time, I might need to pull them and have that conversation. [I would ask them], ‘Are you really using the time for a
quiz, where are you at, what do you need to do?’ My better students, who
are like cranking it, I just gotta let that go, because instead of studying at
night they're working on their project.

Walter described grades as a huge commodity within his school as many families
were focused on supporting their children in accessing highly competitive schools. As
discussed earlier, since points appeared to be so important to parents, Walter felt the need
to assign points to Genius Hour projects so that students’ parents would agree to their
investing time at home to work on them; otherwise, he explained, their parents would
want to shift their child’s time to point-earning endeavors in other classes. Walter thought
it was important “to convince students and parents that this is something that will benefit
them on their path.”

Having to award points was further problematic as Walter noted difficulties he
had in assessing the Genius Hour experience.

I'm not a big fan of rubrics, because for some kids, their project might not
be that impressive, but based on the blog post and the things I've seen
them do, I knew they spent a lot of time on it. I've even had kids who
might not have nailed their project, but I know [the] huge [amount of]
work they put in trying to get it going. If I make some rubric about what a
difference it [the project] made or you know, I can't do that.

Another challenge Walter noted was that students did not always look “busy”
while engaged in Genius Hour work, which may give an appearance that students weren’t
all that productive. “Watching the kids’ innovation can at times be really cool, but at
other times it's ... I don't know. Sometimes it's cool. [But] it doesn't look like they're doing anything sometimes.”

Walter also pointed out that some students had difficulty with aspects of the project itself. He noted that students would sometimes have difficulty selecting topics for their project and it may take several weeks for students to decide on one. Even when students selected a topic, procrastination was often an issue that needed to be addressed. Additionally, group dynamics or differing visions for the project would cause some groups to splinter. “Then there's also problems where there's one kid doing all the work and the other kids aren't doing anything. Then that one kid kind of peels off the project, makes it smaller…[and] all the other kids end up with like nothing. Those things definitely happen.” Other students would resist the structure that Walter imposed on their project and there were some students, Walter perceived, who rejected the structure of school, and thus, the Idea Farming project along with it.

From Walter’s perspective, Genius Hour can be personally challenging for the teacher. Because Water had 37 students in some of his classes, the total volume of projects often exceeded 130, which was especially difficult to manage. Additionally, Walter had difficulty supporting some projects due to his limited knowledge of the topic. Finally, he expressed concern that the time used for Idea Farming cut into time that could be used for discipline-specific work and thus, may have limited student exposure to outstanding novelists.

I don't get through as much curriculum and I'm an English teacher. I often wonder if there's anything I can be doing that's better than having kids read a novelist who
is considered the greatest storytellers or writers of all time, and who am I to be doing anything like vocab instruction, project-based learning, innovation, reading ... You know? There's some great books out there, maybe we should just be reading out of the book.

Summary

Walter was a long-time advocate for interest-driven learning harkening back to his 150-point project which served as the predecessor for his venture into Genius Hour. Genius Hour provided the necessary structure, provided through a farming metaphor, to enhance the quality of his students’ projects. Walter identified numerous successes including projects that resulted in the creation of new athletic programs, events for senior citizens in the community and personal growth for students in terms of public speaking and event logistics.

The challenges Walter encountered were predominantly contextual. Given student and family focus on traditional academic achievement, he felt a strong need to issue significant grade points for the project to ensure that students would invest time in this work. Even still, some of his most successful academic students bristled at the idea of Genius Hour, calling it “stupid,” or use their Genius Hour time for other classwork. Colleagues were interested in Genius Hour, but he lamented that they emphasized the assessment aspects rather than student interests and community improvement. He reported that he was unable to connect with colleagues to find a collaborative partner in this work. Administrators were generally supportive of student projects except when they involved changes to school policies or procedures. Genius Hour, as Walter viewed it, was somewhat at odds with the rest of the school culture.
Case Five: Rita

Overview and Drivers

Rita, who at the time of this study was in her mid-30s, was a teacher at a small high school on the east coast. She had been teaching for almost 15 years and spent most of her career in her current position. She had facilitated Genius Hour 4-5 times at the time of the study. The school had 641 students, 90% of which identified as white, 4% as Hispanic, 2% as Asian and 1% as black. In 2015/16, none of the students were receiving free or reduced lunch. In terms of state assessments, 98% of students achieved proficiency or advanced on state ELA assessments, 92% in mathematics, and 95% in science.

Rita began her Genius Hour experience in 2017 when she was assigned to teach an elective course for Grade 9 students. She appeared driven by the combination of her school’s opportunity for more creative freedom and a desire for something new after ten years of teaching. “[A] couple [of] summers ago, I had been teaching just over ten years and was just looking for something different, … I had Com & Lit (Communication and Literacy), which just offered me all of this creative freedom and I was just looking for something fun or [a way to] bring fun back into English class” to prevent kids, and herself, from burning out from the English curriculum.

Her exploration for “something new” led her to the work of educator Laura Randazzo. Randazzo’s (Randazzo, n.d.) blog resonated with Rita’s personal teaching philosophy and Randazzo’s work with Genius Hour prompted Rita to try it herself.

I just loved everything she did like philosophically, ideologically we just totally matched up. She had this whole part of her blog that was dedicated
to her implementation of (Genius Hour). She did a whole series on it, and she is just wonderful about giving herself away.

When Rita implemented Genius Hour in her own classroom, she saw her role as both a facilitator and a connector, helping students to find the resources or people they needed to move forward on their project. “Even right from that first day, I have to kind of take a step back and allow them to work it out. I'm there. I mean I guess it's a cliché, [but] they need a facilitator. That's what you are. It has to be individualized,” she explained. She noted her personal enjoyment of coordinating Genius Hour and the students’ level of engagement as motivators for continuing with the process.

Rita also explained how she viewed Genius Hour as different from her other English classes; although her other classes also involved projects and group work designed to promote student agency, her traditional classes were less open-ended and focused more on writing, vocabulary and literary analysis. “I mean I enjoy it (Genius Hour) for different reasons. I'm an English nerd and I like to talk about literature, so I do enjoy that part of it. This is fun too. Again, it allows me to see a different side of [my students],” Rita elaborated.

Rita also noted that people at her school were very supportive of Genius Hour. Her administrators expressed both interest & appreciation for the work and they have promoted it to both internal and external audiences. Her colleagues, both within and outside the department, also embraced the idea of Genius Hour and incorporated the experience into their courses. The school had also asked her to provide professional development on the topic to other colleagues and teachers from visiting districts. She explained how important it was to have support from the administration.
I went down to [our principals] when I first had ideas or had the idea of putting it in place years ago. They were like yes, go, do it, which was really wonderful. I mean, it's a district-wide initiative this year, and so I think that, to some extent we are being encouraged to do it. I think that you'll always have teachers who, you know, who do it, you know who try it out, especially if it's something that administration is really supporting.

**Process**

Rita’s Genius Hour teaching took place in a mandatory “elective” course for freshmen called Communication and Literacy. The course met between three - four times per week for 70 minutes and the last meeting session each week was reserved for Genius Hour. In total, students had about 12 sessions to work on their projects, which were all completed individually. Typically, her class enrollment was approximately 30 students.

Her Genius Hour process typically began with an introduction to the guidelines and a guided brainstorming process with prompts and questions that led students toward a product-oriented goal. As Rita clarified, “I guide them through that process with some questions…[and] explain to them, at the end they need to have a product, so we do some brainstorming of what a product could be.”

Once students decided on a project, they pitched their idea in a 60-second “Shark Tank” style presentation. “[Students] actually have to get up and pitch their ideas in kind of a Shark Tank style,” Rita said. “Their peers will ask them questions, try to help kind of guide them along…It's actually been really cool.”

Teacher approval was required before beginning their project. Once approved, students used the remainder of the time prior to the presentations in any manner of their
choosing. During that time, typically once a week over an 8-week span, however, students were required to complete a daily exit ticket with a stated objective. Exit tickets also included several reflection questions provided by Rita. Students were also required to conference with Rita twice during their independent work time.

The final product for Genius Hour in Rita’s class was a TED-style talk where students discussed what they did with their time, why they invested effort in the project, and what they drew from the experience. Students were assessed by a school developed school-wide adaptivity rubric that was used to assign a numerical grade for work completed during the Genius Hour process.

**Successes**

Rita identified numerous successes from implementing Genius Hour. One success was the range of skills that students developed during the process. Public speaking was one skill that was cultivated. “The [project] pitch kind of fits nicely into that because we're able to talk about what speaking skills [were needed] and they have some expectations in that regard,” Rita said. She continued “[The] pitch, like I said, connects to our standards where there are elements of public speaking, it's [the] reliability of the elevator pitch, and they have to go through certain components in terms of talking about why they want to do the thing.”

Rita also referenced skills around self-regulation as benefitting from the Genius Hour experience, particularly in terms of developing an awareness of their use of time and procrastination. When discussing student reflections, Rita explained, “They talk about what they learned in their project; you know content, almost, but also the soft
skills. A lot of them talk about how they learned that they're procrastinators or that it's difficult to set your own goals.”

She also noted students who developed their writing skills through the creation of fan fiction, for example, or others who developed entrepreneurial skills or event management skills by creating an acting camp for their project. Beyond skill development, Rita also perceived that her students experienced increased levels of engagement when participating in Genius Hour. “I think that in the past, students have liked 20 Time, you know, [they] have been excited about it. I think that it's pretty common for kids to come in around Thursday or Friday and be like, yes, it's 20 Time day,” she explained.

Genius Hour also had benefits in her relationships with or perceptions toward students. For example, the process helped her to see different students in a new light as the teaching practice allowed her to see outside interests that may not have manifested themselves in her English classes.

I love seeing different sides of students as part of it. I mean oftentimes, and this is true for any discipline, you see their skills in that discipline. It's just like when you go to other [events], [like] one of their games or you go to the play, and you get to just see this other part that you don't normally see. That's always wonderful. It's so rewarding, and so, yeah, like it's fun to see the skills that they have, but even like my example with Allison, sometimes you see a part of a kid too, like [a part] they might not normally be able to show off.
Rita also noted that she has been positively surprised by the quality of some of her students’ work, estimating that about 5% could be described as “awesome”. Additionally, she reported, the Genius Hour experience had generated positive word-of-mouth comments amongst students at her school. When asked about high-quality projects, two, in particular, readily came to mind. The first was a project in which the student worked with a grandparent to sew toys for children in the hospital. One of the nurses at the hospital was a traveling nurse who brought some of the toys to a hospital in China. The nurse sent pictures and the project was featured on the principal’s blog and it also drew local media attention. The second project centered around the creation of an enrichment camp for elementary students. Rita’s 9th grade student developed the project, designed the programming, wrote the script, and worked with district administration to bring the experience to fruition for 20 elementary school students. Both stories represent another kind of success in that the Genius Hour projects made an impact outside of her classroom.

Challenges

Rita also expressed numerous challenges that occurred throughout the Genius Hour process. From Rita’s perspective, project management could be problematic for a variety of reasons, ranging from students generating a topic, to student time management, and from students revising the scope of their original project ideas, to issues of waning students interest in their topic of choice.

Yeah. What I usually will do for them is make a schedule, especially once we get going, where I show them the weeks that we have left. Because I think sometimes they feel like, ‘Jeez, a semester, that's an eternity. I have so much time I can
totally waste in this 20 Time session’… Once you got to break it down for them and you see that -- or they see -- excuse me, that 12 classes, that's not a lot of time to really get something meaningful and worthwhile accomplished.

Other times, the projects faced logistical hurdles such as lack of adult support or access to critical resources. In discussing the aforementioned theater summer camp, Rita explained,

I mean there was a lot of red tape that [the student] had to conquer in order to make that happen. She had to get permission, and she had to put out an advertisement, and learn how to write, send out Google form to parents to get the kids to sign up… You know, we kind of waited with bated breath, is she going to get any kids to sign up?

In other instances, Rita reflected on challenges that were centered on students or student life. Rita felt that projects implemented in the first semester developed more slowly than projects among older students, as freshmen were also going through the transition from middle school to high school.

I find it's easier to jump right into 20 Times [in the] second half of the year, especially with freshman because coming in from the 8th grade in August, they are fresh in every sense of the word… I find that usually at the beginning of the year, [it] takes them a little bit more time just to get acclimated to that, and to the class, and then they are more ready. It will differ depending on semester of class.

From Rita’s perspective, other challenges resulted from what Fried (2015) would refer to as “the Game of School.” These are times in which students aimed to replicate examples from previous projects to please the teacher, or times that students appeared to
be more comfortable with more familiar educational approaches such as tests or quizzes and more clearly defined projects, rather than the open-ended nature of their Genius Hour projects. As Rita explained,

The day that I introduced 20 Time, everything in me wants to give examples. Wants to because that's my teaching instinct, right? A student did a great project last year, they did such and such, but then the kids will just do that [same thing]. They've been so trained to do what the teacher wants, you know, that if I say that this service project was a great example of 20 Time, they'll all just do service projects. I think for some students, 20 Time, in general, is hard. You know, like, they just … it's not their cup of tea, and they learn better other ways and… in the beginning, middle and end [of the project], it's just, you know, not for them.

Rita also perceived another common challenge was that students would often procrastinate or not put enough effort into their projects; in fact, she estimated that she would describe about 20% of the projects as “duds.” She also believed that the growth of Genius Hour posed a challenge when other teachers also offered the same Genius Hour opportunity and some students struggled to come up with multiple passion projects. “I don't know if it's just a coincidence that there are a lot of freshman teachers doing it, but I do have some freshmen that are doing three, four 20 Time projects (across other classes). That's a lot of passions,” she explained.

Finally, for Rita, some of the challenges were more personal. She reported that it was a struggle when her students did not have success or have a deeply meaningful
experience with Genius Hour. When discussing what was personally hard about Genius Hour, Rita responded,

I think that being okay with it not working for everybody. You know, my general rule if I think back to the first semester I did it, [was that] not every project was life changing or an astounding success. You know, some kids learn some basic things about how they work and all that kind of stuff.

**Summary**

Rita began her Genius Hour journey hoping to try something novel in her 9th grade elective class and to avoid potential personal teaching burnout. She reported that Genius Hour practice was a bit of a departure from her traditional teaching practice as her English class was more skills-focused while Genius Hour was more “student-led.” Unlike some of the other educators in this study, both the administrators and educators at her school were very supportive of this type of work.

Many of the perceived successes Rita reported were focused on skill development ranging from public speaking to writing and self-regulation. She also noted that she perceived her students to be highly engaged during the process and their projects allowed her to see a different side of them.

Rita also encountered challenges. Students struggled generating project ideas and in other cases would lose interest in their projects or Genius Hour in general. Rita found it personally challenging when students did not have a positive experience with Genius Hour. Finally, a unique challenge emerged from
the wide adoption of Genius Hour in the school as students were “double dipping” and using the same Genius Hour project for similar classes.

Case Six: Clete

Drivers and Overview

Clete, 20s, was a middle school special educator from a mid-Atlantic state. She had been a teacher for two years at the time of writing. At the time of the interview in 2018, she had completed two Genius Hour projects in her special education English class. The school where Clete worked had approximately 750 students, 90% of which identified as white, 5% as Hispanic, 2% as Asian and 2% as Black. 5% of students received free or reduced lunch. 74% of students at her school scored proficient or higher on state ELA assessments and 66% met or exceeded proficiency in math.

Clete’s launch of Genius Hour was driven by a desire to improve the student experience by giving them a learning opportunity that was also engaging. She explained, Generally, with the resource room and with the general curriculum, there is automatically the idea of defeat, because they [the students] are in sixth grade and they feel like they've been defeated by language arts throughout the whole year…For their whole lives, they don't like to read, and they don't like to write. They feel like that's their weakness. They feel like every day's just going to be another opportunity for them to fail at something, whereas, I feel like, since this project was more open ended, they feel confident, successful. They're more engaged.

Clete also expressed that she did not want her students to have to “play the school game” like she did in her youth. “I was a decent student. I was in all honors, I graduated
top of my class, but I memorized and forgot. I played the school game pretty well. I didn't want my students to go through that. I didn't want students to just test and forget, test and forget. That's what I felt like I did, which is horrible,” she explained. After learning about Genius Hour on blogs and Twitter, she decided to implement it after spring break in her first year of teaching.

While facilitating Genius Hour, Clete viewed her role as a guide. She noted that her teaching practice in Genius Hour was like that of her non-Genius Hour work. While she was a little more “hands off” during Genius Hour, she strived to include choice into their work.

I'm still really hands off, which is weird. I'm not a stand in the front of the room teacher. I do it on Mondays, because we do morphemes on Mondays, and I hate it. It's the worst part of my day. I don't like to be in the front of the room. I don't like to lecture. I guess from that perspective, I am hands off, in the same way. I'm a little bit more guiding than I am in Genius Hour. As in, ‘We have to do this essay guys, sorry. We have to get through it.’

From Clete’s perspective, the reaction to Genius Hour in her school was mixed. Clete described her administrators as “supportive,” and she reported that the parents had never complained about the practice. In fact, in some instances, she would receive emails from parents expressing their gratitude.

I've never gotten a bad reaction from a parent. I'll get some emails saying that “My child comes home and they talk about it. They're so proud of their work. I read their book and I saw this. I'm so happy they were able to
do that." I've had positive reactions. I haven't gotten any negative reactions about it yet.

Her colleagues’ reactions, on the other hand, were varied. Some colleagues expressed concerns about time or engaging in “hands-off” learning design. Clete reported that others told her Genius Hour was only possible because she had small classes and worked in a resource room. She also stated that she often felt like she was off by herself.

Some [teachers] are very interested. Some feel like it wouldn't work in their class. Most are worried about time, only ask about time. How does that work in your schedule? How does that work there? You have to get through in the curriculum and get ready for testing. How does that work? That [kind of thinking] sucks….For the most part, I think my team of special ed teachers who share the students with me appreciate [Genius Hour], because they get to hear about it and see their students in a new way… [But] some people are like, "Yeah, I don't want anything with hands off teaching. They need to do what I'm telling them to do." They can't branch out.

Process

Clete coordinated Genius Hour in her resource [special education] course with 30 students total. Sessions ran weekly over the course of a semester and each student worked on their projects individually. The process began with an introduction and an interest inventory to spark ideas for projects. The brainstorming process lasted for two weeks (with one class per week) at which point, the students had to decide on a topic. At the end of two weeks, Clete met with her students to discuss their project and begin to
plan their pitch to their classmates. “You have to have a project set in stone by this point,” Clete explained. “I do have a hard deadline on pitches too.”

A month into the process, students will make a “pitch” and presentation about their project to their peers. Peers listen to their proposal and then provide feedback, critique, or ask questions. After the pitch, students have several weeks to research and explore their topic of choice. Clete explained that there was limited formal structure during this time. She would informally conference with students and those meetings informed their final grade. Clete elaborated:

From then until the end of the year, when they present, it's flexible.
They're open to do whatever they want during those periods. I do informally confer with them, and that is part of their grading process.
Those are pop up and unannounced. Then the final, hard deadline is in June. They do have to all have their presentations ready to go by usually the second week. From the pitch to the presentation, it’s more flexible in terms of what they can do in [between] those periods.

Students would also intermittently log their work as a form of reflection. Clete’s Genius Hour session culminated in June with an in-class presentation or demonstration of learning. Some projects took the form of a traditional slide show while others were formatted as skits or films, among other approaches. Students were assessed based on their pitch, their responses during conferences, and their final presentations.

Successes

Clete identified numerous successes in the Genius Hour process. She reported that she believed most students were highly engaged with their project. “I think usually, for
the most part, my students come back and tell me it’s their favorite thing [they] did all year, because they felt like they could explore something about themselves and do something new and find success,” Clete explained. Clete also perceived her students as being happy throughout the process.

In addition to being happy and engaged, students developed or demonstrated several different sets of skills as part of the Genius Hour process. Clete commented on her students’ ability to self-regulate throughout Genius Hour by initiating conferences. She explained: “Students would say ‘Oh, I need help with this on Friday.’ There are several set times that I will schedule the time to sit with a student. Generally, for the most part, they're initiating [the conferences].”

Some students also cultivated skills in writing or storytelling through Genius Hour. As a result of the structure, students were also provided additional opportunities to practice the research process. In describing their research, Clete explained:

They do keep a running doc, and they use an extension on their phone book to keep track of all the things that they've highlighted and kept as research. I have access to that. That's how I keep track of what they're doing. If something's glaring and I notice that it's not something they should be using, then we have a discussion about it. That's generally how I keep track of it. For the most part, the evaluating sources is good, it's just finding the sources to report what they're trying to do.

Clete also reported intrinsic benefits, in terms of both personal feelings and her relationships with students. She felt empowered by the process and inspired by the transformation that she saw in students because of Genius Hour. “It's usually empowering
by the end of it, because you see what the students can do and you relinquish the control and you can see what they're capable of on their own. Initial chaos and at the end, it's a good feeling at the end for them.”

In addition, Clete expressed that Genius Hour had caused her to see some of her students in a different light and it also improved communication with students.

I think personally, it's every time I see a student in a new way. Last year, I had a student who was writing a book. He wasn't the world's best writer, and he was at the lower end of my group in terms of writing ability. He wanted to write a novel, and it was a good opportunity for me as a teacher to see what he was capable of in a non-structured environment, and that he had the ideas. It helped me see the student in a new way.

Parents were also receptive to Genius Hour; as mentioned earlier, Clete had received numerous emails from parents who saw a new side of their child because of the project.

Finally, Clete noted several memorable projects from her time as a Genius Hour teacher. One project was a full-length feature horror film both written and filmed by a student, who Clete said, “fought me all year on writing anything at all.” Another student built a website that focused on providing teachers and students with information on the benefits of fidget spinners. Clete reported that the student received several emails in response to his website and that he spent more time on the Genius Hour project than any other work in the academic class.

Challenges
Despite the many successes, Clete also shared several challenges she encountered when coordinating Genius Hour with her students. From a logistical standpoint, getting started was sometimes problematic for students as Clete perceived the amount of choice students had could be overwhelming. In describing the selection process, Clete said “Half of them usually have a hard time figuring it [their project] out in that short a time period, which is why I usually give them the inventories [to find out] what they are interested in.”

Additionally, Clete mentioned several logistical challenges including the difficulty of managing the numerous projects and the short work time of 50-minute periods. From a personal standpoint, Clete noted that relinquishing control of the learning process can be difficult for teachers.

My first thing I always tell them [other teachers] is to not be afraid to let go. I think that's initially the thing. They want to have so much control of what the kids are doing. Not control, that's a bad word. They want to be involved, so much, with what the students are doing. My advice is always to just let them do it and it will turn out okay. Let them figure it out, because they can do it.

Further, a teachers’ lack of knowledge about a student’s topic can be difficult when trying to support their inquiry. Other challenges that Clete encountered were more directly related to the Genius Hour process itself. She reported that students sometimes had difficulty conducting the research process, particularly transitioning from a topic to inquiry. This is particularly true of students who were learning to cultivate a particular skill.
I have a student this year who's making a documentary on World War II. Obviously, his research was pretty clear cut. Then, you have students who are learning to code or learning to make something. They're like, "What kind of research am I doing?" It's hard to get them thinking in that mindset of how do you research? Then it's expanding their mind to what research actually is. It's not just facts and statistics.

Clete also found that students’ interest in their topic sometimes waned over time. Similarly, students often procrastinated and Clete reported worrying that students would not have a final product at the end of the session. She explained:

I always worry about if the students are going to have nothing at the end. That's always my big thing. I wish I could push them nicely to get to something, especially since you don't want to be hands on. I'm always struggling with that a little bit.

Accountability structures also posed perceived difficulties. Clete explained that she felt concerned about not meeting all her curricular requirements when running Genius Hour. “Trying to find the time to do this, while still meeting all the requirements of the curriculum, has been a challenge. I know I talk to teachers, that's the biggest thing I think they fear, is the time constraints, not having enough time to do that with their students,” Clete explained. She was also concerned about her students’ standardized test scores since it impacted her employment, particularly because Genius Hour did not align to the multiple-choice testing structure.

I'm still a non-tenured teacher, so it always scares me. PARCC is part of my evaluation score. That makes me nervous. I don't push it on the kids. It
does make me nervous, especially because I feel like everything, even in a traditional classroom, it's still open-ended and student-driven. I do get nervous by the time that standardized testing comes, it's different. It's multiple choice. We don't do that in my room. It's always a little bit of tension.

Clete did, however, feel like Genius Hour was an opportunity for students to demonstrate progress toward meeting the standards.

Usually, at the end, I do give my kids the standards. We do the New Jersey student learning standards. … I have them highlight different things that they think they've done, so they do see that things that they're doing with this project do translate to language art skills they're supposed to be learning. I know some people are against those standards with that. I think for my kids, it's important for them to see, "Look, you did this project. You're successful and you mastered these skills that you're supposed to be learning on grade level anyway." It's good for them to see that way too.

Summary

Clete was an early-career educator who sought to ensure that her special education students felt confident and engaged in school. Clete found success in several aspects of her Genius Hour implementation. She found students to be engaged with their projects while also developing essential research, storytelling, and self-regulation skills. She also expressed that she developed a better rapport with students as she supported them in developing their projects. Clete also encountered hurdles. Like many of the other educators in this study, she observed students having difficulty deciding on a topic in the
allotted brainstorming time and procrastinating during allowed work sessions. From a personal standpoint, Clete expressed difficulty relinquishing some control over the learning process and balancing Genius Hour with the remainder of the school’s ELA curriculum. Despite the challenges, Clete maintained a high level of enthusiasm for Genius Hour.

**Chapter Summary**

Each of the six cases illuminated many details of the teacher experience while facilitating the Genius Hour process. Within each case, interview responses detailed how each educator structured the process of Genius Hour for students, and then navigated the successes, challenges, and contextual factors that ultimately shaped their experience.

From these six cases, it was clear that all the teachers took a similar approach to structuring Genius Hour in ways that provided time for students to brainstorm a topic, pitch their ideas to peers, conduct research, build their product, and then present what they learned and/or accomplished to peers in their own classroom or to a larger, more public audience. Additionally, the six participating teachers not only perceived many of their students as being both engaged in and having enjoyed the Genius Hour experience, but they also appeared to receive personal enjoyment that stemmed from their appreciation of projects that students created as well as from the opportunity to build relationships with their students and see them in a new light.

It was also clear that there were many difficulties to consider when implementing Genius Hour. Managing dozens of projects simultaneously could be onerous, especially when the project topic was outside of the teacher’s area of expertise. Additionally, teachers’ expressed frustration with students who tended to procrastinate during the
project process, students who completed other coursework during class time reserved for Genius Hour, or those who lost interest in their projects and finished early rather than following through on their projects to the end. The teachers, by and large, had a strong desire for this experience to be transformational for students and sometimes disappointment when that was not the case.

Participating teachers’ reasons for wanting to implement Genius Hour varied in terms of their initial motivation, but in the end, they all had a desire to create more engaging learning experiences for their students. While some of the six educators initially discovered Genius Hour through social media and others through Ed Camps for the Connected Learning (2013) network, several teachers cited common bloggers and authors who wrote about Genius Hour, including Don Wetterick (2014), Joy Kerr (n.d.), and Kevin Brookhouser (2014). Similarly, while discussing their role in Genius Hour, participating teachers saw themselves in a variety of capacities, but mainly as a mentor, a facilitator, a coach, and an occasional motivator when needed.

Furthermore, all six teachers reported stakeholders who impacted their Genius Hour experience in various ways. Administrators were described as ranging from at least tepidly supportive to outwardly supportive, yet, in one instance, that support was contingent on projects not interfering with other school operations. Reactions from colleagues and parents were varied; generally, colleagues were only passively supportive or agnostic toward Genius Hour practices. Parents, on the other hand, ran the gamut from expressing appreciation for the new sides of their children that they were seeing as coming out of the Genius Hour process, to expressing frustration over the amount of time their child was spending on the work. Often, parents’ frustration was due to
misunderstanding that their child chose to do a deeper dive on their project rather than the educator mandating assigning Genius Hour homework.

Unsurprisingly, all six of the teachers commented that they implemented and continued to implement Genius Hour because they enjoyed it, regardless of the challenges that they encountered. Teachers in this study felt like it was a worthwhile endeavor to provide their students with the opportunity to engage with and explore a content area, a skill, or a project that students found personally meaningful. The satisfaction that teachers derived from the process appeared to help them endure the challenges and other obstacles that can occur when trying to introduce and maintain an unconventional learning experience such as Genius Hour in a school setting.
Chapter 5

Cross Case Analysis

The cross-case analysis yielded a significant group of divergent and convergent themes that cut across the six cases. In the end, five overarching categories were identified to organize key themes and sub-themes. For alliteration purposes, themes revolve around the “5S’s”. The categories include:

- **The Self**, which focuses on teacher-oriented themes about the Genius Hour experience,
- **The Student**, which centers on the teacher’s perception of how their students experienced Genius Hour,
- **The Structure**, which focuses on the choices teachers made while organizing the Genius Hour process,
- **The Stakeholders**, or the groups of external people that appeared to influence and shape the Genius Hour experience, including parents, administrators, and the teacher’s colleagues, and
- **The Situation**, or the school-based contextual factors that appeared to shape the Genius Hour experience.

The Structure category addresses research question one: How do six secondary-level teachers from different school settings describe their implementation of the Genius Hour process in their classrooms? The categories of The Self, the Student, the Stakeholders and The Situation all address research question two: What are the perceptions of teachers around the design and implementation of a Genius Hour project?
Each of the categories contained between one and three themes and several had sub-themes that provided deeper clarity on the Genius Hour experience. One common thread within many of the five categories was that the themes often consisted of dualistic tensions. For example, as part of the teacher experience, themes of inspiration or intrinsic and extrinsic factors that prompted teachers to begin their Genius Hour journey were paired with personal limitations that challenged teachers’ ability to successfully implement the process. Elsewhere, in their observations of students, teachers observed what they perceived as both highly engaged students during Genius Hour and students who experienced waning interests as their project progressed. Additionally, teachers reported divergent reactions to Genius Hour from stakeholders such as administrators, colleagues, and parents; as some members of these groups provided active, outward support, while others were passively critical of Genius Hour practices. While dualistic tensions existed in several of these major categories of findings, duality was not the entirety of the cross-case analysis. Many other patterns were identified across the six teachers who participated in this study, as described in the sections below.

The Self

The Self category includes themes related the teacher’s personal feelings and motivations when implementing Genius Hour. The two major themes in this section were Inspiration and Limitations. Inspiration explored the teachers’ impetuses for implementing Genius Hour. The second theme, limitations, reflected the ways in which teachers felt hindered or in some respects, unable, to support students in their Genius Hour projects.

Inspiration
Inspiration, or the intrinsic and extrinsic factors that prompted teachers to begin their Genius Hour Journey, was the first major theme related to The Self. Inspiration in Genius Hour manifested itself in three primary ways. Most participants (five of the six) cited external influences for their launch of Genius Hour. External influences existed when the educator identified an author, organization, or an event as the catalyst for their decision to implement Genius Hour. In four cases, teachers cited the influence of an important educational blogger / author or several authors whose work inspired or supported their practice. These included Kevin Brookhouser’s (2015) *The 20-Time Project*; Don Wettrick’s (2014) book *Pure Genius*; educator Joy Kirr (n.d.) and her online Genius Hour Live Binder that contains resources for supporting Genius Hour, and educator/blogger Laura Randazzo (n.d.).

Two participants identified EdCamp, a teacher-driven, open meet-up for educators, as a primary external influence; these participating teachers attended EdCamp sessions about Genius Hour that were hosted by other educators. One participant, Orrin, explained that he “had to see it for himself” by observing another teacher implement the process. Henry discussed the importance of a conversation regarding Google’s 20% time, with a Google employee at the Google Teacher Academy, as a propelling force that shifted him toward implementing Genius Hour in his own classroom.

Three teachers, Henry, Flossie & Clete, cited intrinsic motivational factors or forms of personal need that were fulfilled by implementing Genius Hour. For Henry, Genius Hour represented the same choice-based learning experience that he was provided as a high school student. Looking to make up “credit” in his ELA class, Henry asked if he could read his poetry at a local open mic, record it, and submit it to improve his grade.
The power of the experience compelled him to want to provide a similar experience for his students. Clete, on the other hand, lamented that while she “played the school game well,” she didn’t want her students to experience the same thing. For Rita, the personal aspects were rooted in her experience as a teacher. After a decade in the profession, she was looking for something fresh to reinvigorate her teaching. Finding Randazzo’s (n.d.) work resonated with her and gave her the “fun” learning experience she wanted to create in her classroom.

A third common motivator was the teacher’s desire to increase student agency or to provide students with more control or autonomy over their learning. In Henry’s case, this came in the form of putting his students in charge of asking the questions that were most meaningful to them. As Henry explained,

What I want students to be able to do, and I think what most teachers would agree, is we ought to be having the students ask the most pertinent questions in the class. We don't give students enough chance to ask questions. We're always asking them questions and expecting that they response appropriately to those questions.

For Walter, he believed that every student was good at something and that they needed the opportunity to develop that strength in school. “When I started teaching, I was like, you know what? I need to give that [open-mic poetry] opportunity to all of my students. All of my students have some kind of thing that they like or that they're good at, but aren't necessarily given that chance,” said Walter.

Clete didn’t want to “mandate” what students were doing every day in her class; she felt that many of her students were defeated by the school process, and that providing
them with more choice in their learning would fuel their excitement. Similarly, Flossie wanted to ensure that students had “autonomy” over what they were learning. She felt that Genius Hour helped students to better learn to use the technology at their fingertips to support their learning. In turn, Flossie believed that, in giving students the autonomy, they would begin to see themselves as independent learners who had the technical skills to seek out information needed to satisfy their curiosity.

I think it helps shift that mindset of like, "Oh yeah! I can just, what do I wanna learn about? I have the tools that I can learn about. I read anything I want and I can do it right now. I don't have to wait until I'm an adult to be a web designer, or to be a video game designer. I can actually do that now, 'cause I have the resources to do that.

In all of these cases, teachers drew important inspiration from both internal and external sources that sustained their implementation of Genius Hour across multiple implementations of the teaching practice.

Limitations

While reflecting on their Genius Hour experience, participating teachers not only discussed their inspirations for starting the process, but they also identified personal limitations when coordinating Genius Hour. In all six cases, teachers noted their inability to support students, due to their lack of knowledge on their students’ given topic and, in some cases, their inability to connect students with a mentor to support their work.

Rita, who often supported 40 or more concurrent Genius Hour projects, lamented that there were some projects, particularly those around computer coding, where she was unable to support her students. Though she made efforts to connect students with people
who had the necessary expertise, she estimated that only 30% had access to a mentor outside of class. Henry also discovered the need for mentors when both he and his students realized early in the project process that their interests spanned beyond his expertise. “For me, the problem was I realized, and the students realized, is that while I may know a lot of things, I don't know everything and we needed more mentors,” he said.

Other teachers reacted to their lack of expertise in other ways. Walter opted not to include formal research as a requirement and focused on real-world impact projects to help him better support his students. Clete and Flossie both acknowledged the limitations of their knowledge base and also saw it as a semi-silver lining. Flossie perceived that her limited knowledge also forced students to be less dependent on her for their learning and enabled them to take more direct ownership over the process. Clete, on the other hand, saw student projects as an opportunity for her to be a co-learner with students. It’s worth noting that both Clete and Flossie, in the middle school context, were typically managing no more than 25 projects at a time, which may have enabled them to have a slightly different outlook on their ability to stay on top of all the students’ projects.

In addition to their knowledge gaps, teachers acknowledged that they often lacked the network needed to support student projects. Henry noted that less than 10% of his students had mentors for their projects, stating that “learning how to navigate that [finding mentors], that's part of my learning process.” In Orrin’s case, he was able to provide mentors for 10% - 20% of his students due to the strength of his personal digital network. However, Orrin felt that it would be difficult for the number of mentors to scale, both for him personally and for other teachers who likely did not have the same digital network. He compared the process to the challenge of “setting up mini-internships.”
Across the cases, educators found themselves limited in some respect in their ability to support student Genius Hour projects. These limitations included both personal knowledge to support students as well as networks of mentors who could help students on specialized projects.

**The Students**

The second overarching category of findings uncovered in the analysis of teacher interview data centered on teachers’ perceptions of the student experience in Genius Hour. Findings in this category revealed that middle and high school students experienced feelings of engagement, procrastination, waning interest, and for many, success, as part of the Genius Hour process.

**Engagement**

All six teachers suggested that some, if not most, of their students were engaged during their Genius Hour experience. Engagement is defined here as the perception that students were interested in their projects, they found their project work to be meaningful, and they worked actively toward their learning / project goal.

Rita, for example, observed that students would enter her class on Thursdays or Fridays and verbally express their excitement that it was 20-time day. She noted that for some students, they were “lit on fire” from the beginning through the end of the project, and she believed that Genius Hour was really important for students. Walter expressed that he was extremely proud, to the point of bragging to others about 30% – 40% of his students’ projects; moreover, he was personally proud of an additional 30% of his students due to the effort and determination they demonstrated throughout the project process.
Orrin observed Genius Hour as a time that revealed students’ passions in the classroom as students were actively participating in acts of creating and making. The menu of projects and topics provided for the different course assignments reflected their interests. Orrin explained that students would frequently ask if today was a Genius Hour day and, if it wasn’t one, they asked if he could change it to a Genius Hour day. He revealed that students didn’t leave the class for any reason on Genius Hour Days, and they would often come in during their lunch periods to work on projects or be so involved in their projects that they would be late for their next class. Orrin found students were eager to share their projects with peers via presentations or playtesting and with public audiences like Kickstarter, a crowdfunding website that solicits contributions to fund creative endeavors or share work by posting it on YouTube.

Clete articulated a similar experience. She reported that almost half of her students knew what they wanted to do from the project’s outset, as it was something they wanted to do in school but hadn’t gotten the chance to pursue in other classes. She explained that the days were “always busy” during Genius Hour. Students who would refuse or resist other class assignments went above and beyond, creating full-length scripts and comprehensive websites for their Genius Hour projects. Clete also stated that students would return to her class and tell her that Genius Hour was their favorite part of her class because they could “explore something about themselves, do something new and find success.”

Similarly, Henry described the student experience as sublime, revealing that the typical project was “really good” and that “by and large, more of my students tried to push themselves.” Henry referenced a student’s blog reflection, for instance, that
described 20-time as a “really and truly fully autonomous self-directed learning experience”.

Finally, Flossie saw Genius Hour as a time where students dove into a topic that they were interested in; providing time for students’ passions was a theme throughout her interview. She noted how common passions could draw together different groups of students who ordinarily wouldn’t interact with each other in a common project. In one example, a group of new friends were deeply invested in collaborating to work through the construction of a Lego Mindstorms program, huddled over a table and persisting through numerous problems with the construction and code.

In all these cases, teachers perceived a significant number of their students were deeply engaged during Genius Hour. Their descriptions suggest that in large part students experienced high levels of concentration, interest, and enjoyment (cf. Shernoff et al., 2014) while participating in Genius Hour.

**Procrastination**

Paradoxically, despite the increased levels of engagement that teachers saw from many students, they also perceived that some students would often either procrastinate during the time allotted for Genius Hour, or that their interest would wane over the duration of their project. For Rita, procrastination was a common issue. Since the project was a semester long, students felt comfortable not making much progress in class, especially in the middle portion of the project. She perceived that her students felt like they had ample time and suggested that students often expressed their own difficulty battling procrastination in their final reflections. When discussing the Genius Hour final presentations, she stated students “talk about what they learned in their project, you know
content, almost, but also the soft skills. A lot of them talk about how they learned that they're procrastinators or that it's difficult to set your own goals and manage your own time.” Eventually, Rita learned to make peace with students’ procrastination, as it was “part of the learning process.”

Other teachers articulated similar experiences. Walter noted that he found students would tell him that work on their projects was completed, when, in reality they had oversold their accomplishments and were often down to the wire in their project completion. Henry had a similar problem with a slightly different twist. His students would also procrastinate on their projects but would openly note their tendencies in their blog posts. However, Henry opted not to penalize students, so long as there was some sort of forward motion. In general, he felt that the “once-per-week” structure of the class was a source of the stagnation due to the time in between sessions.

For Flossie, students would sometimes have difficulty moving from consumption to action. She gave the example of one group of students logging in their journals that they had been watching soccer trick videos for several weeks, and that they needed nudging [from her] to begin practicing those moves in the gym. Clete shared her fear that student procrastination would lead to an incomplete or an ill-attempted product. Like Rita, Clete’s fear was placed in contrast with her desire to be “hands off” and let students own their learning time and process in Genius Hour.

**Waning Interest**

In a similar, yet related challenge, teachers also observed students’ interest in their Genius Hour project wane, sometimes to the point of wanting to switch topics mid-way through the allotted time. Rita found that waning interest could occur for multiple
reasons. Sometimes, she explained, it resulted from instances when the original project idea, such as working with prison populations, was rejected by an internal or external organization. In other instances, she found that the middle of the project can be a time of waning interest, as the initial excitement fades and the week-to-week goals are less defined than in the final weeks where students are preparing for their presentation. Finally, Rita observed that interest in Genius Hour particularly waned for students who were typically less engaged in school. She noted one student who she knew was interested in motorcycles and offered that topic as a potential project. After initially expressing interest, he abandoned the work.

Henry also observed students losing interest in their projects towards the middle of the program. Citing Austin Keon’s illustration of the “Life of the Project,” (See Figure 9) students’ initial enthusiasm fades as the difficulty of the project they selected increases and becomes clear.

Henry expressed that this was a natural part of the process and common in many of his observations of student projects and process. He explained that the lull is “the biggest problem for them is to navigate that. Every project hits a low point. How do you dig yourself back out of it?"

**Figure 9**

*Kleon’s (2012, p. 83) Life of a Project Illustration*
In Flossie’s experience, she noted that students would sometimes pick projects with a small scope, like building a prefabricated video game on a website, that would last for only two or three sessions. When advised to explore more advanced concepts such as coding for video game design, Flossie recalls them declining. Additionally, she found that some students would switch topics mid-way through their project after their interest faded on the initial topic. She observed that this often led to incomplete or non-existent products at the end of the Genius Hour experience.
Fellow middle-level educators, Clete and Orrin, also encountered students whose original interest in their project eroded as time went on. Orrin explained that he had students who changed their mind in the middle of the project and shifted to a different modality for their project. Sometimes the shift took place due to a suggestion by Orrin, based on the students’ perceived waning interest in the initial endeavor. In Clete’s case, she observed waning interest sometimes lingered into later sessions and prevented students from gaining the momentum needed to sustain their work on the project.

While teachers perceived that most of the students were engaged during their Genius Hour project, procrastination and waning interest in projects were also part of the student experience. The extent to which it impacted student projects varied from student to student, yet these two aspects were universal to the teacher’s Genius Hour experience.

**Defining Student Success**

All six teachers in the study discussed their perception of a quality Genius Hour project. Across the board, all six teachers identified a final product, whether it be a presentation or a physical object of learning, as examples of successful projects. Examples of these successful products were discussed in the individual case summaries. At the high school level, Rita, Walter, and Henry all provided examples of events as successful projects. Events could take the form of a single gathering or a series of workshops that involved people outside of class. In discussing her successful projects, Rita described a student who organized and implemented a theater summer camp for elementary students. Similarly, Walter cited a student who planned for and hosted an ice cream social for more than 80 senior citizens. Finally, Henry discussed a student who
launched a Bulgarian dance troupe as a result of her Genius Hour experience, which then
grew her love for arts into a district-wide art showcase at the high school.

With events being a common theme of quality projects, a related quality project
theme was identified as that of navigating bureaucracies. This theme identifies an
observation of a student or students who learned to successfully obtain the required
permits and permissions from adults or organizations to complete their project. For the
ice cream social project, for instance, Walter noted how his student adhered to a wide
range of requirements to bring the event to fruition.

There is so much paperwork that she had to get through there for a senior
citizen to allow an ice cream social. She had to be incredibly persistent.
She had to go meet with every person. Had to fill out paperwork, a ton of
paperwork she had to fill out. She had to know the food allergies for every
person, like 80 people. She had to know every one's food allergies, what
they could and couldn't eat. She just put everything all together.

Rita noted similar efforts that needed to be implemented for her student’s Theater
Enrichment Camp, explaining that “there was a lot of red tape that she had to conquer in
order to make that happen.” Rita reported that the student created permission forms,
advertising, and even a curriculum based on the middle school director’s input on
essential drama skills.

While the theme of events as quality projects was isolated to high school
educators, the theme of navigating bureaucracies was also identified at the middle school
level. Orrin discussed a student who wanted to write a children’s book on the electoral
college. She wrote the book and then, to have it published, she had to find financing for
the book’s illustrations and production. To achieve her goal, she launched a GoFundMe account to raise $50, part of which would be used to fund the illustrations for her book. Then, the student hired an illustrator in Indonesia to create the illustrations. One of the illustrations was not to her liking, so she had to navigate the request to have the illustrator re-draw the images for one of the pages. Finally, she published the eBook on Smashwords. Orrin’s example highlights the number of different times a student may have to successfully interact with external entities, sometimes multiple entities, in order to complete their Genius Hour project.

A final and related theme of how teachers characterized a student’s Genius Hour success involved that of community impact. Community impact was when the teacher perceived that a student's project yielded a benefit to individuals beyond the class in the larger school or geographic community. As mentioned earlier, community impact was a design feature for Walter and Henry’s Genius Hour project, so it may not be surprising that many of the successful projects had an impact beyond the classroom. Though her design was a little more open-ended, Rita also discussed several projects that had a positive impact on the community. In addition to the drama camp project mentioned previously, another student made cloth beanbag toys to be given to patients at a local children’s hospital. In that case, one of the nurses involved in the doll distribution was a traveling nurse who went to China; she brought the dolls to patients there as well.

Across all the interviews, teachers easily recalled several high-quality projects that made an impact upon them. Oftentimes, these projects had an impact on audiences outside of school settings. Sometimes successful projects were simple informational
presentations, but in many other instances successful projects were either products or programs that supported another member of the local or event global community.

Four of the six educators offered perspectives on the ratios of successful to unsuccessful projects. Across the four cases, the range of unsuccessful projects was as low as 10% in Orrin’s middle school classroom to as high as 20% in Henry and Rita’s high school classes. Walter, interestingly, stated that the number of disappointing projects was cut in half when he moved from the 150-point project (30% were unsuccessful) to Genius Hour (10 -15% projects were unsuccessful). In terms of successful projects, Walter believed that 30 - 40% of his 10th grade projects were truly “bragable,” while Henry said that 80% of kids “really tried to push themselves.” Orrin felt that 60 - 70% of his middle school students went “above and beyond” with their projects. Rita, on the other hand, felt like just 5% of her projects were really good, with the vast majority ranging on a continuum between poor and excellent.

The Structure

The third overarching category of findings revealed from the cross-case analysis of teacher interview data was that of structure, or the choices that teachers made while organizing the Genius Hour Process. Commonalities and variations across the six teachers involved their choices related to structural elements including course context, frame, scope, format, and focus; findings about each element are detailed next.

Context

The teachers in this study implemented Genius Hour in a wide variety of course contexts. The most common was as part of a traditional academic class; Orrin conducted Genius Hour in his middle school history courses and Walter facilitated it across different
sections of his 10th grade English Language Arts (ELA) classes. Rita and Clete launched Genius Hour in an English course, but both courses were different from the traditional grade-level English class. Clete’s course was for middle school students in need of remediation while Rita implemented Genius Hour in a mandatory supplemental ELA course for all grade nine students. Flossie coordinated Genius Hour in a middle school “study hall” period where no specific academic work was issued, and students could use their time to get extra help or make up work. Henry’s Genius Hour project was implemented into a high school elective course designed specifically for interest-driven inquiry.

Orientation

The orientation of Genius Hour projects referred to the initial direction, if any, to which students were expected to adhere when the student navigated the Genius Hour experience. In this study, teacher choices aligned to one of three orientations (see Figure 10). The most common was the open-ended orientation where students could choose any topic they wanted for their projects. Rita, Clete and Flossie all opted for this orientation. Walter and Henry took a similar orientation, but they offered the constraint that each project should be designed to improve the community; thus, their projects were more community oriented and guided by the goal of community improvement. In the community-oriented design, the teacher required that the Genius Hour project must focus on improving a community, whether it be school, local, or global. Finally, Orrin’s was centered on specific content. In a content-oriented design, examples of excellent Genius Hour projects were aligned to key course content, but the teacher provided autonomy
over the end product or the topic as bounded by the content-area. In Orrin’s case, for example, student Genius Hour projects all related to history.

**Figure 10**

*Three Orientations of Genius Hour Projects*

<table>
<thead>
<tr>
<th>Guiding Orientation</th>
<th>Content-Oriented</th>
<th>Community-Oriented</th>
<th>Open-Ended-Oriented</th>
</tr>
</thead>
</table>

**Approach**

The approach of Genius Hour can be described in numerous ways. For the purposes of this study, approach was defined as the general boundaries and constraints that teachers imposed on the Genius Hour process. Across the six participating teachers, each teacher approached Genius Hour in slightly different ways. There did, however, seem to be three patterns of approaches across the six cases (see Figure 11), as described next.

**Figure 11**

*Three Approaches of Genius Hour Projects*

<table>
<thead>
<tr>
<th>Genius Hour Approach</th>
<th>Choice-Based</th>
<th>Process-Based</th>
<th>Interest-driven</th>
</tr>
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</table>

**Bounded Choice-Based Approach**

The first approach, implemented by Orrin, was termed a bounded choice-based approach. In this approach, the teacher provided students with a limited number of choices for their Genius Hour project. Early in the process, students were limited to a
choice of the end product, but in a gradual release of responsibility, at the end of the Genius Hour program, they would have some degree of choice over both the end product and the topic of the project. For instance, Orrin offered three “Genius Hour” experiences in his year-long seventh grade social studies course. The first two sessions of Genius Hour experiences during the school year allowed students to demonstrate their understanding of course content in any manner they chose. Thus, choice was bounded to mode of communication or end product (e.g., presentation, children’s book, video game, or a student proposed option), but not to the content of the project itself. In his third implementation later in the school year, Orrin offered students a choice in the content as they were allowed to explore any topic related to American history prior to the Civil War and present their findings. Again, the choice was bounded by content (US History up to the Civil War), but students were given a great deal more latitude in the topic at the end of the year, while the choices for the type of end-product remained the same as prior Genius Hour experiences.

**Interest-Driven Approach**

Three teachers used an interest-driven approach. This resembled the semi-structured approach to Genius Hour which is found in many books and blogs on the subject (Brookhouser, 2015; McNair, 2017). While there may be slight variation in implementation, an interest-driven approach consisted of a brainstorming session to generate topics, a pitch or primary proposal to the class for feedback, a research and action phase (which may include regular blog posts or meetings with teachers to monitor progress) and a final presentation. Teachers typically used graphic organizers or prompts to help structure student work in each phase of the process. The focus, however, was on
tapping students’ interests and providing them with the space and time to explore a particular interest. The sequenced format is more a means of organizing the student’s time to support their exploration, and the phases were somewhat subordinate to the interest itself. Rita, Clete and Flossie all adopted an interest-oriented approach, which was implemented with at least moderate levels of success at the middle and high school level.

Process-Based Approach

The third approach to Genius Hour was a process-based approach, wherein the teacher implemented intentional structures beyond the typical Genius Hour structure. Additionally, both teachers who implemented this approach were inspired by Kevin Brookhouser’s (2014) work; in particular, his concept of a Bad Idea Factory, where students were encouraged to generate a list of terrible Genius Hour projects as a means of sparking useful ideas. The approach of starting with “bad ideas” was intended to free up mental blocks regarding concerns about whether an idea is good. Although both Walter and Henry implemented a process-based approach to Genius Hour, they each structured their approach in unique ways.

Walter developed a highly structured Genius Hour process that was built around an original narrative metaphor of Idea Farming. This seven-step process provided students with a great deal of latitude on their “crop” [project] so long as their project met the need of another individual or group. As articulated below, the crop went through several rounds of feedback before being selected as the project. The seven-step process was implemented as follows:
• **STEP ONE: The World Needs Farmers.** Students generate ideas of what the world needs and how they might be able to fill that need through their efforts.

• **STEP TWO: Picking A Crop.** In this phase, students begin to decide which need they want to fill and the most effective approach to filling it. This is where Walter brings in Brookhouser’s (2014) Bad Idea Factory via his “Cow Pie Kitchen,” where students aim to generate poor solutions to the needs they identify.

• **STEP THREE: Crows vs. Crops.** In this stage, students develop an initial plan for their “crop” and then meet with peers who serve as “crows”. The role of the “crows” is to “peck” at the plan to help their peers identify holes and give them feedback on how to fix the holes in their plan.

• **STEP FOUR: Plant and Share Your Crop.** At this stage, the students share their revised plans to the class. The student or group of students also gets an additional round of feedback from classmates. The feedback can include what a peer loved about the project, a suggestion for improvement, an offer of help, or a connection. It’s also at this phase where a blog requirement, the first of three, is introduced; for the first blog reflection, students write up their initial plan after both rounds of feedback. Each student completes their own reflective blog post.

• **STEP FIVE: Let it Grow, Let it Grow, Let it Grow.** In this phase students conduct the research and action steps needed to “grow” their crop. They are required to write a mid-term progress blog that updates the teacher and their classmates on their project to date.

• **STEP SIX: The Festival - Celebration Is Better Than Competition.** Students share their projects and new learnings in this Festival stage. Students are provided
with three options for the Festival: a) they share their project in class; b) they share their project in an informal roundtable talk at the open IdeaFM (Idea FarMing) Innovation Symposium; or c) they give a TED-style talk at the IdeaFM Innovation Symposium. The roundtable talks occur a half hour before and half hour after the TED-style talks. Because the number of speaking slots is limited due to time, those students who want to be featured in the TED style talk must approach Walter beforehand to demo their talk. This event is open to the public.

- **STEP SEVEN: Reflection And Planning For Your Next Crop.** As the culmination of the Idea Farming process, students complete one final blog post that reflects on their learning from the process.

Like Walter, Henry also took a process-oriented approach to Genius Hour with his high school level students. However, his process incorporated elements of design thinking, a structured process for human-oriented problem solving developed by Stanford University affiliated Ideo (2012) as a heuristic for structuring the Genius Hour process. Henry’s goal with this design choice was to provide students with a model or a way of thinking that was used in contexts beyond the classroom. “The one thing I don't like doing is just too much blue sky thinking, too much ‘Hey, do whatever you want’”, because that's actually paralyzing,” Henry said. “What we know about creative thinking is that constraints actually help students think more creatively. [With] design thinking, constraints are built into whatever the student's project is.”

Henry began with Brookhouser’s (2014) *Bad Idea Factory* process, primarily as a support for students without ideas; he also used this time to frame the Genius Hour projects around community engagement. The next phase of the process brought in Design
Thinking as a means of providing real-world creative constraints to help guide the students’ process. After selecting their project, students conducted initial background research for the purposes of creating a short “pitch” to their classmates about their project and why it was important. At this phase, much like Walter’s “Crops vs. Crows,” there was a healthy dose of back and forth between the presenter and the class to try to improve the project proposal. Henry elaborated, “We try to negotiate a little bit of push back and a little bit of tussle… We don't just accept things carte blanche.”

Once the project was approved, Henry’s students engaged in a deeper research phase that culminated with an annotated bibliography centered on their project. After the research phase, they engaged in the design thinking phases Ideo (2012) of ideate, in which students developed ideas to address their community challenge; then test, when they implemented their selected idea; and get feedback, when they reflected on their project. During the ideate and test phases, students met with Henry to discuss their project and related needs on a semi-regular basis; they were also required to blog weekly to provide additional updates on their progress. The culmination was a TED-style talk, which Henry guided students to construct their ideas into a compelling “story of learning” format. The story typically lasted 5 -10 minutes and outlined the origins of the project and the resulting processes. Typically, the stories were presented in class, but Henry has had students in his English classes present in the auditorium so that he could invite members of school community (i.e., students and staff) to attend their presentations. At the time of the interview, he had not opened the presentations up to the public, but he stated his desire to do so moving forward.
Focus

One final structural element that cut across the six cases involved the extent to which the focus of the Genius Hour was on an area of interest (i.e., *topic-driven focus*) or a question to be explored and answered (i.e., *inquiry-based focus*). The cases here were split. Three of the teachers, Rita, Walter, and Orrin, discussed the topic-driven focus of their Genius Hour processes. In fact, none of these teachers mentioned the word inquiry or the idea of students generating questions at any point during the interview.

In contrast, Henry and Flossie appeared to implement Genius Hour with more of an inquiry-based focus. Flossie’s students were all required to draft an essential question to be investigated in Genius Hour. Similarly, student questions were critical to Henry’s practice and especially so in Genius Hour. As he explained,

> What I want students to be able to do, and I think what most teachers would agree, is we ought to be having the students ask the most pertinent questions in the class. We don't give students enough chance to ask questions. We're always asking them questions and expecting that they response appropriately to those questions… In a project like this, they ought to be the ones who are asking the questions.

Henry viewed his role as the person who “listen to those questions and redirect, guide, and help solve any problems that might be beyond where they physically or technically are capable of going.”

For one participating teacher, Clete, her focus seemed to move from topic-based to inquiry-based as students moved through phases of the Genius Hour process. As Clete explained, students have two weeks to brainstorm ideas of topics for their project. Once
they have selected their topic, then students were expected to turn their topic into a question to guide their research. Clete noted that some students had difficulty making the transition; the questioning process was “tough for them to do, to say, ‘This is what I want to learn about, now, what am I actually going to be looking up [about my topic]’?”

Overall, the structure of Genius Hour was varied across the settings and sometimes crusted. The greatest variance in this category was the context in which Genius Hour took place, which ranged from traditional content area courses to electives to study halls to special education classrooms. When it came to implementation, educators tended to take one of three approaches. One focused on content while providing choice around product. Another pathway emphasized a structured process and orientation toward improving the community. A third approach was oriented toward student interests and provided students with a great deal of latitude regarding the direction and end outcome of the project. A final area of differentiation was the focus of the Genius Hour structure, where in half of the cases the teachers focused the process around students selecting a topic of interest while the other half focused their students’ projects around designing a question for inquiry.

The Stakeholders

A fourth overarching category of findings uncovered in the analysis of teacher interview data centered on the perceived impact that stakeholder groups had on teachers’ Genius Hour experiences. Stakeholders typically fell into one of three groups: administrators, colleagues, and parents. Findings in this category revealed that five of the six teachers discussed the influential role of administrators; all six teachers referenced reactions from colleagues ranging from supportive to mixed; and four teachers reported
parents’ reactions to Genius Hour experiences for their children ranging from supportive, to agnostic, to skeptical. Details about each are outlined next.

Administrators

By and large, administrators were seen as supportive of Genius Hour in four of the six cases. Both Orrin and Clete reported, that at a minimum, their middle schools’ administrators were aware of Genius Hour practices and felt that the Genius Hour experience was a legitimate use of their time. In their respective middle and high school contexts, both Flossie and Walter felt that their administrators provided them with the autonomy to try projects like Genius Hour.

In Henry and Rita’s districts, administrators were outwardly supportive of Genius Hour and their focus on interest-driven learning. Henry’s assistant superintendent encouraged him to implement a high school course based on the concept and then featured his work in the town’s annual report. In Rita’s high school, the building principal featured student work in his weekly memo and lined up news coverage of the student’s Genius Hour project. Rita noted that Genius Hour even became a district initiative within a year of her implementation.

In Walter’s district, he did note that the support was sometimes conditional. If a project sparked controversy or prompted a call to the central office, a principal may have shut down the project. Because of that, Walter guided projects away from potentially controversial topics to ensure “that nobody does anything that they’ll never allow me to do it [Genius Hour] again”.

Colleagues
Colleague responses varied across the six cases. In Rita’s and Orrin’s cases, they reported that their colleagues were generally supportive of the concept of Genius Hour. Orrin felt that several of his colleagues were also offering interest-driven learning opportunities like Genius Hour, but they were just calling it something different. He felt like he could speak openly and enthusiastically about his Genius Hour work. Rita also found support amongst her colleagues to the point of wide-spread adoption both within her English department and across the school within a year of implementing it on her own. She explained how other teachers in the district were also trying it in their classroom around the same time she started her own journey.

Flossie and Walter, on the other hand, expressed that their colleagues had more of a mixed, or agnostic response, to their implementation. When Flossie was her middle school’s team lead, her colleagues all implemented Genius Hour in their “study hall” periods at her encouragement. She admitted that some of the teachers implemented it with more effort and enthusiasm than others. However, she also pointed out that her colleagues opted not to continue with Genius Hour when she moved out of her role as middle school team leader and into a district-led role.

Walter originally had a collaborative colleague who also implemented Genius Hour, but this educator ultimately pivoted away from the process to invest his time in other projects. Walter noted that other colleagues had made Genius Hour a part of their practice, but none had approached him for support or collaboration. He also perceived that his colleagues were more focused on holding students accountable for their time rather than emphasizing the value of the interest-driven learning, the overall process, or the end product.
Henry and Clete also found their colleagues to have mixed reactions to their implementation of Genius Hour, perceiving some pushback from their colleagues. Henry perceived his colleagues in the guidance department to be supportive in promoting the class, but also noted that some had been passive aggressive. Henry recalled one colleague saying “Hey, how's that new class going? The kids teaching themselves?” which he perceived as critical. He also noted that he “wasn't hired just to do what everyone else was doing.” He sometimes felt like he was “a lone purple cow”, which can feel isolating, but it did not deter his passion for the work. Clete found that some of her colleagues believed that she was able to implement Genius Hour only because of the small number of students she had in her resource classes. Others told her “Yeah, I don't want anything with hands off teaching. They need to do what I'm telling them to do.” However, Clete did note that some of her colleagues had expressed interest in Genius Hour.

Families

Family reactions to Genius Hour was mixed as well. In two cases, the topic of parental reaction never emerged over the course of the interview. For Flossie and Clete, two middle school-level teachers, their response was limitedly positive, with some parents taking the time to email them about the impact the project was having on their child. For the most part, teachers reported that parents had little to no outward expression of their views on Genius Hour.

Walter and Rita, on the other hand, expressed their concerns about parent reactions to Genius Hour. Rita sent a note home to parents of her Grade 9 students to make sure they were aware of Genius Hour because she was nervous about their reaction to a potentially unconventional approach to school. Walter, on the other hand, ensured the
parents of his Grade 10 students that Genius Hour had course points attached to the project. He perceived that families would not allow their children to spend time on Genius Hour if they were not awarded points. Walter also mentioned that points were the currency to buy the time needed to engage in Genius Hour, given that students had many demands on their schedule. It should be noted, however, that neither Walter nor Rita reported outwardly negative feedback from parents.

Orrin’s experience ran the gamut. Most parents of his middle schoolers did not express their views on Genius Hour. When they did, some parents expressed frustration or confusion as to why their child had so much history homework. Orrin elaborated,

The parents think that the students have homework, a lot of homework, but I'm like, “No, they're just choosing to do this project at home. Like, this child is spending hours and hours building this Minecraft map for their project, but I'm not assigning it. They want to do it. If anything, it kind of seems like a lot more work for the students, but it's because it's meaningful work; it's not rote work.”

In other instances, Orrin had received supportive messages from some families. In one such case, for example, a student who was afraid of public speaking gave a TED talk on her project. Her mother remarked that she never thought her daughter would do such a thing.

Across the six cases, stakeholder reactions to Genius Hour varied. The most supportive group of stakeholders in this study were generally administrators who encouraged and often publicly celebrated the student projects and the program. Parents were generally agnostic, or perhaps unaware of the process. Educators in this study only
noted an occasional email from parents, some expressing appreciation for the changes they saw in their child while one teacher, Orrin, received an email about the perceived amount of homework that resulted from Genius Hour. Colleague reactions varied greatly. In some districts, like Rita’s, Genius Hour was widely adopted and discussed amongst the faculty. In other schools, like Flossie’s, it was passively adopted, but dropped when the person spearheading the initiative left. Other teachers, like Henry and Clete, had some colleagues who were both interested and supportive, along with other colleagues who expressed skepticism about the overall process.

**The Situation**

A fifth overarching category of findings uncovered in the analysis of teacher interview data centered on comments related to the situation, which reflected various school-based contextual factors in which Genius Hour took place. One common theme that cut across the six cases were comments that alluded to “the game of school”, which I define here as the formal and informal practices, structures and beliefs that framed students’ school experiences, and in this case, may have run counter to the ethos of Genius Hour.

The “game of school” theme was rooted in an In Vivo code generated from interviews with two participating teachers, Orrin and Clete, who used the phrase in reference to traditional school structures. Clete described the game as “testing and forgetting” while Orrin described students being used to the “game of school: worksheets, tests, homework and more tests”. In both cases, Orrin and Clete suggested that Genius Hour was an approach to break from this “game of school” and that students’ preconceived ideas of what was expected of students could run counter to Genius Hour.
This theme also draws from the work of Baker et al (2008), Fried (2005) and Pope (2001) who have explored ways in which students navigate or game the systems of school to meet their own interests, needs, or management of time. Within this category, comments linked to the challenges of needing to play along with the “game of school” focused on teachers’ perceptions about the constraints of state educational standards and student accountability factors and the more serious nature of traditional schoolwork. Each of these is challenges is discussed in turn.

**State Standards & Accountability**

In five of the six cases, participating teachers discussed feeling the need to hold students accountable for their time in the class. Moreover, the concept of accountability was addressed in all six cases. Here, accountability refers to teachers expressing the need to hold students accountable for their time in Genius Hour or teachers expressing concerns that they will not be able to meet mandated standards or curriculum due to Genius Hour.

Expectations around accountability took different forms. Some teachers, including Henry and Walter, held students accountable for progress via blog reflections while others used a daily entrance or exit ticket. Others, like Flossie, used a Google document where students noted their essential question and then logged their work for each session or their plan of action. Others, like Clete, used conferences with students as an assessment that was scored with a rubric. Given the unique nature of the Genius Hour project, teachers, particularly Walter, Henry, and Rita, found it difficult to hold students accountable for their time when these projects sometimes developed at their own pace. These teachers reported feeling a need to allow students to use their time however they
saw fit, even if the time wasn’t applied to their project. In addition, grading posed another challenge as teachers felt that the context of school required work to be graded in some fashion; unfortunately, the nature of the Genius Hour process and related products did not fit neatly into traditional rubrics or assessment approaches.

Several teachers also mentioned how state standards and accountability framed their Genius Hour experiences and sometimes served as a justification for implementing them in their classroom. Rita, for example, cited her state’s speaking and listening standards as a rationale for implementing Genius Hour due to the final presentation. Clete also wove her state’s standards into the ending phase of her Genius Hour structure; that is, as a culminating reflection activity, Clete asked students to read through their grade-level standards and identify the ways in which their project had met grade-level expectations.

Rita and Clete, both ELA educators, also noted their concerns for wanting to ensure that students were prepared for the state assessments. On the other hand, Orrin referred to Genius Hour as the “anti-PARCC” (which was the assessment used at the time in Orrin’s state). But still, Orrin did refer to the grade-level standards to frame his projects. His seventh graders were bound to the Grade 7 social studies standards for their final Genius Hour projects in order to prevent them from exploring Grade 8 standards. As Orrin lamented, “It's very awkward, because I can't teach too much about what eighth grade is going to teach, because they need to show progress from student growth, right?” Interestingly, while adhering to the need to “hold students accountable”, Flossie explained that Genius Hour was intentionally shifted away from state standards to give students more autonomy over what they learned.
While the impact of state standards varied across the cases, it was clear across the six interviews that the situational need to hold students accountable while employing the accountability systems at play in each of their schools shaped teachers’ perceptions of, and ultimately, their implementation of the Genius Hour experience.

“Serious Work”

Another common theme that aligned with the notion of the game of school was that teachers perceived that some students chose to prioritize the more “serious work” in their other courses, particularly AP courses, over the Genius Hour. Often, this was because work on their projects were not deemed as valuable in school contexts as strongly as grades on other schoolwork. “For all our talk about doing school differently, the feeling of the building is just very traditional. We will champion, ‘Oh, we've got this many AP kids who took the AP test and scored a three or higher’,” Henry explained. Given that both AP work and Genius Hour work can require a great deal of time and cognitive energy, students were sometimes faced with a difficult choice between investing effort into Genius Hour or investing effort into other coursework.

Notably, this contextual challenge related to “serious work” was only reported at the high school level by Walter and Henry. In Walter’s case, grades were a huge “commodity” that provided the justification for investing in Genius Hour. As he pointed out, “I do have to give them points, because points are the currency on papers that allows them to buy time from their parents after class. Their parents will not give them the time to work on this project if I'm not giving them money in the form of points.” Later in the interview, Walter explained, “I think it's a function of this school. This school's like, and grades are a huge commodity in this campus so is getting into higher level schools. You
know? Ivy league schools…like very competitive schools. That's the goal of a lot of students here.”

In turn, Walter used the points as a lure to also sell families on the importance of this type of work over the long-term. Still, Walter explained that some students used their time to prep for other assignments or a quiz, which also presented challenges to manage in his Genius Hour sessions. Yet, the context of his class, as an elective, made him hesitant to increase the workload of the course because students tended to prioritize their core classes.

The pressure to accumulate points and engage in “serious work” was not unique to Walter’s situation. Henry outlined similar concerns at his school, reporting that his students, particularly those in Advanced Placement (AP) classes, did not have as much time outside of class to work on their Genius Hour projects; as a result, students might have tended to put their project work on the back burner. Henry also noted one student who expressed skepticism about his class.

I would count him as one who is very skeptical. He's like, ‘You know, Mr. X. I don't think your class is going to go anywhere because ...’ and then he goes into a systems analysis of school in general, until a larger schooling system shifts and understands that this is the kind of work that really we ought to be having kids do. He was a little bit critical in that way.

**Told What to Do**

A final perceived challenge that participating teachers reported was their students desired to be “told what to do”. This phenomenon could take the form of teachers perceiving one of three things: first, some students mainly sought to please the teacher
with their Genius Hour project; second, some students only put forth a half-hearted effort because Genius Hour practices were ill-defined, or third, some students simply tried to replicate exemplar projects created by other students.

For Rita, she resisted providing examples because she found that students would just replicate the projects. “Well, even just to start like, the day that I introduced 20 Time, everything in me wants to give examples -- wants to because, that's my teaching instinct, right? A student did a great project last year, they did such and such, but then the kids will just do that.” Rita lamented that this appeared to be a function of the school context. “They've been so trained to do what the teacher wants, you know, that if I say that this service project was a great example of 20 Time, they'll all just do service projects.”

Walter experienced similar problems with the autonomy that comes with Genius Hour, and he noted the higher achieving students sometimes struggled the most. When asked about the disappointing projects, Walter explained,

It will be like five percent of super A students, who are either completely overwhelmed with the freedom of the project or are willingly saying this is stupid (Walter) and I'm going to make sure that you look like crap trying to do something like this. It's the same kids; I have kids who literally named their blog, “This is Stupid and I Hate You”.

A similar problem existed for Flossie’s middle school students who also struggled with their new-found freedom. She observed, “Students don't often know what to do with that time if they're not given that… especially by middle school, you kinda lose some of that creativity. So, they begin to just think like, "Okay, well, I come to school, you tell me what to do, I do it, and I get good grades."
Fellow Middle School teacher, Orrin, also experienced some resistance from some students, at least at the beginning of the Genius Hour experience. “Only a couple [of] students at first had some resistance, because they are used to the game of school: worksheets, tests, homework and more tests.” However, he noted that he perceived their resistance to be short-lived, as these students worked through the Genius Hour process and ‘they all drank the Kool-Aid eventually.’

In both the middle school and high school experience, teachers observed that some students struggled with the open-ended nature of Genius Hour. The perceived reasons for this phenomenon and how it manifested itself varied from the students wanting to please the teacher to the belief that students wanted exemplars to replicate in order to maximize their grade. Regardless of the motivation, students desired clear expectations from their teachers and wanted to avoid the ambiguity that sometimes comes in the Genius Hour experience.

**Chapter Summary**

In summary, the overarching categories of interview responses and related themes identified by the six participating teachers in this study suggested they had both convergent and divergent Genius Hour experiences. Across the board, these educators perceived some students to be deeply engaged during their Genius Hour experience while other students appeared to procrastinate during the allotted time and their interest waned. Further, all the teachers articulated that the idea of accountability, whether it be through mandated grading or as shaped by the influence of state standards or assessments, played a role in how teachers designed or experienced Genius Hour in the classroom, most teachers also identified an external entity, an author, an event, or social media that
sparked their interest in exploring Genius Hour with their students. Additionally, all six teachers interviewed for this study described their administrators as supportive, or at least generally supportive, of their decision to pursue Genius Hour at their school.

Conversely, there were several areas in which the six cases also diverged. Almost all the teachers launched their Genius Hour projects in different course contexts, ranging from special education classes to general academic classes, from middle school to high school settings, and from study halls to elective courses. Teachers also differed on the emphasis of Genius Hour projects; some focused-on course content and were choice-oriented, others were open-ended in terms of content with a loosely structured process, and others focused on community improvement and a more process-oriented approach to Genius Hour.

Furthermore, participating teachers differed in how they perceived their colleagues’ support of their endeavor. Two teachers, Rita and Orrin, found their colleagues to be supportive of their work, and in some instances, their colleagues adopted a form of Genius Hour in their own classrooms. Two others, Clete and Henry, found their colleagues to be resistant to Genius Hour and somewhat dismissive of the concept, either in principle, or in terms of its viability in their own classrooms. Finally, two others, Walter and Flossie perceived their colleagues as a mixed group with limited buy-in in terms of sustained implementation, or those who sought to engage in Genius Hour practices with an overemphasis on accountability.

Overall, findings from this cross-case analysis suggested that teacher experiences with Genius Hour cannot be easily grouped into explicit types or generalized profiles. While their experiences involved many overlapping categories of characteristics, each
teacher’s Genius Hour experience was unique. Collectively, the descriptions and
illustrative stories provided by these six educators provide clarity on some of the many
types of experiences a teacher may encounter when facilitating the Genius Hour process
for students. Yet, the confluence of factors, both listed here and not identified, make each
teacher’s implementation unique and worthy of study.
CHAPTER 6

Discussion

This qualitative multiple case study engaged six secondary teachers in separate reflective interviews on the process and perceived impact of their implementation of Genius Hour into their classrooms. Three of the teachers taught at the middle school level while the remaining three taught at the high school level. Participants taught a wide variety of subjects and their student populations varied in terms of racial and socio-economic demographics.

Six teachers were interviewed using a semi-structured question process (Creswell, 2013; Merriam, 2009). The interviews were then transcribed and analyzed using a thematic analysis methodology (Braun & Clarke, 2006) that applied both open and in vivo coding to within case and cross-case analyses. Themes were then written up into individual case descriptions (Creswell, 2013; Guba & Lincoln, 1981; Merriam, 2009) in Chapter 4 and findings of the cross-case analyses were reported in Chapter 5.

In this chapter, I first discuss and interpret three core findings in relation to relevant theories and research. Next, I propose a metaphorical model (Pratt, 1981) that depicts considerations for implementing the Genius Hour experience in the context of sailing. Then, I discuss implications and recommendations for a variety of stakeholders, including practitioners, school and district leaders, school committees and state boards of education, and college and university representatives. These recommendations are intended to pave a way forward for varied educational groups to work together to re-envision and put into place procedures and policies that serve to value and leverage the impact of Genius Hour on both teaching and learning.
Discussion of Core Findings

Finding One: All six teachers adopted similar structures for Genius Hour, but the formats and emphasis varied in each classroom.

Across the cases, all the teachers allocated time and provided structures for students to do at least three things: brainstorm a project, pitch their proposed project to peers, and engage in “work time” to conduct further research or build their final product. These three elements reflect implementation practices commonly found in many of the trade books written about the Genius Hour experience (see Brookhouser, 2015; Krebs & Zvi, 2015; KREBS, 2020; McNair, 2017; Wettrick, 2014). Nevertheless, the nature and duration of these common components varied within the six cases. Some students took a longer, more structured approach to the brainstorming with the aid of handouts and checklists; some engaged in a peer response process to give feedback on their project pitch; and others only received feedback from teachers. However, in all cases, the teachers provided these structures.

An additional universal feature of all Genius Hour projects was that teachers opted to have all students present some version of their learning to their classmates. In Walter’s case, he opened projects to the school and local community, while Flossie, in a later coaching role, supported a team of elementary educators who invited parents to a Genius Hour night at their school. Some teachers, including Orrin and Henry, expressed interest in inviting community members to see student presentations in the future.

Offering Genius Hour nights to the community could have multiple benefits. The literature suggests that public demonstration gives stakeholders a better understanding of what goes on in school and provides alternative perspectives on how schools could be
structured differently (Boss, 2017; Littky & Grabelle, 2004). Presentations of learning also build community support for schools when the community has a better understanding of the work that takes place within them (Dintersmith, 2018; Littky & Grabelle, 2004; Wagner & Dintersmith, 2016).

Unfortunately, opening doors to the broader school community can also pose a challenge, as schools often lack enough space to facilitate all the potentially 100-plus presentations within the one- or two-hour timeframe of a typical “evening event”. Further, given the other demands on teachers’ time, it can be challenging for a single teacher to handle the logistics of orchestrating a large-scale community event. Additional supports may be needed to enable Genius Hour evening events to become a reality.

One significant area in which teachers varied was in how they formatted the Genius Hour experience and the orientation and approach of the projects. The approach of Genius Hour addressed the general boundaries and constraints that teachers imposed on the Genius Hour, whereas the orientation involved the direction, if any, to which students needed to adhere when planning their process.

In Orrin’s case, he took a content-oriented orientation with a “bounded choice-based” format that focused on matching existing curriculum with interests that students brought with them into the classroom. This format of Genius Hour most closely aligns with idea of Connected Learning (Ito et al, 2013), and Orrin articulated the influence of Connected Learning on his own structure. While framed as Genius Hour for Orrin, his approach mirrored the literature on curricular inquiry (T. Bell et al., 2010; Coiro et al., 2016b; Grotzer, 2007) and project-based learning (Almulla, 2020; Blumenfeld et al., 1991; Boss & Larmer, 2018) that encourages teachers to leverage student interests,
encourage student-relevant products, and provide some autonomy for student choice as important considerations for accomplishing curricular objectives. Although the structure of Orrin’s approach to Genius Hour, and perhaps all approaches of Genius Hour, may be extrinsically motivating, findings from Orrin’s interview data suggest that content-oriented, bounded-choice formats of Genius Hour could also be consistent with more autonomously-driven elements of extrinsically self-determined behavior (Deci, 1972; Deci et al., 2001). In contrast to intrinsically motivated actions that are initiated by an individual for his or own satisfaction, extrinsically motivated actions are initiated by an external entity (Ryan & Deci, 2000a). In the context of Genius Hour, a student’s extrinsically motivated actions may occur when a teacher assigns the student a Genius Hour project that is aligned with their interests.

Thus, students in Orrin’s class could be experiencing one of two extrinsically motivated states that yield experiences closer to intrinsically motivated behavior (Ryan & Deci, 2000). First, they may be experiencing what Ryan & Deci call “identified regulation”, a somewhat internally motivated state in which they find Genius Hour personally important and of value. For other students, Orrin’s format of Genius Hour could yield a state of “integrated regulation,” or an autonomous form of extrinsic motivation, such that the Genius Hour experience is aligned with the students’ sense of self despite the motivation being extrinsically driven and for reasons beyond mere enjoyment. Thus, the opportunity for Orrin’s students to choose their content and means of communication can yield enhanced motivation as part of the Genius Hour experience (Coiro et al., 2016b; Shernoff, 2013; Wehmeyer & Zhao, 2020).
For Henry & Walter, they both opted for a process-based approach to the Genius Hour experience with an orientation toward community improvement. Their implementation, in both cases at the high school level, provided students with a narrowed community-specific focus for their project, along with a structured process to guide their work. Although the structures differed - Idea Farming for Walter and a hybrid design-thinking approach for Henry, the structured process was an essential feature of their Genius Hour practices. The community improvement constraints in Henry and Walter’s classrooms mirrored that of Google’s 20% time (D’Onfro, 2015) and Columbia Credit Union’s Genius Hour (see Pink, 2012) approaches, among others, that provided employees with release time to engage in projects designed to improve the organization. Given its orientation toward community improvement, the process-based approach could also be viewed as a form of community inquiry, where students seek to learn about and transform their community through research and action (Bishop et al., 2009; Dewey, 2013).

Notably, this process-based approach to Genius Hour is somewhat limited in its ability to develop skills that foster self-determination as a part of learning. Goal setting, planning, barrier anticipation and navigation, and reflection on planning and action, all of which were shared by Henry and Walter as common practices in their implementation of Genius Hour, are also considered essential components of self-determined learners (Wehmeyer & Zhao, 2020). Yet, it is not clear that these practices are emphasized to students as part of the project or valued as end goals in and of themselves. The literature (Buchanan et al., 2016; Deci et al., 2001; Shernoff, 2013; Wehmeyer & Zhao, 2020) suggests that more explicit instruction or implementation designs that emphasize self-
direction and learning may better enable students to handle the autonomy afforded by Genius Hour.

The remaining three teacher participants utilized an open-ended orientation of the Genius Hour experience with an interest-driven approach. In this version of Genius Hour, students had the opportunity to frame their Genius Hour projects with wide-ranging intent and purposes. While some students opted for community-oriented projects, Flossie, Clete, and Rita did not mandate or emphasize this orientation; instead, they only emphasized that students were expected to identify and pursue an area of personal interest. Further, while structures were provided, these three teachers introduced the structures as resources to support open inquiry rather than as a structured process like Walter and Henry. Also of note, teachers who used an open-ended orientation typically implemented it with either one of the many classes they taught (Flossie and Clete) or as a handful of electives (Rita), compared to Walter, who offered all of his students Genius Hour as a regular part of his English classes. Given that Flossie, Clete, and Rita had fewer projects to manage than Orrin, Henry, and Walter, they may have been less reliant on structures to support their students.

It’s worth noting that two of the open-inquiry teachers were middle school educators. The reasons Clete and Flossie had for choosing to implement a more flexible approach are difficult to say. Perhaps it was due to their desire to provide students with more agency over their learning and that structures could have been perceived as impediments to fostering agency. It’s possible that Flossie opted for an open-ended approach because Genius Hour took place in a “study hall” course and not a graded class. Another rationale could be that both Clete and Flossie were relatively new to Genius
Hour and they didn’t feel a perceived need for more structure, especially when contrasted to Walter, who chose a structured approach after feeling let down by a more open-ended approach. One final explanation may be that high school students expect more structure than middle school students, given their more frequent exposure to rubrics and guidelines accumulated over years of prior classes. High school students may also prefer more clarity in course expectations, given the stakes with grades and college admissions. This variation in levels of support for Genius Hour in relation to middle or high school contexts is worthy of further study.

Genius Hour practices implemented with this open-oriented interest-driven approach align with contemporary principles of open inquiry in schools. Open inquiry is a well-established process of inquiry-based instruction where students are responsible for selecting both the question and the processes for which to address that question (T. Bell et al., 2010; Coiro et al., 2016b, 2019; Learning et al., 2004). Further, this open inquiry approach is consistent with the concept of inquiry as mediated constructivism where students build understanding by generating their own questions and subsequent experiences (Grotzer, 2007). Many research-informed aspects of the inquiry cycle include wondering and question development, sharing one’s initial questions through pitches, exploring and finding information, creating a product based on the inquiry, and then sharing one’s findings or product with others (Bruce & Bishop, 2002; Bruce & Casey, 2012; Casey & Bruce, 2011; Stripling, 2010).

One area that was missing in the discussions across the six teachers who participated in the present study was that of reflection. Reflection was not mentioned by any of the three teachers who utilized the open approach to Genius Hour. Yet, reflection
has been identified as a critical component of inquiry (T. Bell et al., 2010; Casey & Bruce, 2011; Coiro et al., 2016b, 2019; Learning et al., 2004). There could be several reasons for this omission. One could be that the educators viewed student blogs, exit tickets and even their final presentations as a form of reflection. While most models of inquiry include reflection as a culminating activity (Bruce & Bishop, 2002; Learning et al., 2004), in practice, reflection is often ongoing; as such, regular blog posts and Google doc “status” reports are representative of reflection throughout the process. Yet, what is unclear is the extent to which students valued reflection components as part of the Genius Hour experience. Evidence from Walter and Henry’s class suggested that some students did not enjoy or invest much effort into their blogs, as one of Walter’s students named his blog “This is stupid” while Henry reported students posting “I didn’t get anything done,” in their required post.

**Finding Two: Educators, paradoxically, observed students as both deeply engaged during Genius Hour while also procrastinating on projects and losing interest in their topics.**

Universally, the six participating teachers in this study perceived that many of their students were highly engaged during Genius Hour and enjoyed the experience. Teachers also reported that they were impressed with the students’ work produced during Genius Hour. Teachers perceived that this work was higher quality than that of the typical work produced by students, even, in some cases, amongst students who teachers perceived as struggling or those who were officially designated as students with special needs.
Yet, Genius Hour was not a panacea for achieving student engagement for all students. Several teachers reported that they believed some students did not embrace Genius Hour as an opportunity to explore an area of personal interest. According to teachers in this study, these students included both those who thrived academically as well as those, as Walter put it, ‘who are not plugged in’ and are typically perceived as disengaged in school. Furthermore, teachers reported that students would often lose interest in their projects, particularly when encountering logistical roadblocks or when they lacked clarity about next steps with their projects. Additionally, teachers explained that some students who attempted group projects had different visions for the project, which caused some groups to splinter. Using Shernoff and Csikszentmihalyi’s (2009) concept of student engagement, this waning interest or procrastination suggests that one or more of the concepts of concentration, interest and or enjoyment were absent for some students during their Genius Hour experience.

The finding that Genius Hour yielded high levels of student engagement is unsurprising, given the numerous studies that report students experience higher levels of engagement when pursuing interest-driven learning (Coiro et al., 2016; Coiro et al., 2019). The autonomy to choose one’s topic of learning, which was provided by all the participating teachers, is consistent with the idea that autonomy inspires intrinsically motivated learning (Deci et al., 2001; Ryan & Deci, 2016). Ito et al (2020) discussed the impact that interest-driven learning had on youth engagement and learning; however, Genius Hour marked a positive divergence from their research as interest-oriented learning is rarely found in school settings. Further, Genius Hour, as implemented by teachers in the current study, presented the opportunity for students to reach what Conner
and Pope (2013) described as “fully engaged”; which is when a student’s affective engagement (or enjoyment of the topic and project) positively aligned with both their behavioral engagement (or effort), and their cognitive engagement of seeing value in the task.

The question remains as to what could be at the root of the students’ waning interest and procrastination as perceived by participating teachers. The causes could be numerous and would require a researcher to speak with students directly. However, the literature provides some useful insights. First, except for one of Henry’s courses, which was an elective, Genius Hour was a mandated assignment. Thus, it’s possible that Genius Hour was not intrinsically motivating for students because they lacked the ability to opt in or opt-out of the project.

Here, Ryan and Deci’s (2000b) continuum of self-regulation may be illustrative of this point. The authors suggest there are three types of motivation that can be characterized along a continuum: amotivation, or an unwillingness to take action, falls on one end since it is not self-determined; and intrinsic motivation, or action that is self-determined and initiated purely for enjoyment, falls on the other end. In between these two poles are regulatory states prompted by extrinsic motivation. From least to most internal motivation, these regulatory states include:

- **External Regulation**: Externally motivated behavior that seeks to comply due to external rewards and punishments
- **Introjected Regulation**: A partially externally motivated regulation and action driven by internal factors such as ego, pride, guilt or to increase / maintain self-esteem
• Identified Regulation: a partially internally motivated regulation that is partially internal as the individual feels that the external-initiated task is deemed to be important by the individual

• Integrated Regulation: a more internally regulated motivation in which the actions are assimilated and aligned with one’s values, however, are done for reasons other than purely personal enjoyment

Accordingly, students participating in Genius Hour may be experiencing, at best, high levels of extrinsic motivation, such as integrated or identified regulation, where the values of Genius Hour are integrated, to some extent, with oneself. However, if a student is experiencing Genius Hour through introjected regulation or external regulation, they may be operating from a position of compliance, such that they focus on internal / external rewards and consequences, and, thus, resist participating.

On the contrary, Price (2020) suggested that procrastination is an indication that a person cares deeply about the project. Citing Haycock et al. (1998) and Rabin et al (2011), Price argued that procrastination could be rooted in feelings of lack of self-efficacy to complete a project or confusion over the steps necessary to carry out a project, even though the task is meaningful for the person. A highly-engaged flow state is also difficult to reach when the challenge of the task exceeds one’s skill or their perception of their skill (Csikszentmihalyi, 2008; Shernoff et al., 2003, 2014). The latter is consistent with Thomas and Brown (2011), who argued that bounded environments are necessary to be successfully engaged in inquiry. Boundaries, benchmarks, and other structures are needed to help learners gauge progress and identify next steps.
Further, the lack of clarity on “steps”, if that’s a factor, could cause consternation due to the “grammar of school” which, Tyack & Tobin (1994) argue, tends to enculturate students to believe that school is a place where students are provided with clear and predictable expectations and are expected to follow directions. Students may feel like Genius Hour violates what Sizer (1984) referred to as Horace’s compromise, where students behave in class so long as they are not pushed or challenged too severely. Perhaps Genius Hour is considered a break in the compromise by some students; that is, they feel pushed intellectually in ways they do not associate with school, or perhaps, in ways that remind them what they do not like about school. (Sizer, 2004). Thus, the phenomenon of procrastination and waning interest during the Genius Hour experience may reflect their desire “to be told what to do” as discussed earlier in Chapter 5, and further articulated in the upcoming discussion of the third key finding.

Another factor related to procrastination and waning interests may be connected to the students' preference to focus on what they perceived to be “real work” in their more traditional classes. Rita and Walter discussed students using their Genius Hour time to study for quizzes or do work from other classes. Students may be perceived to be “procrastinating” on their Genius Hour project by prioritizing work in other classes that they feel is more important. The open-ended nature of Genius Hour may also work to its disadvantage. Research suggests that teachers sometimes struggle to appreciate the nuanced challenges of the inquiry process and as a result, will assume students have the conceptual knowledge or skills to successfully navigate the inquiry when in fact, they do not (Quigley et al., 2011a).
Furthermore, students’ procrastination and lack of interest may result from a lack of expert mentoring that can be necessary to support inquiry and self-determined learning (Ching et al., 2015; Ito et al., 2013c; Shelley et al., 2012). If educators lack the expertise or time to support students exploring areas of interest, students may need mentors beyond their classroom teachers to fill the knowledge gaps and provide social support when educators are unable to do so (Ito et al., 2013c, 2020).

**Finding Three: Teachers perceive systemic factors, including school stakeholders and student perceptions of schoolwork, as challenges to implementing Genius Hour.**

In analyzing teachers’ reflections on their Genius Hour experiences, findings from the interviews also suggest there are systemic dimensions of each school that may serve as inhibitors to the Genius Hour process. These systemic factors include stakeholder reactions to both the idea of and implementation of Genius Hour. Additionally, student perceptions of what constitutes important work and expectations of schoolwork may have shaped their response to the program.

**Reactions From Colleagues**

In reflecting on the different stakeholder reactions to Genius Hour, many of their colleagues and parents perceived the approach as agnostic, and some educators were even hostile toward the Genius Hour experience. Flossie, for example, who took a grade-level team approach to Genius Hour, found that her teaching colleagues approached the process with varied levels of enthusiasm. Students who had teachers she perceived as “being less behind it,” often had fewer notable projects coming out of the experience. Further, Flossie observed that her grade-level team members opted not to continue with Genius Hour after she left the school, suggesting that her colleagues may not have valued
the experience. Walter, similarly, found himself on a bit of an island when his close colleague opted not to continue with Genius Hour while, from his perspective, other teachers took on similar endeavors primarily to focus on accountability. He also lamented that none of his colleagues ever reached out to him to discuss or collaborate on Genius Hour. Henry also described a feeling of isolation, characterizing himself as a lone “purple cow” and recalling a colleague who framed his Genius Hour class as “the one where they teach themselves.”

Notably, across the six cases, the lone exception was Rita. Rita found that many of her colleagues at her high school had also begun to embrace Genius Hour as she noted that students were reporting they had opportunities for Genius Hour in other classes. However, from Rita’s perspective, the school’s wide-spread adoption introduced another systemic challenge because students would often “double dip” and use the same project for both classes, without increasing the scope of the project to match the increased time allotment.

Reactions From Parents

According to three of the teachers, parent reaction was similarly muddled. Orrin recalled one parent emailing a complaint that he was giving their child too much homework because of Genius Hour even though Orrin did not assign the project as homework. The time investment was at the child’s discretion. In her school, Rita felt compelled to send a note home to parents describing the project and the goals to head off potential concerns. Walter specifically designed Genius Hour around academic grading points out of concern that parents would “not give them the time to work on this project if I’m not giving them money in the form of points.”
The clear takeaway from discussions with the six participating teachers was that the reaction from parents and peers was complicated. In most of the interviews, there was evidence of pockets of family and collegial support, but it was clearly limited. Generally, if acknowledged at all, Genius Hour was tolerated by parents and colleagues. The lone exemption was Rita who reported that her colleagues were receptive to Genius Hour practices.

**Reactions From Administrators**

Administrators, on the other hand, were generally perceived to be supportive. Rita, for example, reported that her building principal celebrated her students’ work in Genius Hour by sharing it on the school blog and calling local media to request coverage of student products. Henry, similarly, stated that his administration specifically requested that he offer a course on innovation. Orrin explained that his administrators had a positive impression of Genius Hour from learning about the practice at leadership conferences. Walter, on the other hand, described administrators as supportive only to the extent that a project did not cause consternation for the school or district.

The six participating teachers in this study represented a subset of educators, who, at least to some extent, appeared to be comfortable challenging the “status quo” in public school settings. These teachers could be described as what Songer and colleagues (2003) called Maverick Teachers, or “self-starter, risk-taking teachers who tended to have a great deal of initiative, autonomy, and support for the range of innovative programs and ideas they implement” (p. 4). The experiences and views expressed by teachers in the present study mirror sentiments on Maverick, or similarly described teachers who often
encounter pushback or conflict with their colleagues, as they explore new classroom practices (see, for example, Beadle, 2017; Newberg, 1998).

However, conflict amongst colleagues is a natural part of an organizational experience (Frolova et al., 2019; Habib, 2016). Furthermore, research suggests that Maverick teachers often feel like they work in isolation, because their willingness to innovate and take risks deviates from that of many of their peers in a typical school culture (Newberg, 1998). The teachers are engaging in what educational scholar Yong Zhao (2020a) would refer to as “rewriting the language of school”, rather than attempting to work within the existing grammar of schooling (see Tyack & Cuban, 1997; Tyack & Tobin, 1994). Additionally, these forward thinking teachers tend to provide some sort of positive recognition for their school as a result of their innovation (Baugh & Juliani, 2019; Newberg, 1998).

Interestingly, however, there are several ways in which findings from teachers in this study deviated from prior research on Maverick teachers. Previous literature suggests that Maverick Teachers can serve as a potential thorn in the side of their administrator, given that their risk taking sometimes exceeds the acceptable level of risk for the school (Hadley, 2019; Newberg, 1998). In the present study, however, the teachers felt like their administrators were generally supportive of their work and the risks they attempted. Relatedly, previous research suggests that teachers may have difficulty navigating the bureaucracy when implementing their innovation (Hadley, 2019; Hallahan, 2020). However, the teachers in this study encountered minimal bureaucratic resistance from their organizations when trying to implement Genius Hour.

Perceptions Of Schoolwork
Another systemic challenge revealed in this study was that teachers’ and students’ perceptions of schoolwork and their responsibilities within a school setting sometimes inhibited Genius Hour. Participating teachers perceived that some of their students prioritized other classwork as more “serious” than Genius Hour and, in turn, teachers believed those priorities negatively impacted students’ investment in their project. This observation was particularly true in the high school settings. Both Henry and Walter described scenarios where they observed students studying for other assessments or completing AP work instead of working on their Genius Hour project. For example, Henry lamented that for all the internal emphasis on innovation and doing school differently, what was celebrated and emphasized in school-district publications and school committee meetings involved traditional metrics such as scores on Advanced Placement (AP) tests. Henry also found that students were forced to choose between requirements of their rigorous course load, other extracurricular activities, jobs, and the time required to invest in Genius Hour. Further, he recalled one student who told him that he felt like the class was, “not going anywhere,” mostly likely because it didn't fit within the commonly held context and concept of schools.

Rita also shared difficulties she faced internally when coming to grips with the decision to allow students to use Genius Hour time however they saw fit, including prepping for other classes instead of putting their time to the project. In a similar vein, Walter articulated the importance of providing grade points to students as a means of providing currency that would allow them to “buy time” from their parents to invest in their Genius Hour project. He, too, observed students studying for quizzes and other
endeavors, and he expressed similar pangs as those that Rita mentioned when reflecting upon students’ use of the time designation for Genius Hour.

Interestingly, students’ problematic emphasis on prioritizing other work was predominantly present in the high school cases and with little to no discussion in the middle school cases. There could be several reasons for this discrepancy. For one, Orrin’s approach to Genius Hour was that his students were expected to complete their Genius Hour projects as part of their regular coursework. The integration of Genius Hour as a curricular endeavor may have prevented some of the obstacles that come with approaches that envision Genius Hour as an add-on to existing course work. That said, middle-level educator, Flossie, relayed a story of a student wherein “One of my middle schoolers came up to me and said, ‘Well, I don't see how this is going to help me in real life.’” Flossie said that she still felt the commitment to continue because she felt as though Genius Hour reflected more of a real-world experience than most school-based learning experiences. She explained that she told the student, “Of anything you do, this is your time to find something that's going to help you in your real life, so it's really my role to help you find that passion and find something that you are at least interested in.”

In her interview, Clete also did not describe a scenario where she felt the kids were diverging from Genius Hour to finish other course work. In her approach to implementing Genius Hour, Clete gave her students the autonomy to pursue whatever they were interested in, but she also had them reflect on how their work met state curriculum standards. In her view, Genius Hour could be a means of achieving state standards. Clete elaborated,
I have them highlight different things that they think they've done, so they do see that things that they're doing with this project do translate to language art skills they're supposed to be learning. I know some people are against those standards with that. I think for my kids, it's important for them to see, ‘Look, you did this project. You're successful and you mastered these skills that you're supposed to be learning on grade level anyway’.

One other factor that may be salient in this discussion when comparing middle and high school Genius Hour projects was the volume of homework and extracurricular responsibilities placed on middle schoolers versus high schoolers. Given that middle schoolers may have less additional responsibilities beyond the school day and feel less academic pressure from parents or for the college admissions process, they may be more inclined to pursue interest-driven work than their older peers.

*Students Wanting To Be Told What To Do*

Yet another concern related to the context of school was the teachers’ perception around students having a desire, as one teacher described it, to be “told what to do.” In these cases, teachers perceived students to be inhibited in their Genius Hour process based on their expectation of following what the teacher wants them to do. This can take the form of students going through the motions of completing their project or simply trying to replicate a prior Genius Hour project that teachers offered as exemplars when introducing the concept of Genius Hour to students. Numerous teachers in this study felt hesitant to provide students with sample or example projects early in the process for fear that students would simply look to replicate what prior students had done in the past.
Teachers perceived that these behaviors were often rooted in students’ desire for simplicity, as a path of least resistance, or a desire to please the teacher.

**Balancing Regular Coursework**

In this study, teachers perceived that Genius Hour, particularly in the context of a traditional academic class, may have been viewed by students as a “nice to have” feature of their schooling rather than as an essential learning experience. That is, students may have felt like they needed to choose between investing time in their Genius Hour projects and completing other, more heavily weighted assignments in the class from the other four days of the week. Additionally, adolescents may be taking upwards of six to seven other classes at any one time, and they simply struggle to find additional hours to devote to their Genius Hour projects. Another challenge is that local accountability systems, such as grading practices for example, are often interwoven into the Genius Hour process either out of perceived necessity or teacher habit. Grading may have the unintentional effect of undermining the intrinsic value of interest-driven or passion-driven learning (Butler, 1987; Morris & Stommel, 2018; Ryan & Deci, 2018; Shernoff, 2013).

Rita lamented, “They've been so trained to do what the teacher wants, you know, that if I say that this service project was a great example of 20 Time, they'll all just do service projects.” In his interview, Walter revealed that a notable percentage of his least successful projects would come from his “super A students.” He attributed this phenomenon to students either being overwhelmed by the freedom provided by Genius Hour or rejecting the open nature of the task. Sometimes this apprehension took the form of hostility; as, according to Walter, one student named the required blog, “This is stupid, and I hate you.”
Clete, Flossie and Orrin also experienced a similar phenomenon at the middle school level, but, to a far lesser degree. Clete, for instance, perceived her students as sometimes taking an attitude of “Okay, well, I come to school, you tell me what to do, and I do it and I get good grades.” These kinds of comments suggest students are not wanting to break the aforementioned Horace’s compromise in which they comply with the work assigned so long as they are not pushed to think and work strenuously (Sizer, 2004).

At first, Orrin also experienced some hesitancy from his middle school students, given the open nature of his curricular-oriented Genius Hour projects. Orrin attributed this hesitancy to students being accustomed to schools, worksheets, tests, homework, and more tests. Interestingly, however, Orrin reported that his students eventually “all drank the Kool Aid and bought in.” Overall, the middle school educators generally had more positive perceptions of students embracing Genius Hour.

Again, this contrast between middle and high school contexts is notable for a variety of reasons. It’s unclear why middle school students in this study were perceived to embrace Genius Hour more than their high school counterparts. Perhaps it comes because of the students’ developmental age or because the stakes are lower in middle school. Research suggests that the impact of grades and the college admissions process poses a great deal of stress (Carlon, 2020; Galloway et al., 2007; Viers, 2019). Further, middle school students are less removed from their elementary experience which, often is more flexible, especially due to a de-emphasis on points or letter grades in elementary schools. High school students, in contrast, have solidified mental concepts of what school
is supposed to be and what the stakes are for non-compliance or deviation from that mindset.

In school, students are often given clear, direct tasks, such that even if they are not engaging, the objective is clear (Pope, 2001). For some students, being told what to do provides clarity, particularly for those looking to optimize school for grades. Further, more ill-defined tasks where students are fully responsible for designing the end product can be challenging for some students (Mills & Kim, 2017). It is critical that students be able trust that teachers will not give poor grades if the project is unsuccessful.

The challenges outlined by teachers relative to their Genius Hour Experiences are both convergent and divergent with other bodies of literature on how students approach learning in the context of school. The student practices described above reflect Marton and Säljö’s (1976) research regarding three types of learners: surface learners, deep learners, and strategic learners. Surface learners are those who tend to focus on the task ahead and complete just enough of the task to get credit for the assignment or pass the assessment period. When engaged in surface learning, the students’ goal may not actually be to master course content, but rather, to complete the assessment and to move on to something more interesting or another item on the “to do” list. Conversely, deep learners focus on mastering their understanding of a given topic and making connections between current information and prior knowledge for the sole purpose of meaning making; deep learners also synthesize ideas and generate their own interpretation of concepts to build a deeper understanding. Deep learning typically takes place when students are interested in the subject and have appropriate time to invest in the given topic (Marton & Säljö, 1976; Mehta & Fine, 2020; Richardson et al., 2021). Strategic learners, on the other hand, aim
towards grade optimization and earning maximum grade points for the amount of time that was invested. Interestingly, strategic learners may engage in surface learning when time is limited, or they may engage in deep learning when it is necessitated or when they are interested in the topic.

Linking findings from the current study to Marton & Säljö’s (1976) work, teachers who perceive students as prioritizing other coursework over Genius Hour for other coursework may, in fact, be observing strategic learners who are allocating their time to the course topics and projects that would yield the maximum grade benefit as strategic learners often aim to do. Though Genius Hour provides the opportunity for intrinsically motivated learning, that opportunity may not be the student’s priority if they are trying to use their time strategically. Additionally, the teacher’s perceptions of students who desire to be “told what to do” could either be instances of surface learning or strategic learning. On one hand, the desire to be told what to do could stem from a surface learner’s desire to just get through the task and move on to something more interesting. Additionally, their motivation could be wanting to avoid getting a poor grade or the desire to adhere to the Genius Hour “requirements” to ensure a satisfactory grade. On the other hand, being told what to do could be part of a strategic learner’s desire to obtain a high grade and structure their time in such a way to maximize their efficiency, given all the other requirements on their plate. The student’s desire for clear criteria and outcomes could also be part of a grade maximization strategy, as they want to ensure the time they invest in a school task does not result in an unintentional poor outcome.

Indeed, a surface or strategic learning approach to Genius Hour can serve as a potential recipe for conflict between teachers and students. Many of the educators in this
The study offered Genius Hour because it was an opportunity for deeper learning where student interests were recognized and valued. Thus, there was an expectation from the teacher that students would actively engage in a way that fostered an in-depth understanding of their chosen topic. The gap between the teacher’s desire for deep learning and a student’s focus on strategic or even surface level learning could explain some of the tensions experienced by Walter, who reported that some of his most successful students expressed frustration with the Genius Hour experience. Additionally, students may have perceived that, given all the responsibilities on their plate, school is a space for surface learning or strategic learning rather than a place that emphasizes deep learning. Thus, when the desired outcome from the teacher does match the strategy being applied by the student, Genius Hour could be a source of contention.

**The Game of School**

Another factor that may be playing into these experiences of teachers is the potential that students conceive school as a system to be gamed, rather than a genuine learning experience (R. Baker et al., 2008; Labaree, 2012). Baker (2008) framed “gaming the system” as a process through which students tended to use the rules and norms of the educational system to maximize one’s score or grade, rather than engaging with the material itself. Baker found that students were more likely to game the system when they disliked the course material or the learning environment. Thus, in this study, while students had choice over course content in Genius Hour, the Genius Hour process was also situated in a course that covered a lot of other content, which the students may or may not have found engaging. Additionally, it is interesting that the environment played a role in the decision to game the system. While the environment in Baker’s (2008) study
was a digital learning environment as compared to a traditional brick and mortar school, perhaps the socially constructed environmental factors in a physical school led students to try to gain or optimize the system.

Fried (2015) also examined the “game of school” phenomenon and framed the concept around the idea of students pleasing teachers in order to get ahead. However, he noted that the game of school looked different between middle school and high school. At the middle level, the game is focused on securing enrollment in optimal courses, often “honors level” courses, or “getting ahead” (Fried, 2015, p. 25) by ensuring students are in a class with high achieving peers.

Additionally, Fried highlighted a social component as part of the middle-level game of school, which is that the student desires to be popular. Fried noted that sometimes that popularity is gained or maintained by ostracizing others and treating popular status like a scarce good. This “Have and Have Not” mindset in middle school can shape student perceptions of school that then, get carried over into high school and influence their attitude about schooling in general. In turn, this mindset may serve to reinforce Baker’s (2008) finding that the environment can either be a detriment or an encouragement of gaming the system. Fried noted that when the personal aspect of one’s talents and creativity are not recognized in school, particularly middle school, students tend to see the game as something not worth playing.

This observation is intriguing in that Genius Hour could serve as a counterbalance to the traditional school experience, particularly in middle school, when students are still framing their concepts of school as a place where their interests are valued. Given that students are still building their conceptual framework of school in middle school, early
middle school students, like the ones supported by some of the teachers in this study, may be best impacted by Genius Hour, particularly if it is continued for multiple years across the school experience.

By the time students get to high school, Fried (2015) argued, they are gaming the system to earn the maximum grades with the least amount of effort while also actively participating in other aspects of school, such as athletics or extracurricular opportunities, that yield a better college admissions application proposal. Thus, Fried proposed that the high school students’ focus is less about learning and more about piecing together the right combination of grades, coursework, and high-stakes assessment scores that will enable them to enter the college of their choice. He also noted the resistance that sometimes occurs when students are asked to take ownership of their learning after being conditioned to listen, comply, and regurgitate as part of the school experience.

**A grammar of school.** Whether students are in middle or high school, the game of school is also situated in what Tyack and Tobin (1994) refer to as “a grammar of school”, or “the regular structures and rules that organize the work of instruction” (p. 454). These rules and structures include designating age-based grade-level classrooms, dividing learning into subjects, and the awarding of grades and credits amongst other practices. Tyack and Cuban (1995) argued the resilience of the grammar of school persisted, in part, due to the predictability it provided educators to complete their regular tasks as assigned by school stakeholders including administrators, parents and school boards. These tasks included “controlling behavior, instructing heterogeneous pupils, and sorting people for future roles in school and life” (p. 86). Further, they argued, once socialized into this structure, students and teachers believe that these aspects are essential
to a “real school”, making a reconceptualization of education difficult. This enculturation, the authors propose, has made school reform difficult. Moreover, this controlling grammar of school has yielded a deeply disengaging school experience (J. O. Conner & Pope, 2013; Washor & Mojkowski, 2014; Yazzie-Mintz, 2007).

The grammar of school not only helps us to understand how to negotiate the Game of School, but it also provides a useful structure for better understanding student resistance to Genius Hour. Educators in this study implemented Genius Hour as a means of departure from the status quo, and in turn, their efforts run resistant to some aspects of the grammar of school. The interest-driven learning in Genius Hour is a departure from traditional subject-based courses that culminate with a regular assessment such as a quiz or a test. Genius Hour doesn’t feel like “real work” within a real school and, may in fact, detract from that work. As Zhao (2020a, 2020b) argued, trying to change the grammar of school could yield something that was no longer “real school” after the change. Zhao recommends reframing the conversation away from the grammar of schooling toward a new language with an entirely different grammar; that is, the grammar of education. In shifting away from schooling and the mental models, grammar, and attachments that come with it, communities can begin to have a broader conversation centered around needs from education. Given the desire for student engagement in education (Bodkin, 2021; J. O. Conner & Pope, 2013; Shernoff et al., 2003, 2014; Yazzie-Mintz, 2010), Genius Hour has the potential to peacefully exist in the grammar of education.

Findings Summary

In general, findings from this study suggest that social and contextual factors shaped the participating teachers’ perceptions of their Genius Hour experiences. Taken
together, these factors can pose significant challenges to implementation. A new Genius Hour educator may find, for example, that colleagues in their school community are agnostic about the practice or in some instances, even hostile to the concept of Genius Hour. This can leave educators feeling isolated and without an internal professional network to support their work. While some parents may be appreciative of the opportunity for their child, some may not recognize the impact of Genius Hour, while other parents may prefer their children invest time in more traditional academic pursuits. Interestingly, findings from this study also suggest that administrators may be the least of worries for any Genius Hour educator and, in some instances, they may be the ones who are most in support of the work. Further, students’ own beliefs about school, schoolwork, and time priorities may also shape the impact of any Genius Hour experience.

Yet, despite the challenges, all six teachers in this study reported that the effort outweighed the challenges. Teachers were encouraged by their students’ levels of engagement, innovation, and ingenuity. In addition, these participating educators drew personal enjoyment and meaning from engaging with students in the process. If one was to embark upon Genius Hour, perhaps the best advice may come from Walter, the high school teacher who recommended that educators “commit to doing it (Genius Hour) twice” so that they can learn from the first iteration and reap its benefits for an improved second iteration.

A Metaphorical Model for Genius Hour

When making sense of any multifaceted topic, metaphorical models can help provide a visual structure to aid understanding (Pratte, 1981). When thinking about the
complexities of Genius Hour, the metaphorical model of sailing conditions may be apt. The two are similar in that Genius Hour and sailing are both:

- Challenging: There are numerous variables that can impact your course.
- Rewarding: Participants can experience thrills during the journey and the satisfaction of reaching one’s destination.
- Empowering: Once students learn the mechanics and skill of charting a course or engaging in inquiry, there are a multitude of directions and opportunities that can be explored.

Consequently, thinking about Genius Hour as sailing can provide a visual representation for educators to process the promises and perils of implementing Genius Hour in their classroom. Additionally, the metaphorical model is useful because it is a tool for generating further inquiry and questions (Pratte, 1981). The iterative probing and questioning of how best to characterize the Genius Hour experience can lead to further refinement and clarity as the model is adapted based on feedback. In the interim, it serves as a constructionist object (Ackermann, 2001; Papert, 1980b) to think with and better understand the Genius Hour phenomenon.

Learning how to implement Genius Hour can be analogous to learning how to sail in the following ways:

- The system of the school is akin to water, which, like sailing, is the setting in which Genius Hour occurs. Additionally, the metaphorical currents of the school (“real work”, expectation of being “told what to do”) and the impact of the sailing conditions must be accounted for when navigating the myriad of Genius Hour
processes. Further, like water, there are often additional unforeseen obstacles in the school context beyond the current that may impact one’s project or course.

- Stakeholders serve the role of winds, which have the power to give each Genius Hour experience ample momentum, sometimes blowing projects off course or serving as headwinds to make progress even more challenging.

- Students and their projects are like navigators in sailboats. Each instructor, also experiencing Genius Hour, is navigating in the same waters, but in separate boats. Teachers, like other boaters, can offer assistance to their student sailors, but it is ultimately up to each student to navigate their sailboat (and project) independently.

- While Genius Hour opportunities can empower students with the opportunity to navigate and chart their own course, like sailing, it can be challenging for students to navigate if they are unfamiliar with the process. For novice learners, engaging in open inquiry can seem like heading into open waters without a deep knowledge of the process. Thus, structure and guidance can be helpful for emerging Genius Hour learners.

- Experiencing content-oriented Genius Hour constrained by curricula is like sailing in the harbor, in that conditions tend to be more favorable with calmer waters; that is, when Genius Hour practices are incorporated into the day-to-day regular class routines, and students are given clear constraints on directions for navigating their project, as well as limits to the distance, learners can sail.

- Like sailing in the open waters, open-ended approaches to Genius Hour can become more treacherous as navigating the process and product becomes more
complex. Thus, like novice sailors who rely on a GPS, students may benefit from planning scaffolds or guides such as design thinking to help them successfully navigate the Genius Hour experience.

A visual model of Genius Hour practices as analogous to sailing can be seen below. Much like a model or sailing excursion, there are elements that are not yet visible in this model. The model or map must not be confused with the actual “landscape” or “body of water.” Consequently, like the best maps, this model is expected to be refined with time and further knowledge.
Figure 12

A Metaphorical Model of Genius Hour as Sailing
Recommendations

Although the thematic analysis of Genius Hour implementation and teachers’ experience sheds light on the practice in schools, illumination alone is insufficient. In the spirit of design thinking (Ideo Inc., 2012), opportunities for revision, iteration, and reflection can serve to further enhance our understanding and improve practice. Because the findings suggest that the Genius Hour experience is impacted by a wide range of stakeholder groups including, but not limited, to teachers, administrators, school boards, and collegiate admissions teams, the following recommendations are provided for each of these groups, in turn.

Recommendations for Practitioners

Practitioners face numerous considerations when implementing a Genius Hour process in their classroom. One of the primary considerations is how to structure one’s Genius Hour process given their instructional goals. Additionally, the case reports in this study suggests there are several common pitfalls in the Genius Hour process, particularly around areas of student inquiry familiarity and skills, project management, self-determined or self-directed learning, and external support around topics beyond the teacher’s knowledge. Next, I provide a range of recommendations for educators that addresses structural considerations as well as each of the major issues identified in this study.

One of the first decisions an educator must make is how to structure the experience for their students. As depicted in Table 4, educators should first consider the context of their learning experience including the grade-level of students as well as class type and when the class meets during the school day. Next, educators should consider
their goals before selecting an orientation and an approach to Genius Hour. In this study, educators typically first decided on an orientation. A teacher interested in starting with Genius Hour who felt a desire to align it with their academic curriculum may start with a content orientation. Next, the teacher would decide on an approach. Perhaps an organized management structure is important to the teacher, so a process-based approach would work well. If the educator was looking for a means to expand opportunities for engagement, they could proceed with an interest-driven approach that would allow students to explore and create anything related to curricular standards.

**Table 4**

*Options for Structuring the Genius Hour Experience*

<table>
<thead>
<tr>
<th>Context</th>
<th>Grade Level: (e.g., Middle School, High School, Grade 8, Grade 10)</th>
<th>Occurrence: (e.g., Before, During or After School)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Orientation</strong></td>
<td>Content-Oriented</td>
<td>Community-Oriented</td>
</tr>
<tr>
<td><strong>Approach</strong></td>
<td>Choice-Based</td>
<td>Process-Based</td>
</tr>
<tr>
<td>Content Oriented &amp; Choice-Based</td>
<td>Community-Oriented &amp; Choice-Based</td>
<td>Open-Oriented &amp; Choice-Based</td>
</tr>
<tr>
<td>Content-Oriented &amp; Process-Based</td>
<td>Community-Oriented &amp; Process-Based</td>
<td>Open-Oriented &amp; Process-Based</td>
</tr>
<tr>
<td>Content-Oriented &amp; Interest-Driven</td>
<td>Community-Oriented &amp; Interest-Driven</td>
<td>Open-Oriented &amp; Interest-Driven</td>
</tr>
</tbody>
</table>

Genius Hour is, in many respects, an inquiry process. Thus, providing students with supported opportunities for inquiry-based learning is likely to help the facilitation of Genius Hour. While curiosity and question asking are core components of the human experience, natural inclinations are not sufficient for a successful inquiry process. Findings from this study indicate that teacher support and guidance through structured
inquiry can help develop student capacities both in and out of academic contexts. Ideally, prior to initiating the Genius Hour process, teachers would yield benefits from providing students with opportunities to engage in structured, semi-structured, and open inquiry projects, independent of Genius Hour. In doing so, teachers can aid students in honing essential skills such as question development, source location, source evaluation, and the communication of written, audio, or other digital media.

There are numerous approaches that educators could take while structuring inquiry projects for students. Alberta (2004) offers a four-tiered approach to designing inquiry experiences for students, with each tier gradually releasing more responsibility to learners. On one end, modeled inquiry is an approach where the learner observes teachers “modeling” or thinking aloud about the steps of an inquiry, which could intentionally include steps for developing a question, generating search terms, and evaluating the relevance and quality of research findings pertinent to their project. On the other end is the Open Inquiry approach which, like the open-oriented and interest-driven Genius Hour approach, puts students completely in charge of the inquiry process. The middle two tiers, Structured Inquiry and Guided Inquiry, provide more and less scaffolded approaches between the two. In a structured inquiry approach, teachers typically provide students with the questions, resources, and potential end outcomes, while in the Guided Inquiry approach, the educator begins to cede to certain students varied amounts of control over the question, sourcing, and their end product.

A second comprehensive, yet flexible approach, to structuring inquiry that could also yield benefits is known as Personal Digital Inquiry [PDI] (Coiro et al., 2019). The PDI process, like that of the Genius Hour process, ensures, by design, that students’
personal interests are taken into consideration; it also assumes that building strong student-teacher relationships play a critical role in the learning process. The emphasis on the “personal” is intentionally designed to consider several affective factors necessary for engaged, intrinsic motivation. The PDI approach also provides a form of scaffolded inquiry that is applicable at the modeled, structured, guided, and open levels of inquiry. The foundational skills embedded into supporting learners as they engage in personal digital inquiry, particularly around question development, digital literacies, online reading comprehension, and creative expression would yield benefits for all three forms of Genius Hour, including experiences that are content-oriented, community-oriented, or open-ended in their orientation.

Further, educators can use Genius Hour to teach and support students in specific nuances of the inquiry process rather than solely focusing on learning new content for their final project. Berger (2014), for example, provides structures for helping students develop more elegant questions while Rothstein and Santana (2011) provide a more structured protocol through the Question Formulation Technique that supports students first in generating questions, and then evaluating their questions based on requirements of their inquiry and its likelihood to generate desired answers. Additionally, students can benefit from instruction around how to critically evaluate digital and print sources as research suggests these skills are an area of weakness for students and adults alike (Breakstone, Smith, Wineburg, et al., 2021). These evaluation skills include evaluating the background of the source of the material, reading across sources to determine the most accurate information, and tracing article claims back to original sources using
embedded hyperlinks (Breakstone et al., 2018; Breakstone, Smith, Connors, et al., 2021; Caulfield, 2016).

Genius Hour provides an opportunity to also explicitly teach project-management skills and practices that would yield benefits in future academic pursuits or that may transfer to real-world work opportunities. Furthermore, project management is a skillset that tends to be undertaught in schools (Boss, 2009; Vander Ark, 2017) yet essential to group projects or project-based learning designs. There were numerous examples in my interviews with teachers where they cited specific challenges connected to project management including difficulty managing their time, conflicts between team members, and splintering groups, that suggested students would benefit from structures to help them navigate these and other challenges embedded in project-based work. Furthermore, project management skills are ideally cultivated by educators throughout the student’s time in school. A just-in-time approach to teaching project management, while critical for Genius Hour success, would be more impactful if students had prior experience developing these skills. Students would then have the benefit of applying prior learning to future Genius Hour experiences or similar project-based learning endeavors.

One potential approach to support project-based work, which Henry discussed in his interview, was design thinking. Design thinking (2012) is a structured process of project management that consists of clearly defining the problem, talking to stakeholders to deepen a team’s understanding of the problem(s), designing solutions, soliciting feedback, and then iterating the solution or product based on the team’s design. Foster (2021) found that explicitly teaching aspects of design thinking can expedite the problem-solving process for students. Further, teaching students about design thinking can
promote metacognition and collaboration, while also creating a meaningful context for teaching district assigned curriculum content and standards (Carroll et al., 2010). However, it should be noted that educators struggle with implementation of design thinking, given the fluid nature of the process and difficulties with capturing evidence of academic learning outcomes (M. Collins, 2019).

Another project management approach that could support the Genius Hour process is one from the technology sector known as Scrum (Sutherland, 2014). This process, while likely new to many educators, has been successfully applied in other educational contexts (see MacCallum & Parsons, 2019). The term originated from the concept of the sport rugby as a means of emphasizing teamwork. Within a Scrum, teams come together to understand the goals of a client and the potential tasks involved. Large-scale projects are broken down into smaller tasks to be completed over a short-term cycle, typically 4 – 6 weeks, in a process called sprint planning. During sprint planning, team members identify tasks they will be charged with during the project. Teams meet briefly and daily so that each member can identify what they accomplished the prior day, what they plan to do on the current day, and any support that they will need. A scrum master listens at these meetings and serves as a facilitator to support the team’s efforts. At the end of the sprint, there is a “sprint retrospective,” during which the team reflects on the successes, realized products, and what items need to be added to the larger backload of project-related tasks.

The use of Scrum can help individuals clarify their learning goals and processes, and its structures can aid in the development of students’ skills in self-regulation and collaboration (A. Cook, 2017; Vogelzang et al., 2020). Self-regulation and collaboration
skill development can prevent procrastination and issues with splintered groups that were identified in Chapters 4 and 5. Further, using a Scrum approach can foster more empathetic strategy use in student group dynamics and conversations through its semi-structured protocol (Friess & Lam, 2021). Scrum protocols have also been leveraged to support the management components of instructional inquiry in schools (A. Cook, 2017). Weaving Scrum-related practices into a process-based Genius Hour structure could aid educators in preventing some of the numerous project management and procrastination issues identified in this study.

In addition to inquiry and project management skills, students need support in developing their competence in the area of self-determined learning (Gray, 2013; Ryan & Deci, 2016; Zhao, 2012a; Zhao et al., 2015). Self-determined learning opportunities have the potential to be powerful, transformative experiences for students, yet the ability to self-direct may not be innate in all contexts, particularly in school. Thus, teachers can better support Genius Hour by deepening their understanding of self-determined learning. Specifically, teachers can familiarize themselves with autonomy-supportive teaching practices designed to foster student choice in learning (i.e., choosing content or communication method) and volition, or conscious choice, in order to meet personal goals (Shernoff, 2013; Wehmeyer & Zhao, 2020). It is critical that the choices have value to students, as the mere appearance of choice is insufficient to yield self-determination (Reeve et al., 2003). Further, teachers can support student autonomy through relational support that focuses on student-generated timelines for mastering course content rather than feeling pressured to adhere to timing guidelines inherent in generic curriculum maps.
(Reeve, 2002). Other critical factors center on ensuring that the student is provided with an optimal challenge and support as they generate their own inquiries.

Finally, given the wide range of potential student topics and interests, teachers would be wise to design Genius Hour so that students are able to access internal (school-based) or external (community-based) mentors. Mentors are critical in alleviating the implementation burden on educators because project mentors can provide expertise when the classroom teacher is unfamiliar with the topic. Although Walter and Flossie spoke of learning alongside students, it is unreasonable to expect teachers to learn about multiple divergent topics while also working to fully support dozens of different projects. Further, teachers in this study noted it was difficult to regularly check in with all their students throughout the Genius Hour process. Mentors could serve as points of contact for the student and informally monitor project progress. Additional mentors would also enable teachers to focus on framing the Genius Hour project and supporting project management aspects of the process, while the mentor can provide technical information and expert feedback on the student’s Genius Hour project. Finally, linking mentors to Genius Hour would potentially yield the added benefit of enhancing and growing school and community relationships through participation and partnership.

While the work of Genius Hour will be primarily shouldered by teachers, it is clear from this study each Genius Hour experience is situated in a school context that includes many stakeholders. Next to students, the most impactful stakeholder in the Genius Hour experience is the building administrator who provides permission and support to the endeavor.

**Recommendations for School and District Leaders**
By and large, the teachers in this study indicated that their school leaders provided critical support for their Genius Hour projects. However, informed by this study’s findings, several structural and cultural supports could be offered to other teachers wanting to explore Genius Hour in their classrooms. First, school leaders can increase the likelihood of creative projects connected to Genius Hour by actively supporting innovative practices and practitioners in schools. Teachers need to feel that endeavors like Genius Hour are valued and supported by administrators for them to take the risk of stepping outside the existing grammar of school. Furthermore, school leaders need to understand that some faculty members may be outwardly, or passively, hostile to colleagues who engage in Genius Hour practices. Building principals may also help support existing innovative faculty by clustering their classrooms in the same hallway or near likeminded colleagues. Additionally, administrators could ask the “Mavericks” (Newberg, 1998; Songer et al., 2003) to mentor new teachers to build the ranks of the innovative. Finally, administrators can also encourage educators to collaborate with their building’s library media specialist in planning Genius Hour. Given the research and knowledge construction necessary for many of these projects, a librarian can be a valuable instructional resource for educators and students alike.

Additionally, school leaders can support teachers in implementing Genius Hour by creating a bank of community members willing to serve as contacts for both Genius Hour projects and other curricular endeavors. In their outward facing role in working with local and state communities, building principals may be in the best position to interact with and recruit external supporters. By creating internal databases and connecting educators and students with potential mentors, school administrators can help
improve the overall student experience while alleviating teachers from the burden of supporting projects beyond their knowledge base.

Structural supports can also play a critical role in supporting Genius Hour, particularly though the power of school schedules. School leaders can explicitly build time into the school schedule in a way that reduces the frequency with which opportunities for interest-driven learning have to compete with other academic objectives. Despite opportunities provided by the Genius Hour experience, the current weekly structure in most secondary schools can pose significant challenges for teachers and students. A 12-week Genius Hour project may appear to be a long period of time. However, given that Genius Hour typically occurs weekly (rather than daily), students will likely be provided with less than 12 hours of class time to work on their project. The time required for Genius Hour will likely exceed the amount of time allotted within a course and the typical amount of homework for one class period. Furthermore, high-quality student projects will also be competing with assignments from each student’s other classes in addition to the on-going work in the class in which Genius Hour resides. The result is a genuine time squeeze for Genius Hour projects.

To address these time constraints, administrators committed to interest-driven learning could reduce the competition factor with other courses and after-school activities through a variety of means. One approach could be to replicate what Henry’s district attempted by creating a course in the existing schedule. School leaders might also take the approach of designating a more concentrated block of time, such as creating an inter-session course (e.g. between Thanksgiving and the winter break or right before another school vacation) where students have the opportunity to opt-in to a multi-week, full-day
or half-day Genius Hour program. There are likely other scheduling approaches
administrators might consider, yet it is critical that whatever time is provided, it should be
done in such a way that it is protected from other school commitments to the extent
possible.

Finally, school leaders can play a pivotal role in expanding the implementation of
Genius Hour by providing high-quality, extended professional development for interested
classroom teachers. Some teachers may have difficulty imagining Genius Hour in
practice, or they may initially be overwhelmed by the logistics, which may prevent them
from engaging in the practice in the first place. Professional development could take a
variety of forms including an interest-driven inquiry or Personal Digital Inquiry (Coiro et
al., 2019) approach to broaden the application and appeal to educators.

What is critical, however, is that professional development take a long-term and
community-based approach to preparing educators to implement Genius Hour in their
classrooms. Teachers can likely benefit from on-going support, perhaps over multiple
years, as they navigate the numerous challenges that are introduced when implementing
Genius Hour. Flossie’s case is illustrative in this regard as her colleagues stopped
implementing the practice the year after she departed from the team. Without
professional development, Genius Hour may only be implemented and led by one
dynamic teacher. If that teacher departs, the remaining educators may lack the knowledge
and capacity to carry it on themselves, or they may be unable to ask their former
colleague for support. High-quality Genius Hour professional learning opportunities can
help create a network of practitioners in the same building that are capable of
implementing Genius Hour while supporting others in their journey as well.
Furthermore, several educators in this study expressed feeling isolated when implementing Genius Hour and wishing they had colleagues available to support their work and provide feedback. Structured professional development may be useful in addressing the cognitive, structural, and social challenges of Genius Hour.

**Recommendations for School Committees & State Boards of Education to Support School Leaders**

If educators and administrators are to take risks in implementing Genius Hour, they will likely need some political support or, in some instances, political prompting to do so. Local school committees and state boards of education can play a critical role in shaping the agenda of schools. Across the board in this study, all six participating teachers claimed that state and local accountability measures, in particular state assessments, weighed heavily in the back of their minds. While some districts leaders and educators, particularly those in affluent high-achieving districts, may feel that they have the latitude to innovate outside the requirements of state standards and assessments, other educators and building leaders may not. If educators and administrators find themselves lacking in the latitude to innovate outside these requirements, Genius Hour may be perceived as a non-starter.

Moving beyond school administrators, if members of school committees and state boards of education believe that self-directed learning aimed at community improvement is important, they can work to publicly celebrate, promote, and emphasize its importance in public meetings and external communications. Henry noted, for example, that while his Genius Hour efforts were sometimes recognized by his school district, from his perspective, AP scores were more heavily emphasized, and therefore prioritized, by
students, educators and families. As a result, Genius Hour projects were moved to the back burner so students could prioritize AP coursework.

Local policy leaders can look to examples such as High Tech High (Wagner & Dintersmith, 2016), the Big Picture Learning network (Littky & Grabelle, 2004; Washor & Mojkowski, 2013, 2014), and Science Leadership Academy (Lehmann & Chase, 2015) as schools and educational organizations that have crafted compelling narratives that demonstrate the power of reframing conceptions of school, re-writing some of the grammar of school, and reshaping community discussions around the idea of what a school is as an entity. In turn, these leaders can consider how they might begin to de-emphasize measures of accountability as the sole or dominant metrics of success, while also working to broaden concepts of school quality (Schneider, 2017).

Yet, communication alone will not resolve the issues, and other structural policies may need to be reconsidered. At the local level, districts could also consider alternative grading policies that are designed to foster feedback and growth. Traditional letter grades or numerical grades can indirectly reinforce the existing conceptions and the game of school. In contrast, mastery-based or standards-based learning approaches could yield progress in these areas as these approaches are typically iterative and provide students with multiple methods and attempts to demonstrate their competency. One potential caveat worth noting is to ensure that the focus on standards or mastery competencies does not preclude students from exploring their interests.

Finally, it is critical for local and state Boards of Education to ensure that their budget reflects their priorities. If so, funding should be made available to support opportunities for interest-driven learning. This could take the form of additional teacher
positions to lead Genius Hour experiences or to help reduce student-teacher ratios to those necessary to support this work. It could also take the form of ensuring that extra-curricular or enrichment programs are appropriately funded, so students have access to interest-driven learning opportunities attached to the school day. Funding can also be provided to support the cost of student materials, transportation to off-campus ventures, or other resources and technology that enable students to research, interview, or otherwise engage with external partners.

**Recommendations for College and University Representatives**

One other critical finding from this study was that participating teachers perceived that students and families held beliefs around the college admissions process that drove behaviors in their schools. One of these perceived beliefs was that AP work and traditional metrics are the primary drivers of admissions. A second common belief was that interest-driven learning would not yield the same benefits as success in traditional academic coursework. As a result, students were, when pressed for time, willing to sacrifice the quality of their Genius Hour project to prioritize work associated with their AP classes or other academics.

If interest-driven inquiry is important to college admissions teams, it is unclear if the message is reaching students and families. Thus, if it is in fact a priority, colleges and universities might take a more active role in clearly communicating the importance and value of self-determined learning. Ideally, this communication would be multifaceted and included on the institution’s website, in its marketing materials and social media outlets, in presentations to families at college night, and on college tours. Admissions teams would be wise to provide narratives and exemplars of students who have been admitted
based on their documentation of self-directed learning as part of their high school experience. To be successful, universities would need to change the “word of mouth” messages passed on by families and guidance counselors to prospective students and their families to actively promote the value of interest-driven learning. Until self-determined learning is over emphasized in conversations on college admission, it may continue to be undervalued by students and their families in secondary school contexts.

Furthermore, teacher education programs have a role to play in providing future educators with the pedagogical skills necessary to design and implement interest-driven inquiry learning experiences. Teacher candidates should understand what self-determined learning looks like in practice and the underlying skills and scaffolds that students need to successfully conduct self-determined learning. Ideally, education courses would be designed in such a way that students would be able to experience self-directed inquiry themselves as a learner, thus providing them with insights into their future students’ experiences. Additionally, schools of education would also model the importance of an iterative process in inquiry, providing teacher education candidates the opportunity to receive feedback, revise work based on the advice, and reflect on the entirety of the process. Finally, schools of education would be remiss if they did not provide insights on navigating school culture, particularly those elements of schools that adhere closely to the grammar of school (Tyack & Cuban, 1997; Tyack & Tobin, 1994). It is difficult to be, as Henry put it, “the lone purple cow”, and educator preparation programs have a duty to help students to both identify schools that share one’s values and the leadership skills to shape school contexts to adopt an ethos that respects learner interests and autonomy.
Limitations of The Study

While this study provides a window into teachers’ experiences as they participated in structuring and leading a Genius Hour project, there are several limitations. First, the perspectives provided represent only six of hundreds if not thousands of perspectives among teachers who have participated in Genius Hour. The sample was kept purposefully small, which limited the number of perspectives to ensure depth of analysis of each case with thick descriptions in the case analysis and cross-case analysis.

Secondly, while the sample represented teachers across a wide range of regions in the United States rather than one local area, it was not realistic to travel to each location to observe teachers in action for long amounts of time; thus, it was only possible to engage with teachers through a single remote interview process. Future studies can benefit from supplementing teacher interviews with classroom observation and/or including follow-up interviews or focus groups with students to learn about their Genius Hour experiences first-hand.

It should also be noted that the perspectives are coming from individuals who present themselves as white males and females, thus limiting a potential range of perspectives from those from different ethnic backgrounds. Additionally, the sample was mainly identified via Twitter recruitment, because Twitter provided access to one of the largest national communities of Genius Hour educators. However, perspectives of Genius Hour educators who were not on Twitter may be different from those included in this study. Further, the pool could have been self-reinforcing, as many educators in the Twitter community could have similar influences (i.e. authors) and may have used similar
resources to inform their Genius Hour practices. Finally, no data was collected on the socio-economic status of the teachers, or their lives prior to becoming educators, so that information might have provided additional insights about what might have led them to implement Genius Hour in the ways that they did.

Another important limitation of the study is that data was collected from teachers prior to the onset of COVID-19. It is possible that the implementation of Genius Hour could look radically different under social distancing guidance and remote or hybrid schooling. It remains to be seen how schools will structure themselves post-pandemic, but undoubtedly the experience of Genius Hour will be different as a result.

**Final Reflections**

At its best, Genius Hour is a spark or a catalyst that can illuminate or initiate a potential pathway to creating more engaging learning experiences for students and educators alike. It is clear, however, that Genius Hour is not a silver bullet. By itself, it will not transform education. The current educational system and grammar of school is entrenched and, in some respects, resistant to Genius Hour practices.

Genius Hour is a reconceptualization of the role of the educator and the use of class time that might run counter to the conceptualizations that led individuals and school leaders to schools in the first place. Yet, from a spark and with a catalyst, transformation is possible. Many components, including structural, cultural, educational, financial, and conversational supports, will be required to grow the availability of connected and interest-driven learning as part of the typical school experience.

As various members in the educational community move forward, they should do so with humility, curiosity, empathy, and grace. Genius Hour is only one part of a larger
educational picture, as are the more comprehensive ideas of self-determined learning and inquiry. Like any good inquiry, the path forward centers on questions that start with when, why, and to what extent? How questions are also important, but secondarily so, to support answers to the initial set of questions.

However, all told, Genius Hour advocates must move forward like individuals who deciding to plant a new tree, knowing that the growth takes time, and that the rewards of growth and patience may be rewards one does not get to see. The most important thing is that the tree is planted, nurtured, and has a chance to thrive. Educators must also understand the environmental context of each tree, growing amidst a forest of other reform efforts, and adjust their efforts accordingly. With time, cultivation, and persistence, educational leaders can create a space where student engagement is the norm and interest-driven learning is no longer offered for just one hour each week.
APPENDICES

Appendix A
Teacher Consent Form

Consent Form for Research
The University of Rhode Island
Alan Shawn Feinstein College of Education and Professional Studies
School of Education
705 Chafee Hall
10 Chafee Rd.
Kingston, RI 02881
p. 401-874-2564
f. 401-874-5471
http://web.uri.edu/education/

* Required

BACKGROUND

You are being invited to take part in a URI research study. My name is David Quinn. I am the student investigator in this study. The Principal Investigator in this study is Dr. Julie Coro of the School of Education at University of Rhode Island. If you have any questions, she can be reached by phone at 401-874-4872 or by email at jcoro@uri.edu. You are being asked to take part in a research study about the self-directed inquiry projects known as 20-Time or Genius Hour. The purpose of the study is to examine the experiences of teachers who facilitate student-directed inquiry projects that use digital technology.

PROCEDURES/METHODS

Secondary teachers (Grades 6-12) who have completed at least one Genius Hour project with students are eligible to apply to be selected to participate in this study.

You will be interviewed for approximately one hour regarding your experience leading students through a 20-Time or Genius Hour project. The interview will take place via a video chat and be recorded so that conversation can be transcribed. After the completion of the interview, the research team may request to conduct a follow up interview to expand upon some of your statements in your interview.

WHAT WILL BE DONE

The teacher who agrees to participate in this multiple case study will:

1. Be interviewed about his or her 20-Time or Genius Hour experience and observations of students.
2. Prior to the interview, provide the researcher with resources or scaffolding materials for students used during Genius Hour or 20-time process so they may be discussed during the interview.
3. Prior to the interview, provide the researcher with student work (with names removed) from Genius Hour or 20-time process so they may be discussed during the interview.

RISKS

This is a minimal risk study. There are no anticipated risks associated with this study other than the typical uneasiness individuals may feel about talking to someone else about their experiences.

BENEFITS


The benefits to the participants in this study that it will provide a teacher with an opportunity to deeply reflect on his or her experience with 20-Time projects. These reflections will include thinking about the strengths and weaknesses of the design and implementation of student interest-driven inquiry.

CONFIDENTIALITY

Your part in this study is confidential. None of the information will identify you by name. A numbered coding system will be used on any data collected from you and a coded number will be used to protect your privacy in the final written documents. Data and records will be stored in a locked filing cabinet and on an encrypted folder on a password-protected computer located in the principal investigator's locked work space. The confidential list of names and identification numbers will be stored in a separate encrypted folder and the teacher informed consent forms will be stored in a separate locked filing cabinet in a separate locked research work space. Only the principal investigator and members of his/her study team will have access to this information. Participants' names will not be used on any written materials, publications, or documents in this study. Participation will in no way jeopardize your employment position or status in the school department. Observations conducted during this study will not be considered part of official school records. Nor will participation in this study be reflected in your yearly teacher evaluation. Following the end of the study, all research data and permission/consent forms will be kept in a securely locked filing cabinet in the researcher’s work space for 3 years.

VOLUNTARY PARTICIPATION

It is up to you to decide whether you choose to take part in this study. You do not have to participate in the study. If you decide to take part in the study, you may quit at any time. Whatever you decide will in no way penalize you in your current status in the school department.

COSTS AND COMPENSATION TO PARTICIPANTS

There are no costs for you to participate in this study.

PEOPLE TO CONTACT

If you have questions, complaints or concerns about this study, you can contact David Quinn, the student investigator at (401-874-4851) or by email David.Quinn@my.uri.edu. You may also contact the faculty advisor, Dr. Julie Ciero, School of Education, University of Rhode Island, (401-874-4972), anonymously, if you choose. In addition, if you have questions about your rights as a research participant, you may contact the office of the Vice President for Research, 70 Lower College Road, Suite 2, University of Rhode Island, Kingston, RI, telephone: (401) 874-4328.

1. Do you agree to the above terms? By clicking Yes, you consent that you are willing to participate in this study and understand that you may not be selected for this study.

   Mark only one oval.

   □ YES  □ NO

   BRB NUMBER: HU1718-082
   BRB APPROVAL DATE: December 13, 2017
   BRB EXPIRATION DATE: December 13, 2018
Cont. Appendix A

2. All teacher interviews will be recorded. By clicking "YES" you consent that you are willing to have the audio and/or video of the conversation digitally recorded. Recordings will be kept confidential.
   * Mark only one oval.
   □ YES
   □ NO

3. Name (Last, First)

4. What is the name of your school?

5. What grade do you teach?
   * Mark only one oval.
   □ 6th Grade
   □ 7th Grade
   □ 8th Grade
   □ 9th Grade
   □ 10th Grade
   □ 11th Grade
   □ 12th Grade

6. What content area(s) do you currently teach?

7. In what city or town is your school located?

8. In what state or country is your school located?

9. When was your last 20 Time or Genius Hour project completed?
   * Mark only one oval.
   □ Less than 3 months ago
   □ 3 - 6 months ago
   □ 7-12 months ago
   □ More than 12 months ago
Cont. Appendix A

10. **What was the duration of your last 20 Time or Genius Hour project?**
   **Mark only one oval.**
   - [ ] 1 week or less
   - [ ] 2 - 4 weeks
   - [ ] 5 -11 weeks
   - [ ] 12 weeks or more

11. **How many times have you completed a 20-Time or Genius Hour project?**
    **Mark only one oval.**
    - [ ] Once
    - [ ] 2-3 times
    - [ ] 4-5 times
    - [ ] 6 or more times

12. **Are you willing to provide the researchers with resources and scaffolding materials that you provide to students to help with their Genius Hour project?**
    **Mark only one oval.**
    - [ ] YES
    - [ ] NO

13. **Are you willing to provide representative examples of student work from the Genius Hour project?**
    **Mark only one oval.**
    - [ ] YES
    - [ ] NO
Appendix B
Teacher Interview Questions

Teachers

• Describe the implementation of the 20time process in your classroom.
• What is the teacher’s role in the 20time process?
  o What do you do during 20time?
  o What did you not do?
• What thoughts, feelings or images come to mind when you recall yourself teaching during Genius Hour classes?
• What have been one personal successes, if any, with this approach?
• What have been the challenges, if any, with the planning and implementation of this approach?
  o Teacher challenges
    ▪ What, if any, challenges came during the brainstorming process?
    ▪ What, if any, challenges came during the researching process?
    ▪ What, if any, challenges came during the construction and presentation process?
  o Student observed challenges
    ▪ What, if any, challenges came during the brainstorming process?
    ▪ What, if any, challenges came during the researching process?
    ▪ What, if any, challenges came during the construction and presentation process?
• Please tell me a little bit about the student-support materials you have shared with me.
• Please tell me about the student projects that you shared with me.
• What concerns did you have when you first heard about 20time and what concerns do you still have?
• What lingering concerns do you still have about using this method?
• What “ah-ha” moments have you had, if any, while implementing 20time?
• What recommendations would you make to teachers who are just beginning the Genius Hour process?
• How would your experiences in 20time teaching compare with your experiences using your typical teaching methods & approaches?
### Appendix C

**Major Themes, Sub-Themes and Codes**

**Successes**
Teacher perceived positive outcomes of the process, products, personal experience or student experience.

| Benefits Beyond The Class: Teacher articulated his or her perception of a Genius Hour project as having impacted the students, peers, or other organizations outside of those involved with the course. | A. **Positive Impact Out of School** – the project provided a benefit to someone or group not directly tied to the school  
B. **Access to Future Opportunities** – the teacher identified an example of how the students’ Genius Hour project directly or indirectly led to a subsequent significant learning opportunity.  
C. **New Mentors**—The student was connected to an adult who provided support for their project |

| Skill Development – The teacher identified a skill that students cultivated during the course of the project. | A. **Collaboration** – teacher references two or more students productively working together to complete their Genius Hour Project  
B. **Entrepreneurial** – teacher references student creating product, plan or event for purchase or use by others.  
C. **Self-Direction** – teacher references students developing their ability to manage their time, goals or plan of action  
D. **Storytelling** – teacher identifies the students work in crafting a story as part of a presentation pitch or a narrative  
E. **Writing** – teacher identifies students developing their writing capacities or a writing product as a result of the Genius Hour project. |

| Student-Teacher Benefit: The Genius Hour project improves the relationship between teacher and student or causes the teacher to see students in a new positive way. | A. **Different Light** – Teacher expresses a new insight or see a new side of a student such as seeing them in a different light  
B. **Increased Communication** – Teacher notes an instance where Genius Hour has led to more and beneficial communication with students |

| Student Social Benefits – Teacher perceives that students obtain a beneficial social interaction or relationship building through the course of Genius Hour. | A. **Students Get New Mentor** – Teacher articulates that the student is connected to an adult who supports the student in the project  
B. **Students Make New Friend** – Teacher perceives that students are positively collaborating with peers they did not previously observe them interacting with in class. |
<table>
<thead>
<tr>
<th>Student Engagement – Teacher identifies a perception that students are interested/or passionate and positively deeply involved in their Genius Hour project</th>
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</thead>
</table>
| **Teacher Benefits** - Teacher articulates a personal benefit or enjoyment that has resulted from the Genius Hour Process | A. **Feeling Inspired** – Teacher articulates that the Genius Hour has provided a source of inspiration
B. **Positive Word of Mouth** – Teacher states that the students have shared positive experiences about the class.
C. **Trust Yields Awe** – Teacher articulates that the trust provided in Genius Hour has provided him or her with a sense of awe. |
### Challenges

Teacher perceived and articulated obstacles that he or she encountered related to the process, products, personal experience or student experience.

<table>
<thead>
<tr>
<th><strong>Logistical:</strong> A teacher-perceived challenge that was associated with but outside the scope of the project.</th>
<th><strong>A. Adult in the Way:</strong> In Vivo code. Teacher perceives that another adult denies permission or access to resources necessary to a Genius Hour Project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B. Time-Short Schedule:</strong> The teacher notes that the limited time in the schedule to complete Genius Hour limits the flow or execution of the process.</td>
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<tr>
<th><strong>Project Management:</strong> A teacher perceived challenge that students face directly related to the managing their Genius Hour project.</th>
<th><strong>A. Question/Topic Generation:</strong> Teacher perceives that students have difficulty selecting Genius Hour inquiry or project focus.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B. Procrastination:</strong> Teacher perceives that the student(s) are not making progress on their project and/or using their time for other tasks.</td>
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<tr>
<td><strong>C. Research:</strong> Teacher perceives that the students are having difficulty locating or evaluating sources to build a deeper understanding of their topic.</td>
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<tr>
<td><strong>D. Waning Interest:</strong> Teacher perceives that the student is having difficulty moving forward on the project because he or she has lost interest or motivation to continue the project.</td>
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<thead>
<tr>
<th><strong>Structural:</strong> Teacher perceives an aspect of the structure of the Genius Hour process itself is a challenge.</th>
<th><strong>A. Paradox of Choice:</strong> The teacher perceives that the open-ended nature of Genius Hour, particularly the unlimited options or choices, makes it difficult for students to select a topic.</th>
</tr>
</thead>
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<tr>
<th><strong>Student-Related:</strong> Teacher perceived challenges related to Genius Hour based on the actions or feelings of students.</th>
<th><strong>B. Mailing it In:</strong> An In Vivo code where the teacher perceives that the student did not place expected amount of effort into the project and the project was of low</th>
</tr>
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<tbody>
<tr>
<td><strong>C. Game of School:</strong> An In Vivo code that refers to the teacher’s perception that students preferring traditional, compliance-based tasks and assessments.</td>
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<tr>
<td><strong>D. Using GH for other Course work:</strong> An In Vivo code that refers to the teacher’s observation that students used GH time for homework or prep for other classes.</td>
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</tr>
</tbody>
</table>
| **Teacher-Centered:** Challenges associated with the Genius Hour process that were specifically related to the experiences or feelings of the teacher | **A. Feeling a Lack of Control:** In Vivo code where teachers expressed a tension between the desire to maintain complete order over the student learning process and relinquishing that power in Genius Hour  
**B. Feeling Overwhelmed:** Teachers reporting that Genius Hour could feel overwhelming when added to their other teaching and life responsibilities, particularly because of the high volume of projects they needed to support.  
**C. Lack of Knowledge of the Topic:** Teacher reflection that they lacked the relevant knowledge necessary to support their students during specific Genius Hour projects |
|---|---|
| **E. Repeating Projects:** Teacher perception that students are duplicating a project from a previous course or a concurrent course.  
**F. Not Plugged In:** An In Vivo code developed from the teacher’s perception that the student’s struggles with Genius Hour was related to a lack the student does not have a strong affiliation with the school  
**G. Lack of Student Positive Experience:** Teacher perceives that the student did not enjoy the Genius Hour Experience. |
Cont. Appendix C

### Drivers
The contextual factors, people or resources that influence the teacher’s Genius Hour experience.

| External: Contextual factor outside of the school or classroom that influences the Genius Hour project | A. **Improve the Community**: Teacher expresses that a reason for implementing Genius Hour is rooted in providing a benefit to the community  
B. **Observing Others**: Teacher states that he or she was inspired to implement Genius Hour after watching another teacher implement the learning experience |
|---|---|
| Resources: The people, events, media, and communities that influence the teacher’s implementation, process or thinking regarding Genius Hour | A. **Authors**: Teacher identified a specific blog or book author who influenced his or her thinking regarding Genius Hour.  
B. **EdCamp**: In Vivo code from teachers that references the role a Genius Hour session at an EdCamp played in starting Genius Hour  
C. **Google**: In Vivo code that denotes a teacher citing 20% time at Google as an inspiration for starting Genius Hour.  
D. **Twitter / Online Community**: Teacher notes that Twitter or an online community played a role in supporting their Genius Hour process. |
| Personal Motivations: Teacher’s intrinsic rationale for launching & continuing with Genius Hour | A. **Comparison to Traditional Practice**: Teacher outlines the similarities and/or differences between his or her Genius Hour process and regular teaching practice  
B. **Creating Opportunities for Flow**: In Vivo code based on teacher’s expressed desire to create the conditions for Csikszentmihalyi’s Flow  
C. **Improve the Student Experience**: Teacher expressed a desire to improve the school / classroom experience for students as an impetus to launch or continue Genius Hour  
D. **Increase Student Agency**: Teacher identifies a desire to give students more choice or agency over what they are learning  
E. **Mirrored Personal Learning**: Teacher expressed that Genius Hour reminded them of their most powerful learning experience in school  
F. **Personal Enjoyment**: Teacher identified that their enjoyment of Genius Hour was a mediation for implementation / continuation |

### Relationships / Tensions: Teacher
A. **Admin** – School administrator reaction. These include principals and central office administrators
perceptions of the response to Genius Hour from various adult constituencies related to the school community.

| Role: Teacher perception of their function in the Genius Hour process | A. **Connector**: In Vivo code where teacher seeks to help students make links between ideas or to people who can support their work  
B. **Taskmaster**: Teacher perceives his or her role as helping students stay on task and maintain progress with their project.  
C. **Curator**: Teacher perceives his or her role as collecting quality resources to share with students to support their projects  
D. **Coach**: Teacher perceives his or her role as one of observing the student and giving feedback to improve their process or product. |
|---|---|
| **Supportive**: Teacher perceives that the administrator approved of the class and/or provided support to projects  
**Catalyst**: Teacher perception that the administrator encouraged the teacher to start or expand the Genius Hour practice in their school |
| **B. Colleagues**: Teacher perceptions of their fellow teachers’ responses to their implementation of Genius Hour  
- **Mixed buy In –Denotes that when teaching in teams, teachers perceived differing levels of investment, in some cases limited investment in implementing Genius Hour**  
- **No Sustained Implementation**: Teacher noted a perception that Genius Hour was not continued after she left the teaching team |
| **C. Not Supportive**:  
- **Off By Myself**: In Vivo code where teacher feels alone or isolated in his or her Genius Hour work within her school community  
- **Passive Aggressive**: Teacher perception that some colleagues comments regarding Genius Hour were dismissive or potentially critical of the practice |
| **D. Supportive**: Teacher perception that their colleagues outwardly supported or encouraged their Genius Hour work  
**E. Adopting the Class**: In Vivo code where the educator notes colleagues implementing Genius Hour after learning about it from the teacher |
E. *Guide*: A more passive role than a coach, but provides general support and suggestions as opposed to critical feedback.

F. *Facilitator*: Teacher perceives his or her role as setting the structure for Genius Hour and check-in support as needed.
## Process
Practices or phases that teachers use to provide structure for the Genius Hour Process

<table>
<thead>
<tr>
<th><strong>Assessment:</strong> Teacher description of how the teacher evaluated the student Genius Hour project</th>
<th><strong>A. Accountability:</strong> Teachers reference or discuss or the need to hold student accountable for their work during the Genius Hour Process through grades or other measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brainstorming:</strong> A part of the Genius Hour process where students generate ideas or inquiry questions for the focus of the project</td>
<td><strong>A. Bad Idea Factory:</strong> Teacher references the use of Kevin Brookhouser’s (2014) Bad Idea Factory process to generate bad Genius Hour Project ideas to spark ideas for quality Genius Hour Process</td>
</tr>
<tr>
<td></td>
<td><strong>B. Scaffolded Process:</strong> Reference to when teachers provide ideas, schedules or prompts to help provide structure or Guides to the students brainstorming or Genius Hour Process</td>
</tr>
<tr>
<td><strong>Class Type:</strong> Describes the type of course or part of the school schedule where the teacher implements Genius Hour</td>
<td><strong>A. Academic Course:</strong> A mandatory core content area course such as math, history, science, ELA</td>
</tr>
<tr>
<td></td>
<td><strong>B. Separate Class:</strong> Genius Hour project is offered as an elective class of its own.</td>
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<td></td>
<td><strong>C. Study Hall:</strong> Genius Hour is taking place during a student’s open block for homework or academic support</td>
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<tr>
<td></td>
<td><strong>D. Within an Elective:</strong> Genius Hour takes place within a non-core academic course that the teacher classifies as an elective</td>
</tr>
<tr>
<td><strong>Conferences with Students:</strong> A component of the Genius Hour process where the teacher meets with the student individually to track their progress and provide support prior to the culminating end product.</td>
<td><strong>A. Desire to Make Public:</strong> Teacher expresses an interest in sharing the student final product with a larger audience within the school or beyond the school with parents and community members.</td>
</tr>
<tr>
<td></td>
<td><strong>B. Video:</strong> Final presentation was a video project.</td>
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<tr>
<td></td>
<td><strong>C. Final Presentation:</strong></td>
</tr>
<tr>
<td></td>
<td>a. <strong>In Class:</strong> The teacher notes that the students Genius Hour project culminated with an In Class Presentation</td>
</tr>
<tr>
<td><strong>End Product:</strong> The culminating or penultimate part of the Genius Hour project where the student creates an artifact of learning.</td>
<td></td>
</tr>
</tbody>
</table>

255
b. **Optional**: Teacher provided students with the option to present, but it was not mandatory

D. **TED Talk**: In Vivo code where teachers specifically referenced a TED-style talk as the means of the final presentation

<table>
<thead>
<tr>
<th><strong>Guiding Structure</strong></th>
<th>The framework of the Genius Hour Process focused either on an exploration of a topic or an inquiry</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. <strong>Inquiry</strong>:</td>
<td>Student Genius Hour process is framed around a “driving” or “essential” question</td>
</tr>
<tr>
<td>B. <strong>Topic ➔ Idea</strong>:</td>
<td>Student Genius Hour project is framed around a specific topic, idea or project that serves as the focus.</td>
</tr>
<tr>
<td>C. <strong>Topics to Inquiry</strong>:</td>
<td>Genius Hour begins with brainstorming topics and then transitions them into questions for an inquiry approach</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Participation</strong></th>
<th>An examination of whether students were required to work individually or allowed to work in groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. <strong>Individual</strong>:</td>
<td>Teacher required students to work independently on their Genius Hour project</td>
</tr>
<tr>
<td>B. <strong>Group</strong>:</td>
<td>Students are allowed to work individually or in small groups of 2+ students.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Pitch</strong></th>
<th>An early phase in the Genius Hour process where students have selected a potential topic and share with an audience why it is important to them. Students typically receive feedback on their proposal.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. <strong>Peer Feedback</strong>:</td>
<td>Teachers require students to obtain feedback from peers after a whole class or small group proposal of their project</td>
</tr>
<tr>
<td>B. <strong>Teacher Approval</strong>:</td>
<td>Teacher must sign off on the proposed project before student can move forward</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Researching</strong></th>
<th>Phase in the Genius Hour process where students gather information relevant to their topic or idea.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. <strong>External Interviews</strong>:</td>
<td>Students conduct interviews with people / experts outside of the school community to build understanding of their topic</td>
</tr>
<tr>
<td>B. <strong>In School</strong>:</td>
<td>Teacher notes that the majority of the research was conducted during school hours.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Student Reflections</strong></th>
<th>Component of the Genius Hour process either through the duration of the project or at the culmination of the project, where students create media to discuss their progress or learning during the process</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. <strong>Student Blogs</strong>:</td>
<td>Teachers assign students to create a website or blog where students document progress or respond to prompts</td>
</tr>
</tbody>
</table>
| Time Allotment: The number of weeks or class periods teacher allot for Genius Hour | A. 12 Weeks  
B. 16 Weeks  
C. 9 weeks  
D. One Month  
E. Frequency  
a. Once per week |
|---|---|
| General Observation: Codes that addressed important potential themes that did not fit into a larger aforementioned category | A. **1-to-1 Access:** Teacher notes the availability of a laptop or iPad to support the Genius Hour approach  
B. **Flex Time:** Teacher intentionally structures Genius Hour for students to have autonomy over how they use class time.  
F. **Flexible Approach:** Teachers explain that their belief Genius Hour structure should be flexible & fluid to meet the needs of the students. |
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