

Fall 2021

## **Inquiry-Based Teaching in a Secondary English Classroom**

Jennifer L. Norman

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Inquiry-Based Teaching in a Secondary English Classroom

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Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctor of Education in

Curriculum and Instruction

College of Education

University of South Carolina

2022

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## **Dedication**

I dedicate this work to my dad who unfortunately passed away before I completed my schoolwork. He taught me what perseverance and hard work mean.

## **Acknowledgements**

There are so many people who helped and supported me throughout my work these last 3 years. Each one has given me endless encouragement and help to keep me focused on my goals. Dr. Leigh D’Amicco has lent me moments of understanding when I have not been at my best in this process. Her patience and guidance have been incredibly meaningful and appreciated. Dr. Betty J. Sternberg has always taken my phone calls to assure me that my path was solid and constantly shared that I am smart enough and capable of completing this process. Those moments of doubt would have been hard to overcome without her oversight and words of loving encouragement. Mr. Sean McKenna was one of the first people I told I was planning on pursuing an advanced degree. From his example, I saw how meaningful this work could be and found in myself a driving passion for curriculum studies. His work in my children’s school district made clear that a strong curriculum and solid instruction really does make a huge difference for kids. Vicki Curtis was a rock and my everyday companion on this journey. Her thoughtful and kind words when I was lost always helped me to steer back on course. My family has always given me the time to write and research. Thank you to Sam and Claire for understanding that your mom is a nerd. Thank you, too, to my sisters and mom who always showed up when I needed them most—in a text, a phone call, or in person. This work would not have been possible without the constant and steadfast support of my community, my people, and my family.

## **Abstract**

Teaching and learning need to move away from a transactional model found in a traditional classroom to support the growth of 21st century skills and abilities. Inquiry-based teaching is a model that places the student at the center of instruction and allows the teacher to facilitate and guide learning. The classroom fueled by inquiry is a classroom that (a) breaks free from the traditional and transactional model to promote connections to past knowledge and build new understandings, (b) allows students to direct their own learning, and (c) promotes moments of self-reflection and metacognition. The purpose of this study was to document the implementation of the 5Es inquiry-based teaching model in a secondary English language arts classroom. The study answers the following three questions: (a) How will the inquiry-based teaching model influence the design of curriculum and instruction in a secondary English language arts classroom? (b) What will inquiry-based instruction look like in a secondary English language arts classroom? and (c) Will students engage with the model and demonstrate strong participation in each step to generate new understanding of material, thoughts, and ideas? By using formal inquiry templates for planning, designing authentic and engaging lessons, and providing informal check-ins regarding self-reflection, students moved through the five phases of inquiry-based learning: (1) engage, (2) explore, (3) explain, (4) elaborate, and (5) evaluate (Bybee, et al., 2006). This study also examined the role of the instructor in the model.

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## **Chapter 1: Introduction**

I walk the concrete hallways of my school building each day and I politely peek through the glass windows in the doors of each classroom. I briefly pause to observe the classrooms. In one room, there is a teacher standing in the front of the lectern reading from notes with a PowerPoint presentation, clicking soundlessly as the words float over the nodding heads of students, half in a daydream and half present in the classroom. In the next classroom, a teacher ambles about, dialoguing with each student in a casual conversation while the students work on a Chromebook; they nod or give a cursory glance toward the teacher, seeming almost annoyed at the interruption in the process of completing the assignment. My own classroom is a complex puzzle of activity and personality. There are yoga balls, wobble seats, clusters of desks, single desks, and all manner of fidget toys. Ambient music quietly fills the room. The windows are often open, and I very rarely turn on the overhead fluorescent lights. The space is a learning space full of movement and thought, but without much ownership of the learning process. As a teacher, I have been wondering what to do next, and how to capitalize on this space I have created for my students to promote thinking and learning.

In 2001, I took the reins of my first classroom. Like most teachers in their 1st year, ruddy cheeked and eager, I thought I had a firm understanding of the kind of teaching and learning needed to produce not just a student who was successful at being a student, but also a student who could approach the demands of the 21st century college and career readiness standards. Most of my first years in the classroom were spent

learning classroom management. I had a plethora of advice from myriad experienced professionals long in the tooth: do not smile until Thanksgiving, sit in rows, do not share personal stories, and my favorite has always been to “make a plan and stick to it.” As I have grown in the profession, mastering to some degree classroom management and my English language arts content area, I have begun to view my classroom in a different way. As I have begun to wake up to the next phase of my own journey in teaching and learning, I am also observing in other classrooms a similar problem of practice. Although my classroom is a joyful and academically focused learning environment, I am still the one driving the learning process while my students miss a level of deeper engagement that, if explored and taught, could reimagine the learning process and craft those 21st century skills needed for college and career readiness.

I have been a classroom teacher for 20 years. In those 20 years, I have experienced many shifts in education that have moved accountability for learning away from students and onto to the teacher. Data driven instruction, rubrics, and standardized testing have created enormous pressure in my classroom. As a teacher, this has forced me to cover more material in less time and focus on results rather than the process. I have often defaulted into traditional teaching methods like lectures and notetaking because of the pressure to perform and teach to the test. When I was a young teacher and relied more on project-based learning and a student driven classroom, very rarely I would lecture or be at the front of the room. As time has gone by, I have found myself at the front of the classroom more and more often. I believe it is time to find my role of facilitator again.

My classroom has always been founded in the belief any student can be an intellectual, or someone who is able to think critically, apply past knowledge to new

situations, and continue to learn and grow throughout a lifetime. I have observed many classrooms and many students over the past 20 years in my educational practice and have seen this realized repeatedly in so many ways. What thinking and learning look like depends on the environment crafted by the fluid dynamics between teacher and student. It also depends on the gentle tension of authentic learning activities and a student's struggle to persevere through obstacles in their own thinking, to develop the ability to explore, and to connect the new and the old to make something unique and novel happen.

### **Problem of Practice**

The empowerment of student ownership drives authentic learning experiences and builds knowledge. It is difficult for educators to let go of the traditional model of teaching and learning, or a model where teachers have the knowledge and use teacher-controlled methods of delivery to instruct students through learning. Students are on the receiving end of a teacher's content mastery and at the mercy of the teacher-chosen delivery method. The old method of teaching and learning is criticized as presenting a restrictive model of education, which may hinder student learning. The level of thought achieved in concentrating on this realm is lower-order thinking (Luther, 2000). This thinking may lead to disengagement, disinterest, or learning for the sake of learning, instead of focusing on the building of key habits that inform intellectual growth for students. Teachers need to "let go of control and embrace freedom . . . let go of content and embrace process . . . [and] let go of avoiding discomfort and struggle and embrace them" (Alper, 2018, para. 7). Traditional teaching methods involve the use of recitation and memorization, focusing on knowing and surface understanding. Curricular content is often divorced from any real world meaning and neglects to build opportunities for: (a)

practicing persistence consistently, (b) communicating with precision and clarity, (c) listening with empathy, (d) using imagination and innovation, (e) building metacognition, (f) using humor, (g) thinking flexibly, (h) making use of past knowledge to inform new thoughts and ideas, and (i) promoting continuous learning (Costa & Kallick, 2008).

Traditional teaching methods do little to grow daily healthy practice of the core descriptors of an engaged mind. Working to create authentic understanding and knowledge is the foundation of 21st century teaching and learning. Traditional models of teaching and learning do not provide opportunities for students to practice the skills necessary to use higher order thinking present in successful and productive members of society. Instead, they focus on content and regurgitation. Learning is treated as a transactional enterprise and results in students who do not demonstrate independence and the ability to think constructively about the world around them.

Teaching needs to adapt to the needs of our society and world by encouraging strong models and processes of thinking in complex and engaging ways. Suchman (1961) stated, “In short, what White, Brune, and Dewey are saying is that concepts are most meaningful, retained the longest, and are most available for future thinking, when the learner actively gathers and processes data from which the concepts emerge” (p. 134). Suchman (1961) argued the reason why this model of learning is so crucial to student success is because learning is intrinsically rewarding for students. Learning allows the student to connect concepts to the larger universe and understand the function and design of the world around them; this discovery increases self-esteem and self-confidence, and the practice of these skills encourages the growth of strong cognitive skills.

I applied Bybee et al.'s (2006) 5Es model of inquiry-based teaching in a secondary English language arts classroom in this study of inquiry-based teaching designed to empower and engage students, moving away from traditional methods of teaching. Traditionally, this inquiry-based model has been met with strong success in science classrooms by asking teachers to rethink and reinvest in the design of authentic learning tasks and the creation of healthy habits of thinking. By applying the 5Es model of inquiry-based teaching in my English language arts classroom, I hoped to change my own teaching practice and embed a pedagogical practice of student-driven learning on English language arts.

Students in my English Language Arts Nine course come to the course with a variety of backgrounds and a multitude of experiences in an English language arts classroom. There are 14 sending towns that direct students to this vocational–technical high school. Each school district has strengths and weaknesses in English language arts instruction. Students in the English Language Arts Nine classrooms pose a unique problem. The teacher must work to address all needs for all students, regardless of their past experiences in the classroom from the different sending towns. Inquiry-based instruction offers an opportunity to allow students to draw on past knowledge and experiences to inform their current work in the classroom. Although each student has a different knowledge set, there are always some key concepts and ideas that permeate across the curriculum and allow students to better understand the work before them in this new classroom environment. The 5Es inquiry-based instruction model (Bybee et al., 2006) heavily draws on making connections to prior knowledge; by using this model, I



can engage with students from a place of strength and continue to build skills, knowledge, and capabilities.

### **Theoretical Framework**

Inquiry is a multidimensional process that involves a clearly outlined framework of thinking. It involves making observations, asking questions, looking at books and resources to understand the thinking process that informs what is already known, looking at new information, using tools to bring together new thinking about a topic, and integrating the complex process of analyzing, interpreting, explaining, predicting, and sharing the results discovered while using the inquiry process (Duran & Duran, 2014).

The theoretical framework of this dissertation was the application of the 5Es model of inquiry-based teaching (Bybee et al., 2006) in an English language arts classroom to promote student ownership of learning and the growth of 21st century thinking and learning for college and career readiness, which all students need to be successful in life after high school. The 5Es inquiry-based teaching model was developed by Bybee to originally reform the teaching of science and health education. Bybee (2018) discussed the role of the five phases (i.e., engage, explore, explain, elaborate, and evaluate) and defined the role of the educator as a facilitator and guide to learning. Although the 5Es inquiry-based model was originally developed to address the need for a research-based teaching and learning model in science education, the field of education has seen its application in other fields such as social studies and English language arts with measured success. Students and teachers move through the five phases of inquiry with the fluidity to move both backward and forward with the model based on student mastery of concepts and learning goals.

By using the 5Es inquiry-based teaching model (Bybee et al., 2006), I sought to develop student ownership of learning, practice the application of old knowledge to understand new problems and ideas, and set in place habits of thinking and learning applicable long after traditional schooling is complete. I hoped to see students demonstrate a stronger connection to their work, use independent skills in reading and writing, and use a wide range of skills to access and grow their own knowledge. Inquiry-based teaching is deeply informed by constructivist theory, where the student uses all skills, abilities, and prior learning to inform and solve the problems presented by the new learning experience. For example, “Inquiry may be referred to as a technique that encourages students to discover or construct information by themselves instead of having teachers directly reveal the information” (Duran & Duran, 2014, p. 49).

This action research dissertation recognizes the importance of the role and influence constructivist theory plays in the inquiry-based teaching model. Constructivist theory promotes student learning from a place of strength by drawing on what is already known to inform and grow what may be known next.

### **Purpose of the Study, Research Questions, and Rationale**

This action research dissertation sought to address the following questions:

- RQ1: How will the inquiry-based teaching model influence the design of curriculum and instruction in a secondary English language arts classroom?
- RQ2: What will inquiry-based instruction look like in a secondary English language arts classroom?

- RQ3: Will students engage with the model and demonstrate strong participation in each step to generate new understanding of material, thoughts, and ideas?

These questions were designed to focus the attention of the study on the success of developing the necessary habits and skills students need. The questions also focused the observations and analysis of the study during the actionable phase of the study itself.

### **Researcher Positionality**

I have worked in many different types of educational environments. I have taught in an alternative high school, an adult education program that provided an alternative route to a state issued high school diploma, and a vocational–technical high school. Throughout my development as a teacher in these educational settings, I have become increasingly curious about how different models of education are appropriate for different learners. At the time of this study, I was an English instructor in a vocational–technical high school, and I must admit to a strong bias toward inquiry-based teaching. It has been my observation that students who are challenged to choose a pathway of education for their secondary school learning have a higher commitment to doing well in that pathway. There is a strong connection between choice and commitment. I believed inquiry-based teaching would yield a strong positive result with this demographic because this model of education is grounded in constructivist theory, which challenges students to use past knowledge to inform and understand new learning situations to create new understandings.

I have a direct connection to the lives of my participants because I am their English language arts instructor. I am involved in the everyday happenings of school and

daily life. This relationship may have represented a power imbalance in my influence on how I am active in the daily learning. I worked to address this issue by focusing on the 5Es framework and model (Bybee et al., 2006) and stepping back to let students drive their own learning. This study was manageable in my daily practice. At the time of the study, I had a small student grouping and a flexible curriculum. The external constraints that impacted the execution of the study were unplanned school activities and the attrition of students from our school setting to the local community high schools.

It is important to recognize teaching and learning have been radically impacted by the COVID-19 global pandemic. When I first started researching and writing this action research dissertation, school-wide conditions and teaching and learning were part of the old teaching and learning paradigm. Students attended school regularly, masking and other health considerations were not implemented, and classroom management could be handled as per usual. The COVID-19 global pandemic changed the teaching and learning landscape; thus, instruction needed to be malleable and flexible. The use of Google Classroom and other online learning platforms came to the center of instruction. Teachers also had to adapt to a fluid model of teaching that involved moving to full online remote instruction, moving to a cohort model to limit student exposures to others, and to in-person, full-time learning.

The impact of these dynamic shifts has yet to be defined and quantified; but, I have noticed the students who have returned to full-time instruction have exhibited a lack of maturity, a profound disinterest in learning, and a significant decrease in executive functioning skills. Teachers have had to work harder than ever before to overcome behavioral issues, social and emotional needs, and coverage of content. It is important to

understand these changing conditions were felt during the course of this study and presented complications that would not otherwise be present.

These external constraints were very much beyond my control to prevent; but, I worked to mitigate the impact on the study by being aware of their potential impact and how these types of normal and abnormal school events shaped the findings of the study. I worked to review the fidelity of my authentic learning tasks by seeking reflective feedback from peers and my community of action researchers in our program. Because this study involved a direct self-analysis of my own teaching practices, I looked to document and describe the successes and challenges I would have in this process.

### **Research Design**

The place of practice for my action research dissertation was H.H. Ellis Technical High School in the Connecticut Technical Education and Career System in Danielson, Connecticut. At the time of the study, the school was one of 17 vocational–technical high schools in the state of Connecticut that comprised a state-run school district governed by the Connecticut State Board of Education. It is a unique system because it is the only school system of its kind in the United States.

As of October 1, 2019, the Connecticut Technical Education and Career System had an enrollment of 10,995 students in 20 schools across the state of Connecticut (Olzacki, 2021). Female-identifying students accounted for 48.4% of students enrolled in the Connecticut Technical Education and Career System and male-identifying students accounted for 51.6%. Out of the 10,995 students, 51.1% identified as White, 26.9% identified as Hispanic or Latino of any race, and all other students identified as other. The district percentage of English-language learners was 8.3%. Almost half (i.e., 43.3%) of

students were eligible for free or reduced lunch meals and 16% of all students were identified with some form of disability.

The district employed 915.5 full-time equivalent regular education teachers and instructors and eight paraprofessionals and instructional assistants in regular education (Olzacki, 2021). The district also employed a full-time equivalent of 71.1 special education teachers and instructors. There were 15 administrators at the central office level and a full-time equivalent of 130.9 people at the building level. There were 893 counselors, social workers, and school psychologists employed across the district.

At the time of this study, H.H. Ellis Technical High School served 677 students in Grades 9–12 (Public School Review, n.d.). The majority of students (i.e., 71%) identified as male and 29% identified as female. The school population was 90% White, 6% Hispanic, 1% American Indian, 1% Asian, and 2% identified as two or more races. Additionally, 23% of students qualified for free or reduced lunch meals (Public School Review, n.d.). There were 57 full-time teachers in the school and five of these teachers were special education teachers. The school had one paraprofessional on staff.

The English Language Arts Department was staffed with six full-time English instructors and one part-time instructor. Three English instructors carried the primary load of the junior and senior English courses. Two English instructors carried the ninth and 10th grade course load with the addition of two upperclassmen teachers who each had one section of ninth or 10th grade students to limit the class sizes. At the time of this study, there were 224 students in the freshmen class.

Students attended both trade and academic classes in rotations referred to as cycles. An average cycle was between 11 and 14 days long. Students moved between

academic and trade classes throughout the year. For instance, a ninth-grade student would attend core academic courses for a period of 11 to 14 days called an A-cycle and then move to their assigned trade for a period of 11 to 14 days called a B-cycle. They rotated throughout the year and had to learn to adjust to the constant movement between academics and trade work. Technical high school has had a stigma of addressing the needs of a more hands-on population, a population that is not academically focused or capable of academic success. This stereotype may impact perceptions of the demographic I worked with for this action research dissertation. In reality, the enrolled students reflected a wide range of skills, talents, and academic focus.

I used an action research model for this dissertation. I employed a mixed-methods approach involving the use of narrative inquiry to help inform my process of evaluation and assessment of work. I believed this approach was best because it allowed me to interact and actively investigate the process with students while forging strong teacher–student connections. Inquiry-based teaching is both a formal and informal process, so informing this study with both formal and informal information is a match with the overall design of the study itself.

### **Data Collection and Analysis**

I used both qualitative and quantitative methods to collect data during this action research study. I used summative, common, formal, and informal assessments constructed using the 5Es design (Bybee et al., 2006) with my students. Students engaged in the 5Es inquiry-based teaching phases: (1) engage, (2) explore, (3) explain, (4) elaborate, and (5) evaluate. During each phase, I conducted one or more lessons and collected data. I used two informal assessments in the engage phase. The first assessment

was a carousel writing activity that challenged students to construct meaning of a world event and use prior knowledge to make sense of what was happening in a series of pictures. The second assessment was the use of a graphic organizer to address our essential question, “What makes a great story great?” Students were asked to use prior knowledge to identify six key elements of “What makes a great story great?” Students were provided with a graphic organizer to help initiate the thinking process. Students in Grade 9 English often had trouble starting assignments; by providing them with a graphic organizer, they were able to visualize the work and begin. I administered one common assessment. This assessment was mandated by the district and had to be given in all Grade 9 English language arts classrooms. This assessment allowed for a strong point of comparison between my inquiry-based classroom and the other two classrooms employing traditional teaching methods.

I also administered informal assessments using the online learning apps Quizlet and Kahoot to continuously assess student mastery of terms and concepts and to provide students with moments of metacognition on their own work and understanding. In the second phase, explain, I provided students a summative, project-based assessment that challenged them to use the new information to complete a hands-on project. They made a map of the plot elements and documented the conflict in a short story.

During the third phase, explain, students worked on a summative assessment to evaluate a short story and provide evidence of whether or not the story meets the criteria of “What makes a great story great?” They completed a Google Slides deck that contained necessary information for the evaluation of the story against our definition of



“What makes a great story great?” and recorded a video review of the story using an app called Flipgrid.

In Phase 4, elaborate, students independently constructed a personal short story using all of their capabilities, skills, and knowledge on a summative assessment. In Phase 5, evaluate, students constructed a rubric for the personal short story as a summative assessment and used it to evaluate their own piece of writing to assess for the characteristics of “What makes a great story great?” I also maintained a daily reflection journal to provide informal observations and reflections of the process as it unfolded. I built in reflective moments for students to share their own observations and findings about inquiry-based teaching. I collected artifacts of the learning process to include and examine in the study. A mixed-methods approach allowed for interpersonal examination of findings.

To ensure the trustworthiness of the study, I reviewed collected data, narratives, and documentations with peers. I triangulated data with participants and discussed the validity of my findings. To check validity and reliability of my data collection tools, I examined the findings to see how questions could be improved and was open to whatever this process taught instead of holding preconceived notions. To promote the confidentiality of the data collected, I conducted surveys anonymously. I also sent home district permission forms in accordance with district policies. I held meetings with any concerned parents or guardians to address any concerns and further explain the study. I coded study data to ensure student privacy was observed.

## **Significance and Limitations of the Study**

This dissertation was an action research project due to the organic nature of the study itself. Teaching and learning is a fluid process that does not often allow for the formal and often divorced study that a regular dissertation researcher must undergo. The action research dissertation allowed me to dynamically engage in my study with participants to actively explore, adjust, and promote a stronger learning of how the shift to inquiry-based teaching benefited students. For this to occur, the dissertation necessitated the use of valid measures and personal reflection. This action research dissertation was not meant to set a standard of practice; rather, it was meant to engage in an active learning process as an educator to examine a practice that could further improve student learning. The intended audience for this action research dissertation was curriculum and instruction workers and educators, or those who work in the design of implementation of curriculum and teaching methods. This study examined the efficacy of the 5Es inquiry-based teaching model (Bybee et al., 2006) to see if the same resultant thinking habits were present in an English language arts classroom; hence, it aimed to change the often-seen transactional teaching model currently at play in English language arts classrooms.

## **Organization of the Dissertation**

Chapter 1 has focused on understanding the problem of practice addressed by the action research dissertation. I provided an explanation of the theoretical framework of the study by grounding the study in constructivist theory and providing the guiding questions that informed the study. I discussed my positionality as researcher, acknowledging my own role in the study and impact I had on the work and findings. The research design

section addressed the location of the study and provided the necessary explanation of the structure of the school where the research took place, making note of any limitations and special conditions during the study. I also discussed the purpose of the study and key research questions it examined. I overviewed data collection and analysis procedures to identify the types of assessments and other data collection methods. Finally, I included a description of how student information was protected and discussed limitations of the study.

Chapter 2 is both a review of constructivist theory and existing literature as it pertains to the inquiry-based teaching method and, more specifically, the implementation of Bybee et al.'s (2006) 5Es inquiry-based teaching model. The literature review addresses: (a) existing literature on teacher training and education in inquiry-based learning, (b) constructivist theory and inquiry-based classrooms, (c) historical perspectives, (d) the phases of the 5Es inquiry-based model, (e) traditional teaching methods compared to inquiry-based teaching methods, and (f) how inquiry-based learning is used to construct explanations. Chapter 2 also provides an overview of the 5ES inquiry-based instructional model by examining the history of the model and its application over time. It will also provide an updated review of the model because the model has been redefined and used in other areas than science and health curriculum.

Chapter 3 discusses the methodology of the action research study. It provides the research design in detail and interventions used during the study. A description of participants is provided to help contextualize the place of the study. This chapter outlines the steps and procedures used in this study. The chapter describes how I used the 5Es inquiry-based teaching model (Bybee et al., 2006) in a ninth grade secondary English

language arts classroom by providing an overview of the planning process using inquiry-based templates, the design of assessment tools, and the different learning applications used to assist in moments of metacognition and self-reflection. I describe data collection measures, instruments, and tools in detail.

Chapter 4 presents the findings of the study by research question. The research questions were:

- RQ1: How will the inquiry-based teaching model influence the design of curriculum and instruction in a secondary English language arts classroom?
- RQ2: What will inquiry-based instruction look like in a secondary English language arts classroom?
- RQ3: Will students engage with the model and demonstrate strong participation in each step to generate new understanding of material, thoughts, and ideas?

Chapter 4 also addresses the implementation of the 5Es inquiry-based teaching phases (Bybee et al., 2006) and how they worked to explain findings and answer the research questions that drove the study. I outlined the use of summative, common, formal, and informal assessments where appropriate in answering the research questions. I discuss intervention strategies review general findings in detail. Chapter 4 is the full presentation of the study that sought to fully describe and interpret the results of the study and recognize any challenges, realizations, and continued thinking about inquiry-based teaching.

Chapter 5 expands on the study findings and discusses possible implications of the work in the field of education. It also acknowledges the work that needs to come next in the study of inquiry-based teaching and learning and provides further introspection on the work. In Chapter 5, I tied the findings back to previous research and literature to help contextualize the work and better understand how the results of the study have added to or modified existing research.

## **Chapter 2: Literature Review**

Inquiry-based teaching is predicated on the belief the empowerment of student ownership drives authentic learning experiences and builds knowledge. It is difficult for educators to let go of the traditional model of teaching and learning, or a model where teachers have the knowledge and use teacher-controlled methods of delivery to facilitate student learning.

Wang (2007) indicated teachers often take center stage in teaching and learning using a traditional instructional model. In traditional teaching, a teacher plays an important role in instruction. The teaching style is highly teacher driven. The teacher dominates and controls the activities of the whole class. Students are on the receiving end of a teacher's content mastery and at the mercy of the chosen delivery method.

Wang (2007) commented that, in traditional teaching approaches, "their teaching materials would be used to present facts and information, and their teaching methods are formal and impersonal" (p. 25). These approaches may lead to disengagement, disinterest, or learning for the sake of learning, instead of focusing on the value of knowledge and its connection to the world around us.

Curricular content is often divorced from any real-world meaning and neglects to build the skills of critical thinking, applied problem solving, and decision making. Luther (2000) stated, "The old method of teaching is criticized as presenting a restrictive model of education which may actually hinder students' learning" (p. 1). Working to create

authentic understanding of knowledge is the foundation for 21st century college and career readiness.

Traditional models of teaching do not provide opportunities for students to practice the skills necessary to use higher-order thinking present in successful and well-functioning members of society. Learning is treated as a transactional enterprise and results in students who do not demonstrate independence in learning, application of skills, and meaningful thinking about the world around them. Teaching needs to adapt the needs of communities, industries, and learning facilities by purposefully encouraging students to think of content as a way to understand and practice quality thinking skills (Wang, 2007).

The organization of this literature review strives to lead the reader through the larger concepts that inquiry-based teaching is seated in to help contextualize the argument for this type of learning as part of a larger movement to promote constructivist theory in current learning environments. This review also identifies and explains the purpose of the study and explores the potential impact of the study on a secondary English language arts classroom. This literature review examines the historical context and foundational practices of inquiry-based teaching. It also examines studies in a variety of discipline-specific classrooms, including science, social studies, and English language arts. Lastly, it guides the reader to a strong understanding of how inquiry-based teaching studies have demonstrated positive outcomes for learners by focusing on the implementation of the phases of inquiry-based teaching.

## **Purpose of the Review**

The purpose of this study was to examine the application of Bybee et al.'s (2006) 5Es inquiry-based model in a secondary English language arts classroom. The 5Es inquiry-based teaching model comprises of five phases: (1) engage, (2) explore, (3) explain, (4) elaborate, and (5) evaluate. The phases are carried out in a purposeful order and rely on each phase to be carried out completely to achieve maximum beneficial results for learners. This study also examined the role of the teacher in the phases of the inquiry-based teaching process, the learning environment, and the role of students in the inquiry-based process. To examine and explore the two main goals of this study, the following questions guided the action research:

- RQ1: How will the inquiry-based teaching model influence the design of curriculum and instruction in a secondary English language arts classroom?
- RQ2: What will inquiry-based instruction look like in a secondary English language arts classroom?
- RQ3: Will students engage with the model and demonstrate strong participation in each step to generate new understanding of material, thoughts, and ideas?

The purpose of this research was to define, understand, and implement the phases of inquiry-based teaching that best supported student growth while examining how educators played an active role in the implementation of the phases of the 5Es inquiry-based model (Bybee et al., 2006). In addition, the goal of this study was to observe the key elements of constructivist theory and how they impact learning outcomes for students.



Inquiry-based teaching finds its roots in constructivist theory, where the student relies on their own skills, abilities, and prior knowledge when approaching new learning. Current knowledge and skills are used when working to take on new information, skills, and abilities to solve problems (Schiro, 2013). This literature review worked to define the phases of inquiry-based teaching through the lens of both teacher and student by providing a strong overview of the history and research already conducted. It also analyzed, developed, and examined the design and implementation of the phases of Bybee et al.'s (2006) 5Es inquiry-based teaching model. Lastly, this literature review provided a strong overview and context for understanding the experience and outcomes of the phases of inquiry-based teaching in a secondary English language arts classroom.

### **The Purpose of a Literature Review**

A literature review in an action research dissertation serves many purposes. The literature review is used to ground the work of the researcher in the historical precedent of the topic the paper is examining, which provides a greater context and relevance to the problem of practice and the study. Lambert and Lambert (2010) stated, "A literature review is a systemic, topic-focused, reproducible method of identifying, evaluating, and interpreting existing literature (a body of recorded work) that has been produced by scholars, researchers, and practitioners" (p. 101).

Researchers conduct literature reviews to better understand the issue or problem they are studying and to look at the issue or problem from differing angles to better inform their own work. The strategies used in this literature review include the use of scholarly research engines such as ERIC, SAGE Publications, Elsevier, JSTOR, and Google Scholar. Additionally, this literature review is informed by textbooks and

published action research dissertations conducted by other scholars in the field of education study. The examination of materials and resources provided a relevant and updated point of reference for work on inquiry-based learning. Scholarly research engines ensured an efficacy on published works that helped with the honest evaluation and purposeful discovery outcomes.

### **Theoretical Framework**

There are distinctly important considerations when working with the inquiry-based teaching model. Constructivism and the focus on student's prior knowledge works well with inquiry-based teaching, which draws heavily on integrating new information with prior information to generate new and better understandings.

Constructivism is an epistemology that works to explain the roots of knowledge and how meaning is made in the learning process (Abdal-Haqq, 1998). Constructivists believe humans make meaning of the world around them by integrating new knowledge with prior knowledge coupled with new experiences and activities. By integrating new knowledge with prior knowledge, it is believed richer and stronger connections are made in the learning process (Abdal-Haqq, 1998). Constructivism recognizes learning is an active, and not passive, practice. Problem solving and experiments are two examples of active engagement in the learning process that reflect a strong constructivist approach, and learning through social engagement (McLeod, 2019). Constructivist teaching works to support students in the process of assimilating new knowledge with prior knowledge to help develop new meanings and understandings of the world. Constructivist theory works to define learning in a new way by arguing against traditional teaching models. Richardson (1997) framed the argument by explaining the need for the use of teaching

methods that promote strong independent thinking and learning skills. They commented, “For the past dozen years, school reformers have admonished use that K–12 students must learn more at higher levels of understanding. They urge that students acquire concepts and routines that lead to deeper understanding of content” (p. 1).

Richardson (1997) encouraged new teacher learning informed by constructivist theory to answer the need for educational reform and the achievement of mutually agreed upon societal goals. Richardson (1997) wrote, “Most constructivists would agree that the traditional approach for teaching—the transmission model—promotes neither the interaction between prior and new knowledge nor the conversations that are necessary for internalization and deep understanding” (p. 3). With the identified societal need to promote the strong development of students who can exercise strong thinking and learning skills, Richardson posited the constructivist theory of learning should be at the forefront of new teacher training and learning.

Constructivist theory addresses two basic principles (Schiro, 2013). The first principle is the belief prior knowledge has a strong impact on learning. The second principle is the engagement with real and authentic problems in the classroom. The teacher’s role in constructivist education is to design student-centered learning opportunities and act as an expert in the subject matter to guide the process of student learning. In the role of expert, the teacher then organizes and asks questions and designs materials to promote learning and engagement (Brooks & Brooks, 1993). Inquiry-based teaching speaks to the definition and structure of constructivist theory because it captures the core concepts: (a) students determine how they learn material, (b) learning experiences are designed to include authentic tasks, (c) learning is a social experience for

students, and (d) curiosity is fostered through the phases of the inquiry cycle (Honebein, 1996).

### **Historical Perspectives**

Epistemology is used to explain how people know what they know. It is grounded in the idea independent problem solving is central to learning (Lamont, 2020). Students construct their own meaning of learning by moving through an active process, which also changes the learner. This change is demonstrated in the reflections of the students and the application of acquired knowledge to new learning situations. To have a strong understanding of the overall definition of the constructivist learning theory, the work of three key educational theorists is important: (a) Dewey's (1899) *The School and Society*, (b) Vygotsky's (1934) *Thinking and Speech*, and (c) Piaget's (1971) *Biology and Knowledge*. Each theorist put forth a piece of the overall constructivist framework.

Dewey (1899) outlined plans to bring real-world situations to the schoolhouse and contended, "Education, therefore, is a process of living and not a preparation for future living" (as cited in Flinders & Thornton, 2017, p. 35). It is here Dewey demonstrated his belief education must make sense to the learner in the larger context of the world around him. Dewey believed education needed to meet the needs of society by educating students in the ability to independently think and apply new learning to the new and everchanging demands of the world around them (as cited in Flinders & Thornton, 2017).

Vygotsky (1934, as cited in Lang, 2002) espoused that learning and transformation of the learner derive from the community of learning itself. Vygotsky believed there were two distinct means of learning: social interaction and the use of language (as cited in Clabaugh, 2010). He is best known for his work around the term

“Zone of Proximal Development” (Vygotsky, 1934, as cited in Zhou & Brown, 2015, p. 32), which can be defined as the belief learning occurs just beyond the student’s current ability level (Clabaugh, 2010). Vygotsky believed a student’s current level of knowledge provided a scaffold to obtain, understand, and assimilate new knowledge. Much like Piaget, Vygotsky’s theory of learning underscored the need for scaffolded instruction and guided learning (Clabaugh, 2010).

Piaget developed a durable theory of thinking and learning. It has been so pervasive that it remains part of the bedrock of educational theory to this day (Cohen & Waite-Stupiansky, 2017). Piaget’s (1971) theory of thinking and learning derives from the central idea knowledge is the result of the nonstop interactions people have with one another. Essentially, all human thinking and learning is the constant absorption of new knowledge and the ability to integrate this new knowledge with old knowledge in a constant system of balance and integration. Piaget believed teachers modeled ways of thinking and learning for students that would allow students to develop their own ability to think, learn, and apply this ability independently to the world around them. The nature of all learning was to move through inquiry to grow, connect, and establish an independent understanding of the world around us (Piaget, 1971).

Inquiry-based teaching combines the philosophies of Dewey, Vygotsky, and Piaget as it establishes a strong definition of the work, identifies the needs of students, and outlines the implementation across disciplines of this teaching and learning model. However, it is important to note the definition of inquiry-based learning is often contested and challenged. Spronken-Smith (2008) stated, “The nature of inquiry-based learning is contested and even the term itself is not in widespread use throughout the educational

literature” (p. 1). By working with research literature and examining scholarly studies, it is possible to understand a working definition of inquiry-based learning and its positive impact on teaching and learning for both students and teachers.

### **Constructivist Theory and Inquiry-Based Classrooms**

Seated in the larger framework of constructivist theory is the methodology of inquiry-based teaching. A core driver of inquiry-based teaching is generating new knowledge by linking old ideas with new concepts and learning experiences.

The educational landscape has come under scrutiny because the needs for 21st century work and life have continued to evolve and change. There is a growing need to address the methods teachers use to instruct students and ready them to be independent learners and members of society (Hattie, 2012). The United Nations Educational, Scientific and Cultural Organization (1998) stated, “Education is no longer to provide information to students, but rather to prepare learners to become active 21st Century critical thinkers” (as cited in Alameddine & Ahwal, 2016, p. 333).

The phases of the inquiry-based teaching method work to build learners who will become critical thinkers. Inquiry-based teaching is the construction of challenging learning situations. Students are moved through phases of inquiry to witness, question, postulate, and explain the things they are thinking and observing during learning, and lastly, to draw conclusions based on their active involvement in the learning (Hattie, 2012).

With the development of the self as an active participant in the phases of the inquiry-based cycle, all learners gain a stronger understanding of self in the larger context of learning. However, it is interesting to consider the added element of gender-based

learning and how inquiry-based learning provides an additional opportunity for adolescents to develop and grow as learners where, with traditional methods of teaching and learning, engagement and interest are often recorded as low (Beach et al., 2001).

### **Inquiry-Based Instruction and Teacher Education**

One important facet of understanding is the importance of inquiry-based teaching and its impact on learning, and the recognition teacher training should address this model to improve teaching and learning practices. Richardson (1997) and Levy et al. (2013) worked to establish the need for teacher training in a model to allow for positive growth and development of student learning. This model allows the teacher to understand their own role in the teaching-learning paradigm (Brooks & Brooks, 1993). Lastly, groups like the United Nations Educational, Scientific and Cultural Organization (1998) defined the need for a different approach to thinking and learning that enforces durable skills and knowledge.

Levy et al. (2013) discussed the importance of the role of inquiry-based teaching in diverse content areas and sought to develop strategies to enhance teacher education. These researchers examined the fields of science, social studies, and English language arts to describe and analyze the process of teaching inquiry in these disciplines. The goal of the study was to establish a connective dialogue between these fields of study to better enhance teacher education and provide positive learning experiences through inquiry-based learning to students. The study began by examining the field of science education. This field has had a long-established tradition of being a central way to instruct students about the nature of the inquiry-based cycle and how it strongly patterns itself after

scientific inquiry in general (Levy et al., 2013). Levy et al. (2013) defined inquiry-based teaching, stating:

Inquiry is a multifaceted activity that involved making observations; posing questions examining books and other sources of information to see what is already known; planning investigations; reviewing what is already known in light of experimental evidence; using tools to gather, analyze, and interpret data; proposing answers, explanations, and predication; and communicating the results.  
(p. 42)

Levy et al. (2013) worked with new teachers to collect viable data and reflect on the findings. New teachers were able to understand where their own weaknesses and strengths rested on this instructional approach. The results from this research indicated the largest deficiency in new teacher training was that, when teachers used the inquiry-based model, they actually model the process as they teach it. The novice teacher has limited experience thinking like a scientist using inquiry, and this impacted the overall learning outcomes. The study was able to help shape the conversation on inquiry-based science instruction by promoting opportunities for novice teachers to practice making meaning for the lesson while planning, selecting appropriate usages for inquiry-based instruction, and suggested providing opportunities for the rehearsal of inquiry-based discussion to better practice this model of thinking and learning.

Unlike the field of science, inquiry-based instruction and teacher training are often not present in the training of English language arts teachers (Levy et al., 2013). Inquiry-based skills are usually taught once teachers are in the classroom as part of writing curriculum on the development of research skills for students. Levy et al. studied



discourse conflicts in an English language arts classroom in a multicultural high school to examine how classroom conversations were conducted and structured to promote student engagement in the inquiry process. Seven English teachers were examined and provided an opportunity for reflection. The teachers used multimedia, including video and audio files, in the discussions and reflections. Levy et al. (2013) concluded, “Inquiry-based [English language arts] instruction has the power to surface the potential of secondary [English language arts] to be about more than learning how to read, write, and logically reason” (p. 400). The inquiry-based instructional model allowed an expanded understanding when it came to key secondary English concepts. Traditional English language arts instruction neglected to connect the larger meaning making students needed to engage in thinking and connecting to the real world.

Teacher preparation programs need to work to address pre-service and in-service training in the model of inquiry-based learning (Manak & Young, 2014). The need to apply knowledge and skills across the curriculum is best supported by an inquiry-based model. Inquiry-based teaching has moved beyond the science classroom and has found value in other core curricular classrooms. However, teacher training and engagement with this model needs to be rehearsed, practiced, and reflected upon by practitioners. By addressing the use of inquiry-based learning in teacher preparation programs, classroom learning is strengthened and learning outcomes become meaningful and connected to the larger context of education for 21st century learning and career readiness.

### **Phases of Inquiry-Based Learning**

Research on inquiry-based teaching reveals many different applications and approaches; however, all the research reflects common attributes in the conversation on

inquiry-based learning. The first attribute is the need of the learner to move away from the transmission of information from the teacher to the students and the need for learners to tackle problems, issues, and questions by using independent skills and abilities (Scott et al., 2018). Inquiry-based instruction has been defined as many things, including discipline-based inquiry, project-based learning, problem-based learning, and challenged-based learning. No matter the name of the inquiry-based teaching, positive commonalities have emerged that forged together to make phases of the inquiry-based cycles. Pedaste et al. (2015) stated, “Inquiry cycles follow from a historical progression of instructional models and therefore represent a contemporary view that is built upon a solid historical foundation” (p. 49).

The phases of the inquiry-based teaching model were developed through the systemic review of scholarly articles to help identify the key components of a successful model. Pedaste et al. (2015) worked to examine a collection of studies to inform a strong understanding and definition of the phases of inquiry-based teaching. In the examination of the current literature on inquiry-based teaching, Pedaste et al. collected the common terms, ideas, and vocabulary of prior studies to share a new and concrete definition of the phases of inquiry-based learning. The study recognized the complexities in the phases and succinctly defined them into different categories that work together to form a cohesive cycle with simpler language and a more straightforward approach. This study found and identified 109 different terms used in scholarly work on inquiry-based phases or cycles. These terms included: “orientation,” “conceptualization,” “investigation,” “conclusion,” and “discussion” (Pedaste et al., 2015, p. 51). They included a description of the term and language to further break the term down. In the first step, orientation is

explained as observation and providing time for exploration of a topic. The second step is defined as conceptualization, or the process of developing questions and establishing a hypothesis. The third step is the investigation, which involves a multifold process of planning, exploration, observation, and experimentation. The fourth step is drawing a conclusion that involves refining results, making inferences, and formulating judgements. The last step is a discussion that involves communication and reflection by the student. It is from this framework and definition of phases of inquiry-based learning that this study operated.

Studies that have focused on the improvement of student learning with the use of the inquiry-based teaching model demonstrated strong outcomes for students. Bevevino et al. (1999) shared, “Using the learning cycle format, the teacher can create a series of activities that are personally meaningful for students and give students opportunities to practice critical thinking skills” (p. 275). Bevevino et al. applied the general principles of inquiry-based learning to a history classroom not only to promote the independence of students, but also to engage in the building of critical thinking skills. They also worked to identify the role of the teacher in this process by outlining the specific duties and responsibilities a teacher carries out in this model. With the strong application of this model, researchers were able to document solid results on the promotion of skills geared toward independence, reflection, and discussion.

There has been a particular focus on the study of inquiry-based teaching in the field of science. The systemic and formulaic nature of the inquiry-based model lends itself to a strong connection to scientific thinking. The learning cycle model is a teaching procedure consistent with the inquiry nature of science and with the way children

naturally learn (Cavallo & Laubach, 2001). Abdi (2014) wrote about the impact of inquiry-based learning produced in a science course. Abdi designed an experiment using a science course as a means of collecting data and studying the inquiry process. They randomly assigned a control group and an experimental group in a cohort of students. Abdi then provided a preassessment to determine the academic competency for each cohort. They then designed traditional learning experiences for one cohort and inquiry-based learning experiences for the other cohort. In the traditional learning cohort, the teacher used standard practices based on a teacher-driven model. Strategies such as note taking, lecture, and worksheets were the primary means of instruction. In the inquiry-based cohort, the teacher-designed learning opportunities by posing questions, planning experiments, and providing feedback. Abdi (2014) shared:

Based on the findings obtained in the study, it can be said that there is a significant difference between the achievement levels of the students who have been educated by inquiry-based instruction . . . and the students who have been educated by the traditional teaching methods. (p. 40)

The use of inquiry-based teaching methods yielded stronger results than those of traditional teaching methods.

### **Traditional Teaching Methods Compared to Inquiry-Based Teaching Methods**

Panasan and Nuangchalerm (2010) provided another look at the use of inquiry-based teaching. Their study examined the success of fifth grade science students with the use of traditional teaching methods and the use of the inquiry-based teaching model. Using two classrooms, Panasan and Nuangchalerm looked at teachers planning to draw conclusions on the use of each method. One classroom worked using traditional teaching

methods, such as notetaking, lectures, and worksheets, while the other classroom was presented with a structured problem and guided through the inquiry process laid out in teacher planning and preparation materials. Each teacher constructed eight lesson plans to be carried out with students. Panasan and Nuangchalem (2010) shared, “This study aimed to compare learning achievement, science process skills and analytical thinking of fifth grade students who learned by using the organization of project-based and inquiry-based learning activities” (p. 253). The results of the study proved interesting. Panasan and Nuangchalem reported there was no significant difference in the results measured by the formative assessment at the end of the eight lessons. However, researchers were careful to point out that, because both methods were effective in promoting strong and positive learning outcomes for students, inquiry-based learning was a solid model to promote understanding and engagement when planning lessons and units.

### **Inquiry-Based Learning to Construct Explanations**

Wu and Hsieh (2006) studied the development of inquiry-based skills in a sixth-grade, inquiry-based learning environment. The study identified the four inquiry skills used by the sixth graders to promote understanding and develop an explanation when faced with a problem. The researchers documented results with video, audio, and pre- and post-testing. Wu and Hsieh documented the continued development and growth of student inquiry-based skills and established significant improvements in thinking and learning when presented with new learning opportunities.

Beach et al. (2001) investigated the application of inquiry-based learning in an English class. This study is unique because searching for studies conducted in the humanities field, and more specifically the study of English language arts, did not yield

many published findings on inquiry-based teaching. Beach et al. (2001) used the inquiry-based model to frame a classroom study into the invention and implementation of what they called a “social worlds” (p. 1) model. They defined social worlds as the use of literature and language in defining how we think and interact with the world around us, and more specifically on how our understanding of self and others is produced by actively participating in the process of discovering who we are in literature and language. With the use of inquiry-based projects, teachers and students make sense of the world around them and, in turn, participate in the construction of the world around them. The inquiry-based model works in this teaching and learning circumstance because it actively engages the learner in the defined process of thinking to create, analyze, and draw conclusions as modeled and guided by the teacher. The study discusses the use of inquiry strategies including immersing; identifying concerns, issues, and dilemmas; and contextualizing. The authors relabeled and reassigned some of the functions of the inquiry-based model, but the intention remains the same. Using inquiry-based teaching, Beach et al. sought to intertwine a stronger knowledge of social worlds for their students by guiding them through a process of self-discovery. It works in a relationship of reciprocity, discovering oneself by oneself and by doing so developing skills to connect to the larger work to solve societal, curricular, and problems of identity in the other two contexts and our surrounding global community.

Inquiry-based teaching places the learner at the center of instruction (Bybee et al., 2006). The teacher finds themselves as a guide, or facilitator, in the learning process. By engaging with students in this way one can connect the underpinnings of constructivist learning theory as outlined by Dewey, Vygotsky, and Piaget, and use them to realize the

importance of student agency in learning. Traditional teaching models do not place importance on the student as an active participant in learning. Traditional teaching models negate or obstruct the process of engaging the learner in directing their own learning and places the teacher as the conveyor of all knowledge, divorcing the student from learning and making meaningful connections to the world around them. Inquiry-based learning by design engages with the learner as an active participant, heightening interest, encouraging strong connections, and instilling durable skills and knowledge with the employment of authentic learning experiences.

### **Inquiry-Based Teaching in Literature Classrooms**

Alameddine and Ahwal (2016) addressed the use of inquiry-based teaching in literature classrooms to improve student learning despite their background and prior experiences. Alameddine and Ahwal (2016) shared, “Inquiry-based models can assist teachers in preparing their lessons and catering for all their learners’ diverse needs” (p. 333.) Alameddine and Ahwal discussed how the inquiry-based model allows teachers an opportunity to design instruction that works for all learners in a classroom by motivating students to adopt a disposition of inquiry and designing and asking questions that directly engage students. The researchers wanted to promote classrooms that leave the transactional model, where students are the simple receivers of information and teachers deliver content, behind and encourage students to actively learn and take on new knowledge. They felt inquiry-based instruction provided an opportunity for educators to craft a learning environment with lessons and activities that promote 21st century thinking and learning skills.

Alameddine and Ahwal (2016) investigated the use of inquiry-based teaching in the learning of literature. They chose inquiry because the inquiry-based model places the learner as a key participant and director of learning. By doing so, it increases critical thinking skills and metacognition, which are skills that benefit all learners despite language ability. Alameddine and Ahwal (2016) stated:

Instead of memorizing material and reiterating it on a test, they have to develop skills for researching, thinking abstractly, organizing, questioning, and reflecting. These fundamental skills are relevant to all regions of their life thus helping them in their school, personal work as well as social life. (p. 334)

Instead of using traditional teaching methods that are transactional, choosing inquiry-based methods teaches students more impactful and critical thinking and learning abilities that are key in school and in real life. Using inquiry-based methods encourages connections to other areas of life for positive results and trains students in positive habits and ways of thinking and approaching new or unique situations.

Alameddine and Ahwal (2016) investigated the efficacy of the inquiry-based method in literature classrooms. They asked two key questions: (a) “Will implementing inquiry-based methods in ENG 105 and 101 . . . improve the learners’ performance and achievements?” and (b) “Will the level of learner’s proficiency affect the effectiveness of the inquiry-based model: that is, will ENG 105 learners benefit more from the use of the model than would ENG 101 learners?” (Alameddine & Ahwal, 2016, p. 333).

Alameddine and Ahwal studied the implementation of inquiry-based teaching in English language literature classrooms to examine if inquiry-based teaching would improve student performance in the classroom.



Participants in Alameddine and Ahwal's (2016) study were in two Grade 10 classrooms with a total of 22 students. English 101 enrolled 13 students and English 105 enrolled nine students. Data were gathered using summative assessments in the form of literature tests and writing tests. Teachers also used projects. After teaching a lesson on literature and writing pieces, teachers administered a summative test. The summative tests were given in both Term 1 and Term 2. The first administration of the summative assessment took place in October and November and the second administration of the assessment took place in January and February. The final administration took place in March. Projects were given after each unit. Students in English 105 completed five projects in 1 term. Students in English 101 completed one project. The teachers graded assessments and recorded results in an Excel sheet.

Students enrolled in Level 1 or English 101 showed an increase in their term average from a 55 out of 100 to a 60 out of 100 (Alameddine & Awhal, 2016). Students enrolled in English 105 showed an increase in their term average from 75.5 out of 100 to 80.25 out of 100. Researchers noted the summative average remained unchanged due to student complications that lowered the overall average. Data collected by the researchers showed improvement in performance for both groups, despite their level of English proficiency. Using inquiry-based methods allowed a students' language ability to not limit their growth and understanding.

There were four major limitations to the study. Researchers worked with their own students instead of choosing a random demographic. Additionally, the sample size of the study was relatively small, with only 22 students. Student groups should have been larger and representative of the whole. Further, the time period for the study was also

short and spanned only 5 months. Finally, the assessments used in the study needed to be unified in structure and format. Overall, the results of the study using the inquiry-based method showed an improvement in learning. Students benefited from participating in the inquiry-based instruction.

### **The BCBS 5Es Instructional Model**

This action research study investigated the use of the 5Es inquiry-based instructional model. This model was originally designed and developed by Bybee (2018) and a team of colleagues for science and health instruction. Bybee (2018) wrote, “More than 25 years ago, a team of colleagues and I created the BSBS model. At the time, we were developing a new program for elementary science and health and needed an instructional model” (p. 15). Bybee wanted to develop a new model of teaching and learning informed by the learning cycle work of Atkin and Karplus (1962). At the time, they did not anticipate the impact their new instructional model would have on teaching and learning in the coming years. Bybee (2018) shared, “We had no idea that in decades that followed, the instructional model would be widely applied, commonly modified, and frequently used without reference or recognition of its origin” (p. 15). The 5Es model was initially designed to address science curriculum, with a focus on addressing the Next Generation Science Standards. Bybee framed the conversation on the 5Es inquiry instruction model by explaining it is first and foremost a research-based instructional model. The 5Es inquiry-based instructional model is derived from another earlier research model called the Science Curriculum Improvement Study developed by Atkin and Karplus (1962). This original work was attractive to Bybee because it was cyclical in nature and research based. Bybee (2018) stated, “Hence, we began with the SCIS

Learning Cycle because it had substantial evidence supporting the phases and sequence. The BCBS additions and modifications to the Learning Cycle also had a research base” (p. 15). The 5Es inquiry-based teaching model was developed to reflect the early model and further defined the cycles and phases of learning. It is important to note Bybee emphasized the importance of a research-based method, and their later work reflects this focus.

Bybee (2018) also described the importance of constructivist theory in this work. Constructivist theory informs inquiry-based work. The understanding and past application of prior knowledge in new learning situations is central to the inquiry-based model because it is present in each phase. Bybee (2018) stated, “Second, we realized that the constructivist view of learning required experiences to challenge students’ current conceptions (i.e., misconceptions) and ample time and activities that facilitated the reconstruction of new ideas and abilities” (p. 15). They wanted to design a new model that provided opportunities to challenge student thinking and develop new understandings. As students work through the phases of the inquiry-based model, there are key moments when the teacher can recognize when misconceptions need to be addressed and corrected before the core work can continue. Bybee acknowledged the role of prior knowledge and its importance in new learning.

The third consideration made by Bybee (2018) was to recognize and define the role of educator during a lesson or activity. Bybee (2018) stated, “We asked—what perspective should teachers have for a particular lesson or activity?” (p. 15). The role of educator is to act as a facilitator and designer of learning for students. During each phase, the educator is charged with specific responsibilities to help guide students through

learning. Bybee understood the need to appropriately situate the teacher in the learning process. They also understood the need of the educator to know and understand that there is a coherent and sequential design to lessons.

Lastly, Bybee (2018) wanted this new model, based on inquiry, to be applicable and purposeful for educators and students. By making the process or phases applicable and purposeful, Bybee found educators were more likely to engage with the model and use it in their classrooms. Bybee (2018) shared, “Finally, we tried to describe the model in a manner that would be understandable, usable, and memorable for teachers” (p. 15). Bybee shared this new model would need to be impactful for teachers, which means it needed to be designed in a way that made sense given the demands of the classroom. Bybee also wanted the impact of this new model to be an experience teachers found remarkable, which would promote its use and sustainability in the curriculum delivery and decision-making process, and that teachers would be so positively impacted by the new inquiry model that they would continue its use.

The BCBS instructional model has five distinct phases. These phases are: (1) engaging learners, (2) exploring phenomenon, (3) explaining phenomena, (4) elaborating scientific concepts and abilities, and (5) evaluating learners (Bybee, 2018).

The first phase, engaging learners, is designed to captivate student interest (Bybee, 2018). The goal of this phase is to direct student focus on a learning experience that incorporates both the content learning abilities that are the goal of teacher instruction during a unit. Bybee (2018) shared, “The goal of this phase is to capture the students’ attention and interest. Get the students focused on a situation, event, demonstration, or problem that are the aims of instruction” (p. 15). Teachers can recognize the success of

this phase when students move into an inquiry stance of question asking and curiosity on the lesson materials and topic. Students will also engage with prior knowledge by making connections with this new learning. This phase is important for two reasons. The first reason is the ability of the teacher to recognize and assess student prior knowledge and the second is to provide an opportunity to address any misunderstanding students might have before moving into the next phase of inquiry-based teaching. This phase allows the teacher time to reflect with students and reteach to address any misconceptions or misunderstandings.

The second phase, exploring phenomena, is designed to provide students with activities that promote direct and strong engagement. Bybee (2018) shared, “The exploration lesson or lessons provide concrete, hands-on experiences where students express their current conceptions and demonstrate their abilities as they try to clarify puzzling elements of the engage phase” (p. 16). The exploration phase is used to allow the teacher to provide instruction in the concepts, ideas, abilities, and skills that are the focus of the unit of learning. Learning opportunities should look like authentic learning that include formulating explanations, investigating, observing, and the continued development of intellectual capabilities. During this time, the teacher’s role is to provide the initial activity, provide appropriate context, provide materials and supplies, and act as a counter agent to dispel any misconceptions. At the end of this phase, the teacher is charged with specific duties. Bybee (2018) explained, “After this, the teacher steps back and becomes a coach with the tasks of listening, observing, and guiding students as they clarify their understanding and begin reconstructing scientific concepts and developing abilities” (p. 16). The teacher, after designing and implementing activities and authentic

learning opportunities, must become a facilitator or guide to bring students through the learning and help them to make sense of their experiences.

The third phase, explaining phenomena, has a heavy emphasis on scientific explanation. Bybee (2018) shared, “The concepts, practices, and abilities with which students were originally engaged and subsequently explored, now are made clear and comprehensible. The teacher directs students’ attention to key aspects of the prior phases and first asks students for their explanations” (p. 16). During the third phase, there is a focus on contextualizing the work accomplished in the first two phases. Students are directed by the teacher in a more formal learning that helps to order and orient their learning from the first two phases. The teacher takes this time to introduce the key terms and vocabulary necessary for further understanding to take place. The teacher may also make note of the standards of the field and common attitudes and thoughts on the topic. Teachers also draw on student prior knowledge and experiences from Phases 1 and 2 to help make sense of new learning in this phase.

In the fourth phase, elaborating scientific concepts and abilities, students are presented with a new challenge that uses prior knowledge from the first three phases to make sense of this new learning. According to Bybee (2018), “In the elaboration phase, the teacher challenges students with a new situation and encourage interactions among students and with other sources such as written material, databases, simulations, and web-based searches” (p. 16). The goal of this phase of the inquiry cycle is to encourage students to use or transfer old concepts and abilities to a similar but new context. Students are able to further develop their own understanding of new learning by further

investigating information with tools and other curious students in the learning process with them.

The fifth and final phase, evaluating learners, is the phase when learners receive reflection and suggestions on their learning and understanding at the end of the five phases (Bybee, 2018). Although learners receive constant and consistent feedback throughout the phases as they work with their teacher in the role of guide, they receive formal feedback during this phase. Bybee (2018) shared, “Clearly, informal, formative evaluations will occur from the initial phase of the instructional sequence. But, as a practical matter teachers must assess and report on educational outcomes; hence, the evaluate phase that addresses the issue of assessment” (p. 16). Bybee recognized evaluation of learning happens throughout the inquiry phases. Teachers provide important and valuable feedback throughout each phase, monitoring and adjusting to the needs of learners. However, Bybee made special note of the need for formative assessment in feedback in the more traditional structure of schools. In the evaluate phase, teachers need to identify what evidence of students’ learning makes sense to demonstrate mastery of content and provide students with opportunities and experiences in line with those opportunities and experiences from the prior phases.

There have been many questions about the 5Es inquiry-based model. Bybee (2018) pondered many of the issues raised by the implementation of this learning model. Bybee (2018) provided guidance on the application of the 5Es inquiry-based model, and stated:

My experience suggests that the optimal use of the model is a unit of 2–3 weeks where each phase is used as the basis for one or more lessons (with the exception

of the engage phase, which should be less than a lesson). In this recommendation, I assume some cycling of lessons within each phase; for example, there might be two lessons in the explore phase and three lessons in the elaborate phase. (p. 17)

Bybee recommended using the 5Es inquiry-based model during a 2- to 3-week unit of study, allowing for the use of multiple lessons during each phase. Bybee argued using the 5Es model for only one lesson in a larger unit would devalue the impact and effectiveness of each phase. The teacher needs to work on the balance of the implementation of each phase over the course of the unit of study and decide which lessons in a phase are most valuable to maintaining the integrity of the model.

Further considerations are addressed by the researchers. The omission of a phase is not recommended (Bybee, 2018). Prior research has shown omitting a phase decreased the overall effectiveness of the whole model. Additionally, “From a contemporary understanding of how students learn, there is integrity to each phase and the sum of the phases, as originally designed” (Taylor et al., 2007, p. 17). The value of the 5Es inquiry-based model (Bybee et al., 2006) is not solely derived from a phase or a few phases; but, it is derived from the collective impact of all of the phases in the appropriate and proper order. Skipping a phase removes the onus of both the transfer of learning and the application of knowledge.

The second consideration is the possible movement of shifting of the phases. Bybee (2018) argued the order of the phases is important and should not be adjusted. Bybee et al. (2006) shared, “The original sequence was designed to enhance students’ learning and subsequently supported by research” (p. 12). Research on the movement of the phases revealed there was reduction in the effectiveness of the overall inquiry-based



learning model if the phases were moved or shifted (Bybee, 2018). To maintain the overall objectives of inquiry-based learning, it is essential to keep in place and order each of the five phases.

The third consideration was the addition of a phase or phases to the inquiry-based learning model. Although Bybee (2018) recommended only five phases, the addition of more research-based phases could be helpful. Bybee reflected on the research of Eisenkraft (2003), who added two phases to the inquiry phases. Bybee (2018) shared, “In principle, I do not have a problem with adding a phase (or two) if the justification is grounded in research on learning which was the care for Eisenkraft’s modification” (p. 17). Eisenkraft added two phases to the inquiry-based model by dividing the engage phase into elicit and engage and adding extend to the evaluate phase. Although this division and extension of the two phases proved useful in that particular learning context, Bybee does not recommend modifying the phases without a solid and grounded research-based reason.

The last area of consideration addressed in the article was the repetition of a phase in the inquiry-based model. Bybee (2018) recognized it may be necessary to repeat a phase, and shared, “This change should be based on the curriculum developer or the teacher’s judgment relative to students’ needs for time and experiences to learn a concept or develop an ability” (p. 18). Bybee recognized the fluid dynamics of teaching and the mercurial nature of learners. Teachers may need to acknowledge when and if students require more time and space to demonstrate mastery of concepts and ideas. The inquiry-based teaching model allows for this very human dynamic in the learning process.

The 5Es instructional model was developed to enhance and improve student learning (Bybee, 2018). It has, since its implementation in schools and other learning environments 25 years ago, had a wide impact on teaching and learning. Bybee acknowledged its role and was hopeful it would have a continued impact on education by emphasizing the use of prior knowledge to build new understandings and the critical role students have in their own learning.

## **Conclusions**

Inquiry-based teaching finds its roots in constructivist theory of learning. Dewey, Vygotsky, and Piaget each contributed to the modern definition of the theory and inform the active application of the theory in teaching and learning. There are significant forces at work in the world—economic, social, and political—that call for an increase of enabling students to think and learn on their own. This growing imperative influences current teaching and learning. There is an increased need for students to develop the ability to think independently. This process begins with teacher education and practice in a variety of disciplines, including social studies, science, and English. Teachers need to be instructed in inquiry-based thinking and learning to better model for students the thought process of inquiry in dealing with a variety of subjects.

Current studies on inquiry-based learning in science education and social studies demonstrate positive and strong outcomes for students in the form of applied knowledge and deeper understanding of key concepts. Refining inquiry-based teaching into a phase-oriented approach clarifies the teacher and student roles. The phases of the inquiry-based teaching model allow specific and direct instruction to the new and practicing teacher on the key elements that need to be modeled, explained, and addressed with students (Bybee

et al., 2006). These phases are identified as: (a) orientation, (b) conceptualization, (c) investigation, (d) conclusion, and (e) discussion. Despite the discipline, these phases represent a common means of solid practice for teachers and students. The examination of current studies builds a strong case for positive results with the use of inquiry-based learning. This action research dissertation sought to document and observe the outcomes of the phases of inquiry-based learning in a secondary English language arts classroom, informed by the practices and methods of study that have historically informed current understandings of the inquiry-based model.

## **Chapter 3: Methodology**

### **Overview of Study**

This study examined the application of the 5Es model of inquiry-based teaching (Bybee et al., 2006) in a secondary English language arts classroom. By applying the 5Es model of inquiry-based teaching in a secondary English language arts classroom, I hoped to change my own teaching practice and embed a pedagogical practice of student-driven inquiry on English language arts. This action research dissertation addressed the following questions:

- RQ1: How will the inquiry-based teaching model influence the design of curriculum and instruction in a secondary English language arts classroom?
- RQ2: What will inquiry-based instruction look like in a secondary English language arts classroom?
- RQ3: Will students engage with the model and demonstrate strong participation in each step to generate new understanding of material, thoughts, and ideas?

### **Research Design and Intervention**

The design of this study used an action research model. It employed both qualitative and quantitative designs to answer the core questions on the implementation of the 5Es inquiry-based teaching model (Bybee et al., 2006) in an English language arts classroom. Inquiry-based teaching is both a formal and informal process that requires the teacher to step out of the traditional learning process and assume a role of guide. The

action research model is designed to underscore the importance of both the informal and informal learning that happens in a classroom. The organic nature of the action research model allowed me, as the teacher, to assume the role of guide to learning that is required in the 5Es inquiry-based model. The 5Es inquiry-based model incorporates a phase model that shaped the work for students. The five phases of inquiry are: (1) engage, (2) explore, (3) explain, (4) elaborate, and (5) evaluate. I used informal, formal, common, formative, and summative assessments to measure student understanding and direct learning. These assessments presented an opportunity for me to document how to rethink curriculum design, deliver curriculum, and examine the potential for increased student engagement. While planning using the 5Es inquiry-based teaching templates, I maintained a journal that captured the differences in planning a traditional lesson versus an inquiry-based lesson. I also used the journal to record the differences in student engagement and behavior as we moved through the 5Es inquiry phases.

## **Participants**

The Connecticut Technical Education and Career System (CTECS) is a unique school district. There are seventeen technical–vocational high schools that make up the school district. They are located all over the state of Connecticut. These schools are considered a school of choice. During the eighth-grade year, middle school students may elect to attend a vocational–technical high school in their region for their high school education. The schools offer 91 days of academic instruction and 91 days of trade instruction over the course of 4 years. Each school offers different trades. These may include carpentry, masonry, plumbing and heating, culinary arts, architectural design, hairdressing and cosmetology, automotive repair, and electrical. Students move through

the school year in cycles. Each cycle lasts on average between 10 to 14 days. Students move between academic cycles and trade cycles over the course of the school year.

The place of practice for this action research dissertation was H.H. Ellis Technical High School in Danielson, Connecticut. At the time of this study in 2021, H.H. Ellis Technical High School was one of 17 technical high schools in Connecticut. The 17 vocational–technical high schools comprise a state managed and operated school district governed by the State of Connecticut Board of Education. It is a unique system that incorporates both a comprehensive academic curriculum and trade curriculum. The result is a 4-year high school diploma and various trade certifications and licensures upon graduation from the system.

At the time of this study in 2021, H.H. Ellis Technical High School served 677 students in Grades 9–12. The majority of students (i.e., 71%) identified as male and 29% identified as female. The school population was 90% White, 6% Hispanic, 1% American Indian, 1% Asian, and 2% identified as two or more races (Olzacki, 2021).

H.H. Ellis Technical High School has 14 sending towns. Students enroll freshmen year with a variety of skills and abilities. Although there is an application process for admission to the school, the process is not rigorous. Freshmen classes are not tracked or levelled. Classes have a wide range of abilities and present a unique challenge for instruction. In their ninth-grade year, students may elect to return to their designated high school after participating in a shop selection process. Students in the ninth grade must participate in a detailed process that introduces them to each of the 11 trades offered in the school. Once they have evaluated each trade, students are asked to choose the top three trades they would like to study for the remainder of high school. If a student is not

placed in the trade they have selected, they may elect to return to their designated high school to complete their education.

The school year operates on a set of cycles called A-cycle and B-cycle. Each cycle is roughly 10 to 14 days long. During the A-cycle, the ninth grade and 12th grade classes are enrolled in academics and follow a normal high school schedule. The 10th and 11th grade classes are in trade at this time. During the B-cycle, the cycle is reversed with 10th and 11th grade classes enrolled in academics while the ninth and 12th grade classes are enrolled in trade courses. Students travel by grade between the academic and trade cycles throughout the school year, spending 91 days in academic learning and 91 days in trade learning.

Participants in this study included one section of English Language Arts Nine. Students in this study were chosen after their first academic cycle. I chose them because of their willingness to participate in class and the strong performance on the written assessments given during the first academic cycle. I wrote, distributed, and collected a permission slip that outlined the study. I reviewed the permission slip with students and explained the study to them. All permission slips were returned to me, and students seemed excited to begin our work. There were 21 students in this section: 17 students identified as male, and four students identified as female. There was one Black student, 18 White students, and two Hispanic students. There were two English-language learners who received outside support services to help them access the curriculum. At the time of this study, I had been an English Language Arts Nine teacher for 9 years and felt these early learners are a strong group with whom to work. These students were new to our school community and had a strong commitment to success to earn their desired shop

placement. Initially, I had planned to interview and film a subgroup of volunteers for the study. Unfortunately, coordinating the time to interview and record proved too great of a challenge. The school schedule did not allow the needed time to meet with students individually. The school does not offer after school transportation and most of our parents work until the evening hours and are not able to pick students up after school.

### **Data Collection Measures, Instruments, and Tools**

This action research dissertation used both qualitative and quantitative design methods. This approach complements the study of the inquiry-based teaching model because it provided opportunities for both informal and formal learning.

### **Lesson Planning Template**

I used a formal inquiry lesson plan template to design instruction (see Appendix A). The use of a formal template allowed me to self-assess and monitor the progressions through the 5Es inquiry phases and design the essential question that drove our unit of study. The lesson plan template consisted of an essential question to guide the unit, plus columns for the information. The left column outlined the five phases of inquiry, the center column was used to record student learning targets, and under each center column was a space to record learning activities and assessment types.

### **Assessments**

I designed informal, formal, common, and summative assessments to measure understanding and direct learning.

#### ***Informal***

Informal assessments included the use of the learning app Quizlet to engage students in the active learning of key terms and their meaning. Kahoot is another online



learning platform that presents information in a gaming format and allows the teacher to assess student knowledge and understanding of key terms and concepts. Data generated by the Kahoot game were recorded in the app and provided to the teacher to assess student mastery of information. This was helpful in steering curriculum decisions.

Students participated in two informal classroom activities. I provided students with a graphic organizer that asked them, “What makes a great story great?” The graphic organizer had this essential question in the center of the page, and it had six bubbles surrounding the question. Students were provided 15 minutes to provide six potential answers to the essential question based on their prior knowledge of the topic from past instruction and interactions with the English language arts curriculum. When the 15 minutes were over, students worked with me to share ideas and write them on a large piece of white poster paper displayed on an easel. We identified the common answers to generate the beginning of our answers to the essential question.

The second activity was a carousel writing group activity. The classroom was arranged into four stations and each station had a photograph. Each photograph was part of a whole story of a real-life, catastrophic event. Students worked in groups of four or five to rotate through each station at 5- to 7-minute intervals. At each station, they used a large piece of white, sticky poster paper to draft a story based on what they saw in the story and what other groups before them had written. At the end of the station work, students returned to their original station. One student from each group read the story the class had constructed. I then asked them to place the pictures in the order they thought the event occurred and read the story we had written as a class. Students then had an opportunity to reflect and identify the elements of a story that help make this

unconventional story using pictures a great story by assessing it for the criteria we identified during the initial activity using our graphic organizers.

### ***Formal***

I gave students a district designed common assessment that addressed literary terms. Data from this assessment were used to compare student learning in my classroom to the other ninth grade classrooms in operation. Data provided a window to see how the use of inquiry-based instruction compares to other traditionally taught English nine courses.

### ***Summative***

I used three summative assessments to allow students to demonstrate mastery of key terms and ideas throughout the unit. Students constructed a map based on the events and conflicts in the short story *The Most Dangerous Game* by Connell to show understanding of how events and conflict impact the plot of a short story. The second summative assessment was a short story project that challenged students to showcase their knowledge of “What makes a great story great?” Students chose a short story to independently evaluate and assess using a Google Slides deck presentation and a Flipgrid presentation. The third summative assessment was the independent creation of a short story that incorporated all of the elements of “What makes a great story great?” Students constructed a short flashback story called *The Laws of Life* that required them to tell the story of a lesson they learned in life.

### ***Student-Developed Rubric***

Students designed a rubric to self-assess the essays. This rubric allowed students to demonstrate a connection between old knowledge and new knowledge and practice strong self-reflection skills as they evaluated their own work.

All assignments were scaffolded to ensure mastery. The inquiry-based teaching model allowed the teacher to remediate and reteach whenever necessary. By scaffolding assessments, I was able to ascertain when we were ready to move to the next phase of inquiry or if we needed to return and relearn material. Mastery was considered reached when a student scored an 80% or higher on the assessments given. It is important to note my classroom policy allowed for students to continue to work toward mastery after a first grade on an assessment had been given. If a student wished to continue to improve their grade, they were welcome to make the suggested recommendations and resubmit their work for a higher grade.

### **Research Procedure**

The study began with the intentional planning of an inquiry-based teaching unit. I used the 5Es inquiry template to construct a unit plan and daily lesson plans (see Appendix A). As I worked to design and develop the unit using this tool, I kept a reflective journal to record the key differences in the planning of an inquiry unit versus a more conventional or traditional unit of learning. This helped me design authentic learning opportunities for students and align the curriculum with the inquiry-based model, resulting in conscientious movement from one phase of the inquiry cycle to the next.

The study continued with a survey of students to ascertain any prior knowledge they may have on inquiry-based teaching and learning. This was conducted using the Kahoot learning app. I also administered a sliding scale assessment during our class time. The sliding scale asked students to identify on a scale of *uncomfortable* to *very comfortable* where they identified themselves on a spectrum of understanding on the 5Es model of inquiry-based teaching. These check-ins were given periodically as we moved through the inquiry-based teaching phases. The check-ins were designed to cultivate a metacognitive process where students become aware of their own thinking and learning and self-assess content knowledge and habits of thinking they used to make sense of new learning.

Students participated in each of Bybee et al.'s (2006) 5Es inquiry-based teaching model phases: (1) engage, (2) explore, (3) explain, (4) elaborate, and (5) evaluate. Each phase had one or more lessons. During the engage phase, students completed a graphic organizer that provided a preliminary answer to the unit's essential question of "What makes a great story great?" and worked as a class to generate a list of common attributes. Students also participated in a carousel writing activity to use prior knowledge to assess the events of a catastrophic event captured in a series of photographs. Students worked in groups to move from station to station to construct a detailed story about the catastrophic event. When groups returned to their first station, a volunteer from each group shared the story and thought process behind the group's writing decisions. At the end of the activity, we discussed the elements of the story and how they worked to answer our essential question.

During the explore phase, students read a new short story with me and constructed a map based on the plot and conflict that drove the story, further investigating the essential question and elements of literature. During the explain phase, students worked with three short stories to evaluate them and discover if they met the requirements for our work with the essential question. Students chose one short story and provided a written assessment of the story using a Google Slides deck. They then recorded a presentation using Flipgrid that provided an evaluation of the short story and assessed if it was, in fact, a great story according to our work in the first two phases of the inquiry cycles. In the elaborate phase, students were challenged to write a *Laws of Life* essay that required them to use all of their knowledge, prior and new, to independently construct a short story about an event that challenged their thinking and taught them a powerful lesson. In the evaluation phase, students developed a rubric that captured the elements that make a great story great and then used that rubric to assess their own work. This task provided students with an opportunity to practice using strong metacognitive skills and self-reflection on their own writing.

### **Treatment, Processing, and Analysis of Data**

Throughout the course of study, I used both quantitative and qualitative analysis. Qualitative analysis is driven by the mingling of modalities of collecting information and holds in deep regard the role of researcher while recognizing bias and the influence we have on our own work. Qualitative analysis is meant to appreciate and honor the role teachers have in the classroom and allows for honest observations and reflections throughout the data collection process (Flinders et al., 2017). This, in and of itself, is valuable in understanding the dynamic nature of teaching and learning. Education is

never solely facts and is largely subjective in its nature; thus, it makes sense any studies conducted and research enacted needs to reflect the heart of the discipline. Qualitative analysis is a strong fit for the topic of inquiry-based teaching using the 5Es method in a secondary English language arts classroom because it honors both the formal and informal nature of inquiry-based instruction. Qualitative analysis allowed me to acknowledge my own role and impact on learning in my classroom, but not limit or dismiss my findings. Quantitative analysis worked in this action research study to provide measurable data on engagement with the inquiry-based process. Quantitative analysis allowed me to capture data to enrich the study with information that may be tied to other findings and justify conclusions on the measures of the study.

To address the question, “How will the inquiry-based teaching model influence the design of curriculum and instruction in a secondary English language arts classroom?,” I used formal inquiry lesson plan templates to design instruction. The use of a formal template allowed me to closely monitor and adjust instruction as we moved through each of the five phases.

To address the question, “What will the 5Es model in an English language arts classroom look like?,” I designed informal, formal, common, formative, and summative assessments to measure understanding and direct learning. Informal assessment included the use of online learning apps such as Quizlet, Kahoot, and Flipgrid. Students used these tools to assess knowledge and record reflections on their work and progress.

Informal assessments included periodic check-ins using a student rating scale to assess working knowledge of new content and promote metacognitive moments. Formal

assessments included the use of project-based assignments, where students demonstrated their knowledge of the newly obtained information by completing a project.

Common assessment was used across classrooms to highlight successful learning by providing a point of comparison on a district issued assessment given to all ninth-grade students, in both my inquiry driven classroom and traditional classrooms.

To address the question, “Will students engage with the model and demonstrate strong participation in each step to generate new understanding of material, thoughts, and ideas?,” informal assessments such as Kahoot and Quizlet generated student data on engagement. Each program provided a statistical overview of student engagement with each part of the lesson. I examined data, identified trends, and drew conclusions on student engagement with materials and the process. This process allowed for quantitative analysis of data collected. I also designed three summative assessments to offer students a chance to demonstrate connection to old knowledge and the incorporation of new knowledge gained from participation in the 5Es inquiry-based teaching method. These projects were student generated and included a reflective component in the form of a self-evaluation tool.

## **Summary**

This action research project was designed to address the application of the 5Es inquiry-based model of teaching (Bybee et al., 2006) in a secondary English language arts classroom to examine how this approach to curriculum and instruction could yield positive outcomes for all students. The key research questions were designed to investigate: (a) the application process in written planning and implementation of the English language arts curriculum with the use of formal inquiry templates; (b) the

development and use of informal, formal, common, formative, and summative assessments that challenge students to think about their own thinking during this process; and (c) the use of assessments informed by the inquiry-based methods to capture the application of new knowledge and demonstrate strong metacognitive skills. The study incorporated the use of a teacher journal to document impressions and observations of learning. I used district level policy throughout the study to ensure participant understanding and cooperation in the process. I used coding techniques when necessary to ensure student privacy was observed and maintained throughout the study.



## **Chapter 4: Presentation and Data Analysis**

Teaching and learning are often a transactional enterprise. In traditional learning models, teachers drive instruction and students follow along, having little agency in the things they learn or how they learn them. If the empowerment of student ownership drives authentic learning opportunities and builds knowledge, then teachers need a stronger method of instruction to replace traditional methods and better support thinking and learning. Inquiry-based teaching provides an avenue for teachers to become a guide to instruction and a facilitator of learning, while placing students at the center of their own learning. This action research study examined the use of the 5Es inquiry-based instructional model (Bybee et al., 2006) to provide a framework in English language arts to increase student ownership and engagement in authentic learning activities and experiences to acquire new knowledge and create a deeper understanding of the world around them to prepare them for the 21st century.

This action research study used both qualitative and quantitative approaches to examine the inquiry-based teaching model in a secondary English language arts classroom. This approach included the use of informal, formal, common, formative, and summative assessments to measure understanding and direct learning. I also used a journal to record daily happenings and exceptional occurrences during the study. Students participating in this study were in a ninth grade English language arts classroom at a vocational—technical high school.

## **Intervention/Strategy**

The 5Es of the inquiry-based model are: (1) engagement, (2) exploration, (3) explanation, (4) elaboration, and (5) evaluation (Bybee et al., 2006). This action research study documented the application of the 5Es inquiry-based teaching model by using intentional planning templates grounded in the inquiry-based model; promoted the development and use of informal, formal, common, and summative assessments that challenged students to think about their own thinking during the process; and provided an assessment opportunity informed by the inquiry-based method to direct student learning and capture the application of new knowledge and demonstrate strong metacognitive skills.

## **General Findings/Results**

Three research questions guided this study. The first research question focused on my use of the 5Es inquiry-based lesson planning template and how this impacted the design of the curriculum and instruction. The second research question focused on the implementation of the 5Es model in a secondary English language arts class. The third research question explored students' engagement in inquiry-based learning. Each research question and supporting evidence from the researcher journal and assessments were provided to determine the impact of the 5Es model on lesson planning, implementation, and student engagement.

### ***Research Question 1***

To address the question, "How will the inquiry-based teaching model influence the design of curriculum and instruction in a secondary English language arts classroom?," I used qualitative data and analysis to understand study findings. I used

formal inquiry lesson plan templates to design instruction. The 5Es inquiry-based lesson plan templates I used in this study were designed differently than the lesson plan templates I have used in the past when designing units of study for a traditional teaching approach. The template was presented in landscape format and provides space for an essential question and learning goals at the top of the template. Each of the phases of inquiry were also listed to the left with a box that asked questions to guide students as we worked through each phase.

In this lesson planning template, the engage phase was first. During this phase, the inquiry template provided space to identify answers to the following questions:

- “What do you already know?”
- “What are you curious about?”

The explore phase was second. During this phase, the inquiry template provided space to identify answers to the question:

- “What new knowledge are you adding to what you already know and have experienced?”

The explain phase was third. During this phase, the inquiry template provided space to identify answers to the following questions:

- “Are you able to express your understanding and figure out what it means?”
- “How can you deepen your understanding?”

The elaborate phase was fourth. During this phase, the inquiry template provided space to answer the question:

- “How are you reflecting on and applying your learning of the essential questions?”

Finally, the evaluate phase was fifth. During this phase, the inquiry template provides space to identify answers to the following questions:

- “How are you able to show your understanding?”
- “How could you take informed action?”

The learning goals for the unit were listed across the top of the inquiry template and there was space in each phase to provide materials and planning.

Because I was new to inquiry-based teaching, this approach helped to guide my work in shaping authentic learning opportunities for students. By using the formal template, I was able to self-assess and monitor the progression of my teaching through the 5Es inquiry phases. The inquiry lesson plan template followed a structure that outlined the learning goals, the five phases (i.e., engage, explore, explain, elaborate, and evaluate), and made time for self-reflection. My typical lesson planning identified a bell ringer, a learning activity, and a small space for reflection; it did not provide a dedicated time for self-reflection. In my third journal entry, I wrote: “I have been using the inquiry planning templates to design lessons. By using the templates, I have become intentional about what tools I am using to deliver the lesson and check for understanding.” By incorporating purposeful time for self-reflection, I found I was encouraged to better understand the learning, connect to past knowledge, and form a new and better understanding of materials and concepts.

### ***Research Question 2***

To answer the question, “What will the 5Es models in an English language arts classroom look like?,” I began the study by giving an informal assessment in the first inquiry phase, engagement. I asked students, “What makes a great story great?” and

provided them with a graphic organizer. Students used the graphic organizer to answer the question. They were asked to fill in six circles to answer the question. After providing students with time to answer the questions, we reviewed the results as a class. Out of the 20 responses, 18 students (i.e., 90%) shared similar answers. We discovered our prior knowledge included the following common responses on “What makes a great story great?:” (a) conflict, (b) elements of plot, and (c) characters. This question and these answers formed the essential question for our unit of learning.

I designed informal, formal, common, and summative assessments to measure understanding and direct learning. Informal assessments included the use of the learning app Quizlet to engage students in the active learning of key terms and their meaning. Quizlet is a dynamic learning platform that presents information in many ways for students to practice, memorize, and apply new learning. Key terms and definitions may be presented as flashcards, a matching game, and/or a game called Gravity. I gave students a set of terms at the start of the study of “What makes a great story great?” These terms included: (a) exposition, (b) rising action, (c) climax, (d) falling action, (e) resolution, (f) conflict, and (g) character types. Prior to completing the Quizlet to informally assess learning, we played Quizlet as a class and practiced memorizing the terms each day at the start of the class period for 10 minutes. Out of 23 students, 15 (i.e., 70%) scored 90% or higher on the quiz, four students (i.e., 19%) scored an 85%, and two students were absent and did not make up the quiz. Students continued addressing these terms throughout the unit.

Kahoot is an online learning platform that presents information in a gaming format, allowing the teacher to assess student knowledge and understanding of key terms

and concepts. We played the Kahoot game as a class. I presented the class with a question or a prompt and gave them four different answers to choose from. I captured and saved data generated by the Kahoot game for teacher inspection, allowing me to better understand and use this understanding of a specific concept or idea to reteach or address any learning deficits.

I used Kahoot to establish a baseline understanding of inquiry during the first phase of inquiry-based teaching. I posed seven questions to students: (a) Are you familiar with inquiry-based learning?, (b) What are the five phases of inquiry-based learning?, (c) What does it mean to engage?, (d) What does it mean to explore?, (e) What does it mean to explain?, (f) What does it mean to elaborate?, and (g) What does it mean to evaluate?

The 21 students who played the Kahoot were initially polled for the first question. Less than half of students indicated they were familiar with inquiry-based instruction and only 38% of students could identify the five phases of the inquiry-based learning. Half of the students (i.e., 50%) knew what the term engage meant in the context of inquiry-based learning. Likewise, 35% of students knew what the term explore meant, 42% knew what the term explain meant, 38% knew what the term elaborate meant, and 35% knew what the term evaluate meant in the context of inquiry-based learning.

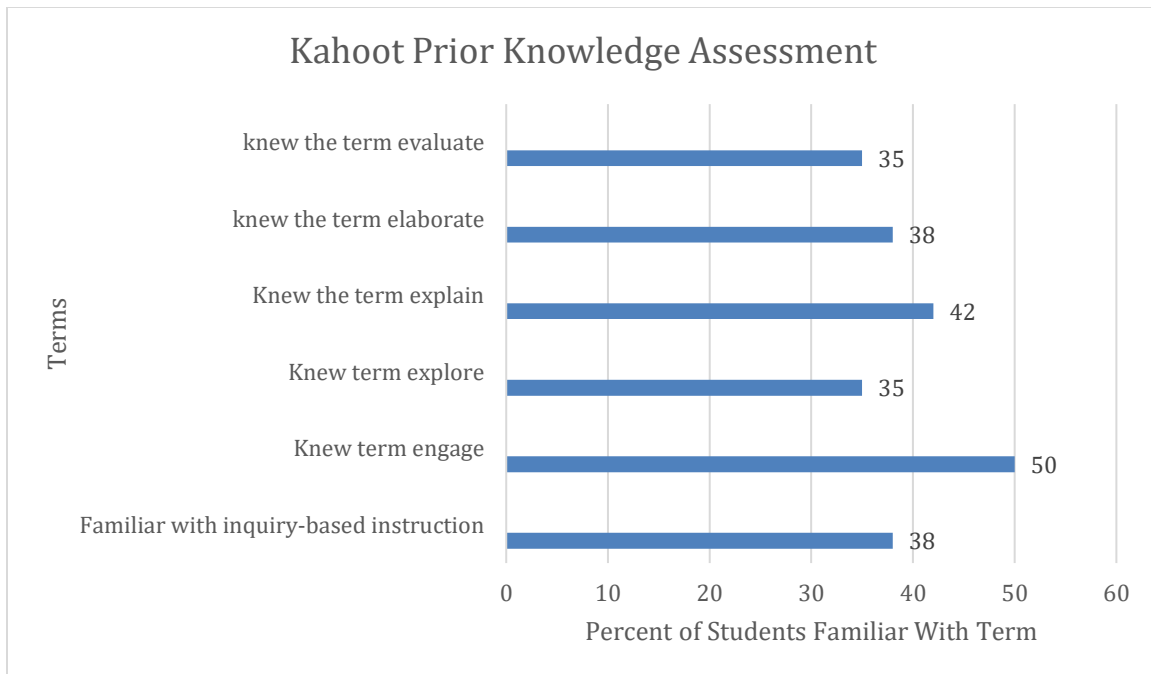


Figure 4.1 Kahoot Prior Knowledge Assessment

These low numbers informed my instruction and materials design. I labeled each assignment in the Google classroom with the correct phase of the inquiry cycle we were in. I provided explicit instruction on each phase as we moved through the study.

My journal reflects the movement between cycles and how we understood the inquiry-based process. I shared, “The initial Kahoot results showed that not many students are familiar with inquiry-based learning and did not have a working understanding of the phases or process.” After multiple reteaching opportunities specifically designed to address the phases of inquiry-based learning, students took a second Kahoot assessment and showed improvements in each area. More than half of students (i.e., 60%) could identify the five phases of inquiry-based learning. Likewise, 70% could define the term engage, 80% could define the term explore, 85% could define the term explain, 80% could define the term elaborate, and 65% could define the term

evaluate in the context of inquiry-based learning. Although these numbers showed strong improvements in understanding inquiry terms, they also showed the need to continue instruction during the second inquiry phase, explain. The explain phase provided further time to continue teaching students through engagement and authentic learning experiences.

There was one primary common formal assessment I gave to students in January 2022 after inquiry-based methods were used in the ninth grade English language arts classroom. The English language arts department was mandated by the district to provide students with a common formal assessment that addressed the literary elements. This assessment was provided at the start of the school year in the fall, the middle of the school year in early January, and at the end of the school year in late May or early June. Data from this assessment were used to drive professional learning community conversation, grade level decisions, and assess ninth grade student progress throughout the year. The assessment worked in the dissertation framework because it provided a standardized assessment and a point of comparison and contrast between the traditional teaching and learning model being employed in the other two ninth grade English language arts classrooms and my own classroom, which employed the inquiry-based teaching model.

I gave the assessment to students as a Google Forms quiz. This quiz made for easy and quick grading, which made data relevant and useful in a timely manner, giving teachers and students immediate feedback. Students in the first classroom that employed traditional teaching methods scored an average of 164 points out of 300 possible points. Students in the second classroom that employed traditional teaching methods scored an



average of 124 points out of 300 possible points. Students in my English nine classroom that implemented inquiry-based teaching methods scored an average of 185 out of 300 possible points. Students in my inquiry-based classroom scored higher than the other two classrooms that used traditional teaching methods.

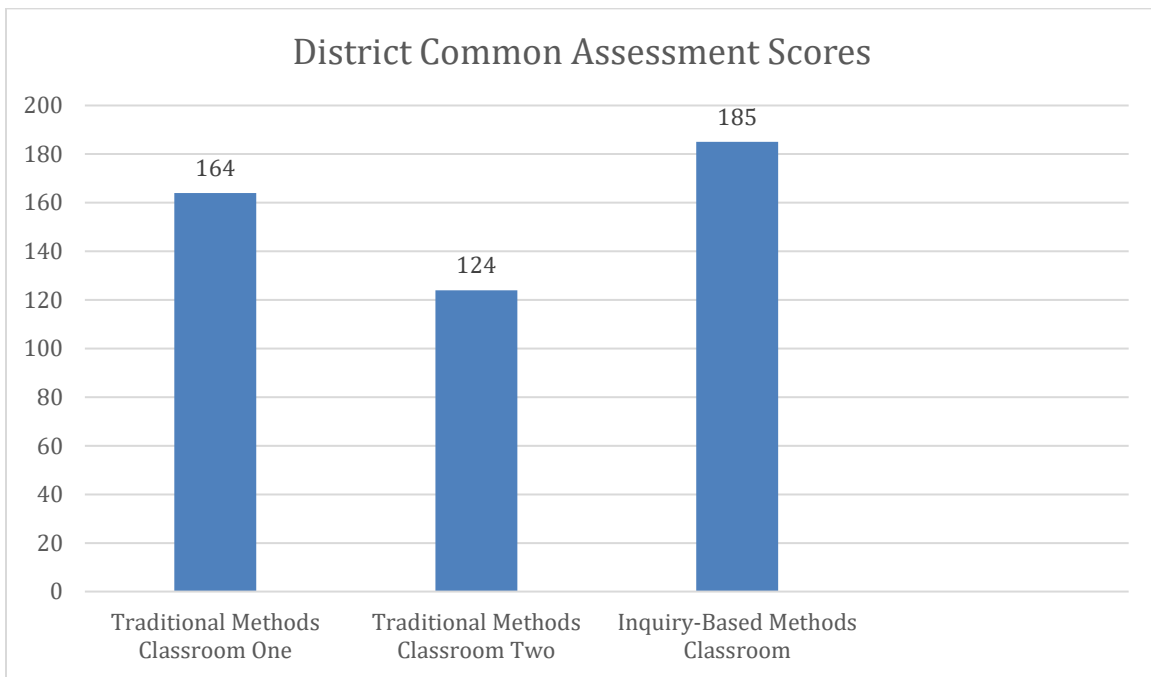


Figure 4.2 District Common Assessment Scores

Finally, I used summative assessments at the end of the inquiry phases. I gave the first summative assessment at the end of the explore phase, the second phase of the 5Es phases. The explore phase was when students were provided with opportunities to add new knowledge to past knowledge and experiences. This is a teacher-led phase where I was challenged to design and deliver authentic learning experiences that promoted strong engagement. This first summative assessment was given at the end of this second inquiry phase and allowed students to demonstrate mastery of the concepts of plot and conflict. Students read the short story, *The Most Dangerous Game*, by Connell. I chose this piece

because it was a strong example of the use of plot and conflict. Students worked through the piece with me during the explore phase to understand how plot and conflict drive a short story. We identified two key terms at the start of the unit when we asked, “What makes a great story great?” in the first inquiry cycle—engage. At the end of the short story, students constructed a map of the events of the story that captured the growing conflict and fast-moving plot. A total of 18 students completed the map project and scored an average of 88% on the project, demonstrating mastery of the concepts explored and taught during the inquiry phase.

I gave the second summative assessment at the end of the third inquiry cycle, explanation. The explain phase was when students were challenged to express understanding and deepen understanding of new learning. I presented students with three short stories, *Charles* by Jackson, *Eleven* by Cisneros, and *Indian Education* by Alexie. Students read the three stories as a class and then individually chose the story they wanted to work with to construct a project that assessed their understanding of the elements of a short story that we identified in Phase 1, engage. Once they chose the short story, students worked to identify and provide textual evidence to support their answers as they evaluated the piece for the elements of “What makes a great story great?” Students were required to complete a Google Slides deck paired with a Flipgrid video to produce a short story report that evaluated the story to see if it met the criteria of “What makes a great story great?” A total of 17 students completed the assignment and scored an average of 72%.

This score revealed an opportunity to reteach the critical concepts and ideas of the unit and deliver stronger instruction and learning opportunities before moving on to the

next part of the unit. I provided students with detailed feedback to improve on their prior work and given time to readdress the assignment. We worked as a class to develop an anchor chart of important terms and concepts. While working with students to match terms and definitions, it became clear they were both familiar and comfortable with the language of the unit and ideas we had engaged with in the previous inquiry phases; however, they struggled to remember the terms and definitions. By constructing an anchor chart, we were able to review the terms and concepts and use the appropriate language and words. During the second administration of the assessment, 17 students scored an average of 90% on the assignment, showing a marked improvement in understanding and application.

I gave students the third summative assessment at the end of the fourth inquiry cycle, elaborate. During the elaborate phase, students reflected on and applied learning to the essential question of the unit, “What makes a great story great?” The third summative assessment was the writing of a self-generated short story that incorporated all of the learning we explored during the inquiry-based teaching phases to answer the question, “What makes a great story great?” Students wrote a flashback story called *The Laws of Life* essay. This essay required students to independently write a short story that captured an important life lesson they learned. The story needed to include the elements of literature we identified and worked with throughout the unit of inquiry-based learning.

I instructed students to underline using a color-coding system the elements of the short story. All 16 students who completed the assignment met the criteria of the assignment by including the necessary elements of the short story. Although students needed to continue to work on developing their writing, all students who submitted the

assignment correctly self-identified the elements of “What makes a great story great” by highlighting them in their own story.

After the short story was written, we worked as a class to design an evaluation tool in the form of a rubric for students to self-assess their own work. Students were placed in groups and asked the question, “What makes a great story great?” They worked on a large piece of white, sticky paper to record what they knew and answer the question. I provided students with 15 minutes to record answers. At the end of the 15 minutes, one member of each group was asked to stand and share what the group had written with the class. We repeated this process until each group had presented. Although answers varied from each group, students were able to recognize similarities. By raising a hand, students identified the common features of what makes a great story great. They identified the elements of: (a) plot, (b) character development, (c) conflict, and (d) setting, as key elements that answered the question “What makes a great story great?” At this juncture, we stopped and agreed we should use these elements to evaluate our stories using a rubric. I then asked students to provide a ranking scale to use in making the rubric. Students decided on a 4-point scale and the following categories: (a) elements of plot, which must include exposition, rising action, climax, falling action, and resolution; (b) character development, which must include a major character who is dynamic and static characters; (c) conflict where there must be either an internal or external conflict, although there could be both; and (d) the setting needed to work in the story to help tell the story and interest the reader.

Once we had decided on the categories and their definitions, we assembled the rubric and went to work on assigning the various levels of mastery in each category.

Students thought a score of 4 in each category should be the highest points because it captured all the elements in that category. Students thought a score of 0 should be given in a category if the criteria had not been met at all. I used a Google document to assemble the rubric and printed copies of the rubric for student use. Students used the rubric to grade their own work. This summative assessment was designed to demonstrate connection between old knowledge, literary terms, and elements of plot from the second phase of inquiry-based teaching, exploration, and the incorporation of new knowledge, crafting their own short story from inquiry Phase 4, elaboration. The student-designed rubric provided an opportunity for self-reflection and metacognition, where students had to look at what they knew about what they know and where they needed to continue to improve in their own learning. This was part of the fifth and final inquiry phase, evaluation, where students reflected on and applied the learning of the essential question.

### ***Research Question 3***

To address the question, “Will students engage with the model and demonstrate strong participation in each step to generate a new understanding of material, thoughts, and ideas?,” assignments in this unit were scaffolded by design. Students had to complete each part of the inquiry-based teaching and learning phases and must have shown mastery of material before moving to the next assignment. The inquiry-based teaching method included time for me to address deficits and push further understanding throughout the implementation of the unit. There were times when I needed to reteach or readdress a concept, idea, or application of knowledge to support students in achieving mastery. This looked like small group work or whole class instruction, depending on the data collected throughout the unit.

I gave two informal assessments to gather data that provided and captured moments of self-reflection and metacognition while we worked through the inquiry phases. I gave the first assessment at the end of the first inquiry phase, engagement, after direct instruction that addressed the elements of literature. The informal assessment that included questions and statements was a sliding scale assessment given in the Google Forms format. I asked students about their comfort level working with the elements of literature. The students ranked their comfort level on a scale of 0 to 10, with 0 being *not confident* and 10 being *most confident*.

The first question asked students, “On a scale of 1 to 10, 1 being *not confident* and 10 being *most confident*, please rank how you feel about identifying the literary elements of plot that inform a story.” Out of 18 respondents, one student responded with a score of 3, four students (i.e., 22.2%) responded with a score of 4, four students (i.e., 22.2%) responded with a score of 5, four students (i.e., 22.2%) responded with a score of 6, three students (i.e., 16.7%) responded with a score of 7, one student (i.e., 5.6%) responded with a score of 1, and one student (i.e., 5.6%) answered with a score of 10. The majority of students did not feel comfortable in their understanding of the material.

The second question asked students, “On a scale of 1 to 10, 1 being *not confident* and 10 being *most confident*, please rank how you feel about describing/applying the literary terms that help you understand who a character is in a story.” Out of 18 respondents, one student (i.e., 5.6%) responded with a score of 3, three students (i.e., 16.7%) responded with a score of 4, eight students (i.e., 44.4%) responded with a score of 5, three students (i.e., 16.7%) responded with a score of 6, one student (i.e., 5.6%) responded with a score of 7, and two students (i.e., 11.1%) responded with a score of 8.

Students registered a stronger sense of comfort and confidence with this concept.

Students felt slightly more confident in this area than in the other areas asked about.

The third question asked students, “On a scale of 1 to 10, 1 being *not confident* and 10 being *most confident*, please rank how you feel about identifying the setting and explain how it impacts the characters and story.” Out of 18 respondents, five students (i.e., 27.8%) responded with a score of 5, three students (i.e., 16.7%) responded with a score of 6, five students (i.e., 27.8%) responded with a score of 7, four students (i.e., 22.2%) responded with a score of 8, and one student i.e., (i.e., 5.6%) responded with a score of 9. These scattered results revealed inconsistent understanding of the material. Overall, the self-assessment revealed students had a scattered understanding of content at the start of our learning. I used this data to design instruction during Phase 2, explain, that offered opportunities to improve understanding and application of the learning concepts of the unit.

I gave the second informal assessment at the end of the inquiry phase, elaboration. The informal assessment used the same sliding scale assessment as the first assessment given at the start of the inquiry phases. Data from this assessment showed improvement in confidence and comfort level after moving through the five inquiry-based phases. The first question asked, “On a scale of 1 to 10, 1 being *not confident* and 10 being *most confident*, please rank how you feel about identifying the literary elements of plot that inform a story.” Out of 21 respondents, three students (i.e., 14.3%) responded with a score of 5, one student (i.e., 4.8%) responded with a score of 6, two students (i.e., 9.5%) responded with a score of 7, five students (i.e., 23.8%) responded with a score of 8, six

students (i.e., 28.6%) responded with a score of 9, and four students (i.e., 19%) responded with a score of 10.

The second question asked, “On a scale of 1 to 10, 1 being *not confident* and 10 being *most confident*, please rank how you feel about describing/applying the literary terms that help you understand who a character is in a story.” Out of 21 respondents, four students (i.e., 19%) responded with a score of 5, one student (i.e., 4.8%) responded with a score of 6, three students (i.e., 14.3%) responded with a score of 7, five students (i.e., 23.8%) answered with a score of 8, and eight students (i.e., 38.1%) answered with a score of 9.

The third question asked, “On a scale of 1 to 10, 1 being *not confident* and 10 being *most confident*, please rank how you feel about identifying the setting and explain how it impacts the characters and story.” Out of 21 respondents, three students (i.e., 14.3%) responded with a score of 5, one student (i.e., 4.8%) responded with a score of 6, three students (i.e., 14.3%) responded with a score of 7, three students (i.e., 14.3%) responded with a score of 8, six students (i.e., 28.6%) responded with a score of 9, and five students (i.e., 23.8%) answered with a score of 10. Overall, students reported a stronger sense of comfort on this second informal assessment after moving through the inquiry process. The increase of higher scores demonstrated an improvement in understanding of the elements of literature. These moments of reflection revealed student deficits and accomplishments to inform learning activities and experiences.

## **Summary**

I used Bybee et al.’s (2006) 5Es inquiry-based learning phases to answer the questions:



1. How will the inquiry-based model influence the design of curriculum and instruction in an English language arts classroom?
2. What will the 5Es model in an English language arts classroom look like?
3. Will students engage with the model and demonstrate strong participation in each step to generate new understanding and material, thoughts, and ideas?

I used inquiry-based templates to design the unit of learning. I used a journal to reflect as I worked to adjust my teaching and instruction to this new model of teaching and learning. I captured key differences in my own thinking to see the adjustments made by my students as I designed with their classroom leadership in mind.

During the implementation of the model, students completed informal assessments, formal assessments, and district-based assessments. The implementation of the inquiry-based model allowed me to capture moments of metacognition and understanding of student learning as we worked through the study. The results of the informal assessments demonstrated progress in student mastery of key concepts and terms used in the unit of learning. Students took the district-designed common assessment to capture their understanding on the elements of literature and provided a strong point of comparison between traditional classroom teaching methods and inquiry-based teaching methods.

Students worked to complete three summative assessments during this study. They read and analyzed *The Most Dangerous Game* by Connell. They demonstrated understanding of plot and conflict when asked, “What makes a great story great?” They completed a map project that carefully looked at the progression of plot and conflict throughout the story.

Students moved into a short story project that had them independently evaluate a short story of their own choosing. Students constructed a Google Slides deck that they used in a Flipgrid short story video review. All elements of “What makes a great story great?” were addressed in this assignment and students used these elements to evaluate the story to determine if the story was, in fact, a great story.

The last summative assessment was the writing of a short story using all the elements of literature. Students wrote a *Laws of Life* essay that used the elements of literature taught and learned during the 5Es inquiry-based teaching phases to tell a story that shared an important life lesson learned. Students evaluated their short stories using a student-designed rubric.

I gave students all assessments as we moved through the 5Es inquiry-based teaching model. The phases were fluid. There were times when I had to reteach a concept or idea to the class either in small groups or as a whole. This fluidity helped to ensure students mastered concepts and met goals as we moved through the phases. As a whole, students showed improvements in learning as we participated in the 5Es inquiry phases.

## **Chapter 5: Discussion, Conclusions, and Recommendations**

### **Overview of Study**

Traditional teaching and learning models have long dominated the field of education. Teachers employ methods such as lecture and note taking to communicate information to students. Students are expected to listen, pay attention, and follow directions. These methods do little to hold students accountable for building strong connections to past learning, constructing new and better understanding, and becoming practitioners of metacognition and self-awareness. The focus is often on the lower order thinking skills and may lead to disinterest or disengagement (Alper, 2018).

The 5Es inquiry-based teaching method is designed to dynamically engage students (Bybee, 2018). Students move through five phases of the inquiry cycle. The five phases are: (1) engage, (2) explore, (3) explain, (4) elaborate, and (5) evaluate. The engage phase is designed to assess student prior knowledge and discover what students may already know on the essential question and to deal with any misconceptions students might have about the topic. The explore phase is informed largely by teacher-designed lessons that introduce new material to the unit and connect prior knowledge to these new concepts and ideas. The explain phase provides students with opportunities to express understanding and figure out what this new understanding means. The fourth phase, elaborate, was designed to allow students to independently demonstrate how they have understood information and new ideas and can combine them into new understandings of concepts and ideas. The fifth phase is evaluate. Students work in this phase to examine

and assess their own work. Although feedback and assessment happen during all five phases of inquiry, this fifth phase is the time for the teacher to provide formal and evaluative feedback that assesses student mastery of material. Students are challenged throughout the inquiry phases to connect past learning, construct new and better understandings, and become practitioners of metacognitions and self-reflection.

Although traditional teaching models do little to grow and develop students for 21st century college and career readiness, the inquiry-based teaching model promotes the critical thinking and learning that prepares students for college and career readiness by increasing student ownership in regard to their own learning.

The theoretical framework for this action research dissertation was the application of the 5Es inquiry-based teaching model in a secondary English language arts classroom. This framework was to encourage student ownership of learning and to practice 21st century thinking and learning that will prepare students for college and career readiness, which all students need to be successful in life after secondary education.

This action research dissertation was conducted at H.H. Ellis Technical High School in Danielson, Connecticut. At the culmination of the 4 years of high school, students graduate with an academic diploma and have the opportunity to achieve certifications and licensure in their chosen trade field. Students who participated in this study were in a ninth grade English language arts class. There were 21 students enrolled in the class: 17 male students and four female students. Two of the students were identified as English-language learners and 19 were identified as regular education students. Students moved through the school year in two cycles. A-cycle was the academic cycle for the freshmen and senior classes and the trade cycle for the sophomore

and junior classes. The B-cycle was the academic cycle for the sophomore and junior classes and the trade cycle for the freshmen and senior classes. Each cycle was typically 10 to 14 days long.

This study took place over the course of four academic cycles. The first academic cycle was 7 days long, the second academic cycle was 10 days long, the third academic cycle was 12 days long, and the fourth academic cycle was 13 days long. Data collected during the study were both qualitative and quantitative. They included common, formal, informal, and summative assessments throughout the course of the study. I used a reflection journal to record observations on the inquiry-based teaching phases. Data were collected using Google Forms, Kahoot, Quizlet, teacher-designed assessments, and assignment performance data generated from the PowerSchool gradebook. Data were collected and examined over a 5-month time period and throughout the inquiry-based phases to help guide instructional decision making.

I asked three key research questions:

- RQ1: How will the inquiry-based teaching model influence the design of curriculum and instruction in a secondary English language arts classroom?
- RQ2: What will inquiry-based instruction look like in a secondary English language arts classroom?
- RQ3: Will students engage with the model and demonstrate strong participation in each step to generate new understanding of materials, thoughts, and ideas?

These questions were designed to provide insight into the application of the 5Es inquiry-based model in my ninth grade English language arts classroom.

I used formal inquiry-based lesson plan templates to design instruction and choose curriculum materials. The inquiry-based lesson plan templates were different in composition than a traditional lesson plan template. The inquiry-based lesson plan template was set up to include the essential question and learning objectives. It provided space to address each of the learning objectives along with each phase of the inquiry cycle or phase. During the engage phase, the inquiry-based template provided space to answer the following questions: (a) What do you already know? and (b) What are you curious about? During the explore phase, the inquiry-based template provided space to answer the following question: What new knowledge are you adding to what you already know and experienced? During the explain phase, the inquiry-based template provided space to answer the following questions: (a) Are you able to express your understanding and figure out what it means? and (b) How can you deepen your understanding? During the evaluate phase, the inquiry-based template provided space to answer the following questions: (a) How are you able to show your understanding? and (b) How can you take informed action? During the elaborate phase, the inquiry-based template provided space to answer the following question: How are you reflecting on and applying your learning of the essential question? The use of an inquiry-based lesson plan template organized the materials I generated and impacted the design and delivery of the unit of learning, which also allowed me to monitor and adjust instruction as the class worked through the 5Es inquiry-based phases. It also helped me to better understand my role in each phase of the learning. I found that I became more purposeful and direct in my planning.

Each of the summative assessments were designed to be provided at the end of a phase. Each summative assessment addressed the skills and abilities students mastered during the lessons. By orienting into the questions associated with each inquiry-base phase, I was better able to design assessments and authentic learning activities that allowed students to drive instruction and keep consistent in my role as facilitator or guide to learning. I was also more centered on the essential question of the unit, “What makes a great story great?” while working with students and developing materials.

To answer the question, “What will the 5Es model in an English language arts classroom look like?,” I designed informal assessments. During the initial phase, engage, I had students use a graphic organizer to respond to “What makes a great story great?” Students used the graphic organizer to provide six potential answers and we worked as a class to find the common themes among their answers. These common answers were written on a big piece of white, sticky paper and available for the class to see. Out of 20 respondents, 18 students (i.e., 90%) shared similar answers. This process allowed us to activate our prior knowledge and work to answer our essential question.

Other informal assessments included the use of online learning applications such as Quizlet, Kahoot, and Flipgrid. Students used these tools to demonstrate knowledge and provide reflection about their work and learning. We used the Quizlet online learning app to practice with the terms and vocabulary in the unit. At the end of the practice time, students took a quiz on the material. Out of 21 respondents, 15 students (i.e., 71%) scored 90% or higher on the quiz, four students (i.e., 19%) scored an 85%, and two students were absent and did not make up the quiz. These quiz results showed students had mastered the terms and vocabulary used in the unit. With this new mastery of terms and

concepts, I helped make the instructional decision to move into the next phase of the inquiry-based cycle. I also used the Kahoot online learning app to assess student knowledge and understanding of key terms and concepts. Kahoot was played as a class; students were asked a question and chose between four possible answers. The information gathered by the learning app allowed me to closely examine areas of weakness and reteach and address any learning deficits we had as a class.

Summative assessments included the use of project-based assignments. I gave students a project based on the short story, *The Most Dangerous Game*, by Connell. Students worked with me to identify the conflict and elements of the plot. Students then used the conflict and elements of plot to construct a map of the events of the story to better understand how conflict and the elements of plot worked to drive a great story. Students scored an average grade of 78% on the assignment. The relatively low score on this assignment prompted me to reteach the key concepts and terms by providing students with an outline worksheet. Students then worked on the outline worksheet, citing the key points in the plot and defining the conflicts in the story.

I gave students a common assessment to provide a strong point of comparison between all ninth-grade classrooms, two of which employed traditional teaching methods, and my own, which employed inquiry-based teaching methods. Students in the first classroom that employed traditional teaching methods scored 164 points out of 300 possible points. Students in the second classroom that employed traditional teaching methods scored 124 points out of a possible 300 points. Students in the inquiry-based teaching classroom scored 185 points out of a possible 300 points. When compared to the other two traditional teaching classrooms, my inquiry-based classroom scored higher on



the common assessment. This affirmed for me that our class was making favorable progress covering and understanding the curriculum and content for English Language Arts Nine.

As we worked through the unit, I became explicit in using the language of inquiry and labeling assignments and classwork with the appropriate phases in the Google classroom. Students showed a marked improvement from the first assessment given at the beginning of the unit to the last assessment given after we worked through the 5Es inquiry-based teaching and learning phases.

To address the question, “Will students engage with the model and demonstrate strong participation in each step to generate new understanding of material, thoughts, and ideas?,” I used informal assessments such as Kahoot and Quizlet to look at data on student mastery of concepts and ideas. These data provided insights into the trends in student learning as we moved through inquiry-based learning. At one juncture in the study, data showed I needed to spend more time reviewing and practicing with students the material they needed to master. Inquiry-based teaching is fluid in nature and allowed me to reteach key ideas and promote stronger understanding.

I used three summative assessments to demonstrate connection to old knowledge in the development of new understandings. These projects incorporated the use of a student-designed rubric to self-assess learning, providing further opportunity for student self-reflection and metacognition. The map project, short story project, and essay project demonstrated success in the application of the elements of literature and the answering of the essential question, “What makes a great story great?” Student grades on these assignments demonstrated strong understanding and application of old and new concepts.

To better understand students' comfort level and engagement with inquiry-based learning based on the research question, "Will students engage with the model and demonstrate strong participation in each step to generate new understanding of materials, thoughts, and ideas?," I used informal assessments. I distributed these assessments through Google Forms and included a sliding scale to assess student comfort level with content and provide moments of metacognition for students to think about their own thinking. Initial data did not demonstrate a sense of comfort using the inquiry-based terms and understanding the phases.

### **Results Related to Existing Literature**

Inquiry-based teaching and learning is grounded in the epistemology of constructivism that works to explain the roots of knowledge and how meaning is made in the learning process (Abdal-Haqq, 1998). Constructivism defines learning as an active process that requires problem-solving and social engagement. It also focuses heavily on the assimilation of new knowledge with old knowledge to forge a new and stronger understanding of new material, concepts, and ideas (McLeod, 2019).

Constructivist theory and inquiry-based classrooms promote students who become critical thinkers. Students take an active role in the learning as opposed to traditional teaching methods that do not allow for students to be active participants in the learning process. The inquiry-based instruction allowed me to design learning that actively engaged students and provided moments of metacognition and self-reflection during the work. This helped students to have a stronger understanding of what they did and did not know and gave me opportunities as a teacher to guide them to new understandings.

Inquiry-based instruction and teacher education are closely linked with classroom success. Levy et al. (2013) examined the role of inquiry-based teaching in science, social studies, and English language arts to better understand teacher education on inquiry-based teaching methods. They found new teachers were better able to understand their own strengths and weaknesses on instruction. As I worked through my own inquiry study, my journals reflected my own thinking about teaching and provided me with opportunities to improve my own practice by generating self-awareness around my role and the choices I made when instructing students.

The phases of inquiry-based instruction allowed the learner to move away from the transmission of information from teacher to student. The phases were developed to provide a succinct and clear model of instruction that guides the instructor through concrete learning experiences with students and provides mastery check points to assess understanding and the development of new knowledge (Pedaste et al., 2015). Using the 5Es inquiry-based phases allowed me to understand my own role in student learning and to better understand when students needed the room to investigate, discuss, and lead the learning process.

Panasan and Nuangchalerm (2010) explored traditional teaching methods compared to inquiry-based teaching methods. They looked at fifth grade science students in traditional teaching classrooms and inquiry-based teaching classrooms and found that inquiry-based learning was a strong model to promote understanding and engagement when planning lessons and units. The use of formal, inquiry-based teaching templates helped me to better plan and organize materials and encouraged me to stay student-driven throughout the study. The comparison of my inquiry-based classroom with the two other

traditional teaching methods classrooms provided me with a point of reflection. The higher scores on the common assessment achieved by my students helped me to understand that inquiry-based learning was having a positive impact on my students' learning.

Alameddine and Ahwal (2016) used the inquiry-based model to guide instruction for English language learners in a literature classroom. By using this model, they were able to stress the role and importance of prior knowledge, which acted to strengthen student confidence in approaching the curriculum. Two English classrooms used inquiry-based methods and met with success in improving overall assessment results. By stressing the acquisition of skills and abilities over transactional content mastery, students learned new skills and abilities to help improve in all areas of their life. In my own study, the inquiry-based method was successful in addressing student performance by honoring prior knowledge and using authentic learning activities and tasks to build new knowledge and understanding.

Bybee (2006) developed the 5Es instructional model. The model was originally developed to address reform in science and health education instruction. Bybee and colleagues wanted to develop a new model of teaching and learning that was research based and would prove to be more impactful on student learning. Drawing on the work of Atkin and Karplus (1962), Bybee developed the inquiry phases and shaped them into a five-phase model. Another key facet of the 5Es inquiry-based model is understanding the role of the educator in the model. Bybee worked to define the role of educator as a facilitator or guide in the learning process.

During this action research project, it was essential to understand the phases of the inquiry process and understand my own role as educator in this new model. Bybee (2018) provided a strong description of each phase in the cycle. The first phase called engage is designed to capture interest by using both content and prior learning abilities and knowledge. The second phase called explore is designed to be teacher-led and provide students with authentic learning experiences underscoring the skills, abilities, ideas, and concepts that drive the unit. This is also the time when teachers address any misconceptions students may have. The third phase called explain is when the formal terms, concepts, and ideas are introduced and used with students during lessons. The fourth phase is called elaborate and it challenges students with new opportunities to use concepts, terms, and abilities in a similar but new context. The fifth phase is called evaluate. During this phase, the teacher provides formal evaluation of student mastery of concepts, ideas, and learning goals.

By understanding what should be happening in each phase, I was able to design assessments and learning to best suit the phase we were in. Also, understanding each phase helped me to understand when to move between the phases and prompt students through the phase. Bybee (2018) also stipulated there are phases in which it is more important for the teacher to be a facilitator or guide and when direct instruction should take place. It was important in Phase 2, explain, for me to develop and cultivate learning opportunities for students and then step back into my role as guide. This was difficult to do; I had a hard time watching students make mistakes and puzzle things out and I wanted to step in and help them. However, knowing my role, I was able to recognize

when I was too involved and not involved enough. Bybee's work provided me with a clear and strong conceptual knowledge of the inquiry-based teaching process.

### **Practice Recommendations**

The results of this action research study highlight the importance of student ownership in teaching and learning. The 5Es inquiry-based model allowed for students to be actively involved in the learning process and allowed me to design new and dynamic ways for students to engage with learning.

Educators would benefit from learning that the 5Es inquiry-based teaching methods have the potential to yield strong results for students in any discipline or field of study. The design and planning using inquiry-based teaching templates helps to focus learning on an essential question; but, it still maintains the role of teacher as guide or facilitator of learning. Students, by design, are at the center of learning. The phase design of inquiry-based teaching naturally allows for all forms of assessment at the end of each phase of inquiry. This design provides valuable feedback to the instructor and can direct learning for students. The instructor may recognize the need to reteach or further instruct students in particular focus areas of deficiency.

The 5Es inquiry-based teaching model is largely student driven, which promotes curiosity and investment in learning, unlike traditional teaching methods that are teacher driven and promote apathy and disengagement in learning. The 5Es inquiry model may be adapted to any field of study because it provides a structure or way to think about subject matter and materials rather than the transmission of content. It is a framework for thinking and learning and may be applied in any discipline to yield positive results.

By releasing responsibility of learning to my students, I learned a lot about myself as an instructor. I learned that, when students are actively engaged in learning, they will drive instruction and engage enthusiastically with materials and content. By using this model of teaching and learning, I was able to move away from the “sage on the stage” model I had defaulted into over the course of my teaching career. Admittedly, this was uncomfortable for me at times because I had to trust that students would engage with the process and take responsibility for their own learning. I often found myself fighting the urge to organize and direct the learning. The five phases helped to provide strong structure to contain student-driven learning. Inquiry-based teaching creates a strong disposition and stance to independently think and learn, which are crucial skills across the curriculum.

### **Limitations or Suggestions**

One of the most important limitations of this study is to recognize that it was conducted during a historical and unprecedented time in educational history. This study was conducted during the COVID-19 global pandemic. Over 3 academic years, the educational model underwent a few momentous shifts. The first shift occurred in March 2020 when students were sent home and did not return to the classroom until the following school year. Students were left to use whatever executive functioning skills and academic abilities they possessed to make it through the remainder of the school year in a virtual format. The following school year saw students return to instruction in cohorts and a virtual format. Students did not consistently attend a normal school day for almost 2 years. This study took place in the 3rd school year impacted by the COVID-19 global pandemic. Students were struggling with attendance issues and social and emotional

disturbances as they attempted to engage with grade level content. It is important to understand how this event affected students and will continue to impact classrooms.

The length of the study and the size of the study group would suggest the need for further study. Over the course of 5 months, 21 students participated in the study. This is a relatively short period of time and a small group. Conducting the study using the 5Es inquiry-based model with more sections of English language arts over more than one cycle of the five phases would yield more data and better assess whether the results of this small study could be repeated in a larger context.

This study was my first experience with inquiry-based teaching. I chose the 5Es inquiry-based teaching model because it provided me with firm structure, moments of reflection, and the chance to allow my students to direct their own learning. It was difficult, at times, to know when students had too much control over learning and would veer off course. I would often have to reel them back into the instructional goal. It was also difficult to not become frustrated when students spent a lot of time in one phase and the assessment showed weak results.

I was happy to discover areas of weakness that we could improve upon before moving onto the next part of the unit. However, reteaching and designing further opportunities for practice meant slowing down and refocusing. This refocusing is difficult when you are expected to cover specific content and curriculum during a school year. I would like to have had more time to relax into the inquiry-learning phases to better understand how to craft learning experiences that truly guided and prompted students through learning. Another limitation was my prior training and teaching in the traditional teaching style often meant deeply examining my own practice. It was difficult to not



default into transmission mode when students were off task or seemingly uninterested in the material we were working with. The study would benefit from repeated practice with the phases. I believe I would get better at my inquiry-based teaching methods if I had more opportunities to practice with students in the future.

### **Recommendations for Future Research**

For future research, it would be beneficial to continue to examine the use of the 5Es inquiry-based model in teaching and learning across all disciplines. It would be interesting to note which disciplines easily lend themselves to this way of teaching and which ones need to adapt the phases of the inquiry-based model to better deliver curricular content.

There is great potential for inquiry-based teaching to teach strong habits of mind. A study that investigates how this approach to teaching and learning impacts cohorts of students across the curriculum could help us better understand if this work is transferable. I wondered, several times, during this study if my work with students could be seen or felt in tangible ways in other classrooms. By consistently using the 5Es inquiry-based model in all classrooms, I wonder if we could instill positive thinking habits or routines for our students that would enable them to naturally engage with material, make strong connections, and apply what they learned to novel situations.

It would also be beneficial for new teachers to be trained in the inquiry-based teaching model to help move away from traditional teaching methods that do little to develop critical thinking skills for students. New teachers would benefit from training in inquiry-based teaching because it would reorient how we think about educating our children and create classrooms where there is no longer transactional learning but deep,

rich, meaningful, and authentic learning experiences that place the learner in control of the process.

## **Summary**

Traditional teaching needs to change and adapt to the growing demands of the 21st century. Students need to learn how to drive learning and develop skills that will benefit them when they leave secondary education. Inquiry-based teaching, specifically the 5Es inquiry-based model, supports the development of critical thinking and learning skills and promotes metacognition. Constructivism stresses the importance of past experiences and learning and its role in building new learning as we acquire knowledge (Bevevino et al., 1999). Inquiry-based learning draws on past experiences and learning and provides students opportunities to grow new understandings from these prior experiences and learning (Bevevino et al., 1999). Traditional teaching does not provide for the same opportunities, shortchanging students in their learning. The 5Es inquiry-based teaching method allows for students to have strong ownership of learning and encourages student engagement.

Teachers in any discipline could benefit from using the model in their classroom because it promotes a strong structure for thinking, which is applicable in all subjects. Because this was my first-time using inquiry-based instruction in my own classroom, I learned many powerful lessons about my own role in teaching and learning and how to plan and deliver content with the student at the center of instruction. I would benefit from the repeated practice of implementing this teaching and learning model and I believe it would strengthen my own teaching practice.

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## Appendix A: Interventions

### Inquiry-based Teaching Template

Short Stories				
Essential Question		What Makes a Great Story Great?		
<b>Learning Goals</b> Self-Reflection Before Learning	Students can identify the Literary Elements and Plot that inform a story.	Students can describe/apply the literary terms that help me understand who a character is in a story.	Students can identify the setting and explain how it impacts the characters and story.	Students can describe/identify/apply the different types of conflict and explain how it drives the characters and plot.
<b>Engage</b> What do you already know? What are you curious about?	Kahoot! <a href="#">LucidChart</a> Six (6) Elements that make a great story great	Pre-assessment: Google Forms Quiz on character types	Carousel Picture Activity	Quizlet on Types of Character
<b>Explore</b> What new knowledge are you adding to what you already know and have	Pixar Short Stories Graphic Organizer	Character Notes with Google Slides Deck Character Anatomy Activity	Read Short Story with an emphasis on setting Worksheet on setting	Read Short Story with an <u>emphasis</u> on Conflict
experienced?				
<b>Explain</b> Are you able to express your understanding and figure out what it means? How can you deepen your understanding?	Independently complete a Pixar Short Story Analysis Record with work in Flipgrid	Design and build a timeline of a character over the course of short story to document growth and change	Read a short story and produce a picture of the setting of the story with a written piece about how it impacts the story	Conflict Quiz Short passages that exemplify the different types of conflict. Student written responses.
<b>Self-Reflection</b>	I can describe/apply the literary terms that help me understand who a character is in a story.	I can identify the key elements of plot that inform a story.	I can identify the setting and explain how it impacts the characters and story.	I can describe/identify/apply the different types of conflict and explain how it drives the characters and plot.
<b>Elaborate</b> How are you reflecting on and applying your learning of the essential questions?	Read <u>new short</u> stories and complete a plot chart.	In the <u>new short</u> story identify the different types of character using the literary terms.	In the <u>new short</u> story discuss how setting impacts the plot and characters.	In the <u>new short</u> story students will identify the conflict and share how it drives the plot.
<b>Evaluate</b> How are you able to show your understanding? How could you take informed action?	Students will write their own short story that incorporates <u>all</u> of the plot elements.	Students will write their own short story that incorporates <u>all</u> of the plot elements.	Students will write their own short story that incorporates <u>all</u> of the plot elements.	Students will write their own short story that incorporates <u>all</u> of the plot elements.
<b>Self-Reflection</b>	I can describe/apply the literary terms that help me understand who a character is in a story.	I can identify the key elements of plot that inform a story.	I can identify the setting and explain how it impacts the characters and story.	I can describe/identify/apply the different types of conflict and explain how it drives the characters and plot.

Figure A.1 Inquiry-Based Teaching Template

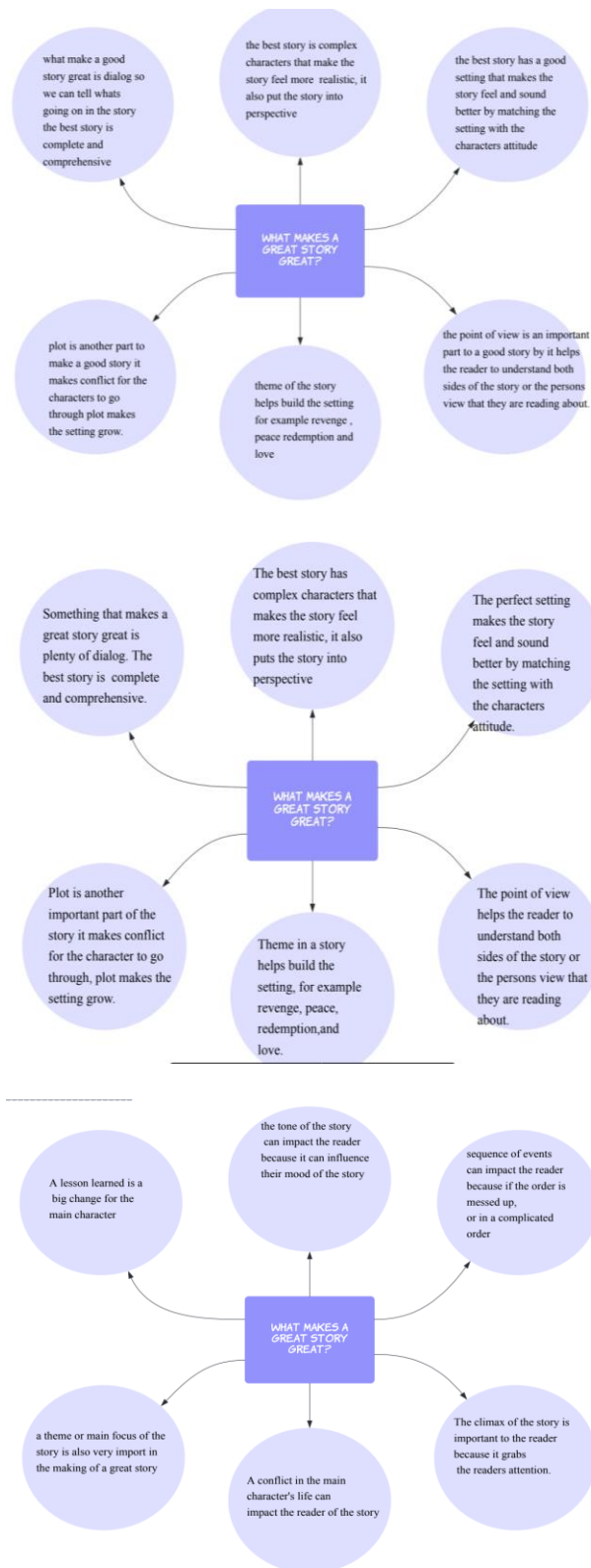


Figure A.2 What Makes a Story Great? Elements

Terms in this set (6)		Original
Engage	To brainstorm, ask questions, and access prior knowledge	★ 🔊 ✎
Explore	Conduct research, watch videos, read articles, and make observations	★ 🔊 ✎
Explain	To present information to the class and share ideas	★ 🔊 ✎
Elaborate	To connect concepts, apply learning to a new situation, solve a problem	★ 🔊 ✎
Evaluate	To complete assessments and reflect	★ 🔊 ✎
What are the five phases of the inquiry cycle?	Engage, Explore, Explain, Elaborate, and Evaluate	★ 🔊 ✎

Figure A.3 Five Phases of the Inquiry Cycle


Assessment 			Hosted by jennifernorman111	
Summary	Players (26)	Questions (7)	Feedback	
			Expanded view	Compact view
All (7)	Difficult questions (2)	Search		
Question	Type	Correct/incorrect		
1 Are you familiar with inquiry-based learning?	Poll	?		
2 What are the five phases of inquiry-based learning?	Quiz	38%		
3 What does it mean to engage with something?	Quiz	50%		
4 What does it mean to explore?	Quiz	35%		
5 What does it mean to explain?	Quiz	42%		
6 What does it mean to elaborate?	Quiz	38%		
7 What does it mean to evaluate?	Quiz	35%		

Figure A.4 Assessment Questions

## Literature Test

Form description

This form is automatically collecting emails for Connecticut Technical High School System users. [Change settings](#)

Select the best answer for each question.

Description (optional)

The struggle that gets the plot under way is called the... \*

- ☐ narration
- ☐ conflict
- ☐ climax
- ☐ dialogue

Figure A.5 Beginning of Literature Test

Writers use plot complications in order to... \*

- ☐ introduce the main character
- ☐ resolve the central problem
- ☐ intensify the main character's problems
- ☐ create a chronological sequence of events

Suspense is... \*

- ☐ a feeling that the main character is about to be killed
- ☐ the reader's desire for a happy ending
- ☐ the reader's first impression of the main character
- ☐ the reader's uncertainty about what will happen in the story

Figure A.6 Literature Test Questions Part 2

⋮

In a flashback a writer.... \*

- ☐ comments directly on the events in the plot
- ☐ tells about a character's life in the future
- ☐ gives a short summary of the plot
- ☐ interrupts the story to show a past event

The setting pulls the reader into a story by... \*

- ☐ showing how the characters interact with each other
- ☐ giving the reader the feeling of being in a situation with the characters
- ☐ describing the main character's actions
- ☐ revealing an insight about human experience

Figure A.7 Literature Test Questions Part 3

⋮

What kind of mood would a writer create by describing laughing in a park on a sunny afternoon? \*

- ☐ somber
- ☐ cheerful
- ☐ tense
- ☐ chaotic

Which kind of the following steps is an example of synthesizing? \*

- ☐ Combine the ideas from two sources to create a new work.
- ☐ Create an outline for a report
- ☐ Restate a paragraph in your own words
- ☐ Underline or highlight important information in an article

Figure A.8 Literature Test Questions Part 4

⋮

A writer would probably use statistics in an essay to... \*

☐

 indicate a topic

☐

 reveal his or her attitude toward the topic

☐

 support the main idea

☐

 help readers relate the topic to their own experiences

⋮

Which of the following words does not contain a prefix? \*

☐

 rejected

☐

 unnecessary

☐

 manageable

☐

 submarine

Figure A.9 Literature Test Questions Part 5

⋮

A word's etymology gives information about its... \*

☐

 connotation

☐

 plural form

☐

 spelling

☐

 origin

Character

Select the best answer for each question.

Figure A.10 Literature Test Questions Part 6

⋮

Describing a character's fancy style of dress is an example of revealing character through... \*

☐

 setting

☐

 appearance

☐

 speech

☐

 contrast

⋮

Characters reveal themselves most vividly through their.... \*

☐

 actions

☐

 names

☐

 ages

☐

 places of birth

Figure A.11 Literature Test Questions Part 7

⋮

By using indirect characterization, writers... \*

☐

 directly describe a character's personality

☐

 provide little information about characters

☐

 prevent readers from forming their own opinions about characters

☐

 show, rather than tell, readers what a character is like

⋮

Characters with internal conflicts... \*

☐

 struggle with opposing desires or emotions

☐

 are incapable of taking action

☐

 do not clash with other people

☐

 face threats from their family or community

Figure A.12 Literature Test Questions Part 8

When writers convey the reasons for a character's actions, they are describing the character's... \*

- ☐ outcome
- ☐ autobiography
- ☐ motivation
- ☐ exposition

A dynamic character is best described as a character who... \*

- ☐ tells the story
- ☐ performs most of the actions in a story
- ☐ changes and develops
- ☐ opposes the main character

Figure A.13 Literature Test Questions Part 9

A book that describes events in which the writer did not participate is called a... \*

- ☐ secondary source
- ☐ bibliography
- ☐ primary source
- ☐ generalization

What is the difference between facts and opinions? \*

- ☐ facts are used in nonfiction, but opinions appear only in fiction
- ☐ facts are objective, but opinions are subjective
- ☐ opinions are less complex than facts
- ☐ opinions are inaccurate, while facts are accurate

Figure A.14 Literature Test Questions Part 10



A synonym... \*

- ☐ means the opposite of another word
- ☐ has the same or almost the same meaning as another word
- ☐ is a figure of speech
- ☐ is a word with multiple meanings

...

In a word analogy... \*

- ☐ a sentence contains clues to the meaning of a word
- ☐ several words have related meanings
- ☐ two words share the same origin
- ☐ the relationship between the words in one pair matches the relationship between the words in a second pair

Figure A.15 Literature Test Questions Part 11

**Narrator and Voice**

Select the best answer for each question.

To tell a story from the point of view of one character, authors... \*

- ☐ limit the number of characters in the story
- ☐ do not provide information about other characters
- ☐ tell about the thoughts and feelings of all the characters
- ☐ use the first-person pronoun "I" to write the story

Figure A.16 Literature Test Questions Part 12

A narrator in a story... \*

- ☐ does not always tell the truth
- ☐ can be fully trusted by the reader
- ☐ is always the main character
- ☐ describes the past, present, and future

What is tone? \*

- ☐ An author's choice of words
- ☐ An author's characteristic writing style
- ☐ An author's attitude toward a subject, character, or the audience
- ☐ The way one character interacts with other characters

Figure A.17 Literature Test Questions Part 13

What is a surprise ending? \*

- ☐ an unexpected but logical ending to a story
- ☐ an ending that is not related to the rest of the plot
- ☐ an ending that can be interpreted in several ways
- ☐ an ending that presents a solution to a mystery

Irony occurs when... \*

- ☐ a character lies to other characters
- ☐ there is a contrast between what is expected and what actually happens
- ☐ characters have a disagreement
- ☐ a writer shows that a character is wrong

Figure A.18 Literature Test Questions Part 14

To support a point, nonfiction writers often use... \*

- ☐ transitions
- ☐ chronological order
- ☐ evidence
- ☐ images

Which of the following sentences uses a definition as a context clue to hint at the meaning of the bolded word? \*

- ☐ The children who roamed the neighborhood and stole things were called **marauders** by the community
- ☐ He had trouble climbing the **precipitous** slope.
- ☐ When she heard about the incident, she sent the family her **condolences**.
- ☐ At the end of the meeting, there was no sign of **reconciliation** between the two sides.

Figure A.19 Literature Test Questions Part 15

What is the main idea of a nonfiction text? \*

- ☐ the body of an essay
- ☐ the writer's subject
- ☐ the first point a writer makes in a text
- ☐ the writer's most important point

Restating a passage in your own words is called... \*

- ☐ paraphrasing
- ☐ making inferences
- ☐ analyzing
- ☐ brainstorming

Figure A.20 Literature Test Questions Part 16

The part of a word that establishes the word's core meaning is the... \*

- ☐ suffix
- ☐ prefix
- ☐ derivation
- ☐ root

Figure A.21 Literature Test Questions Part 17

## Student Inquiry Check-in

This exit ticket is designed to document your learning journey while we work to figure out "What Makes a Great Story Great?" Please answer honestly and thoroughly.

 jennifer.norman@cttech.org (not shared) [Switch account](#)



\* Required

On a scale of 1 to 10, 1 being not confident and 10 being most confident, please rank how you feel about identifying the Literary Elements of Plot that inform a story. \*

	1	2	3	4	5	6	7	8	9	10	
not confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	most confident

On a scale of 1 to 10, 1 being not confident and 10 being most confident, please rank how you feel about describing/applying the literary terms that help you understand who a character is in a story. \*

	1	2	3	4	5	6	7	8	9	10	
not confident	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	most confident

Figure A.22 Student Inquiry Check-In Questions Part 1

On a scale of 1 to 10, 1 being not confident and 10 being most confident, please rank how you feel about identifying the setting and explain how it impacts the characters and story. \*

1 2 3 4 5 6 7 8 9 10

not confident ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ most confident

On a scale of 1 to 10, 1 being not confident and 10 being most confident, please rank how you feel about describing/identifying/applying the different types of conflict and explain how it drives the characters and plot. \*

1 2 3 4 5 6 7 8 9 10

not confident ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ most confident

[Submit](#) [Clear form](#)

Figure A.23 Student Inquiry Check-In Questions Part 2

Table A.1 Breakdown of Possible Points

Item	Possible Points	Points Earned
Logical Shape and Form of Ship-Trap Island based on the reading	5 points	
Colorful and Shows Creativity	5 points	
Rainsford's path from beginning to end	10 points	
Key of Important Locations and Items	10 points	
Jagged Rocks Leading to the Chateau: "The Ship Trap"	10 points	
Chateau: logical style/details from the text	10 points	
Big Tree Where Rainsford Sleeps the 1st Night	10 points	
Malay Man-Catcher	10 points	
Death Swamp/Burmese Tiger Pit	10 points	
Scene of the Ugandan Knife Trick	10 points	
Rainsford's Leaping Point	10 points	
Total Points Earned	100 points possible	

Comments:

Exemplars:





## Short Story Review

To prepare for your Flip Grid short story review, please identify the following pieces of information for the short story you chose.

You will need to include the information in a google slides deck to accompany your story review and share while you work in your Flip Grid assignment.

Story Title:

Why did you choose this story?

Table A.2 Plot Component and Definition

Plot Component:	Definition:
Exposition	
Rising Action	
Climax	
Falling Action	
Resolution	

Type of Conflict:

Dynamic/Round Character:

Static/Flat Character:

Your Opinion, was it a great story? Why or why not?

Step Two:

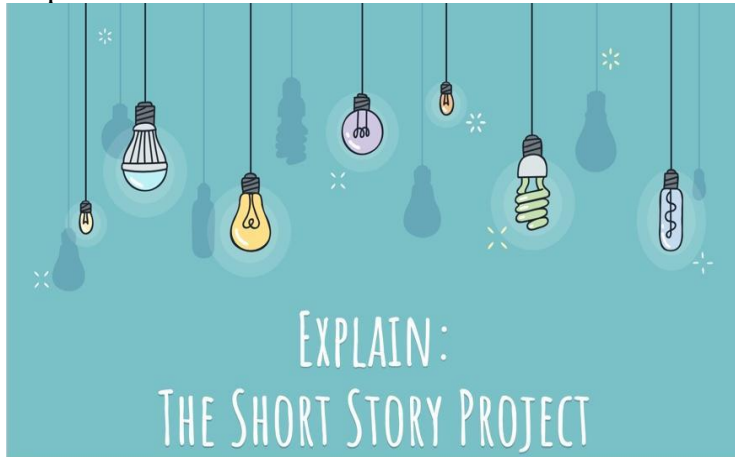


Figure A.26 Title Slide – Explain: The Short Story Project

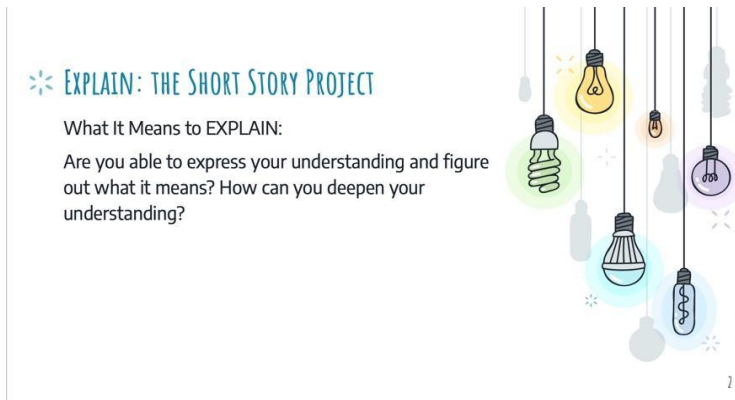


Figure A.27 Slide 2 – What it Means to Explain



Figure A.28 Slide 3 – Choosing a Story



Figure A.29 Slide 4 – Story One

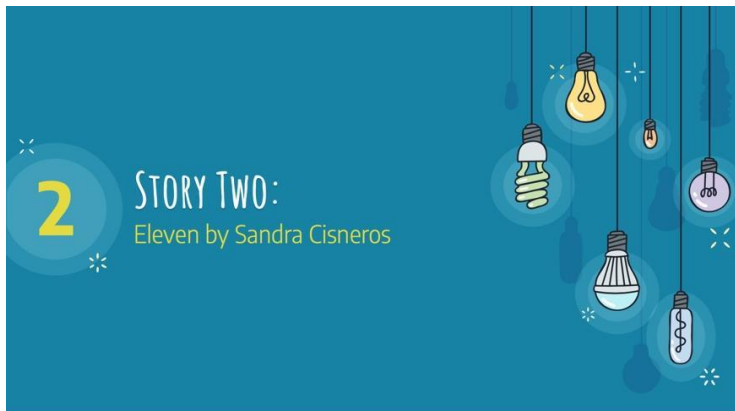


Figure A.30 Slide 5 – Story Two

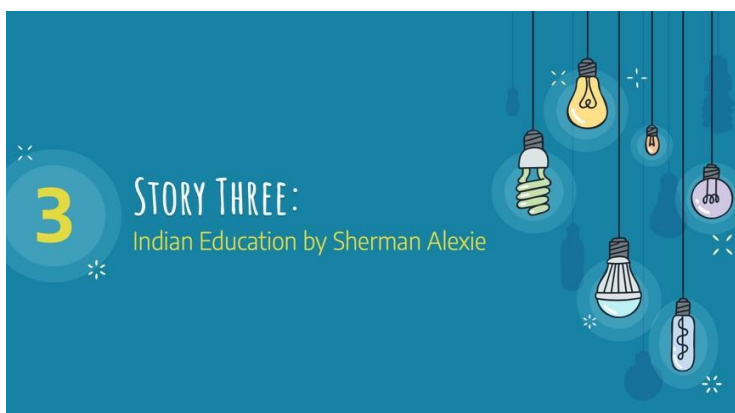


Figure A.31 Slide 6 – Story Three

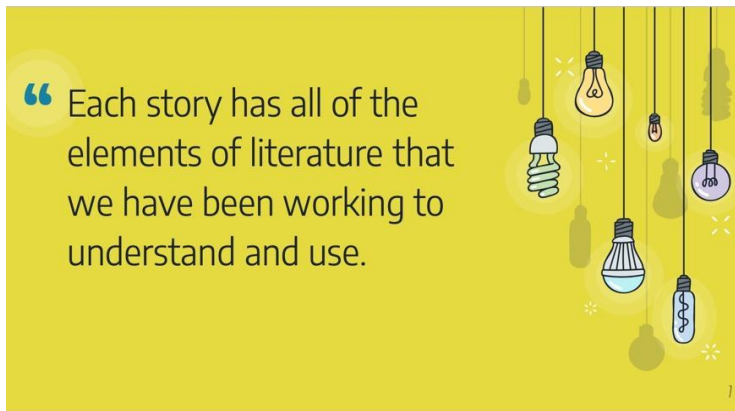


Figure A.32 Slide 7 – Elements of Literature

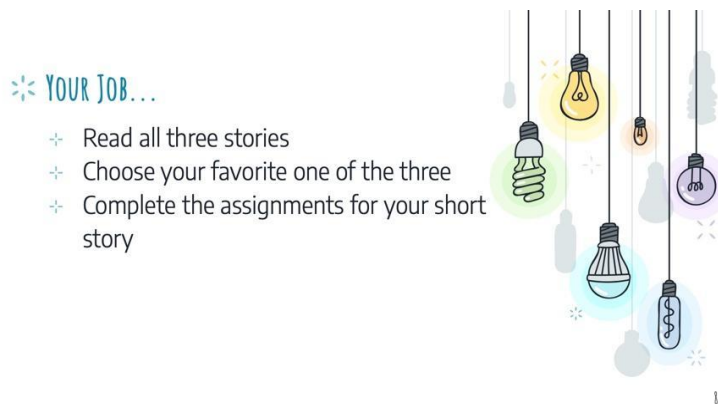


Figure A.33 Slide 8 – Your Job



Figure A.34 Slide 9 – Explain

### ✧ COMPLETE THE SHORT STORY REVIEW

After reading your short story, complete the Short Story Review. This will help you to have all of the elements you need for your FlipGrid Short Story Review.



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Figure A.35 Slide 10 – Complete the Short Story Review

### ✧ CONSTRUCT A GOOGLE SLIDES DECK

Using the information from your Short Story Review, construct a Google Slides Deck that has all of the information in it.



11

Figure A.36 Slide 11 – Construct a Google Slides Deck

### ✧ FLIPGRID

You will be provided with access information to create a Flipgrid video review.

Construct your Google Slides Deck with all of the information you will need to include in your Flipgrid presentation.

Record your Flipgrid presentation.

Remember this is a MAJOR project. Make sure to do an exceptional job.



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Figure A.37 Slide 12 – FlipGrid Instructions



Figure A.38 Slide 13 – Closing Slide

## Laws of Life: Essay

<b>Exposition</b>  The writer provides all the background information needed to understand the story.		
<b>Excellent</b> 5 pts A detailed exposition is included. It provides all the necessary information to help the reader understand what the story will be about and introduces the characters/people,	<b>Good</b> 3 pts An exposition is provided. It has some of the necessary information to help the reader understand what they story will be about and it may or may not introduce the characters/people.	<b>Incomplete/Not Do...</b> 0 pts The story just starts and does not provide much background information to help the reader understand what is going on.
<b>Rising Action</b>  The events leading up to the climax.		
<b>Excellent</b> 5 pts Events in the story are presented in a logical way. They make sense and lead us to the story's climax.	<b>Good</b> 3 pts Events in the story are presented in a somewhat logical way. They don't make total sense and may or may not lead us to the climax.	<b>Incomplete/Not Do...</b> 0 pts Events in the story are present. They are not given in a logical way. They don't make much sense. They feel like they have just been tossed in
<b>Climax</b>  The most exciting moment in the story. When the conflict is at its height.		
<b>Excellent</b> 5 pts The story presents the climax as the most exciting part of the story. There is a clear event that is the height of the story. The conflict is dealt with.	<b>Good</b> 3 pts The story has a high moment, but it is underdeveloped and doesn't make much sense. It is not clear if this is the most exciting moment.	<b>Incomplete/Not Do...</b> 0 pts The story does not have a high moment. It is just a list of things that happened.
<b>Falling Action</b>  The events that happen after the climax that lead to the resolution.		
<b>Excellent</b> 5 pts There are clear events that work to tie up the conflict and climax. The events are clear and lead to the resolution of the story.	<b>Good</b> 3 pts There are events that happen after the climax, but they are in no particular order and don't seem to lead to the resolution.	<b>Incomplete/Not Do...</b> 0 pts There is no falling action or the falling action is just a random part of the story that does not lead to the resolution.

Figure A.39 Laws of Life Essay Rubric Part 1

<b>Resolution</b>		
The end of the story where the loose ends are tied up.		
<b>Excellent</b> <i>5 pts</i> The story has a logical ending. The end makes sense and is clear.	<b>Good</b> <i>3 pts</i> The story has an ending, but it may not be clear or make sense given the rest of the story.	<b>Incomplete/Not Do...</b> <i>0 pts</i> There is no real ending to the story. Nothing is wrapped up. The story just ends.
<b>Conflict</b>		
Conflict:: man v. man, man v. society, man v. self, and man v. nature.		
<b>Excellent</b> <i>5 pts</i> There is a clear conflict in the story. The reader knows what the big problem is and can identify who it is between.	<b>Good</b> <i>3 pts</i> There is a conflict in the story, but it is difficult to know what type conflict it is and how it is being dealt with.	<b>Incomplete/Not Do...</b> <i>0 pts</i> There is no conflict in the story. The story just sort of rambles and accomplishes nothing.
<b>Characters</b>		
Two types of characters: dynamic and static.		
<b>Excellent</b> <i>5 pts</i> The story includes both a dynamic character who changes and grows over time and static characters that offer a compare and contrast to the dynamic character- these characters do not change or grow over time.	<b>Good</b> <i>3 pts</i> The story has characters. It is unclear which one is dynamic and which ones are static.	<b>Incomplete/Not Do...</b> <i>0 pts</i> There are no real developed characters in the story. The characters do not have a real part in the telling of the story.

Figure A.40 Laws of Life Essay Rubric Part 2