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Implementing literacy instruction through project-based learning

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IMPLEMENTING LITERACY INSTRUCTION THROUGH PROJECT-BASED LEARNING

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ABSTRACT

This thesis paper explores the implementation and outcomes of project based learning (PjBL) in an elementary literacy classroom setting. The research aims to provide a comprehensive understanding of the effectiveness of PjBL as an instructional approach and its impact on student learning outcomes. The research investigates the implementation strategies employed by educators to facilitate PjBL and examines the resulting impact on academic achievement and social-emotional learning (SEL). Findings reveal that PjBL significantly enhances student engagement by fostering active and collaborative learning experiences. Students involved in PjBL demonstrate increased critical thinking skills as they engage in authentic problem-solving and decision-making activities. Moreover, PjBL supports the acquisition and application of content knowledge in a meaningful context, resulting in deeper understanding and improved long-term retention. PjBL is a valuable instructional approach in elementary classrooms. The research is applied through the creation of unit and lesson plans for an elementary literacy classroom.

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CHAPTER I: INTRODUCTION

History of Project-Based Learning

Project-Based Learning (PjBL) has been around for over 100 years and is theoretically rooted in educators such as John Dewey and Maria Montessori (Waite, 2020, p. 30). The concept of project-based learning has become popular in recent years because of its hands-on, authentic approaches to learning. In the early 20th century, the Progressive Education Movement played a pivotal role in shaping project-based learning. Educators such as William Heard Kilpatrick and Francis W. Parker advocated for student-centered approaches that focused on active learning and practical applications. Kilpatrick's concept of the project method, where students work on extended projects aligned with their interests, served as a catalyst for the development of project-based learning.

During the mid-20th century, project-based learning gained recognition in vocational education. The integration of hands-on projects and real-world experiences into vocational training projects aimed to develop practical skills and increase employability. Vocational schools and programs embraced project-based learning as a core component of their curriculum, emphasizing the importance of applied learning and authentic tasks.

In recent decades, project-based learning has gained popularity across educational settings. New technology, along with an increase in access to information and global connectivity, has opened up new possibilities for project-based learning. Digital tools and online resources have enhanced the implementation of project-based learning approaches. Research and frameworks have been developed from this concept, allowing teachers to develop unit plans and lessons meeting specific grade-level content standards. Projects are rooted in real-world experiences that connect students to their communities and the world around them.

Project-based learning continues to evolve and adapt to meet the changing needs of learners and society. New trends and innovations, such as the integration of technology, interdisciplinary approaches, and community partnerships, offer exciting possibilities for enhancing project-based learning experiences. Implementation of project-based learning varies across grade levels, subjects, and schools. The Buck Institute for Education (BIE), a leading organization promoting project-based learning, has worked with thousands of schools nationwide to implement PjBL. This organization has a network of schools and educators that actively engage in project-based learning practices. However, the specific number of schools within their network and the total number of schools using PjBL across the United States is not readily available within the literature. While project-based learning seems to typically trend towards math and science subjects, I would like to explore the effects of project-based learning in an elementary literacy classroom.

Definition of Terms

There are several terms and acronyms that need to be defined in order to better understand the research described. The Buck Institute for Education states a formal definition of Project-Based Learning (PjBL) on its website: “Project-based learning is a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge” (2018). Many researchers use the acronym PBL when referring to Project-based learning, and others use PjBL. During the course of research for this paper, PBL was also used when discussing Problem-based learning. Because of this overlap, the acronym PjBL was chosen to be used throughout this paper to reference project-based learning.

The Project Method Teaching Approach (PMT) is referenced in this literature review. PMT is one tool teachers use to practically employ student choice and narrow down project topics in a PjBL classroom (Filippatou & Kaldi, 2010). The research of project-based learning in this paper is focused on the elementary literacy classroom. In this context, literacy means instruction involving reading, writing, speaking, and listening.

Social-emotional learning (SEL) is defined by the Committee for Children (2023) as: "The process of developing the self-awareness, self-control, and interpersonal skills that are vital for school, work, and life success" (para. 1). Social-emotional learning helps support academics, social skills, and the ability to cope with everyday challenges.

Guiding Questions

This literature review asks the question: 'How do teachers integrate a literacy focused project-based learning curriculum in an elementary classroom?' This paper describes detailed aspects to implementing literacy instruction through project-based learning including the PjBL design principles, the outcomes it has on student achievement and social-emotional development, and the overall effects it has on engagement in reading and writing.

CHAPTER II: LITERATURE REVIEW

Introduction to Reviewed Literature

The following literature was identified by searching research databases, including ERIC, ProQuest Education Journals, and Academic Search Premier, for articles published between 2000 and 2022. Keywords used to conduct the search itself included “project-based learning,” “social emotional learning (SEL),” “elementary education,” “informational texts,” “literacy focused,” and “responsive practices.” This literature review includes only published empirical studies and reviews from academic journals, focusing specifically on project-based learning (PjBL). A variety of grade levels and subject-emphases are included in the research.

The following sections review the definition, implementation, and outcomes associated with PjBL in the reviewed research and literature. As highlighted above, the findings of this research are intended for an elementary-age, literacy-focused application that meets the individualized needs of all learners.

Defining Project-Based Learning

The Buck Institute for Education, now doing business as PBLWorks, is a central resource for educators seeking to implement PjBL (Duke et al., 2020). The Institute explicitly defines PjBL as a constructivist approach to teaching and learning (Buck Institute of Education, 2018). To define PjBL, the fundamental constructivist features mentioned throughout the literature are reviewed.

In a qualitative case study of one elementary school’s Saturday School Program, Catapano and Gray (2015) defined the constructivist approach of PjBL as self-led learning opportunities, where students create their own knowledge of curriculum content and about themselves as learners. Constructivist learning allows students to assign new understanding to

content by incorporating their past experiences and culture. Constructivist learners start by choosing a self-selected question or problem and then collaborate with others to find a potential answer or solution (Catapano & Gray, 2015).

Researchers in this study collected data using interviews, surveys, and observations (Catapano & Gray, 2015). Surveys and evaluations were administered to students and families at the end of Saturday School sessions. Administrators, university faculty, and pre-service teachers were also interviewed and surveyed about the program. Data was intended to observe the benefits, changed attitudes, and participation for students who regularly engaged with PjBL in Saturday School. Participants included first through fifth graders who participated in at least seven of the eight sessions of Saturday School in a given semester (Catapano & Gray, 2015).

Results of this study indicated that when the curriculum was led by the students, an inherent feature of PjBL, programming was well attended. This study also called for using constructivist, PjBL approaches to better engage learners in their typical Monday through Friday classroom setting (Catapano & Gray, 2015).

Catapano and Gray (2015) also defined PjBL outside of constructivist-terms, based on the products students create while engaging in the approach. This study defined PjBL as having a final product, such as a presentation or performance, completed over a set timeframe, either independently or in collaboration with peers. Another study, discussed in further detail in the next section of this chapter, recommended that the final product in PjBL units should be presented publicly whenever possible (Duke et al., 2020).

Next, Tamim and Grant (2013) presented a case study focusing on how six teachers define PjBL in their classrooms. The teachers taught fourth through twelfth-grade students in both public and private schools. These six teachers willingly participated in the study and had

been using PjBL for at least one year at the time of their 20-45 minute interviews. Researchers conducted semi-structured, individual interviews using a pilot-tested interview protocol. Themes were then identified from these interviews (Tamim & Grant, 2013).

One of the themes that Tamim and Grant (2013) identified in teacher definitions of PjBL was student-centeredness, which teachers incorporated into the approach in a variety of ways, including collaboration. Tamim and Grant (2013) also found that working with their peers also encouraged students to test their ideas out and allowed them to make mistakes. The interviewed teachers also defined PjBL based on their perceived benefits of the approach, including the incorporation of different points of view and students' increased self-awareness of their knowledge (Tamim & Grant, 2013). Student choice and collaboration, constructivist features of PjBL as defined by The Buck Institute for Education (2018), are also identified as defining themes in the Tamim and Grant (2013) case study. Teachers' definitions of PjBL in this study emphasized collaboration and student-centeredness as defining, constructivist features of the approach (Tamim & Grant, 2013).

Another research study also defined PjBL by its constructivist features, including student-centered learning and collaboration (Parsons et al., 2011). In the 2005-2006 school year, a Title I elementary grade school in the Southeast, where 86% of students received free-or-reduced lunches, did not meet the reading requirements for adequate yearly progress determined by the No Child Left Behind Act (Parsons et al., 2011). To improve literacy, teachers chose to focus on instruction that included projects, or PjBL. When defining this type of instruction, teachers said that "project-based instruction" is "authentic, challenging, student-directed, and including an end product" (Parsons et al., 2011, p. 2). Elementary teachers in this Title I school received professional development to support their implementation of PjBL

in the classroom. While researchers were investigating how teachers utilized and felt about the professional development they received, the results included features that also defined the PjBL approach. These defining features were noted in themes identified within the data regarding positive outcomes of PjBL in the classroom. This included constructivist elements of student participation and collaboration with peers. Additionally, Parsons et al. (2011) emphasized that PjBL must include student-choice, another defining constructivist feature of the approach.

Moving away from definitions based on constructivist theory, other studies defined PjBL based on more general characteristics, including Fitzgerald's (2020) case study of one third-grade classroom in a rural Midwestern elementary school. Data in this study was collected by observing classroom instruction of PjBL, which included field notes from live sessions and transcriptions of video-recorded lessons. Researchers also utilized artifacts, including teaching materials and student projects as data in this case study. The teacher in this classroom implemented a multidisciplinary PjBL curriculum, referred to as ML-PBL, using four project-based units, each lasting between six and nine weeks. The data in this case study was collected during the third of those four PjBL units. The PjBL units taught by this teacher were defined as focusing on questions that matter to students, including an investigative process, and the creation of artifacts intended to answer the students' chosen question. PjBL is also defined in Fitzgerald (2020) by student collaboration that extends beyond peers, including educators and the larger community. Results of the Fitzgerald (2020) study will be discussed further in both the implementation and outcomes sections of this chapter.

Another study summarized the essential elements of PjBL. Krajcik et al. (2021) conducted an ethnographic study of ten teachers in a kindergarten through twelfth-grade science setting, seeking to learn what features define the approach and support teachers in implementing

it. Over 10 years, researchers collected data from these ten teachers, verified with data from 200 other teachers engaged in elementary PjBL science instruction in 41 districts and two different states. These ten teachers taught in schools that were predominately attended by students experiencing poverty or who identified within a marginalized racial group, including black or African American and Latiné. Three-fourths of the students that these teachers served received either free or reduced-price lunch. The ten classrooms also represented small, urban, and rural settings. These conditions were considered in developing, designing, and testing the PjBL curriculum, rather than being considered after a curriculum was created. The findings of this study showed that while PjBL instruction tends to be variable, there are a set of essential features that define the approach (Krajcik et al., 2021). This includes a central question or inquiry, students engagement in "situated inquiry practices," collaboration with peers, scaffolded learning that addresses academic goals, and the creation of artifacts that answer the driving question (Krajcik et al., 2021, p. 760).

Another study, discussed in more detail in the implementation section of this chapter, also defined PjBL generally. Revelle (2019) interviewed teachers about their perceptions of PjBL instruction. The PjBL curriculum provided to teachers in this study was created based on three characteristics that researchers felt defined the approach; this included students engaging with projects over a prolonged period of time, project goals being met in a series of scaffolded activities, and addressing "a real problem, need, or opportunity in the world outside of school" (Revelle, 2019, p. 97-98).

When reviewing the literature, PjBL was often defined in contrast to teacher-centered approaches. Aslan et al. (2014) stated that the main difference between teacher and student-centered approaches is found in the areas of instruction and assessment. Teacher and

student-centered approaches are associated with ages of education in this article. Teacher-centered approaches were affiliated with the "industrial age," while learner-centered approaches, like PjBL, are considered a result of the "information-age" (Aslan et al., 2014, p. 39).

Differences in instruction between teacher and student-centered approaches are mentioned throughout the literature already discussed in this section. Teachers in the Parsons et al. (2011) case study defined PjBL as being inherently different from approaches that rely heavily on lecturing, required readings, and dense, subject-specific texts, often referred to as teacher-centered. Fitzgerald (2020) defined the approach as different from teacher-centered classrooms because it is multidisciplinary, incorporating many subjects into one unit or curriculum. Catapano and Gray (2015) also defined PjBL in contrast to teacher-centered approaches in their Saturday School case study because it allowed students to collaborate with their peers and gave them freedom to choose their own learning, rather than being rigidly bound to specific schedules, plans, or requirements (Catapano & Gray, 2015). The constructivist elements of PjBL inherently make the approach different from teacher-centered classrooms.

In an article discussing the Minnesota New Country School (MNCS), Aslan et al. (2014) elaborated on the differences in assessment between teacher-and-student-centered approaches. The MNCS, founded in 1994 by education reformists and entrepreneurs, achieves learner-centered instruction and assessment using student-led PjBL (Aslan et al., 2014). A leader in alternative schooling, the MNCS emphasized the importance of "self-directedness," providing learners with "opportunities to actively design, develop, and monitor their own projects," in a way that "encourages students to design projects that they are passionate about" (Aslan et al., 2014, p. 41). Features of the MNCS that set it apart from other school settings include small

learning collectives, student-choice, universal use of PjBL, and "authentic assessment" (Aslan et al., 2014, p. 40).

In teacher-centered approaches, assessment is based on the idea that "all students are expected to gain the same learning outcomes in the same amount of time" (Aslan et al., 2014, p. 39). In contrast, assessments at the MNCS include students' awareness of their expectations prior to starting the inquiry process and continual feedback from peers and educators (Aslan et al., 2014). Students are encouraged to create multiple products throughout the PjBL process; the MNCS school employs this defining feature of the approach by asking that students complete a set number of projects each year before advancing to the next grade-level (Aslan et al., 2014).

Other literature also defines PjBL by assessing learning and retention using a variety of artifacts. Tamim and Grant's (2013) case study, discussed earlier in this section, used classroom discussions, self-assessments, and weekly reports as alternative, learner-centered assessments when using the PjBL approach.

The reviewed literature defines PjBL as a constructivist approach, namely because of the foundational characteristics of student-choice and collaboration (Buck Institute of Education, 2018; Catapano & Gray, 2015; Duke et al., 2020; Parsons et al., 2011; Tamim & Grant, 2013). Project-based learning is also more generally defined as an approach that focuses on questions which matter to learners, who create products within a set timeframe that investigate or answer their chosen inquiry (Catapano & Gray, 2015; Fitzgerald, 2020).

The literature also includes definitions that contrast PjBL with teacher-centered approaches, namely differences in instruction and assessment (Aslan et al., 2014). Rather than focusing on teacher-led lectures and individual subject instruction, PjBL focuses on student-choice and incorporates multiple subjects into the same unit (Catapano & Gray, 2015;

Fitzgerald, 2020). Assessment in PjBL differs from teacher-centered approaches because students are engaged with their expectations, while giving and receiving feedback with their peers (Aslan et al., 2014). This can include activities like classroom discussions, reflection journals, and self-assessments (Tamim & Grant, 2013).

Implementing Project-Based Learning

The literature often references the implementation of PjBL, putting the elements which define the approach into action. In general, PjBL can take many forms and can be applied from a single classroom, to a school-wide context (Dole et al., 2017).

The Buck Institute for Education, now doing business as PBLWorks, and the organization EduTopia both provide PjBL resources, including session planning guidance and training, to teachers looking to implement the approach (Duke et al., 2020). The Buck Institute for Education provides a set of standard recommendations for implementing PjBL, including the recommendation that implementation should include opportunities for students to build both curricular knowledge and "career readiness skills" (Buck Institute of Education, 2018, p.1). The Buck Institute of Education also recommends that projects or artifacts created by students should be focused on a question or problem that encourages "real-world engagement" (Buck Institute of Education, 2018, p. 1). Implementing this "authentic" form of engagement includes students receiving feedback from "real-world actors" and a public presentation of final products to "invested community members" (Buck Institute of Education, 2018, p.1). The recommendations made by The Buck Institute of Education (2018) also included implementing a "sustained inquiry," dedicating more than a few days to PjBL. Student-choice and reflection are other elements that are also recommended as essential to implementing the approach (Buck Institute of Education, 2018).

Teachers can implement student-choice by seeking out questions that are meaningful to students. In their case study, Filippatou and Kaldi (2010) referenced a method of employing student-choice, called the Project Method Teaching approach (PMT), where students are surveyed for topics they are interested in or questions they care about pursuing. In the case study, students discussed their interests in classroom discussions, which led to a PjBL unit focused on sea animals (Filippatou & Kaldi, 2010). The students in this study showed interest in learning more about sea animals and the topic offered opportunities for experiential and field-based learning (Filippatou & Kaldi, 2010). This specific case study will be discussed further in the outcomes section of this chapter.

In an informational article describing how teachers can implement PjBL, Duke (2016) described how the approach was used in one classroom teaching English Language Arts (ELA) and writing skills. Duke (2016) detailed one third grade classroom where students used a blog written by a marine biologist as a model to create their own posts about plants and animals native to the area. Students focused on one plant or animal that they then researched and wrote about on their blog. Here, PjBL was used to learn writing skills, identified in the real-life example, and then practiced in their project (Duke, 2016).

Duke (2016) recommended steps for implementing PjBL units, starting with setting instructional goals, including subject content and standards. Next, Duke (2016) recommended that an inquiry is established that can engage specific academic content chosen for the unit. After this, Duke (2016) suggested that students and teachers collaborate to choose a project or artifact, which the teacher then structures or scaffolds. Setting a time each day or week is one way that this article recommended implementing PjBL in the classroom (Duke, 2016).

Krajcik et al. (2021), detailed in the definitions section of this chapter, also discussed

effective implementation of PjBL units. This includes basing unit-level questions on the lesson-level inquiry, including "artifacts threaded throughout a unit," and scaffolding learning outcomes and skill-building (Krajcik et al., 2021, pp. 765). Each unit also involved the teacher prompting students to engage in a discussion related to the science-topic (Krajcik et al., 2021).

Research on PjBL included using technology to implement the approach. In a randomized control trial, Wang (2020) discussed the supportive and challenging elements of using technology learning materials to implement a PjBL unit. This study included fifty-one elementary-age students, randomly assigned to two groups using game-based learning materials and either e-books or augmented reality (AR) materials (Wang, 2020). The researchers sought to identify any differences in learning performance and classroom experience between the two groups (Wang, 2020). E-books, AR learning materials, and game-based learning were chosen because of their respective accessibility, interactive learning, and enjoyable, "low stress" nature (Wang, 2020, p. 54). All 51 students were taught by the same science teacher and spent three hours each week for four weeks in their dedicated experimental instruction group. There were thirty students placed in the game-learning and e-book group and twenty-one students were assigned to the e-book and AR group. Data was collected using pre-and-post tests, activity scores, questionnaires, and interviews. The two group's science pretest scores indicated that they had equal science knowledge prior to the experimental period (Wang, 2020).

Wang (2020) reported no differences in learning performance between the two groups, both reporting positive student feedback about using e-learning materials. Students in the AR group tended to score higher on feedback than students who used e-books (Wang, 2020). This indicated that students enjoyed AR and also reported that the e-learning method helped them learn the science concepts. Wang (2020) also reported that "most students enjoyed learning with

the game-based learning materials" and "that they did not feel stressed even when they could not answer the questions" (p. 62). Game-based learning was also found to help students create their artifacts in the science PjBL activity, but they found it difficult to complete their work using the method. When incorporating learning technology in PjBL, it can increase student participation and learning motivation, but may make completion more difficult. Wang (2020) also reported that the e-learning materials can be helpful in scaffolding learning and encouraging student discussion. The study called for additional research exploring the impact of e-learning materials on student inquiry exploration and creativity, due to the potential for AR to limit students' thinking and creativity (Wang, 2020).

Another study implements PjBL using a technology element. Huang et al. (2012) conducted a quasi-experimental study comparing regular PjBL and PjBL using a digital storytelling approach with 117 fifth grade students in Taiwan. The experimental group of 60 students used Meta-Analyzer and Photo Story, two electronic systems for searching the internet and creating digital stories, to complete a PjBL science curriculum where the projects were movies. The researchers in this study sought to determine how digital storytelling in PjBL impacts student's learning motivation, achievement, and problem-solving capacity. Both groups completed pre-and-post-tests, a learning motivation scale, problem-solving competence scale, course content assessment, and interviews. This study includes a 16 week science curriculum, in which both groups completed a unit about saving energy. Five learning tasks, specific to topics like global-warming and energy-saving homes, were included in the curriculum. The control group used a typical PjBL approach, while the experimental group took photos using digital cameras and created stories based on those pictures. The experimental students then used an editing system to present a story about the learning content (Huang et al., 2012). This study

provided one example of how PjBL can be implemented using technology. The outcomes of the Huang et al. (2012) study are discussed further in the next section of this chapter.

In a qualitative study, the perceived challenges and successes experienced by 24 second grade teachers who implemented PjBL to teach social studies and literacy were examined (Revelle, 2019). The 24 teachers included in this study taught in 20 different schools within 11 districts in one Midwestern U.S. state. The schools tested below the state average in reading, writing, and social studies and 65% of students received free or reduced-price lunch (Revelle, 2019). Using a control and comparison group, each with 24 teachers, data was collected using end-of-year interviews. All of the teachers included in the study were new to implementing PjBL. Before implementing the approach, all teachers attended a three-hour professional development workshop detailing the research project and PjBL. All implementation materials were provided ahead of time; during the year of PjBL instruction, teachers attended webinars that detailed the upcoming PjBL units. Teachers were visited by research assistants an average of 11 times per year, who also provided coaching related to PjBL implementation. Revelle (2019) found that implementing the PjBL curriculum was identified as both a challenge and success for teachers. More than half of the teachers in this study reported that PjBL was feasible for them to implement and for their students to engage with. The remaining teachers found that implementing PjBL was challenging for a variety of reasons, including lack of time and lack of student's prior knowledge (Revelle, 2019).

Teachers' engagement with the curriculum and perception of how feasible it was to implement PjBL were significant predictors of teachers' perception of the approach as either a success or challenge (Revelle, 2019). Teachers who perceived their implementation of PjBL as successful often listed hands-on activities as essential to the positive outcomes they experienced.

Revelle (2019) specifically noted the importance of understanding how educators experience PjBL in order to better support effective implementation of the approach. Next, this section reviews literature which discusses how to support the implementation of PjBL.

The reviewed literature often references the impact of school support on how and if PjBL is implemented (Catapano & Gray, 2015; Culclasure et al., 2019; Lam et al., 2010). A survey studying 182 teachers investigated how school support can be a resource that motivates teachers implementing PjBL (Lam et al., 2010). Eight schools in Hong Kong, China began implementing PjBL when there was a city-wide call for education reform. Implementation in this study included small groups of between five to six students choosing teacher-approved topics and working on projects, such as written reports or oral presentations, for between two to three months. Teachers who participated in the study received a questionnaire either one or two weeks after their student's final presentations, which they completed at home or in school, and returned within one week. Results of these surveys were evaluated in three areas: competence, autonomy, and colleague support. When teachers perceived their school as being supportive of their competence and autonomy, they were more driven to implement PjBL and more likely to continue using the approach in the future. Shared responsibility among colleagues is another factor that supported teachers implementing this approach. Researchers noted that this indicates the importance of school support beyond the observed components, including infrastructure resources like "class size, workload allocation, and financial resources" (Lam et al., 2010, pp. 493).

Another study, discussed further in the outcomes section of this chapter, also associates school or administrative support to successful implementation of PjBL (Culclasure et al., 2019). Two of the three schools in this study terminated use of PjBL due to lack of administrative and

district support, as well as an emphasis on standardized testing. Teachers not fully understanding how to implement the approach was also associated with the termination of PjBL in this study (Culclasure et al., 2019).

Aside from support from the school and administrators, teachers were supported in implementing PjBL by their own skills. Tamim and Grant (2013), detailed in the previous section of this chapter, noted intrinsic characteristics that support teachers in effectively implementing PjBL. These characteristics include being "motivated, open to a change in their teaching practices, and ultimately…flexibility in planning the learning experiences of students" (Tamim & Grant, 2013, p. 75). Changes in their teaching practices included assuming a variety of roles in the PjBL process; this includes reinforcing, extending, or initiating, and navigating between these three roles based on students' needs (Tamim & Grant, 2013). The study also noted that for teachers working with large classrooms, it may become more challenging to implement the assessment process involved in PjBL (Tamim & Grant, 2013).

Another study, also detailed in the previous section of this chapter, investigated how teachers in a Title I school viewed PjBL instruction and implementation (Parsons et al., 2011). The study notes certain skills that supported teachers in implementing the approach, including practicing self-control and using effective classroom leadership. Four themes are identified for difficulties noted by teachers in implementing the approach: "time, resources, classroom management, and teacher restraint" (Parsons et al., 2011, p. 10).

In the Fitzgerald (2020) study, a teacher's ability to adopt student-centeredness is noted as an important factor to effectively implementing PjBL. This is described as the teacher moving from the role of "director to facilitator" in the classroom (Fitzgerald, 2020, p. 596). This study also indicated effective implementation of PjBL is supported by a teacher's ability to align the

curriculum with learning requirements (Fitzgerald, 2020). This review will discuss the Fitzgerald (2020) study further in the next section of this chapter.

Implementation of PjBL is a topic covered heavily in the literature. The Buck Institute of Education recommends that the approach be focused on a real-world problem, include long-term engagement, and employ student choice and reflection (Buck Institute of Education, 2018; Duke et al., 2020). The Project Method Teaching Approach (PMT) is one tool teachers use to practically employ student choice in a PjBL classroom (Filippatou & Kaldi, 2010). When implementing the approach, the literature recommended that teachers start by setting goals for instruction, then establish an inquiry and decide what artifacts will be created; the learning outcomes are then scaffolded using the chosen topic and delivered for students to engage with during school-time (Krajcik et al., 2021).

Project-based learning can be implemented using technology elements, including AR, e-books, game-based learning, and digital storytelling (Huang et al., 2012; Wang, 2020). While benefits are noted when using technology to implement the approach, they also present unique challenges (Huang et al., 2012)

While the PjBL approach is noted as being feasible for teachers to facilitate and students to engage with, teachers struggled to implement the approach due to lack of time and students' base knowledge (Revelle, 2019). School support was often referenced as an important factor to whether teachers successfully implemented the approach or struggled to do so (Catapano & Gray, 2015; Culclasure et al., 2019; Lam et al., 2010). Administrative and district support of teachers' competence and autonomy, as well as shared responsibility among teachers were all beneficial in implementing PjBL (Lam et al., 2010). Without this type of support, PjBL is typically not implemented long-term (Culclasure et al., 2019).

Teachers who are motivated and flexible with their role in the classroom were found to be most effective at implementing PjBL (Tamim & Grant, 2013). Four types of difficulties are noted by teachers in implementing the approach: "time, resources, classroom management, and teacher restraint" (Parsons et al., 2011, p. 10). Being able to adopt student-centered teaching approaches, while incorporating learning outcomes is essential to effective implementation (Fitzgerald, 2020).

Outcomes of Project-Based Learning

Finally, this review summarizes the observed outcomes of PjBL. This includes outcomes related to academic achievement and social-emotional learning (SEL). Additional outcomes, like motivation and creativity, are also noted.

The De Vivo (2022) article summarized the outcomes of four separate PjBL studies, called the Lucas Education Research (LER) projects; these projects sought to create a better understanding of what effective PjBL looks like in the classroom. This article included several positive outcomes associated with the effective implementation of PjBL (De Vivo, 2022). Each of the four LER studies include increases in academic achievement for students who engaged in PjBL. One of the LER-studies found that in the first year of using PjBL in Advanced Placement (AP) courses, eight percent more students passed the affiliated AP test (Saavedra et al., 2021). When teachers had two or more years of experience using PjBL in the AP classroom, ten percent more students received passing AP test scores (Saavedra et al., 2021). Another of the LER-studies found that when middle-schoolers in California were taught science using PjBL, they tested eleven percent higher on a science assessment than their peers in teacher-centered classrooms (Deutscher et al., 2021). The students in this study also scored higher on end-of-year testing for both science and ELA (Deutscher et al., 2021).

Krajcik et al. (2021) discussed in both the definition and implementation sections of this chapter, is also included in the De Vivo (2022) article. This study observed that third-graders who learned science using a PjBL curriculum scored eight percent higher on a science assessment than their peers who were taught using a teacher-centered approach (Krajcik et al., 2021).

Another study, introduced in the definition section of this chapter, is also included in the De Vivo (2022) article. This randomized control trial includes two groups of teachers: one group teaching a social studies curriculum using their normal, non-PjBL teaching styles and another teaching the same curriculum using PjBL (Duke et al., 2020). Each group taught 80 lessons over the course of one school year using their respective approaches.

Student achievement was measured using pre-and-post tests in social studies, informational reading, and writing (Duke et al., 2020). Students also received a Likert-scale survey measuring their motivation to learn social studies and literacy. Second graders who engaged in the Duke et al. (2020) PjBL-group showed social studies learning that was five-to-six months ahead of their peers in the comparison group. These same students also experienced a two-to-three month advantage in informational reading when compared to students receiving the teacher-centered instruction. Students in the PjBL-group were more engaged in their learning than their peers in the comparison group. The study did not observe a difference in writing achievement or motivation between the two groups. When the PjBL session plans were more consistent, Duke et al., (2020) found that students in the PjBL group experienced higher achievement in writing and reading and were more motivated to learn than their peers in the comparison group.

One case study, also in the De Vivo (2022) article, used a pre-post-test design to observe the outcomes experienced by twenty-four fourth grade students from three cities in Greece (Filippatou & Kaldi, 2010). These twenty-four students are identified as having learning difficulties and were taught in six different mixed-abilities classrooms (Filippatou & Kaldi, 2010). The experimental program was implemented over the course of eight weeks, with two-to-three hours of PjBL teaching each week (Filippatou & Kaldi, 2010). Filippatou and Kaldi (2010) used observations in the classroom, standardized learning difficulty assessments, unit tests, attitude surveys, and interviews with students and teachers.

Filippatou and Kaldi (2010) noted positive outcomes associated with using PjBL to meet the needs of diverse learners. Students in this study experienced positive outcomes when working in PjBL groups. This included positive impacts on social acceptance and higher learning outcomes when compared to their peers who did not engage in PjBL (Filippatou & Kaldi, 2010). Specifically, all twenty-four of the students experienced greater informational retention and felt the PjBL approach helped them learn better (Filippatou & Kaldi, 2010). Students increased their knowledge, doing so through "hands-on" and "experiential learning;" the "multi-sensory approach," inherent to PjBL, is found to be better meet the needs of students with learning difficulties, according to this study (Filippatou & Kaldi, 2010; p. 23) Students in this case study felt the approach was more amusing and motivational than other, teacher-centered approaches. All but two of the students identified working in groups as one element that contributed to their positive perceptions and outcomes related to approach. Students in the PjBL group were more engaged in the learning process, more accepted within the learning community or group, and improved their attitudes toward group-based work (Filippatou & Kaldi, 2010).

Duke (2016) discussed how PjBL can meet the diverse needs of all learners, a notable outcome associated with the approach. This included the learning needs of younger students and students with behavioral or learning differences. The Duke (2016) article included one study that when PjBL was implemented in high-poverty schools, the approach was able to "close the academic gap" (p. 7) between schools in wealthier districts.

Catapano and Gray (2015) discussed in the definitions section of this chapter, also associated PjBL with positive impacts on students and their families, including improved attitudes toward learning (Catapano & Gray, 2015). The study found that when students take the lead to plan their learning, they tend to also be more engaged in the process. Catapano and Gray (2015) found that literacy skills, specifically reading and writing, are inherent to engaging in PjBL. In addition to learning more, feeling more excited about, and enjoying PjBL better than teacher-centered approaches, students in this study also experienced improvements in their capacity for conflict resolution. This includes respecting diverse and different opinions. Students in this study also reported gaining and refining their problem-solving, time-management, goal-setting, and presentation skills. Teachers in the Catapano & Gray (2015) study also agreed that PjBL allows students to practice important skills, including collaboration, creativity, and critical thinking.

In a case study of 25 five to six year old students, Prachagool (2021) observed the impact of PjBL on learning outcomes in a literature context. During the 2020-2021 school year, a primary school in northeast Thailand implemented 32 researcher-created learning plans using literature and PjBL. Data was collected using observations, focus group debriefings, and interviews. Results indicated that young learners are highly capable of understanding and managing literacy-focused PjBL experiences. Results also indicated that four-fifths of the

students who participated in the study had high levels of learning, motivation and "eagerness to learn" (Prachagool, 2021; pp. 95). Prachagool (2021) found that PjBL including literature or literacy elements is appropriate for early childhood education.

One case study discussed the use of collaborative teaching with PjBL, seeking to understand the impact of this approach on student's reading skills and attitudes (Chow et al., 2011). In one Hong Kong primary school, teachers from several subjects collaborated with the school librarian to implement an inquiry PjBL activity. The students engaged in a group research project in two phases over the course of 19 weeks. Data was collected using Progress in International Reading Literacy Study (PIRLS) tests, surveys, and interviews. In total, Chow et al. (2011) collected data from 132 students, 25 parents, and 11 teachers. The students in this China-based study were Primary 4 in school, similar to the fourth grade in the United States. Chow et al. (2011) stated that students who engaged in this collaborative teaching PjBL approach improved their reading performance; students were also more interested in reading after engaging in PjBL activities. Students, parents, and teachers perceived the collaborative element of this approach as fundamental to the improvements in reading skills. The results of this study also indicated improvement in three specific reading skills: comprehension, speed, and vocabulary (Chow et al., 2011).

Another study, discussed briefly in the implementation section of this chapter, noted outcomes associated with PjBL (Culclasure et al., 2019). Students, teachers, and school administrators from three schools were observed and surveyed with the intention of understanding how PjBL is implemented and the impact of the approach on all parties. An online survey was administered to both teachers and students and received close to 100 teacher responses, including 26 elementary-school and 38 middle-school educators. More than 850

students responded to the survey, including 210 third-and-fourth-graders. Students also completed behavioral, academic, and SEL assessments; the study uses the Devereux Student Strengths Assessment (DESSA), intended to measure social emotional skills. Assessment scores for students who participated in this study were then compared to national averages for students of the same age (Culclasure et al., 2019).

When standardized state test scores for ELA and math were compared, the students in the Culclasure et al. (2019) study scored similarly to their peers at the national level; when students who learned using PjBL were compared to a national average, there was no statistically significant difference in average academic test scores (Culclasure et al., 2019). The same students in this study were compared to their national peers in terms of social emotional skills using DESSA scores. The DESSA is a validated inventory of eight social emotional competencies (Culclasure et al., 2019) of "self-awareness; social awareness; self-management; relationships skills; goal-directed behavior; personal responsibility; decision-making; and optimistic thinking" (p. 6). Culclasure et al. (2019) noted that when DESSA scores for all eight competencies were compared, students who engaged in PjBL scored higher than their averaged peers at the national level.

Culclasure et al., (2019) noted a positive perception of PjBL when reviewing the survey responses for students who engaged with the approach. Students believe that PjBL gave them more of a choice and they learned more than when they engaged in teacher-centered approaches. Students survey responses also indicate that they were excited to participate in the classroom using PjBL and more comfortable presenting their work amongst their peers. This study also noted that students reported being better able to respect opinions different than their own; they also had better experiences with conflict-resolution. Time-management, realistic goal-setting,

and improved problem-solving were other experiences noted frequently in student surveys about PjBL in this study (Culclasure et al., 2019).

Another study, Fitzgerald (2020), discussed in the definition and implementation sections of this chapter, also noted outcomes experienced by students using PjBL. The 31 students who participated in this study experienced SEL outcomes that researchers associated with the inherent features of PjBL. Specifically, researchers note that their observations indicate the following (Fitzgerald, 2020):

> …an integrated elementary-grade [PjBL] curriculum provided opportunities for students to learn and use social-emotional skills and literacy tools of reading, writing, viewing, and representing across each of the analyzed lessons. (p. 584-585)

Researchers in this study associated students' interest and engagement in the learning content as essential to the observed SEL outcomes (Fitzgerald, 2020). Additionally, certain elements of PjBL, including collaboration, reflection, and autonomy, are noted as being facilitators of SEL for students in this study (Fitzgerald, 2020).

Discussed in the implementation section of this chapter, Revelle (2019) also noted significant student outcomes. All 24 teachers who participated in the study perceived that their students were excited and engaged in their PjBL experiences. One teacher noted that their student's motivation was high and that the PjBL experience empowered them to take action in the local community. Teachers in the Revelle (2019) study also perceived an improvement in overall student learning and engagement associated with PjBL.

One study, discussed in detail in the definitions section of this chapter, discussed the social emotional outcomes experienced by young students who used PjBL (Tamim & Grant, 2013). Teachers who implemented the approach identified four advantages for students,

including facilitating and supporting students' learning, eliciting group work, and promoting collaboration. Project-based learning was also noted as keeping students motivated to learn and engaged in their work. Tamim and Grant (2013) also noted that, in addition to engaged and motivated learning, students who engaged with PjBL were able to differentiate themselves and practice their creative skills more.

Dole et al. (2017) sought to explore the effects of inquiry-based PjBL on student learning and motivation. This single case study observed 36 teachers who completed a hybrid Academically or Intellectually Gifted licensure program at a southeastern regional state university (Dole et al., 2017). Teachers completed four weeks of online coursework and one week of in-person field experience, during which they facilitated problem-based and PjBL activities with students grades one through nine. Students called the summer day camp experience 'Rocket to Creativity' (Dole et al., 2017).

The study included structured online and follow-up telephone interviews with four teachers (Dole et al., 2017). Researchers also observed teachers during their week-long field experience at the summer day camp. From these observations, surveys, and interviews, Dole et al. (2017) found that students who engaged in PjBL held positive attitudes about learning and experienced improvements to their academic mindsets. One teacher felt that this change in academic mindset better prepares learners for the 21st-century. This study also finds that students were more motivated, engaged, and creative when engaging in PjBL. Teachers in the study note that learners were focused when engaging with PjBL. Teachers also felt that the PjBL approach allowed students to learn skills that were secondary to the primary lesson or topic, like problem-solving or literacy skills (Dole et al., 2017).

In addition to experiencing improvements in learning attitudes, students also seemed to prefer PjBL over other approaches (Dole et al., 2017). Project-based learning incorporates both autonomy and collaboration, which Dole et al., (2017) found to be a notable student preference.

Another study sought to observe the impact of PjBL on students' critical thinking skills (Andrini et al., 2019). Teachers in this study chose to use the PjBL approach to improve scores on Substance Changes assessments. The quasi-experimental study took place during the 2017-2018 school year with one experimental group of 38 students. The students took a pretest, then received PjBL lessons about the Substance Change topic, then completed a post-test. Results of this study indicated that students experienced improvements in their critical thinking skills when engaging with PjBL. In addition to critical thinking skills, teachers in this study aso believed that the PjBL approach also promoted interpersonal skills, interdisciplinary skills, and project management (Andrini et al., 2019).

Another quasi experimental study observed the impact of PjBL materials, used to teach math, on students' creative thinking and active problem solving skills (Dafik et al., 2020). Teachers in this study taught contextual division problems using teacher-centered and PjBL. The two groups of students included a control class with 19 students and an experimental class with 20 students. Researchers collected data from students using observations, interviews, and written tests, including a pre-and-post test. Qualitative and quantitative data are included in a mixed-methods approach (Dafik et al., 2020).

The primary outcome observed in the Dafik et al. (2020) study is creative thinking, measured using a 5-point Likert scale (Dafik et al., 2020). Researchers also observed students' active problem-solving skills. This study found that when elementary-grade students used PjBL to solve math word problems, 72% of students were either actively or very actively engaged in

problem-solving. Students in the PjBL-class improved their creative thinking skills more so than their peers in the control class. In the PjBL class, 49% of students had either creative or very creative thinking skills, compared to only 23% of their peers in the control class. This study found that when PjBL materials are provided to students, their active problem-solving and creative thinking skills are engaged more effectively (Dafik et al., 2020).

The outcomes associated with PjBL are widely discussed in the literature, including the LER-projects (De Vivo, 2022). These studies associate PjBL with a significant increase in test scores and content comprehension for high-school, middle-school, and elementary-age students (Deutscher et al., 2021; Duke et al., 2020; Krajcik et al., 2021; Saavedra et al., 2021).

One of the LER-studies emphasizes that the outcomes experienced by students who engaged with PjBL in a high-poverty school show the potential for the approach to "close the academic gap" (Duke, 2020, p.7). The literature also noted other examples of outcomes that indicate PjBL may meet the needs of a more diverse set of students, including students with physical, mental, behavioral, and learning difficulties, differences, and disabilities (Duke, 2016; Filippatou & Kaldi, 2010).

Literacy-based outcomes are also associated with PjBL throughout the literature, including indication that the approach is appropriate for early childhood learning (Prachagool, 2021). The literature also stated that students were more interested in reading and improved their reading performance after engaging with PjBL (Chow et al., 2011). This may be associated with PjBL's inherent engagement of SEL and literacy skills (Fitzgerald, 2020).

Despite these positive literacy-based outcomes, the literature also notes no statistically-significant difference between ELA and math scores for students who engaged in PjBL and those who learned in a teacher-centered classroom (Culclasure et al., 2019). Positive

outcomes of the approach were often social-emotional; students who learned with PjBL scored higher on all eight separate measures of SEL measured in the DESSA (Culclasure et al., 2019).

Throughout the literature, students who engaged in PjBL were perceived as motivated, excited, and engaged, while also improving their learning (Dole et al., 2017; Revelle, 2019; Tamim & Grant, 2013). Other skills, like problem-solving, time-management, realistic goal-setting, presentation skills, creativity, critical thinking, and problem solving skills are also cited as improving when students engage in PjBL (Catapano & Gray, 2015; Culclasure et al., 2019; Dafik et al., 2020). The approach is also linked to improvements in interpersonal, interdisciplinary, and project management skills (Andrini et al., 2019). Students are also noted as having more positive learning attitudes and improved conflict resolution skills when engaging with PjBL (Catapano & Gray, 2015).

Concluding Remarks

The reviewed literature briefly defines PjBL as a constructivist approach that allows students to choose their learning, collaborate with their peers, create artifacts, reflect on their learning, and present to authentic audiences in the context of classroom learning (Buck Institute of Education 2018; Catapano & Gray, 2015; Duke et al., 2020; Fitzgerald, 2020; Parsons et al., 2011; Tamim & Grant, 2013).

Implementing the approach is emphasized in the literature, recommending that educators who implement the approach focus on a real world problem chosen by learners, facilitated over a prolonged period of time (Buck Institute of Education, 2018; Duke et al., 2020). Tools for employing student choice, for building a PjBL curriculum, and for implementing the approach using elements of technology are also highlighted in the research (Filippatou & Kaldi, 2010; Huang et al., 2012, Krajcik et al., 2021; Wang, 2020;).

Challenges to implementing PjBL are presented in the literature, included lack of time, administrative or district support, classroom management, and teacher restraint or flexibility (Catapano & Gray, 2015; Culclasure et al., 2019; Lam et al., 2010; Parsons et al., 2011; Revelle, 2019; Tamim & Grant, 2013)

A majority of the literature focuses on outcomes associated with PjBL. Some literature associated the approach with increased test scores, content comprehension, and reading performance for high-school, middle-school, and elementary-age students, while others found no statistically significant difference in test scores between project-based learners and their peers (Chow et al., 2011; Culclasure et al., 2019; Deutscher et al., 2021; De Vivo, 2022; Duke et al., 2020; Krajcik et al., 2021; Prachagool, 2021; Saavedra et al., 2021).

Positive outcomes of the approach were often social-emotional and included advantages to using the approach on skills like problem-solving, time and project management, realistic goal setting, critical thinking, creativity, and working with others (Andrini et al., 2019; Catapano & Gray, 2015; Culclasure et al., 2019; Dafik et al., 2020).

The literature available is broad, with studies taking place both in the U.S. and internationally, with a variety of learner needs, grade levels, and subjects. Due to the nature of the approach, it is reasonable for the majority of literature to be single case studies, but some randomized-control trials and quasi-experimental studies are included in this review.

CHAPTER III: APPLICATION OF THE RESEARCH

In order to apply the research of literacy focused project-based learning, unit planning templates and three different unit topics were created, all which model specific aspects of the literature reviewed on literacy focused project-based learning. PBLWorks (2019) noted that lessons should include challenging problems or questions, sustained inquiry, provide authentic real-world context, and give students the choice not only with how but what they create. It should also include time for reflection, allow feedback and time for revision, and conclude with a product or presentation that can be shared with the community. A fourth unit plan was created along with a slideshow to better understand how the unit would be taught to students.

Based on this research and the unit plan framework by Duke (2016), Table A1 of Appendix A displays a project-based learning unit plan outline for teachers to use when outlining units. First, teachers must develop an essential question in order to provide a purpose for student learning. Next, a summary of the inquiry describes the unit topic of investigation taking place. In order to provide opportunities for inquiry in the Project-Based Learning (PjBL) approach, Chu et al. (2011) stated that the teachers in their study sourced various kinds of research and reading materials related to the project focus for students to explore. The PjBL units described by Duke et al. (2020) all centered around a project with an authentic purpose, public product, student voice and choice, and "opportunities for extended informational text reading and writing" (p. 176). Mapping out the real-world context and opportunities for student choice should be an intentional part of outlining the unit, in order to help guide the final product that students will create and share with their community.

Continuing to model the research of Duke (2016), Table A2 of Appendix A displays a PjBL scope and sequence to use after outlining the unit. Duke (2016) recommended 15-20

session units to take place, each about 45 minutes. Session 1 is the Project Launch, where the teacher establishes the purpose and audience for the project. In sessions 2-6, students research to build on their previous knowledge, and gather new information for the project. In sessions 7-11, students write a draft of the project, and continue to research as needed. In sessions 12-16, students revise and edit in order to improve their project. In sessions 17-20, students present their projects to an authentic audience and celebrate their accomplishments. While this amount of time on a PjBL unit would be ideal, that is not always possible in classrooms where the pressure to teach a number of standards and learning targets takes up a majority of classroom time. The PjBL scope and sequence displayed in Table A2 of Appendix 2 better represents the amount of time that teachers and students can successfully complete a unit, balancing the positive outcomes of a PjBL unit with the heavy load of standards to cover in other subjects throughout the day.

There are many design principles and teaching strategies that should be considered when creating a PjBL curriculum. Each session in the unit outline described in Table A2 of Appendix A models that of Duke (2016), where the session begins as a whole-class lesson for 10-15 minutes, followed by small-group, partner, or individual work for 25-30 minutes, and ending with a whole-class wrap-up for 5 minutes. This unit outline and sequencing can be modified for different topics and classroom schedules, but provides teachers with a successful framework for designing and implementing project-based learning units. Lesson structure should be consistent throughout a unit, and include driving questions that move it toward the next lesson (Miller et al., 2021). The PjBL units described by Revelle (2019) included opportunities for students to make choices and collaborate with each other while addressing social studies and language arts standards, and follow a similar lesson structure as described by Duke (2016). Kokotsaki (2016) proposed that scaffolding students' learning is one important skill teachers should enact when

using a PjBL teaching model. Mulcahy and Wertz (2021) used recommendations made by the Buck Institute for Education (2018) to define PjBL design principles. In this set of recommendations, PjBL curriculum design should use a complex essential question and identify a specific set of learning goals. The design should also support collaborative learning, and foster student engagement through scaffolding project steps. The unit should end with a final product and/or a public presentation to authentic audience members (Buck Institute of Education, 2018; Mulcahy & Wertz, 2021). De Vivo (2022) shared important characteristics of successful PjBL programs, including lessons that are rooted in purposeful experiences, created from content standards, foster collaboration and innovation, and are taught by educators who are supported with high-quality professional learning surrounding PjBL. Other important aspects to include in PjBL include time for students to:

> (a) make connections and identify patterns across project experiences, within and across PBL units; (b) reflect on their learning processes; (c) summarize their learning in whole- and small-group discussion; and (d) incorporate feedback from the teacher and peers to improve project work. (Fitzgerald, 2020, p. 593)

Appendix B provides specific literacy focused project-based learning units that can be implemented from first grade through fifth grade learners. Table B1 shares the title of each unit as follows: First grade Writing Letters; Second and Third grade Fractured Fairy Tales; Fourth and Fifth grade Broadcasting. Tables B2, B3, and B4 go into more detail about each unit, using the unit plan outline from Table A2 of Appendix A. Aslan et al. (2014) recommended that students are made aware of standards for success before initiating their project, and should receive feedback throughout the entire process. Rather than creating just one end-stage project, students engaged in PjBL might create several projects during the school year, with one

classroom-application of PjBL requiring students to complete 10 projects per grade level (Aslan et al., 2014). The lessons outlined in Appendix B are just one example out of many topics and skills that can be taught using PjBL during a school.

In the first grade writing letters unit as described in Table B2, students will work towards answering the essential question, "How can writing letters make an impact on someone's life?". In this unit, students analyze the format of a letter, and begin by practicing writing letters to someone they know. After the first sessions of research, students will make real-world connections by sending and receiving letters to a pen pal in their community, who will be a resident of a local assisted living home. Teachers can adapt the recipient of the letters, for example by having students connect with students of the same age at another school, or to connect with community heroes. Students will be able to make decisions on who they write their practice letters to, and what they choose to write about in their letter. Students can add drawings, decorations, and can write or type their letters. As a final product, students will exchange three letters with a resident of a local assisted living home. Students will create a google slides presentation with pictures of their letters and will share with their classmates how this made an impact on the lives of their pen pal. Catapano and Gray (2015) discovered that students had a more positive attitude towards learning because of the more hands-on instruction delivered through PjBL. This lesson takes first grade reading and writing standards and creates an authentic, real-world experience for students, while working towards letter writing learning goals.

A literacy focused project-based learning unit appropriate for second and third-graders surrounds the analysis and creation of fractured fairy tales. As outlined in Table B3, students will work towards answering the essential question: "What are the elements of a fractured fairy tale?"

During this unit, students will read and analyze classic versions of fairy tales, as well as the fractured fairy tales that have been created based on those stories. In order to apply a real-world context, students will create their own fractured fairy tale, including the elements of the genre previously analyzed and researched. Hung et al (2012) found that "...storytelling is an effective instructional strategy for promoting learning motivations and improving the learning performance of students" (p. 369). In order to provide opportunities for choice, students will have a variety of modes for creating their story, including options involving technology. Wang (2020) noted that using technology tools can increase students' engagement and motivation during PjBL units. For example, by using game-based activities, e-books, and interactive environments that allows students to self-explore. In this unit, students can produce their story into a WeVideo, stop motion animation video, google slides presentation, or into a physical picture book, just to name a few possible products. Teachers may want to adapt this unit plan based on the technology available and may consider adding more days to the unit for students to create their project in order to allow more time for revising, reflection, and feedback from teachers and peers. This unit is an engaging analysis of fairy tales that motivates and excites students to be creative, while applying their learning into an authentic experience they get to share and celebrate with others.

A literacy-focused project-based learning unit for fourth and fifth graders is outlined in Table B4, and takes nonfiction to the next level through a news broadcasting unit. In this unit, students will work toward the essential question, "How can we communicate important announcements and current events with others?". In the beginning sessions of the unit, students will read, watch, and analyze the elements of a newspaper/news segment. As an authentic, real-world experience, students will write and produce a news broadcast to be shared with other

students in the school building. Students will work on broadcasting teams, where they will choose a specific role in producing their broadcast. Broadcast topics can involve reporting on the climate of chosen areas around the world, reporting on historical events as if they were in that time period, or researching and reporting from a specific country, just to name a few examples. This project can integrate virtually any subject with literacy. When implementing the "One Hen" project, Whitlock and Fox (2014) integrated literacy into a social studies unit, using a mentor text as a guide for the project. With the application example, students will work together to write and produce a news broadcast, and for those that spark an interest, can continue to be a part of a broadcasting team that puts out weekly videos for the school building throughout the year. Teachers can elevate this project by using green screen supplies and a variety of camera equipment and video editing programs. Students can learn how to add special effects, and use editing tools through video production software. When projects promote meaningful learning, they allow students to make connections and be directly involved in the learning process.

Appendix C outlines a literacy focused project-based learning unit on graphic novels, appropriate for third grade students. Graphic novels are a popular genre for this age level, and would engage students in new texts they may not have explored before. The essential question for this unit is, "What makes graphic novel readers keep turning the pages?" This essential question can be used with other grade levels focusing on other genres, such as mysteries and adventure novels. In this unit, students will read and analyze selected graphic novels in small groups to construct a set of shared criteria for a highly effective graphic novel. Students will apply their learning by creating their own graphic novel that includes the elements they identified with their groups. In order to give students choice in their product, students can work with a partner or independently, and can develop their stories in a paper version, or a digital version.

Students will choose their own characters, setting, and context for their story. In order to share their final product, students will add them to a special bin in the library near the graphic novels that can be checked out. This allows other students in the building to be able to read through them during library class. In order to see this unit come to fruition, an example slideshow was created to show how to engage learners in the unit. It shows students first exploring different graphic novels and identifying the elements that make them engaging. Then a class discussion allows for ideas to be affirmed and expanded on. There are several direct teaching slides with specific examples of elements in graphic novel mentor texts, followed by directions and ideas for students to create their own graphic novel.

Each of these units can be completed with students in partners or as part of a small-group team. When project-based learning units involve teamwork and collaboration, it helps to engage low-achieving students. Research shows that cooperative groups allow students with disabilities to be socially accepted, and achieve higher outcomes. It allows them to be directly involved in the learning process, creating a positive learning experience (Filippatou & Kaldi, 2010). Through collaboration, students take risks and learn from their mistakes. The teacher should act as a facilitator during PjBL units to ensure that the learning taking place is a positive and rewarding experience for all learner abilities (Tamim & Grant, 2013).

The units outlined in Appendix B and C are just a few examples of literacy-focused project-based learning. Almost any literacy topic covered by grade level standards and curriculum can be designed into a successful project-based learning unit using the templates in Appendix A. Research from the reviewed literature supports the use of project-based learning in a wide age-range of school age students, and proves that the outcomes are worth the effort of planning these engaging units. One teacher who participated in the study conducted by Dole et

al. (2017) reported: “My students are highly engaged thinkers now. They feel greater ownership of the projects that they are involved in, and exert more effort. I have seen the level of motivation increase as I have created a more autonomous classroom.” (p. 6).

Project-based learning has the potential to better meet the needs of learners than teacher-centered approaches. Mulcahy and Wertz (2021) stated that PjBL’s practices of engaging the learner, providing opportunities for hands-on activities, asking meaningful questions, and responding to real-world issues, helps meet the needs of a more diverse set of learners. This student-centered approach provides opportunities to engage in learning in ways that work best for the individual, especially because of the many ways that students can participate in PjBL (Mulcahy & Wertz, 2021). As previously discussed, interdisciplinary instruction, student collaboration, and choice are common themes found during the implementation of project-based literacy instruction (Parsons et al., 2011). When implementing PjBL across three public schools, Culclasure et al. (2019) found that most students that participated in a PjBL unit, had a positive experience as they developed important skills such as presenting in front of their peers, time management, setting goals, and problem solving.

Teachers need to feel supported during the implementation of project-based learning units. Lam et al. (2010) used an inventory to identify and report on the specific types of support that need to be in place in order for teachers to have a positive attitude towards implementing project-based learning. These supports include (1) competence support, (2) autonomy support, and (3) collegial support. School administration and curriculum leaders should keep these supports at the fore-front when implementing PjBL units, so that teachers and students are set up for success.

CHAPTER IV: DISCUSSION AND CONCLUSION

Summary of Literature

In conclusion, this review uses the research to define PjBL, make recommendations for implementation, and examine the outcomes associated with this student-centered approach. The findings from this literature review are summarized here.

The definition of PjBL often includes elements of constructivist learning, especially as it relates to the principles of self-driven inquiry and collaboration (Catapano & Gray, 2015; Tamim & Grant, 2013). This "learner-centered" approach engages students in active questioning and answer exploration, utilizing meaningful and realistic inquiries to guide the learning process (Baiden, 2021; Buck Institute of Education, 2018; Fitzgerald, 2020). PjBL still meets the academic learning needs, but does so through the creation of a project or product over a "sufficient" period of time (Fitzgerald, 2020). Students can work either independently or in groups to complete and present their projects. Typically, students present these projects publicly or to an "authentic" audience (Catapano & Gray, 2015; Duke, 2016; Duke et al., 2020). PjBL presents students with opportunities to be challenged while engaging them in project management and reflection skills (Duke et al., 2020). PjBL is different from teacher-centered approaches because of its focus on 21st-century and career readiness skills, including elements of SEL (Fitzgerald, 2020; Price et al., 2019). PjBL also incorporates a variety of products, including classroom discussions and ungraded teacher feedback, into the assessment process while allowing students to set their own learning outcomes and engage in multidisciplinary learning (Baiden, 2021; Fitzgerald, 2020; Tamim & Grant, 2013). These features are all fundamental in defining the PjBL approach.

The literature provides several recommendations for implementing PjBL effectively. This includes devoting “more than a couple of days” to the inquiry process, incorporating opportunities for formal reflection and feedback, and balancing teacher support and guidance with student autonomy (Buck Institute for Education, 2018; Culclasure et al., 2019; Kokotsaki, 2016). Implementing this approach should include both “high-quality group work” and a balance between “didactic instruction” and independent work (Kokotsaki, 2016, p. 274). PjBL should also be implemented with “clearly stated learning goals and outcomes based on grade-level,” “opportunities for students to meet standards in nontraditional ways,” and “assessments that are embedded” in the learning process itself (Martinez & McGrath, 2021, p. 33). Teachers can use the PMT approach to facilitate student choice, where students are surveyed for meaningful inquiries (Filippatou & Kaldi, 2010). PjBL session plans should include learning objectives, standards, materials, key vocabulary terms and definitions, instructional steps and additional notes for the teacher (Duke et al., 2020). PjBL learning units are recommended to have between 15-20 sessions, each 45 minutes long, with 3 sections each; one 17-session model is provided as an example of how to use this structure in the classroom (Duke, 2016). The Buck Institute for Education and EduTopia are two resources available to teachers seeking to use PjBL in their classroom (Duke et al., 2020). To implement PjBL effectively, teachers need to be “motivated, open to a change in their teaching practices, and ultimately allow for flexibility in planning the learning experiences of students” (Tamim & Grant, 2013, p. 75). Teachers should also know how to scaffold learning and use classroom management skills to use this approach effectively (Kokotsaki, 2016; Parsons et al., 2011). If teachers are overwhelmed, including managing large classrooms, they may be less effective at utilizing the "multifaceted" assessment process required for PjBL (Tamim & Grant, 2013). Teachers that have limited administrative or district support

also struggle to use this approach effectively; this includes supporting teachers to better understand PjBL in general (Culclasure et al., 2019). Several examples of elementary PjBL that incorporated literacy skills are included in the literature, providing helpful context for the application of research, discussed later.

PjBL is associated with a variety of improved academic outcomes, including postsecondary degree attainment, increases in reading and math scores and higher ACT scores (Aslan et al., 2014). One source claimed that differences in standardized test scores between students who did and did not engage in PjBL were not statistically significant (Culclasure et al., 2019). Despite these claims, another source found that PjBL allowed students in a high-poverty school to “[close] the academic gap” between their school and a wealthy school that did not use PjBL (Duke, 2016). Students participating in PjBL tend to have "greater content knowledge" and be more engaged in their learning (Duke et al., 2020). Academic achievements associated with PjBL also included literacy-specific skills, including gains in informational reading skills, as well as general improvements in reading and writing competencies (Catapano & Gray 2015; Duke et al., 2020). PjBL is seen to have many social emotional benefits. This includes allowing students to differentiate themselves, practice creativity, feel empowered, practice calculated risk-taking, and become more efficient problem-seekers and innovators (Baiden, 2021; Tamim & Grant, 2013). Collaboration uniquely engages SEL, especially for students with disabilities or learning differences; this learning approach allows students with diverse needs to work in groups and frequently results in higher learning outcomes and increased social acceptance (Filippatou & Kaldi, 2010). The fundamental characteristics of PjBL allow students to use intellectual, social, and problem-solving skills, while also being more motivated in the learning process (Yuen, 2009). Students participating in PjBL score higher in eight social-emotional competencies:

"self-awareness; social awareness; self-management; relationships skills; goal-directed behavior; personal responsibility; decision-making; and optimistic thinking" (Culclasure et al., 2019, p. 6). Students often enjoy PjBL unique use of their social-emotional skills, developing a higher capacity for conflict resolution, including differences in opinion (Catapano & Gray, 2015). Teachers using PjBL can expect to notice a positive change in students' academic mindset and interpersonal skills, as well as the development of values, including patience (Catapano & Gray, 2015; Dole et al., 2017).

Shalihah et al. (2020) states that: "Project-based classes allow students to investigate questions, propose hypotheses and explanations, discuss their ideas, challenge others' ideas, and try new ideas. The core idea of Project-based learning is that problems in the real world attract interest and provoke serious thinking when students acquire and apply new knowledge in the context of problem solving" (p. 2).

Prachagool (2021) notes that PjBL helps children develop a "habit of reading" and creates opportunities that lead "in the discovery of something meaningful to life" (p. 93).

Limitations of the Research

The research for this literature review was narrowed by focusing project-based learning research to elementary classrooms. However, the amount of research on the effectiveness of project-based learning in elementary classrooms is extremely limited, especially when narrowing further to a literacy subject focus. Because of these limitations, project-based learning research was used in other subject areas, and grade-level schools from around the world. This allowed for a full picture of the topic of project-based learning in the literature review, and an elementary literacy focus for the application of this research.

I chose to narrow this research because of its relevance to my current teaching position. I currently teach as a media specialist for grades kindergarten through fifth grade. I was asked to revamp my school district's curriculum for the media center role this past school year, and project-based learning was a way to increase engagement through hands-on, relevant projects that also integrated grade level language arts skills.

Implementing project-based learning faces its own challenges and limitations. Implementation requires careful planning, support, and resources. Curriculum constraints, standardized testing, and time constraints can hinder the use of project-based learning in some educational settings. Teacher training and professional development are also essential to ensure effective implementation and support for educators, but time constraints and funding can prevent the proper amount of professional development and administrative support from occurring.

Implications for Future Research

Future research is needed on the implementation of project-based learning specifically in elementary classrooms in the United States. While there were a few studies on PjBL focused at the elementary level, most subjects included math, science, and social studies topics. There are many opportunities for researchers to look closer at the implementation and outcomes of project-based learning specifically through literacy subject matter. There is also a need for more PjBL resources, unit plans, and professional development so that teachers can be prepared to implement project-based learning along-side or in place of their curriculum.

Implications for Professional Application

This topic is important because it brings engagement, relevancy, and academic and social-emotional achievement to classrooms. Both in my current position as an elementary media specialist, and in my previous position as a third-grade teacher, I find joy in my work when

students are excited to learn. When I am having fun teaching, I see my students having fun learning. Many times teachers are bogged down with the pressures of standardized testing, implementing curriculum, and grades, and don't have the time to focus on how to motivate and engage students. Project-based learning is a way for teachers to improve the overall experience for their students, while increasing their achievement.

Many teachers feel overwhelmed by the thought of implementing "one more thing", even with the positive results that can be produced. That is a reason why I chose to tackle the topic of project-based learning and break down the steps into a manageable process for teachers to implement engaging projects. The research gathered in this literature review is a comprehensive look into the implementation and effectiveness of project-based learning and can be used as a foundation for teachers when beginning their journey implementing project-based learning.

Conclusion

When answering the question: 'How do teachers integrate a literacy focused project-based learning curriculum in an elementary classroom?' there are several different design principles for teachers to consider. Projects should focus on real world problems and should be facilitated over a prolonged period of time. There should be elements of student choice, technology, and collaboration. Project design helps students develop 21st century and career readiness skills while developing an understanding of academic content. These projects bridge academic content to real world experiences, allowing students to connect with their community through authentic experiences. When implementing the approach, the literature recommended that teachers start by setting goals for instruction, then establish an inquiry and decide what artifacts will be created; the learning outcomes are then scaffolded using the chosen topic and delivered for students to engage with during school-time. While some outcomes included no

change or an increase in academic achievement, positive outcomes of the approach were often social-emotional and included advantages to using the approach on skills like problem-solving, time and project management, realistic goal setting, critical thinking, creativity, and working with others. When considering these design principles, teachers can successfully implement literacy focused project-based learning.

Appendix A

Table A1 Project-Based Learning Unit Plan Outline

Essential Question(s)	
Summary of Inquiry	
Real-World Context	
Student Voice & Choice	
Final Product	

Table A2 Project-Based Learning Unit Scope & Sequence

10 Sessions - 40 minutes each	
Session 1: Project Launch	The teacher establishes the purpose and audience for the project.
Session 2: Research	Students research to build on their previous knowledge and gather new information for the project.
Session 3: Research	Students research to build on their previous knowledge and gather new information for the project.
Session 4: Research	Students research to build on their previous knowledge and gather new information for the project.
Session 5: Draft	Students write draft of the project & continue to research
Session 6: Draft	Students write draft of the project & continue to research
Session 7: Revise & Edit	Students improve their project with reflection & teacher feedback
Session 8: Revise & Edit	Students improve their project with reflection & teacher feedback
Session 9: Revise & Edit	Students improve their project with reflection & teacher feedback
Session 10: Present & Celebrate	Students present their projects to an authentic audience and celebrate their accomplishments.

Appendix B

Table B1 Literacy Focused Project-Based Learning Units

	Literacy PjBL Unit
1st Grade	Writing Letters
2nd Grade	Fractured Fairy Tales
3rd Grade	
4th Grade	Broadcasting
5th Grade	

Table B2 Writing Letters- 1st Grade Project-Based Learning Unit

Essential Question(s)	How can writing letters make an impact on someone's life?
Summary of Inquiry	In this unit students analyze the format of a letter, and practice writing letters to someone they know.
Real-World Context	Students will send and receive letters to a penpal in their community.
Student Voice & Choice	Students will choose who to write their practice letters to, and what is included in the letter. Students will add drawings, decorations, and can write or type their letters.
Final Product	Students will write and receive three letters to a resident of a local assisted living home. Students will create a google slide with pictures of their letters, and will present how these letters made an impact on their pen pal.

Table B3 Fractured Fairy Tales- 2nd & 3rd Grade Project-Based Learning Unit

Essential Question(s)	What are the elements of a fractured fairy tale?
Summary of Inquiry	Students will read and analyze classic versions of fairy tales and the fractured fairy tales that have been created since.
Real-World Context	Students will create their own fractured fairy tale including the elements of a story.

Student Voice & Choice	After writing their stories, students will present it through a WeVideo, Stop Motion Animation, Google Slides Presentation, or by creating a picture book.
Final Product	Students will present their fractured fairy tale to the class, in the format of their choosing (WeVideo, Stop Motion Animation, Google Slides Presentation, or Picture Book)..

Table B4 Broadcasting- 4th & 5th Grade Project Based Learning Unit

Essential Question(s)	How can we communicate important announcements and current events with others?
Summary of Inquiry	Students will read, watch, and analyze the elements of a newspaper/news segment.
Real-World Context	Students will write and produce a news broadcast to be shared with students in the building.
Student Voice & Choice	Students will choose their role on their broadcasting team.
Final Product	Students will write and produce a news broadcast that will be shared weekly in the school building.

Appendix C

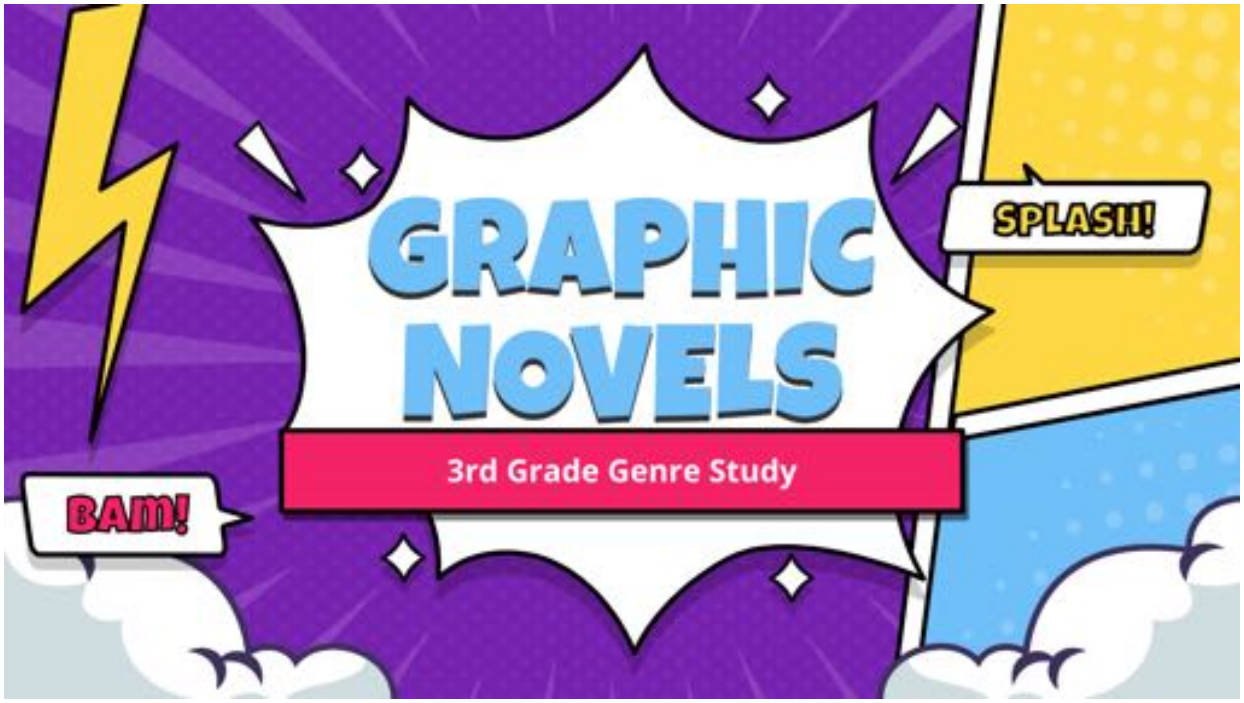
Table C1 Project-based learning unit: 3rd Grade Graphic Novels

Essential Question(s)	What makes graphic novel readers keep turning the pages?
Summary of Inquiry	Students will read and analyze selected graphic novels in small groups to construct a set of shared criteria for a highly effective graphic novel.
Real-World Context	Students will write their own graphic novel that incorporates the elements they established.
Student Voice & Choice	Students can work with a partner, or individually on their graphic novel. Students can develop their stories through paper, or digital. Students can choose the characters, setting, and context for their story.
Final Product	Students will develop and publish their stories and share them with their school community in a special section of the library.

Example slideshow to guide unit:

https://docs.google.com/presentation/d/1bnuSo3t8Sm4sm0isuVfkt7YXZpQ-9KHxVPOoimaOtlY/edit?usp=sharing

Slideshow created by Andrea Beauchamp with some content & resources from Sarah Werstuik and Elizabeth Ingram.


GRAPHIC NOVELS
3rd Grade Genre Study
SPLASH!
BAM!

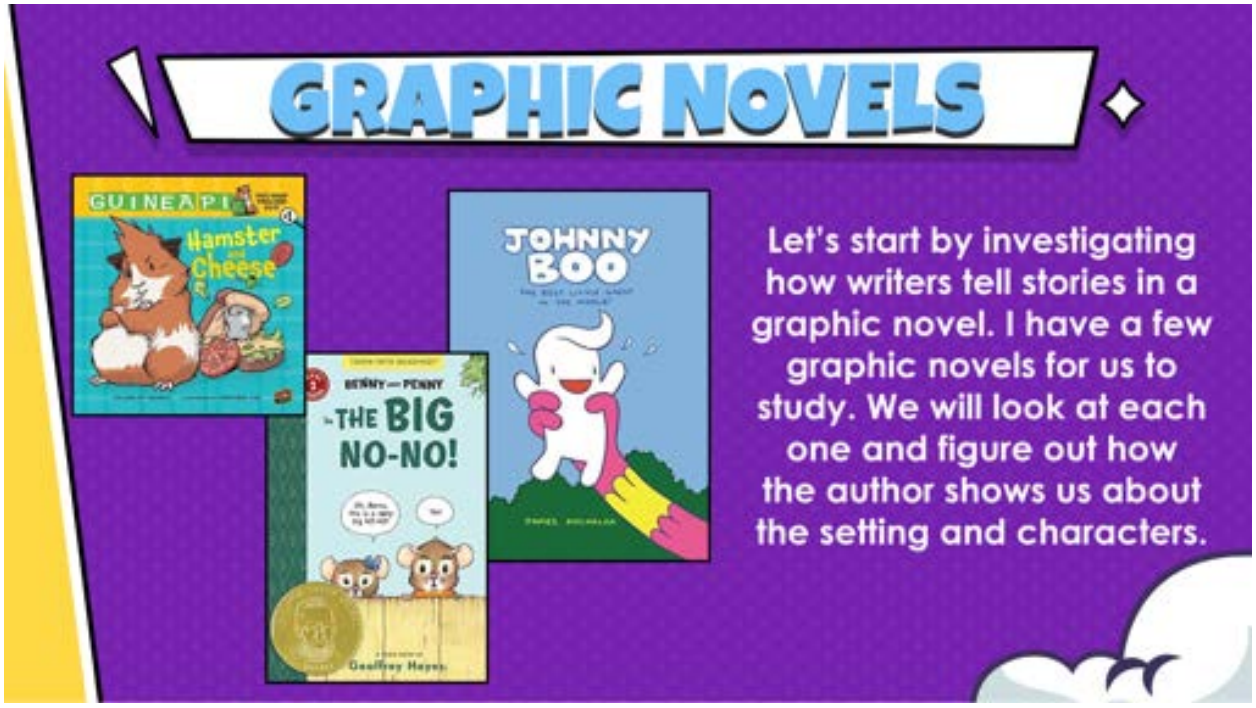

LET'S INVESTIGATE!
What makes graphic novel readers keep turning the pages?
DOG MAN
DAV PILKEY
WINGS OF FIRE
THE GRAPHIC NOVEL
THE BABY-SITTERS CLUB

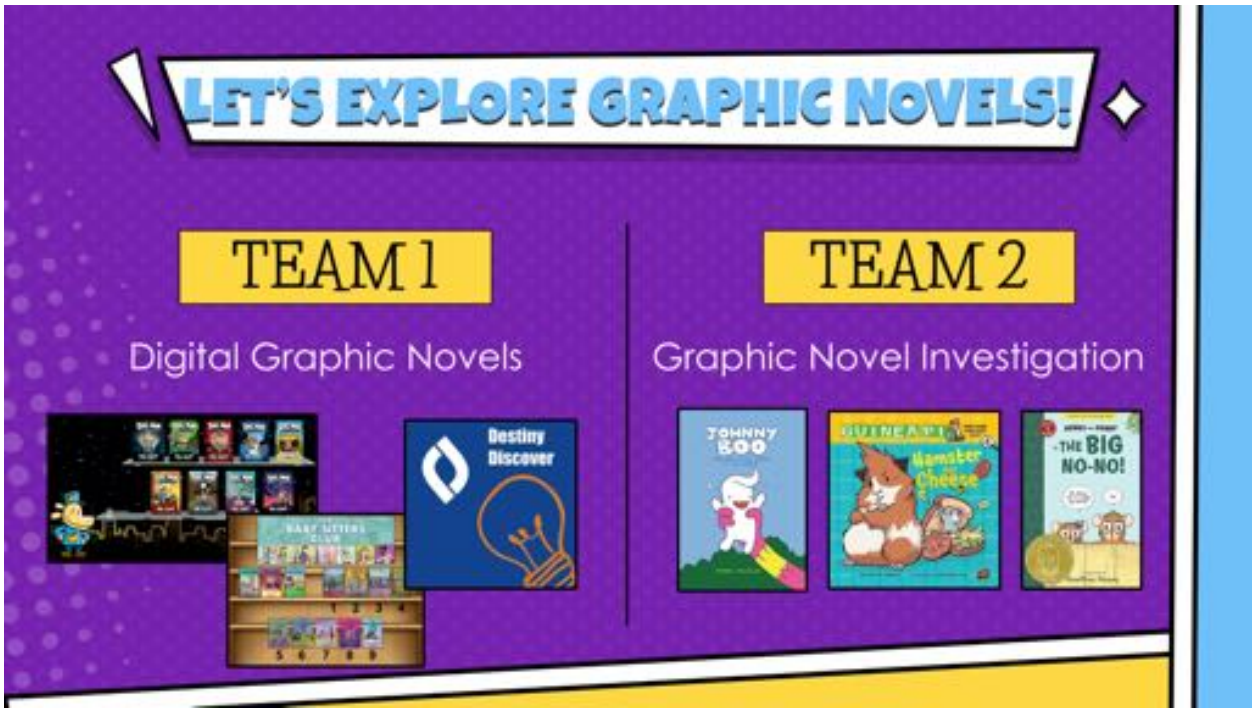
GRAPHIC NOVELS

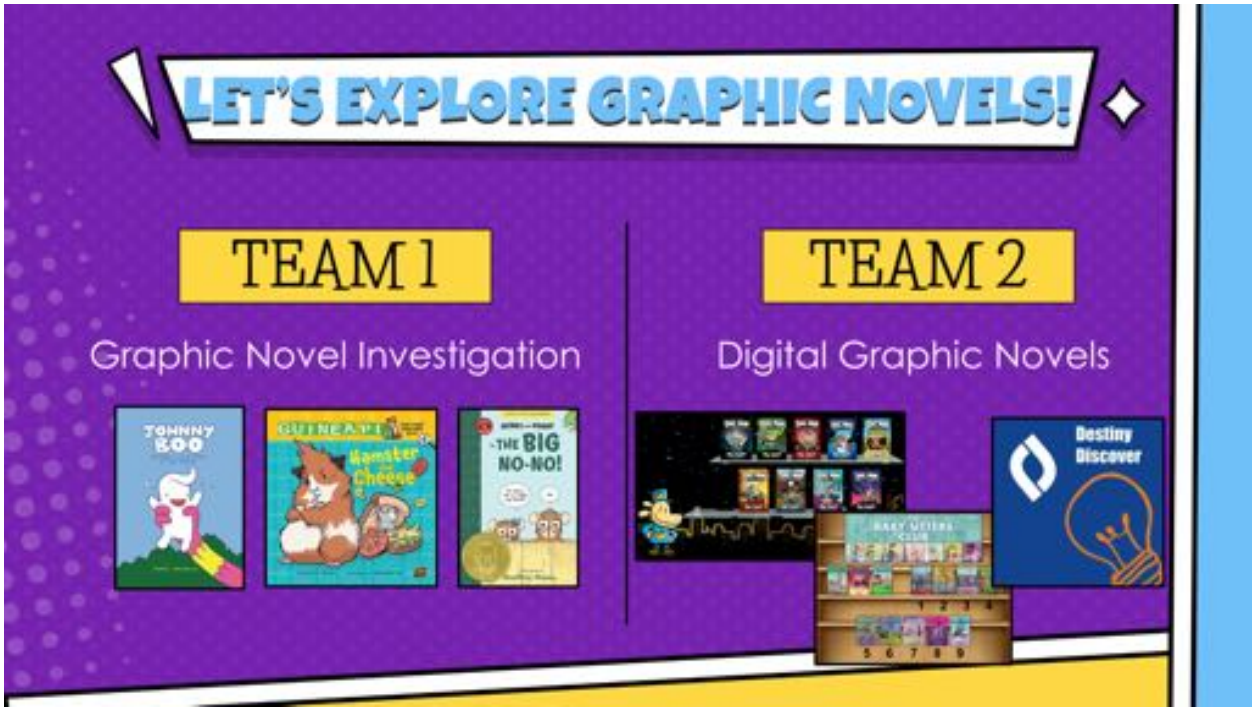
A fiction book with comic strips on every page.

WHERE CAN I FIND THEM?

Destiny Discover

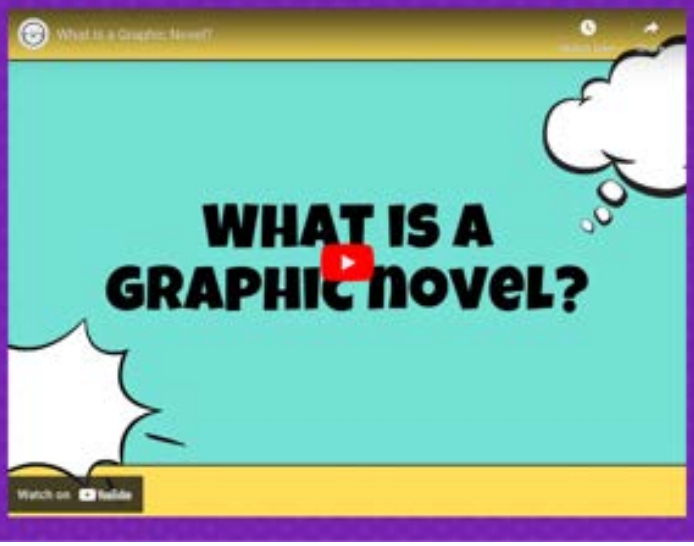

GRAPHIC NOVELS
GUINEA PI
Hamster and Cheese
JOHNNY BOO
BENNY and PENNY
THE BIG NO-NO!
Geoffrey Hayes
Let's start by investigating how writers tell stories in a graphic novel. I have a few graphic novels for us to study. We will look at each one and figure out how the author shows us about the setting and characters.


LET'S EXPLORE GRAPHIC NOVELS!
TEAM 1
Digital Graphic Novels
Destiny Discover
TEAM 2
Graphic Novel Investigation
JOHNNY BOO
GUINEA PI
Hamster and Cheese
THE BIG NO-NO!


LET'S EXPLORE GRAPHIC NOVELS!
TEAM 1
Graphic Novel Investigation
TEAM 2
Digital Graphic Novels
TOMMY BOO
Hamster and Cheese
THE BIG NO-NO!
Destiny Discover


LET'S DISCUSS
What did you notice?
Similar to a comic book but longer
Dialogue in speech bubbles use first person
Print features create mood
Often uses all uppercase letters
Has all fictional story elements

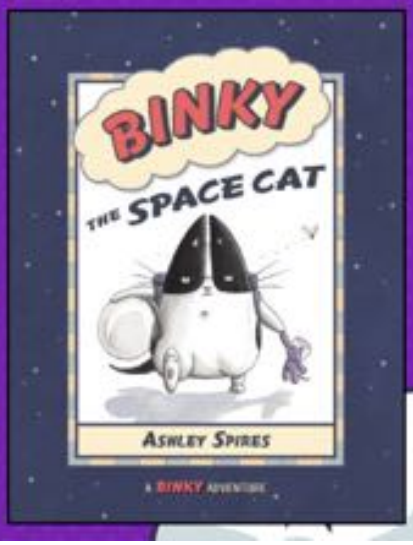
WHAT IS A GRAPHIC NOVEL?



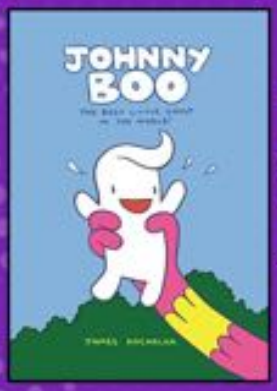
CHARACTERS & SETTING

Writers of graphic novels start by imagining a character and choosing a setting for their story.

Graphic novel writers, like Ashley Spires, imagine a character and the setting for their adventures. Ashley used things she knew a lot about, like cats, and also her imagination to develop the character and setting for her graphic novel: Binky the Space Cat. Ashley Spires' character is a cat named Binky who lives in a house with his family. Ashley practiced drawing Binky from the front and back so that she could make lots of pictures of him on every page. She also drew details her setting, like the couch and bookshelf, to make her illustrations interesting.

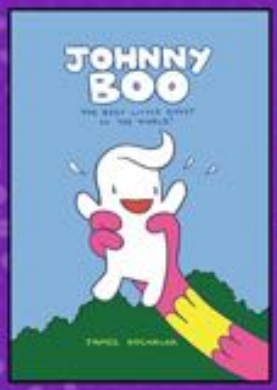


SMALL MOMENTS



Writers of graphic novels focus on telling one story across many pages by adding lots of details. James Kochalka didn't write Johnny Boo about many different adventures – he just told about how Johnny and Squiggle became friends with the Ice Cream Monster. He included a beginning, middle, and an end. The story starts when Johnny and Squiggle want ice cream, in the middle they run into the Ice Cream Monster and they are afraid of him, and at the end they help the Ice Cream Monster and become friends.

SMALL MOMENTS



Let's look at how James Kochalka focuses in on one small moment. As I read,think about what you notice? [Read a section, like pages 12-19, that focuses on a small moment.] Now you can pair up and share your observations. [Students Think-Pair-Share, then share out. Sample responses may include using different types of speech, showing actions, and showing feelings.] Did you notice that James Kochalka kept focusing on how Johnny and Squiggle were afraid of the Ice Cream Monster and tried to run away from him?

CREATE A GRAPHIC NOVEL!

Writers, today we are going to be writing graphic novels!

Graphic novels can be fiction, nonfiction, mysteries, history, or fantasy. Graphic novels are sort of like a comic book because they tell stories through art.

ELEMENTS OF A GRAPHIC NOVEL

How to Write a Graphic Novel

Use pictures to show the characters emotions and actions.

Use pictures to show changes in the background.

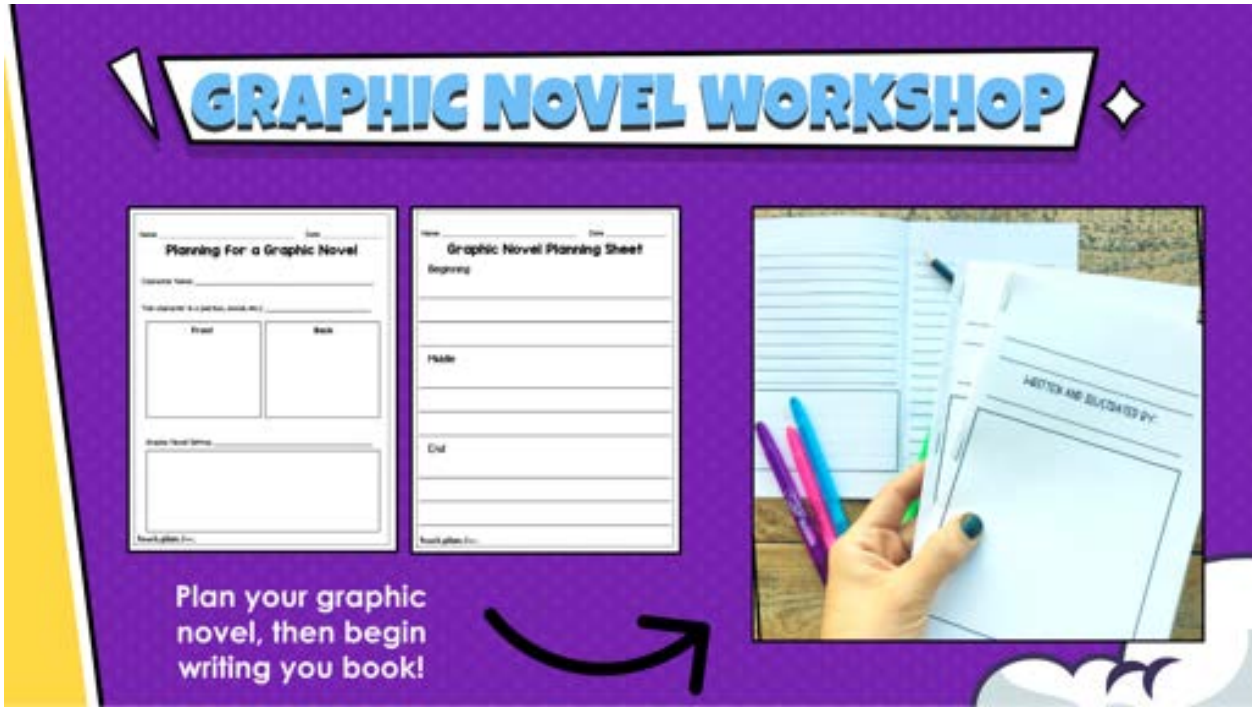
Tell more of the story through speech bubbles.

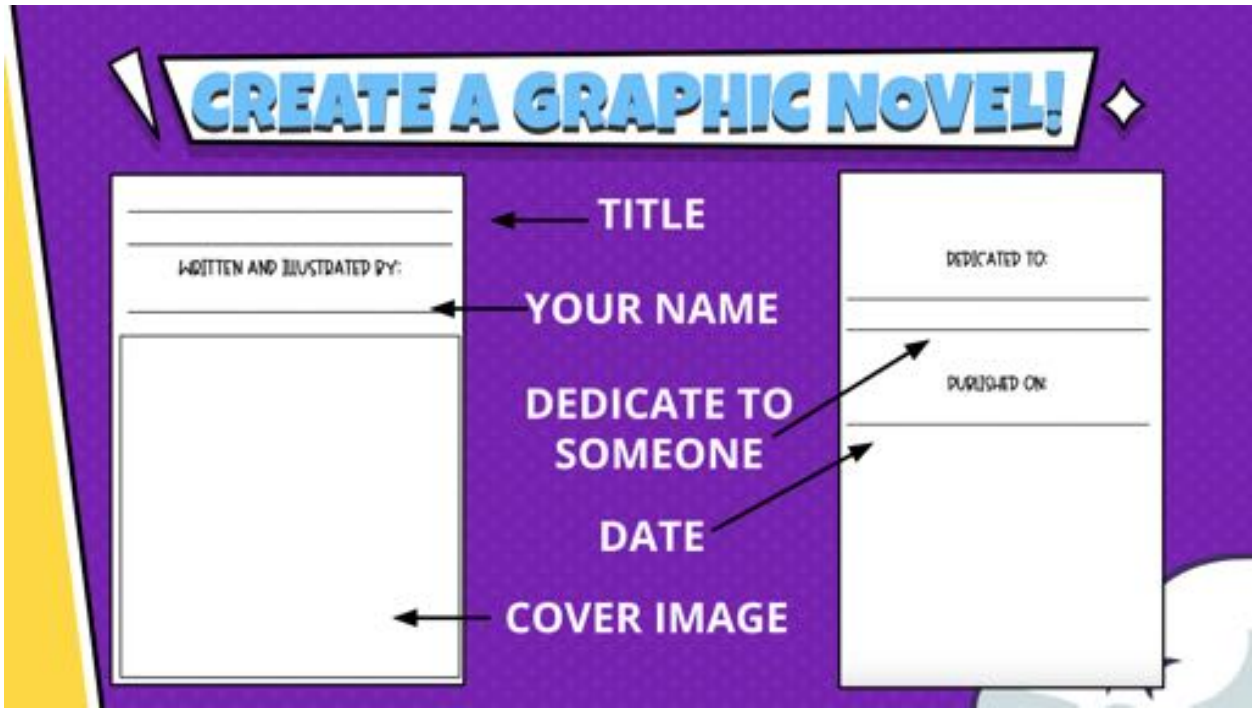
Show, not tell, ALL about characters.
Use detailed pictures & give clues in the dialogue.

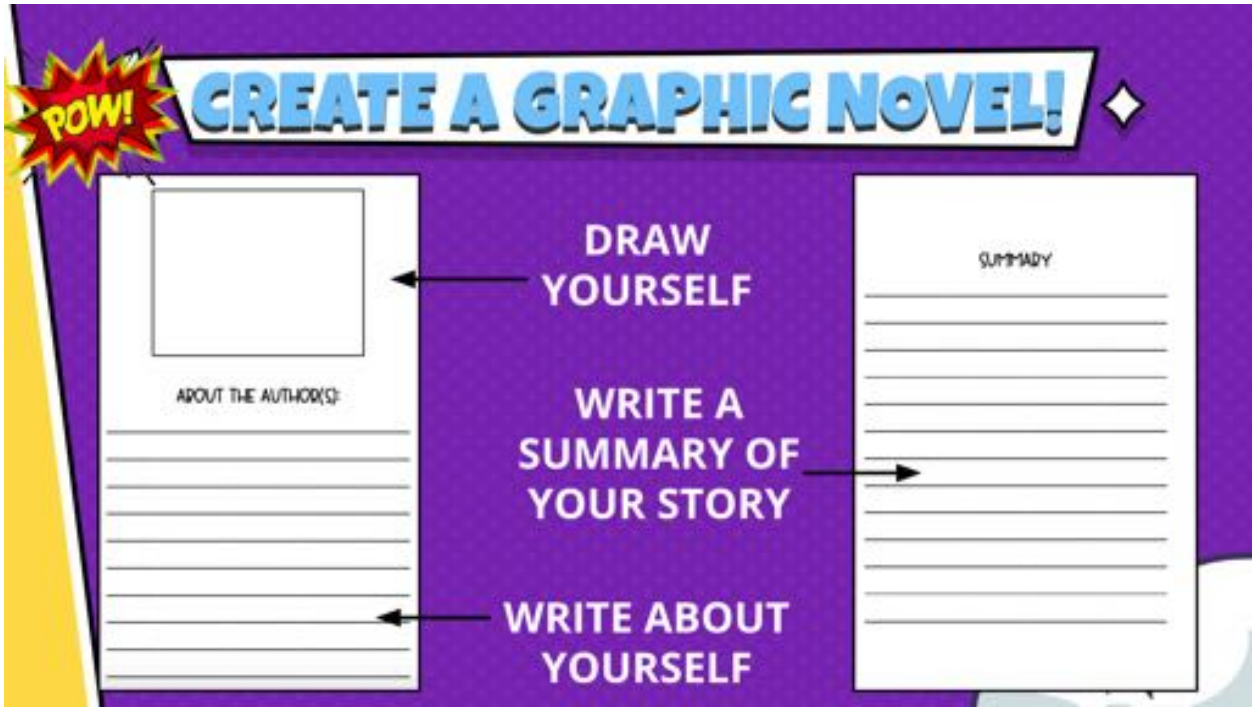
Let's Brainstorm!

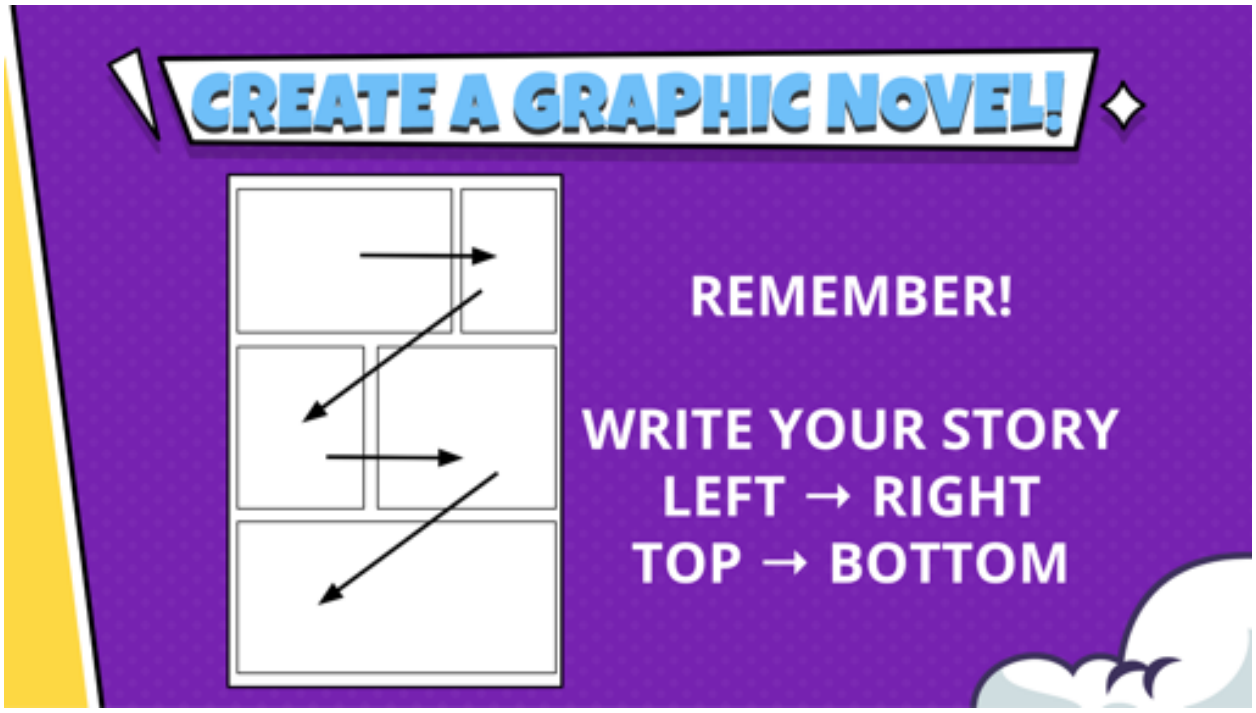
Take a few minutes to think about some possible pretend characters or pretend adventure stories that you want to share.

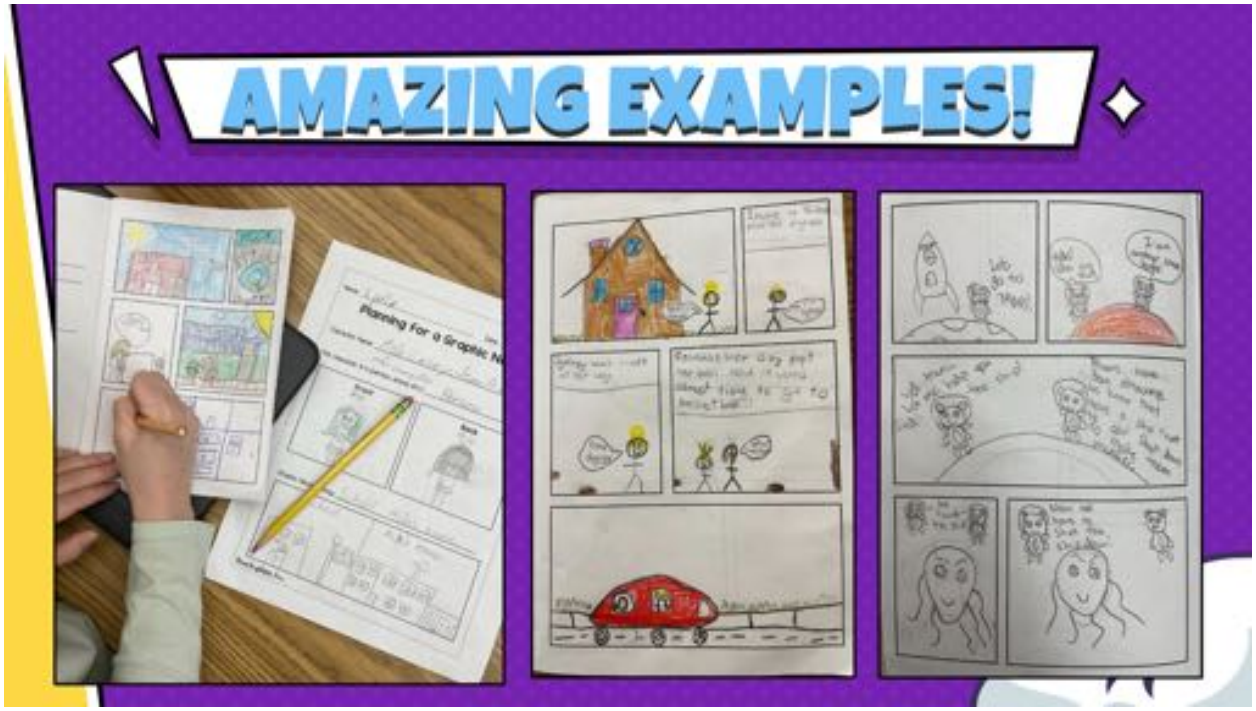
Writers, before you start to tell a story in your graphic novel you need to be able to draw the character and a setting. You will draw your character on almost every page so it's important that you know what it looks like from different sides. The setting will be the background for your pictures so you need to have lots of details to add to it.

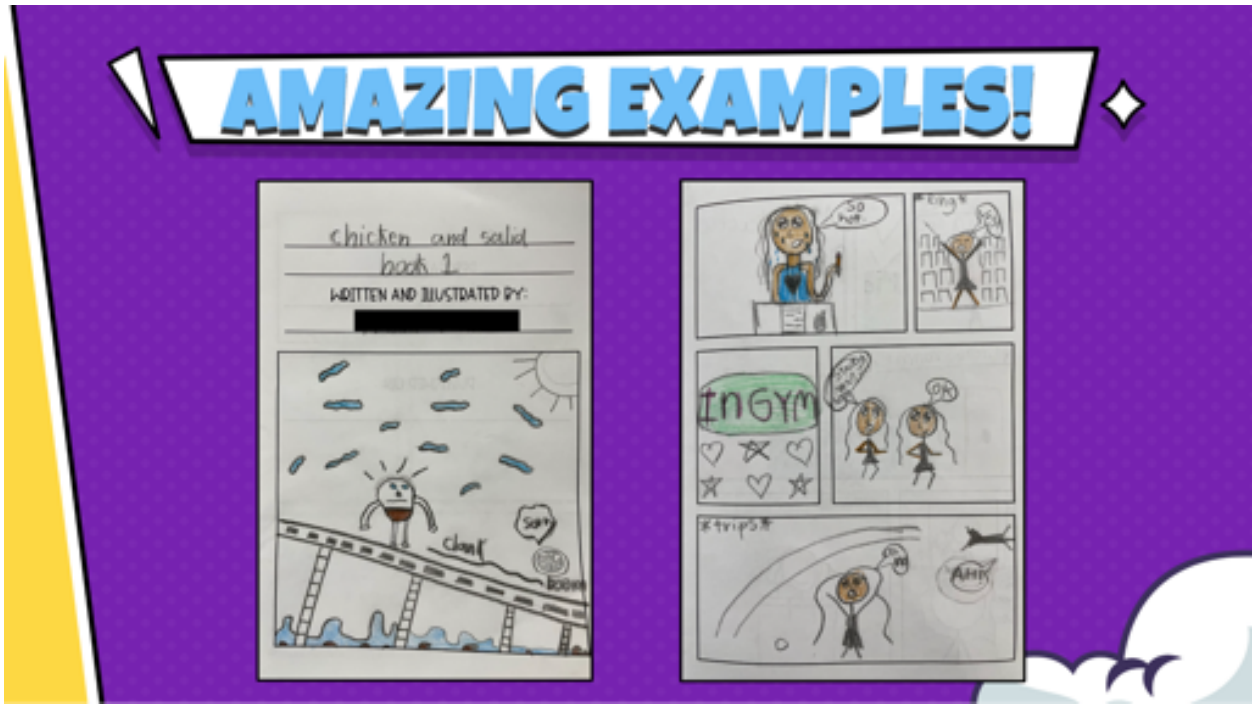

GRAPHIC NOVEL WORKSHOP
Planning For a Graphic Novel
Graphic Novel Planning Sheet
Beginning
Middle
End
Plan your graphic novel, then begin writing you book!

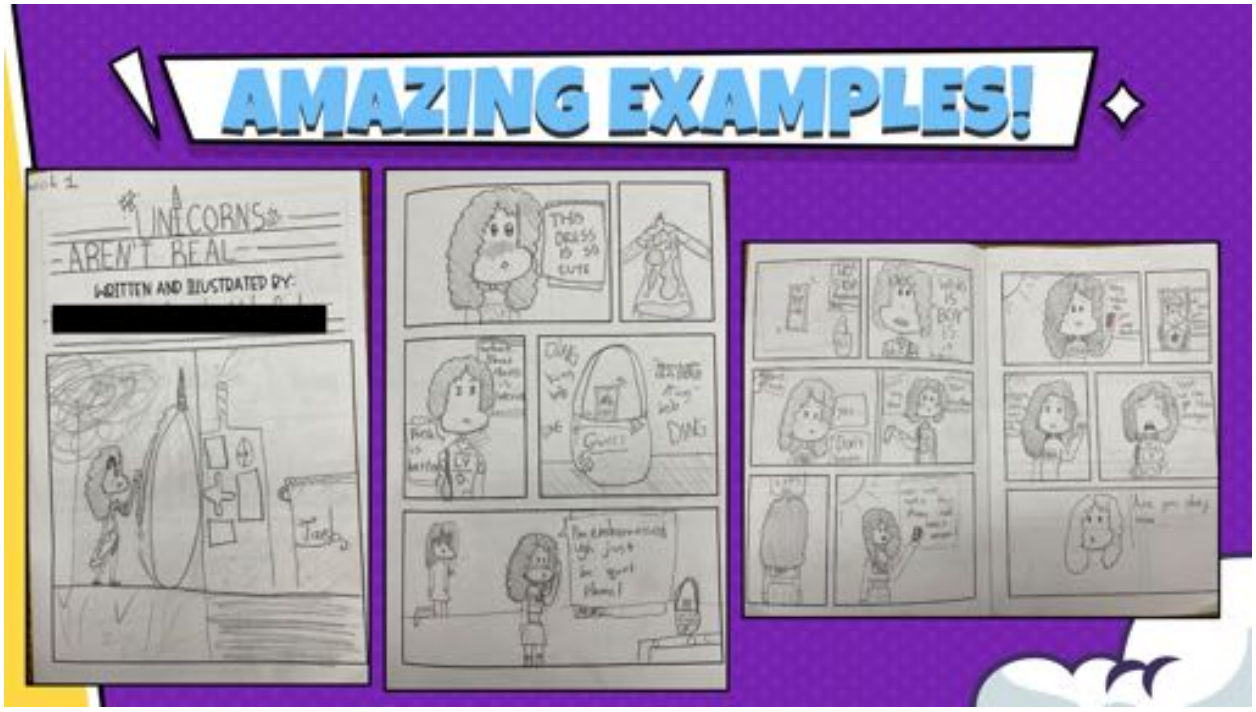

CREATE A GRAPHIC NOVEL!
WRITTEN AND ILLUSTRATED BY:
TITLE
YOUR NAME
DEDICATE TO SOMEONE
DATE
COVER IMAGE
DEDICATED TO:
PUBLISHED ON:


POW!
CREATE A GRAPHIC NOVEL!
ABOUT THE AUTHOR(S):
DRAW YOURSELF
WRITE A SUMMARY OF YOUR STORY
WRITE ABOUT YOURSELF
SUMMARY


CREATE A GRAPHIC NOVEL!
REMEMBER!
WRITE YOUR STORY
LEFT → RIGHT
TOP → BOTTOM


AMAZING EXAMPLES!


AMAZING EXAMPLES!
chicken and salad
book 1
WRITTEN AND ILLUSTRATED BY:
[redacted]
INGYM


AMAZING EXAMPLES!
#UNICORNS AREN'T REAL
WRITTEN AND ILLUSTRATED BY:
[redacted]


DAV PILKEY
Dav Pilkey Reads Aloud from Dog Man: ...
AAAAH!

GRAPHIC NOVEL WORKSHOP

GRAPHIC NOVEL CHOICE BOARD

TYPE	READ	WRITE
Typing Quest	epic!	

Work on graphic novel & get teacher feedback!

Done? Graphic Novel Choice Board

LET'S SHARE!

Meet in your original team to share your graphic novels!

Put your graphic novel in the "student creation" bin in the library so that other grade levels can read your story.

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