THE IMPACT OF EXPERIENTIAL LEARNING ON PERCEIVED LEARNING AND SELF-EFFICACY IN LITERACY FOR ELEMENTARY EDUCATION: A QUANTITATIVE, CAUSAL-COMPARATIVE STUDY

Tabbetha Harrison

by

Liberty University

A Dissertation Presented in Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

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ABSTRACT

The purpose of this quantitative, causal-comparative, non-experimental study was to determine if there is a difference in reading self-efficacy and perceived learning among fourth- and fifth-grade inner city students who participated in experiential learning and those that did not participate in experiential learning. Experiential learning is considered an immersive method of ensuring that learners become well-experienced, immersed, and confident in their learning. Self-efficacy or how students feel about their learning is also an important factor in literacy retention and performance. The setting for this study was inner-city Northern Virginia. In this study, 163 fourth and fifth grade elementary students in Northern Virginia were sampled. Of the convenience sample, 77 students participated in experiential learning within a unit in their classroom while 86 students were taught the same unit without experiential learning. The dependent variables, self-efficacy and perceived learning, were measured by the Perceived Learning Scale and the Self-Efficacy scale. Results of the one-way multivariate analysis of variance were significant with the test group outscoring the control group in both PL and self-efficacy reading with a mean score of 39.32 (*SD*= 13.47) and 65.97 (*SD*= 13.47) respectively. The null hypothesis was rejected. Recommendations for future research include quantifying the hours of added experiential learning as an invention and comparing beginning of the year to end of the year test scores of students critically below grade level.

Keywords: behaviorism, constructivism, experiential learning, inner-city perceived learning, retention, and self-efficacy

Dedication

This research proposal is first and foremost dedicated to Almighty God for His grace, mercy, strength and the mental capacity He has provided me with.

Special dedication to my family, friends and relatives for their moral support. I dedicate this to my family, I may be the first but prayerfully, I will not be the last. May this be the start of a legacy.

Acknowledgments

First and foremost; I thank God Almighty, throughout my work and education so far, He has granted me wisdom, strength, peace of mind and good health that have enabled the achievement of my goals and objectives. A special feeling of gratitude to my parents and siblings for their words of encouragement and support which have been key for my progress in my education until this far. Most importantly children, my angels, my motivation. Everything is for you. I may not be able to register my appreciation to all those who in one way or another contributed to the success of this work and my education so far, but to all of you, thank you, and may God bless you.

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List of Abbreviations

Experiential Learning (EL)

Multivariate Analysis of Variance (MANOVA)

Northern Virginia Public Schools (NVPS)

Perceived Learning (PL)

Perceived Learning Scale (PLS)

Science, Technology, Engineering, Arts, Math (S.T.E.A.M)

Self-Efficacy Reading (SER)

CHAPTER ONE: INTRODUCTION

Overview

The purpose of this quantitative, causal-comparative, non-experimental study was to determine if there is a difference in reading self-efficacy and perceived learning among fourth- and fifth-grade inner city students who participated in experiential learning and those that did not participate in experiential learning. Chapter One provides a background for the topic of experiential learning in elementary schools. Included in the background is an overview of the theoretical framework for this study detailing the potential benefits of experiential learning. Additionally, this section also includes a brief description of how this research could benefit other demographics. The problem statement examines the scope of the recent literature on this topic. The purpose statement is then discussed. Finally, the significance of the current study and the research questions are presented. The chapter concludes with definitions and questions found in the literature.

Background

Experiential learning holds immense importance in the educational landscape as it goes beyond traditional classroom teaching methods and encourages students to actively engage in hands-on experiences (King-Meadows & Mcray, 2021). By incorporating real-world applications and practical activities, experiential learning enhances critical thinking skills. Experiential learning also promotes creativity, collaboration, and problem-solving abilities, which are essential for success in the modern workforce (King-Meadows & Mcray, 2021). Moreover, for students in low-income areas like Inner-city Northern Virginia, literacy rates are alarmingly low, experiential learning can serve as a powerful tool to bridge the educational gap. Poverty within the United States represents a prevalent issue facing inner-city Americans. The United States

Census Bureau estimates about 11.6 % or 37.9 million Americans are living on or below the poverty line (Creamer et al., 2022). Using Census data, it was determined that more than 20% of the populations affected by the disparity of poverty are under the age of 17 (Census Bureau, 2019). According to Davishahl et al. (2018), socioeconomic disparities, especially poverty, are heavily represented in inner-city schools. In Northern Virginia the inner-city student population recognized student's poverty status based on their qualification for the free and reduced lunch program (U.S Department of Education, 2018). Likewise, the inner-city population was mainly connected with Title 1 schools-schools that received additional government funding due to the socioeconomic factor of poverty within the school's community (U.S Department of Education, 2018). The research of Martin-Chambers (2022) suggested poverty and the subsequent limitations on resources could attribute to the literacy rate deficit within the United States. Inner-city, Title 1 schools show a disproportionately low literacy rate in comparison to their counterparts (Martin-Chambers, 2022).

Though school systems in inner-city areas are plagued with socioeconomic factors like poverty affecting learning statistics, educators are still charged with remediating the achievement gap (U.S Department of Education, 2018). Students, regardless of region, are still given the same standardized formative and summative assessments and held to the same standards. Practical education or experiential learning represents a knowledge procedure where students learn and retain through involvement (Parry & Allison, 2020). Students are more engaged when they are presented with the ability to own their learning and independence by having an active role in their learning process (Small & Varker, 2021). Practical knowledge helps with student's critical thinking and application skills allowing them aid in making real-world connections. According to Parry & Allison (2020). Practical knowledge helps in the advancement of collaboration,

critical thinking, and inferencing ability. Experiential education helps students prepare for the existing curriculum achievement because it concentrates on the benefit students; thus, analytical thinkers for tomorrow (Parry & Allison, 2020).

Historical Overview

Historically, constructivism, the basis of experientialism, assesses how humans construct knowledge about themselves, their environment, and general intelligence (Piaget, 1929a). Piaget (1929) determined humans create their own knowledge from their experiences pioneering the idea that knowledge acquisition is realized solely on the interpretation of said experiences. Bauerle and Park (2012) built upon this historical foundation by conducting a comprehensive study that aimed to ascertain the effectiveness of experiential learning in knowledge retention. Bauerle and Park (2012) furthered this research by concluding knowledge retention is best conceived through experiential learning (2012). Piaget (1929) pragmatic approach was anchored in the fundamental belief that learning and life are not separate. Central to Bauerle and Park's (2012) findings is their pragmatic approach, which emphasized the interconnectedness of learning and life. Bauerle and Park's (2012) research significantly contributes to the historical overview of experiential learning by affirming that knowledge retention is best achieved through this pedagogical approach. Dewey determined a person’s life experiences and how they interacted with the world contributed to how they learned and what they retained (Ord, 2012).

Furthering Piaget’s study, Heinrich purported the capability of each specific humanoid exists to study and is distinct to learning. His opinions directed teaching towards self-governing in Europe, schooling is accessible and aimed at everybody. Dewey’s education philosophy assisted in accelerating the application of experiential learning (Schilpp & Hahn, 1989). Dewey’s viewpoint explained a person’s environment and how they interact within it will determine how

much and how quickly knowledge is retained (Noddings, 2019). Lee-Esola (2022) used experiential learning to measure creativity and self-efficacy in elementary school, showing a significant amount of retention and creative success.

Society-at-Large

Experiential learning conveys self-assurance and critical thinking, especially in students (Bauerle & Park, 2012). People accomplish knowledge and skills through their lived experiences (Folino, 2019). Interacting with their learning helps students to have improved acceptance of their own thoughts and helps them to display adequate knowledge retention (Jordan, 2021). This added confidence and free thinking are beneficial to a student's conclusions, inferencing, decision-making, and ultimately testing. Educators initiate experiential learning as an intervention to help solidify comprehension and to build background knowledge (Small & Varker, 2021). The learners acquire additional confidence once they realize their improved ability in problem-solving. Subsequently, students retain more information from their lived experience than from bookwork alone (Xu & Shi, 2018). Currently, literacy rates vary across the nation based on socioeconomic factors. According to Murray (2021), literacy is staggeringly low in low-income areas. Primarily, inner-city schools show disproportionately low literacy rates in comparison to their counterparts in suburbs (Barber, 2021). The use of experiential learning, in theory, has the ability to intervene, by providing an alternate, yet effective method of information distribution and retention (Small & Varker, 2021). In areas of low literacy, it is possible that success of experiential learning could also transfer to areas outside of inner-city communities.

Theoretical Background

Constructivism theory explains learning as progressive and built on early encounters and familiarities (Piaget, 1929a). Based on this theory, encounters with information and stimuli are

learned and retained better through exposure, the more background knowledge that exist, the higher the chance of deepened analysis and understanding. Connectivism theory emphasizes the idea that people study and produce when they form associations (Lenhart, 2022). Johannes Heinrich claimed that children should acquire knowledge through activity and possessions (R. Miller et al., 2019). They should be allowed to follow their interest and develop their learning. John Dewey added that students must be interwoven in actual existence, responsibilities, and trials (Parry & Allison, 2020).

The constructivism theory, specifically behaviorism and experiential learning are often used when teaching to produce an engaging educational atmosphere. Intentionally planning to incorporate hands-on experience and learning enhances the depth of learning for students acquire entirely (Romberg, 2019). Educators teaching from the book are limiting the information exposure given to students. Cognitive learning theory clarifies how inner and exterior aspects inspire a person’s psychological progressions to enhance teaching (Çeliköz et al., 2019). Factors like suspensions and attendance represent problems in education and are therefore seen as hindrances to educators. However, issues like poverty, lack of resources, and limited exposure pose threats to the acquisition of knowledge. Behaviorists' learning theory describes knowledge as the attainment or retention of knowledge, it represents the assessment of what was learned not just the exposure (Cihon & Mattaini, 2020). The current research has explained experiential learning helps to aid learning retention and interest but there is a gap in determining the effects of experiential learning on literacy, its impact, and how specifically experiential learning could be effective in communities with the aforementioned socioeconomic disparities (Daud, 2022). Elia-Renaud (2019) explained learning is best achieved through action but does not explain how to achieve or facilitate the actions.

Problem Statement

As experiential learning theory develops, it indicates learning is most profound when attached to real-world stimuli (Jordan, 2021). Literature informs educators to stimulate learning and retention through exposure and action (Seage & Türegün, 2020). However, the literacy rates continue to either decline or remain stagnant in underdeveloped areas (Morris, 2020). Students within low-income neighborhoods of inner-city Northern Virginia score historically lower than their counterparts on achievement assessments (Ralston, 2023). Underdeveloped inner-city elementary schools have poor academic performance that falls below the national average. For example, in the latest end of the year state assessment, inner-city elementary students scored only 12% achieved proficiency in mathematics, while only 17% achieved proficiency in reading (Lawrence & Boone, n.d.). Consequently, 88% of the students failed to meet the required qualifications in mathematics while 83% failed to meet the required qualifications in reading. In addition, 35% of students were above the required proficiency levels for reading, and 31% were above the required proficiency level for mathematics in the district's average as a whole (Lawrence & Boone, n.d.). Apart from mathematics, students also poorly performed in other subjects. The poor performance was associated with poor learning methods applied in the schools (Ashraf, 2020).

Jordan (2021) reported the benefits of experiential learning, specifically as remediation for lack of knowledge retention. He suggested that experiential learning could be used to improve the current literacy rate. Although students in lower socioeconomic schools participate in Science, Technology, Engineering, Arts, and Mathematics (STEAM) programs, there is limited research on the impact of these programs on literacy rates for this population (Seage & Türegün, 2020). According to Black et al. (2020), innovative thinking creates new or enhanced

ideas by applying problem-solving techniques, such as critical and creative thinking which are integral to STEAM. A curriculum centered around STEAM that thoroughly combines the arts and sciences is one tactic that has been suggested to foster innovative thinking via education (Rahmawati et al., 2019). The effects of experiential learning in quantified hours on perceived learning, particularly in inner cities beset by socioeconomic disparities, are not explained by any statistical data that is currently available. The specific problem relates to my study as it explores the potential impact of experiential learning on students' literacy scores as measured by the self-efficacy and perceived learning scales. By focusing on the specific context of inner-city elementary schools, the study proports to add to the existing literature on literacy rates and identify potential strategies for improving literacy scores in disadvantaged communities. A gap exists in the relationship between experiential learning and both perceived learning and self-efficacy of fourth and fifth-grade students within in low-income inner-city areas. The problem exists that insufficient research exists to determine whether using experiential learning or using non-experiential learning will increase inner-city low-income student literacy scores.

Purpose Statement

The purpose of this quantitative, causal-comparative, non-experimental study was to determine if there is a difference in reading self-efficacy and perceived learning among fourth- and fifth-grade inner city students who participated in experiential learning and those that did not participate in experiential learning. The independent variable was experiential learning. Experiential learning is defined as learning through doing which includes interacting with the environment, society and/or completing projects to experience the lesson with a broader perspective than isolated book/literature work (Jordan, 2021). The dependent variables were reading self-efficacy and perceived learning. Reading self-efficacy relates to how much students

anticipate themselves to succeed on a reading task (Peura et al., 2021, p. 3). Perceived learning is defined as cognitive, affective, and psychomotor learning, specifically the positive attitude possessed towards learning post exposure to learning stimuli (Ying et al., 2023, p. 2090). The participants, fourth- and fifth-grade students in general education courses, are from one inner-city school district in Northern Virginia.

Significance of the Study

The present study is significant because it will address the educational literacy deficit with emphasis on a method to aid in literacy achievement through student self-efficacy and perceived learning. This study adds to the existing body of literature by strengthening the understanding between experiential learning and literacy achievement. In this study, student literacy achievement is quantified by using the perceived learning and self-efficacy scale to determine if there is a significance difference in experiential learning compared to traditional, non-experiential learning.

In recent years, students within the Northern Virginia Public Schools (NVPS) have continuously scored below the nation’s average on summative and formative assessments (Lawrence & Boone, n.d.). Through participation in experiential learning like field trips and STEAM students could display an increase in both their approach to learning and comprehension. Hands-on learning can build confidence while bridging gaps in intellectual development, making students better equipped to infer and problem-solve on standardized formative assessments (Anwer, 2019). This study supplements the already available literature on effective teaching methods and interventions that can enhance students' self-belief and academic achievement in inner-city settings. By examining the potential differences between students who engage in experiential learning and those who do not receive experiential learning, this study

seeks to provide valuable insights for educators, policymakers, and researchers working towards improving educational outcomes for inner-city students.

Knowledge is a right for all students, as stated in the United States Free and Appropriate Education Act (FAPE) (Rozalski et al., 2021). Education and literacy should be protected and upheld; therefore, methods should be found to instill knowledge and knowledge retention. Sbrocca suggest educators should teach students how to think, apply themselves, and problem-solving so they can be better equipped for all of their lives (2022). Traditional textbooks alone do not sharpen students, specifically, they have not closed the literacy gap (Anwer, 2019).

Further, The Century Foundation (2020) observes Black students live in population concentration clusters with poor funding and thus have fewer resources for learning at their homes and in their schools. Intervention and remediation hold potential benefits, so the failing statistics break within the cycle. By expanding on current research, the study will examine the impact of experiential learning on the student literacy scores. Furthermore, the research's conclusions might help design focused treatments and teaching techniques that might help inner-city kids with their particular problems. By fostering academic success, self-belief, and a sense of empowerment in kids, the study seeks to establish an educational climate that reduces performance gaps and advances fair opportunities for all students.

Research Question

RQ1: Is there a difference in reading self-efficacy and perceived for inner city fourth and fifth-grade students' based on those who participated in experiential learning and those who do not?

Definitions

1. *Constructivism*- Constructivism is created knowledge through interactive experiences. Building upon knowledge with experiences (Mohammed & Kinyó, 2020).
2. *Experiential Learning (EL)*- Experiential learning is categorized as learning through doing which includes interacting with the environment, society and/or completing projects to experience the lesson with a broader perspective than isolated book/literature work (Jordan, 2021).
3. *Literacy Rate*- The measure of subject competency based on capabilities (Morris, 2020).
4. *Perceived learning* - Perceived learning is comprised of the following three factors: cognitive learning, affective learning, and psychomotor learning (Ying et al., 2023, p. 2090).
5. *Reading Self-Efficacy* - Reading self-efficacy relates to how much students anticipate themselves to succeed on a reading task (Peura et al., 2021, p. 3).
6. *Self-Efficacy*- Self-efficacy is the belief an individual has regarding their ability to successfully perform a task (Bandura, 1986).
7. *Traditional textbooks* - Traditional textbooks occupy a unique role in education and are defined as printed books used for course instruction, course readings, and exercises (López-Escribano et al., 2021).

CHAPTER TWO: LITERATURE REVIEW

Overview

The purpose of this quantitative, causal-comparative, non-experimental study was to determine if there is a difference in reading self-efficacy and perceived learning among fourth- and fifth-grade inner city students who participated in experiential learning and those that did not participate in experiential learning. The chapter opens with a theoretical framework as this study is grounded on the theory of constructivism and the theory of experiential learning (Dewey, 1938). A thorough literature review will be conducted to explore the previous research conducted on self-efficacy and perceived learning scores. It will highlight the existing gaps in the literature and emphasize the need for further investigation into the effects of experiential learning on these scores. Additionally, the chapter will discuss the variable concepts of the study, as the related literature. These studies are peer-reviewed and have primarily focused on experiential learning. Thereafter the chapter will end with a summary.

Theoretical Framework

The theoretical framework of this study is based on two primary theories: the theory of constructivism and the theory of experiential learning (Dewey, 1938). These theories are founded on the notion that learning can only occur as an active process characterized by the learner's contact with the reality of theoretically stated events. Knowledge is believed to be generated by reflection on life experiences. Jean Piaget developed the constructivism hypothesis, stating adults and children use reasoning and thought processes (Morris, 2020). Piaget recognized four fundamental phases in cognitive growth that all people go through- sensorimotor intelligence, preoperational thinking, concrete operational thinking, and formal operational thinking (1929a). This idea is strongly related to research concerning how formative assessments are affected by

experiential learning and if including these evaluations in experiential learning affects students' understanding rates, particularly those in primary school. According to Dewey's (1938) experiential learning theory, learning is most effectively recalled when applied to or derives from one's own experiences. This theory recognizes that social processes surround individuals at all times (Andresen et al., 2020). Both theories have clear links and associations with one another and are congruent in their views on the impact that experiential learning has on formative evaluations. These two ideas serve as the foundation for this study and will be utilized to examine how experience learning affects formative evaluations.

Dewey's concept of experiential learning stresses the value of active interaction with the environment and the significance of reflection in the learning process. The theory asserts that people learn best when actively participating in real-world events and are encouraged to reflect on and derive meaning from them (Dewey, 1938). This idea is consistent with the constructivist viewpoint, which contends that interactions with the environment and social relationships help learners build their knowledge (Vygotsky, 1978). Experiential learning has received a lot of attention in the context of education and is now extensively used in various situations. EL- experiential learning- changes conventional didactic techniques by emphasizing practical tasks, problem-solving, and critical thinking.

EL seeks to improve students' comprehension, retention, and transfer of information by involving them in actual activities and situational learning opportunities. In addition, EL promotes autonomy, motivation, and greater engagement by encouraging students to participate in their learning actively. Incorporating formative assessments, continual evaluations used to track students' progress and provide feedback for improvement, is a crucial component of experiential learning (Cheng et al., 2019). Observations, dialogues, self-evaluations, and peer

evaluations represent a few examples of the several types of formative assessments that may be used in an experiential learning framework. These evaluations provide students with insightful feedback and let teachers know how successful the lessons were and support them in making changes to improve learning outcomes.

The effect of experiential learning on formative assessments in various educational environments has been the subject for several researchers, all finding experiential learning to have benefits (Brad, 2016; Daud, 2022; Elia-Renaud, 2019; Lee-Esola, 2022). For instance, incorporating formative evaluations into experiential learning activities has improved students' metacognitive abilities since they are obliged to reflect on their learning and gauge their own development. Furthermore, since students are actively involved in real-world problem-solving and decision-making activities, formative evaluations in experiential learning have been demonstrated to encourage deeper comprehension and application of information (Bhati & Song, 2019). The constructivist principles and experiential learning theory work together to provide a solid framework for comprehending how experience learning may affect formative assessments. This research intends to add to the body of knowledge by examining the connection between experiential learning and formative assessments. While also providing insights into successful instructional approaches that might improve students' learning outcomes and experiences.

Theory of Constructivism

Constructivism holds that people actively develop their knowledge and understanding of the world via their experiences and interactions, is the philosophy on which experiential learning is built. According to constructivism, an individual's past information, beliefs, and experiences impact learning. According to this hypothesis, assimilation and accommodation of new information to pre-existing mental structures are how learners actively connect with their

environment and build new knowledge (Bell & Bell, 2020). Constructivism strongly emphasizes the value of experiential learning and active engagement in the educational process. According to this theory, people learn best when actively engaged in worthwhile work and have the chance to reflect on their experiences. Constructivism emphasizes the value of students actively creating their own knowledge via their experiences and interactions with the outside world (Piaget, 1929a). By providing students first-hand experiences that aids in creating knowledge, experiential learning fits under the constructivist educational philosophy. Experiential learning aligns with constructivist concepts, giving students practical experiences that enable students to interact actively with the subject matter and create their knowledge.

Understanding the potential advantages of experiential learning is based on constructivism and experiential learning theories (Huang et al., 2020). The theory represents a principle-centered educational concept founded on the primary assertion that knowledge is constructed by reflecting on world experiences (Aldamigh, 2018). In addition, constructivists believe learning can only occur as an active process featured by the learner's interaction with the reality of theoretically described phenomena (Karami & Tang, 2019). Socialization is also among the key principles of constructivism due to its unique role in representing the learner's interaction with the teacher and the environment for perfect learning (Da Fonte, 2022). In constructivist learning, student involvement in the process is a constant critical concern by the teachers that is achieved through engaging the learners in evaluating knowledge-based facts and exploring their thoughts in a freethinking style (Aldamigh, 2018). The nature of learning is student-centered, as the teacher remains the facilitator who expects the learners to engage responsibly and autonomously (Matriano, 2020). Applied learning approaches embrace the need

for students' active construct where they are tasked with making personal knowledge and incorporating their experiences which form the basis for reality.

Constructivist learning methodologies also emphasize the value of student collaboration. Collaborative learning enables students to create meaning together through the promotion of discussion and the sharing of viewpoints. Students can learn from one another, question their own presumptions, and better grasp the subject matter by participating in group discussions, group projects, and cooperative problem-solving activities (Anwer, 2019). In addition to promoting social contact, collaborative learning also improves communication and critical thinking abilities. Students who actively engage in collaborative activities can personally experience the advantages of teamwork, including acquiring new views, sharing resources, and attaining common objectives (O'Connor, 2022). Constructivist learning's interactive and cooperative character fosters a dynamic and interesting learning environment that allows students to take charge of their education and build knowledge via valuable interactions with their peers.

The theory of constructivism assesses how humans construct knowledge about themselves, their environment, and general intelligence (Piaget, 1929a). Jean Piaget is one of the pioneer theorists of the theory of constructivism. According to Piaget (1929b), humans create knowledge from their experiences and ideas. Therefore, the determining factor of knowledge acquisition relies solely on an individual's experiences and ideas and general conceptualization of their life. From the onset, individual experiences and ideas are the primary factors that dictate an individual's knowledge acquisition process. Piaget (1929b) considered how true learning is constructed through experiences and personal ideas and concluded that knowledge levels continuously develop as one grows. According to Piaget (1929b), cognitive development occurs

when one interacts with unique experiences innately. The environment in which a person is raised does also have a capacity to transform their experiences, thus affecting how they create, assess, and build lasting knowledge.

As a method of education, experiential learning puts emphasis on learning via first-hand experience and reflection. It strongly emphasizes the value of active participation, problem-solving, and critical thinking in the educational process. This method encourages students to engage with their surroundings, relate theory to practice, and reflect on their experiences to better understand the material. It is necessary to recognize how the environment affects the development of knowledge and experience learning (Tien et al., 2021). The environment significantly shapes a person's experiences and affects their cognitive development, as stated by Piaget (1929b). The familial, community, and educational contexts contribute to the socio-cultural environment, providing the framework for learning experiences. Depending on the resources available, the chances for investigation, and the amount of assistance offered, these settings may help or inhibit information acquisition. Educators may support experiential learning and advance constructivist methodologies in educational settings by creating learning spaces that promote active involvement and reflection. Including practical exercises, real-world applications, and problem-solving exercises may give students meaningful experiences that help them build knowledge (Vega et al., 2021). Teachers may encourage students to actively engage in their learning, share their thoughts and viewpoints, and expand upon their prior knowledge by fostering a friendly and cooperative learning environment in the classroom.

In his view, Piaget (1929b) argued that both children and adults do engage in reasoning and thinking processes. Quality of reasoning is the only differentiation between children and adults. He isolates this favoring factor among adults due to the more experienced and higher-

quality ideas they have amassed over time. Piaget's (1929a) theory narrows down to four foundational stages that all human beings undergo as they undertake cognitive development. These stages include the sensorimotor, preoperational, concrete, and formal operational stages. Children do not just acquire knowledge from adults as they develop through the steps. Instead, they actively build insights and ideas and add these to their unique experiences, thus enabling them to create knowledge. As people move from preoperational to formal operational stages of thinking, their cognition is enhanced from watching and being told to doing.

Experiential learning theorists contend that learning is an active process of producing knowledge via the interplay of one's experiences, ideas, and actions rather than just a passive process of gaining information, building on Piaget's theory of cognitive development. The four phases of learning: concrete experience, reflective observation, abstract conceptualization, and active experimentation, occur continuously. Individuals engage in direct, practical encounters at the concrete experience stage, which form the cornerstone of learning. These encounters might be practical exercises, role plays, or simulations (Hanfstingl et al., 2019). The next step is reflective observation, during which students critically evaluate their experiences, see trends, and draw connections between their actions and the results. The creation of theories, ideas, and generalizations based on the reflections occurs during the abstract conceptualization stage. In the last step, active experimentation, students put their ideas and concepts to the test via the actual application and obtain fresh experiences to continue the cycle.

Experiential learning has been extensively adopted in many educational contexts, including schools, universities, and professional training programs. Its efficacy comes from its capacity to actively engage students, enabling them to apply concepts to practical circumstances. Learners who engage in experiential learning gain information and practical skills, critical

thinking techniques, and problem-solving approaches. Because experiential learning is hands-on and allows students to immediately witness cause-and-effect linkages and draw links between theory and practice, it helps students comprehend topics more thoroughly (Sevinç, 2019). It provides several advantages across a variety of fields, according to research. For instance, research in the area of science education has shown that fieldwork and hands-on experiments help students better grasp scientific ideas and develop their capacity for scientific inquiry.

Similarly, experiential learning exercises like case studies, simulations, and internships have promoted the growth of critical thinking, decision-making, and leadership abilities in business and management education. It also applies to personal and professional growth and formal educational settings (Babakr et al., 2019). Experiential learning techniques, such as outdoor team-building exercises and leadership workshops, boost leadership capabilities and self-awareness in leadership development. Additionally, experiential learning may be used in fields like healthcare, social work, and environmental education, allowing students to use their knowledge and abilities in practical situations.

This theory is closely connected to the study on the effect of experiential learning on formative assessments and whether these assessments, when included in experiential learning, impact the comprehension rate, especially in children at the elementary school level. Piaget's theory of constructivism demonstrates the need to either base literacy on more than assessments or attempt to make them more equitable. Piaget (1929a) details, it is impossible to determine student's intelligence in a single approach of using a test score. Instead, Piaget (1929b) advocates for experiential assessment, which is an assessment of the learner's progress while putting into perspective their environment and their innate experiences, which are undoubtedly differentiated from one learner to the next. The other problem with using formative assessments from Piaget's

lens is the advocacy and value he attaches to learning in a wholesome environment rather than stressing on a single environment, the classroom (1929b). Therefore, Piaget's constructivism model is a strong and viable model whose connection and relevance to this study are solid and indisputable.

Piaget's constructivism theory emphasizes the value of social interaction and teamwork in education. Learners actively create knowledge, following Piaget, via their interactions with people and their surroundings. According to this component of constructivism, formative evaluations must consider the collaborative and social dimensions of learning in addition to just individual achievement (Romberg, 2019). Group projects and activities that encourage collaboration and teamwork give students important opportunities to create knowledge collaboratively in experiential learning. Additionally, Piaget's focus on the student's participation in learning is consistent with experiential learning via hands-on activities (Saleem et al., 2021). Students are encouraged to actively participate in real-world activities via experiential learning, which enables them to link abstract ideas with useful applications. Formative assessments may be included in experiential learning activities so that teachers can monitor students' comprehension and development while actively applying their knowledge in practical settings. This strategy develops critical thinking, creativity, and problem-solving skills, which are crucial for children's growth at the primary school level. It also improves understanding.

In addition, constructivism is rooted in the essential realization of how prior knowledge significantly influences how individuals construct knowledge through reflection on new experiences. Experiential learning is a major contributing activity to the progress of constructivism. For learners to grasp knowledge effectively, they must elaborate on its meaning through active experiments to improve their creativity and problem-solving skills. Although

learning information may be delivered passively, its understanding can only be perfected through connecting to prior knowledge and the situational learning process (Xu & Shi, 2018). Furthermore, the social knowledge construction principle aligns with the significance of learning as a social engagement where learners interact to evaluate and practice knowledge (Aldamigh, 2018). Moreover, learning is described as a community concept where involved individuals create meaning through collective responsibility (Parta, 2013). So, the learning environment could be essential determinant of the student's thinking abilities.

Constructivism places a strong emphasis on the value of group learning in the creation of new knowledge. The social environment in which learners interact with their classmates, instructors, and other members of the learning community is one in which they are recognized as active participants. Students can discuss various points of view, exchange ideas, and work together to build knowledge in collaborative learning settings (Dunn, 2021). In addition to gaining new views, collaborative learning helps students build critical social and communication skills essential for their personal and professional development.

Theory of Experiential Learning

Experiential learning theory is another model that strongly relates to how people learn and build upon knowledge. Learning becomes a social construct that is possible through a series of interactions rather than book work. John Dewey's (1938) experiential learning theory acknowledges that all processes surround an individual in a social approach. Since knowledge is created through a person's one's experiences, knowledge is regarded as a social construct anchored on one's experiences. According to Dewey (1938), learning is retained best when it applies to or is derived from a person's experiences and when learning is relevant to the individual's life. Therefore, the theory advocates for more pragmatic models when imparting

knowledge rather than relying on studies, history, etc., which, as he indicated, should be tracked and found to be emanating from ordinary life experiences. In addition, Dewey (1938) conceived an individual to be at the center of attaining and transferring knowledge. In the context of his view of experiential learning as practiced in ideal form, Dewey (1938) stood for pragmatism.

According to Dewey's notion of experiential learning, the teacher is a facilitator who aids students in their pursuit of knowledge. To help students grasp and remember the material better, the instructor encourages them to participate in practical activities, experiments, and hands-on experiences. By actively engaging students in their education, teachers provide a learning environment where students can build their knowledge, form connections, and hone their critical thinking abilities. By encouraging learners' independence and autonomy, this method allows them to take charge of their education (Bhati & Song, 2019). Experiential learning also goes beyond the walls of the traditional classroom. Applying their knowledge in real-world settings encourages students to go outside of the conventional academic environment. This highlights the value of real-world experiences. This could be field excursions, internships, and volunteer work in the community, or joint initiatives with experts in related subjects. Students get a more comprehensive comprehension of subjects, see how their information affects real-world situations, and receive a wider perspective on how their learning relates to different contexts when interacting with the world outside their textbooks. This experiential method prepares students to actively participate in their communities and the larger community by cultivating flexibility, problem-solving abilities, and a sense of social responsibility.

The model is consistent in its stance on what effect experiential learning has on formative assessments (Elia-Renaud, 2019). In this case, the question would be of focus would be whether these formative assessments in question go deeper into determining whether the formative

assessments administered in a particular setup focus on real-life experiences. This model, therefore, is also a relevant model that can be used to study the effect of experiential learning on formative assessments. There is an evident connection and association between the two models as both outline the significance of approaching learning from an experiential standpoint. Piaget (1929) outlines the process of knowledge construction, while Dewey (1938) builds on the same but expands the issues by advocating for real-life experiences to be derived and unearthed from history, studies, geography, and other broad models of teaching.

In addition to the available information, using experiential learning in formative assessments may significantly increase student motivation and engagement. Students are more likely to be engaged in the learning process when they actively participate in practical applications of the principles they are learning. This greater involvement results in higher levels of motivation and a better knowledge of the material. Teachers may allow students to link theoretical knowledge with real-world applications by including experiential learning in formative evaluations (Perusso et al., 2020). According to Perusso (2020), this will help students have more meaningful and lasting learning experiences. Additionally, including experiential learning in formative evaluations might improve students' ability to think critically and solve problems. Traditional tests sometimes emphasize rote memorization and regurgitation of data, which could not effectively prepare pupils for problems in the real world. Experiential learning, on the other hand, pushes students to assess and apply their information in real-world situations actively (Goethe & Goethe, 2019). This strategy develops their critical thinking capacity, creative problem-solving, and defensible judgment. Teachers may evaluate their student's ability to apply their information in real-world circumstances and provide a more thorough assessment

of their overall comprehension and proficiency by adding experiential learning into formative assessments.

Related Literature

The purpose of this literature review is to gain a greater understanding of the existing research on the potential impact of experiential learning. The first purpose is to analyze the dependency schools place on literacy assessments in grade schools. Next, a synthesis of literature associated with and relevant to experiential learning is presented to expose the gap and create a potential intervention for the varying literacy rate throughout the inner city. Although research has been conducted on the benefits of experiential learning, this literature review will assess the connection that exists between assessments and mean test scores by comparing the historical, theoretical benefits of added experiential learning to the mean average of assessments by scholars without the addition. This literature review details the effects of experiential learning by exploring the literature surrounding its practices of assessments, hands-on learning, field trips, and STEM learning.

This literature analysis intends to investigate the role of instructors in supporting experiential learning and its influence on student involvement in addition to the aforementioned focal areas. Teachers are essential in developing and executing experiential learning activities that support active student engagement and curricular objectives. This research aims to find effective instructional techniques that improve experiential learning opportunities by analyzing pertinent literature on teacher practices and tactics. It is critical to comprehend the best ways for instructors to include STEM learning, field excursions, and hands-on activities in their lesson plans to provide students with opportunities for meaningful learning (Boice et al., 2021). This literature review also acknowledges the significance of considering the socio-cultural setting in

which experiential learning occurs. Inner-city communities often confront particular difficulties, including few resources and socioeconomic inequities, which may affect the success of projects for experiential learning. This research attempts to provide insights into possible interventions that might address the disparate literacy rates in these neighborhoods by reviewing literature that addresses the particular requirements and conditions of inner-city schools (Hou, 2023). Creating techniques that may more effectively promote students' academic progress and general well-being in inner-city settings would benefit from understanding the contextual elements that affect the implementation and results of experiential learning programs.

Experiential Learning

Experiential learning, specifically learning via reflection on doing, is learning through experience. While not always the case, experiential learning, such as hands-on learning, can involve students reflecting on their work. Experiential learning differs from rote or didactic learning when the student takes a relatively passive part (Andresen et al., 2020). It shares similarities with other active learning methods, including action, adventure, free-choice, cooperative, service, and contextual learning but is not the same.

Experiential learning holds learning is a natural byproduct of experience and that experiences are created by people's continual participation and interactions with the world around them (Morris, 2020). Because it adopts a more comprehensive approach, this learning theory differs from cognitive and behavioral learning theories. It considers how experiences—along with their feelings, thoughts, and environment—affect how people learn. However, deep learning typically entails acquiring knowledge through various techniques, such as reading, experimentation, role-playing, and discussion. By requiring students to apply and discuss theories rather than memorize them, these teaching strategies assist students in understanding

what students are studying. These strategies represent a process of learning that begins with a concrete experience, which calls for reflection, review, and perspective-taking about the experience, followed by abstract thought to draw conclusions and conceptualize the experience, which then results in a decision to act, engage in active experimentation, or put what you have learned to use (Karami & Tang, 2019). People participate in this cycle without knowing they are learning since it is natural and organic. It almost always occurs naturally and continuously transforms people's life. Ortiz-Gallegos (2020) determined most people have preferred methods of employing this learning cycle and learning modalities emphasizing some modes over others.

Experiential learning has impacted literacy through its role in enhancing better concept grasping by the learners (Daud, 2022). In a classroom setting, various assessment methods are applied to facilitate in-process evaluations, which enable teachers to realize the learner's understanding potential (Ortiz-Gallegos, 2020). Furthermore, formative assessments spark the educator's understanding of students' learning needs and measure their academic performance (Fatima, 2022). With the introduction of experiential learning as a mechanism for advancing the curriculum, learners' creativity can improve due to methods linking theoretical learning with real-world situations. For instance, science learning is the most practical subject in the current world educational systems, which requires prioritization of experiential learning to assist learners in evaluating the reality of concepts. In addition, experiential learning is the route to deeper critical thinking capacity and the ability of learners to develop reflective judgments for various situational phenomena. In experiential learning, students learn through mistakes, a strategy that allows them to explore valuable experiences from errors.

Furthermore, teachers can observe the learners’ learning attitudes and become mindful of the student's learning motivation. Besides, constructivism theory entails foundational learning in

which students engage more in knowledge construction than passive absorption of information (Matriano, 2020). Constructivism theory depicts that world experiences and their reflection trigger people's ability to create personal representations, raising their knowledge level. Matriano (2020) expounded on constructivism theory, experiential learning's impact on formative assessment, and its advantages in assessment comprehension.

John Dewey said, “If we teach today’s students as we taught yesterdays, we rob them of tomorrow” (Bărbuceanu,, 2021, p. 177). Experiential learning has been considered an immersive method of ensuring that learners become well-experienced (Oikawa et al., 2023). Unlike other learning methodologies that mainly focus on knowledge delivery, experiential learning involves gaining experience through direct first-person interactions (Brad, 2016). Learning goes beyond the traditional cover-to-cover book learning to engage learners intellectually, socially, spiritually, emotionally, politically, and physically which causes them to experience factors such as success, failure, and adventure (Elia-Renaud, 2019). Experiential learning integrates interpretation and interpretive processes to provide meaning to lived experiences and has been considered effective in improving performance in Science, Technology, Engineering, Arts, and Mathematics (STEAM) despite being considered to have improved learning outcomes (England, 2021). Research has been conducted to determine the efficacy of experiential learning on math and even on college students to analyze if distance learning is in fact a benefit (Oppermann & Lazarides, 2021). However, the there is a specific gap on the impact of experiential learning on student self-efficacy and perceived learning of elementary students in the fourth and fifth grade attending inner-city schools that belong to the marginalized Americans living at or below the poverty line. Certainly, poverty exists throughout the county, but the inner-city areas have been acutely

affected academically (Clark, 2023). Specifically, 43% of low to illiterate adults live in poverty; consequently, their children are also being raised in poverty (Clark, 2023).

Watts (2022) said, it was important for children in low-income families to receive early literacy intervention to support their development, as it stands, children from illiterate families are less likely to be exposed or assisted with reading (Watts, 2022). Experiential learning is an effective strategy that applies theories to purposefully engage learners through hands-on experiences and reflection. These theories include the cognitive learning theory, which examines methods to maximize the brains potential and the Behaviorism learning theory is the impression that a learner's behavior is based on their relations with the surroundings (Cosgrove, 2018). It suggests that students can be prejudiced by inner and outer biases (King-Meadows & Mcray, 2021). In this regard, children from illiterate families or families that do not place an emphasis on reading/literacy could possess a bias to learning. These parents may not see the value or need for literacy skills. Thus, potentially displaying a bias and prejudice. Wingerter (2020) determined the way in which students experience learning and their feelings towards learning coincides with their effort in performance. Displaying the inherent need to increase student self-esteem, efficacy, and confidence within the classroom (King-Meadows & Mcray, 2021).

Current Assessment Practice

Assessment is an essential component of the educational system. It enables educators to pinpoint pupils' areas of strength and weakness to give them individualized teaching and support. There are many ways to assess students, including examinations, projects, assignments, and observations (Morris, 2020). Individual student development can be tracked through assessments, which can also assist teachers in tailoring their instruction to each student's needs.

Decisions about resources, spending, and curriculum at the school and district levels can also be influenced by assessments.

Assessments go beyond testing. They may include practical exercises like experiments, problem-solving, or group projects. These exercises are crucial because they let pupils fully demonstrate their comprehension (Schildkamp et al., 2020). Experiential learning is useful for gauging pupils' comprehension. Students who participate in experiential learning activities solve problems in the real world by building new products or services or by setting up experiments to study particular scientific phenomena. Students can apply their knowledge in meaningful ways by participating in these activities.

Current research details the extensive benefits of assessments. Assessments provide funding for state schools. Institutions with the highest test scores received the most funding as they were seen as highly successful. Assessments bring resources to the schools. However, low-scoring schools continue to receive inadequate funding, therefore, creating a cycle of underperformances. The background of testing displays inequitable literacy standards needing remediation. Adding or increasing experiential learning is an intervention that could aid in the performance of scholars through the development of background knowledge and critical thinking skills needed for analysis and application.

Formative Assessments

Formative assessments are crucial to the learning process since they offer a tool to gauge a student's understanding and development. Formative assessments are intended to track students' development while they are still learning, allowing teachers to modify their approaches to the classroom to meet each student's needs better (Morris, 2020). Assessments are also utilized to gauge their progress to determine whether the pupils meet their learning objectives. There are

many ways to employ formative evaluations, including tests, quizzes, essays, and projects. Teachers can use formative evaluations to assist them in recognizing areas in which their pupils are succeeding and those in which they are struggling.

Formative assessments are a useful teaching technique because they enable teachers to give feedback tailored to each student's needs, enhancing student engagement and learning. Since students feel more at ease when they get feedback on their progress, formative assessments also foster a more positive learning environment (Schildkamp et al., 2020). While they are encouraged to take responsibility for their learning and utilize the feedback to make significant changes in their learning practices, formative assessments also guarantee that the students are actively engaged in the learning process.

During the learning process, students and teachers apply well-planned processes in eliciting and applying evidenced student understanding, ensuring their transformation into self-centered learners. The teacher effectively provides instructions for a clear learner understanding of the concept under development. Clarity is a student achievement the teacher facilitates during a planned learning-teaching process (Andresen et al., 2020). Formative assessments occur after the learners have been exposed to the learning concepts using relevant materials aligned with the learning intentions. Eliciting evidence is a formative assessment process that entails identifying the prior learned knowledge concepts while aiming to evaluate a student's depth of understanding. Teachers obtain the learner's information to develop the association between the past learned skills and the contextual classroom concepts.

Equally important, formative assessment has been constructive in determining literacy among grade school scholars. Literacy assessment involves the applied decision-making processes which examine the learner's abilities in performing literacy tasks. In addition, literacy

assessment encompasses all aspects, including formative responses to high-stakes assessments. Texting experts' perspectives, criteria standardization, text development, text scores analysis, and needs prioritization are the critical assessment literacy components (Tapingkae et al., 2020). Assessment literacy is a combination of assessment knowledge practices that enlighten the teacher in applying the outcomes to trigger learners' improvement and academic achievement. Also, formative assessment attempts to define the fluency abilities of grade school scholars and is facilitated by testing the learner's ability to read comprehension messages accurately with the expected speed. The significance of fluency assessment is centered on enhancing the learner's understanding of the concepts attached to various literacy materials.

Experiential Learning Benefits

Experiential learning's significance entails a purpose of reinforcing student knowledge application, ability to find solutions and teamwork and communication skills development. First, experiential learning assists learners in engaging in the immediate application of knowledge in real-world problems (Routh, 2020). Theoretical learning is accompanied by the active collective practice of the information meaning in reality. Experiential learning is considered the most profound learning, which provides an opportunity for a student's self-examination regarding their procedural actions and aligned emotional responses (Yang & Lau, 2019). Internal learner reflection acts as the student's basis for workplace preparation. It enables students to set measures for personal relationship improvement, decide ground-breaking life choices and become conscious of their emotional needs.

Through experiential learning, students are equipped with the skills to provide well-scaled solutions to real-world challenges. Principled pedagogic guidance and teaching guidance entail using real-world examples, which enable learners to develop the association of concepts to

real issues (Brodek, 2022). Learners are also introduced to research concepts to make learning a personal responsibility by encouraging them to find knowledge, hence making it relevant to their understanding (Andresen et al., 2020). As learners discuss examples of real-world problems, they continue to explore the infinite possibilities for obliterating the obstacles to progress. Experiential learning boosts the learners' access to student-centered coaching accompanied by feedback, a mechanism that leads to their performance improvement. Finally, teamwork promotion is initiated by experiential learning as a tool for enhancing social learning (Brodek, 2022). The process improves scholarly communication skills, motivating learning and understanding conceptual knowledge.

Activities Involved in Experiential Learning

Experiential learning is a process that involves the use of real-world experiences and activities to drive learning. The activities involved in experiential learning can vary, depending on the learning type. For example, activities may involve field trips, simulations, role-playing, outdoor activities, problem-solving tasks, and more (Morris, 2020). These activities are designed to provide students with hands-on, real-world experiences that can help them learn and apply knowledge in meaningful and relevant ways. Field trips are a common activity that can be used for experiential learning. Field trips allow students to explore their environment and gain a deeper understanding of a particular topic (Cook, 2021). For example, a field trip to a local museum can help students learn about the history of the area or the culture of a particular region (Karami & Tang, 2019). Field trips can also help students learn about the environment, such as a trip to a local nature center to learn about local wildlife or a trip to a nearby lake to learn about the effects of pollution (Cook, 2021).

Simulations and role-playing are other activities that can be used for experiential learning. Simulations and role-playing allow students to explore different scenarios and their potential outcomes. For example, students might be asked to simulate a business decision-making process or role-play a negotiation between two sides (Morris, 2020). This activity allows students to better understand the topics at hand by exploring different possibilities and scenarios. Outdoor activities can also be used for experiential learning. Outdoor activities allow students to learn about the environment and explore their surroundings (Karami & Tang, 2019). For example, students might be taken on a hike to learn about the local flora and fauna or to a beach to learn about the effects of erosion. Outdoor activities can also be used to explore social issues, such as a visit to a homeless shelter to learn about the causes and effects of poverty.

Problem-solving tasks are another activity that can be used for experiential learning. Problem-solving tasks allow students to explore different solutions to a problem and practice critical thinking skills (Morris, 2020). For example, students might be asked to solve a math problem or devise a creative solution to a design challenge. Problem-solving tasks can help students develop critical thinking skills and learn to think outside the box. Experiential learning is a powerful tool that can be used to help students learn in meaningful and relevant ways (Andresen et al., 2020). By incorporating activities such as field trips, simulations, role-playing, outdoor activities, and problem-solving tasks, educators can provide students with real-world experiences that can help students to develop critical thinking skills, gain a deeper understanding of their environment, and explore different possibilities and scenarios (England, 2021).

Morris (2020) defines experiential learning as a learning model that entails learning through experiences. According to him, individuals learn better when exposed to tangible experiences like actively participating in activities and experimenting. Experiential learning has

the theme of ensuring learners get adequate information. According to Bond (2020), tutors who give learners an assignment about research make the learners get sufficient information on the topics, enhancing active learning. Moreover, experiential learning has the theme of ensuring memory retention. To attain this, instructors always give feedback and revise learners' assignments. Furthermore, they engage learners in some activities that promote experiential learning (Bond, 2020).

Through active engagement in experiential learning activities, students can put their theoretical understanding into practice, demonstrating the immediate relevance and practical applications of what they have studied. Their ability to think critically is stimulated as they complete challenging activities, make judgment calls, and assess the results of their judgments. Through this process, students learn to think critically, consider other viewpoints, and reach educated decisions—crucial skills in today's dynamic and quickly changing world. Experiential learning also motivates students to take on difficulties and learn from mistakes (Chiu, 2021). Traditional educational systems often see failure as the result of errors, which breeds fear of making mistakes. However, failure is seen as a chance for development and reflection in experiential learning. During their practical experiences, students who encounter difficulties are urged to reflect on their mistakes, revise their approaches, and try again (Su & Cheng, 2019). In addition to fostering a growth attitude, this iterative process helps students become more receptive to taking calculated risks and experimenting with novel ways of problem-solving.

Field Trips in Education

Field trips promote experiential learning. According to Stern and Powell (2020), field trips give learners a substantial experience where they observe events and find lessons from their 11 observations. Later they can use the addresses to enhance their knowledge of how they

perceive things. Field excursions allow students to interact with the outside world and use what they have learned in the classroom. Students may personally experience the ideas and theories they have studied when they leave the safety of the classroom and go into the outer world. Their grasp of the subject matter is deepened by the links they can draw between theoretical knowledge and its practical applications attributable to this practical experience. Field excursions also encourage student cooperation and social engagement (Han, 2020). Students are taught to interact and collaborate to solve difficulties and accomplish shared objectives when exploring new settings and encountering strange circumstances. This collaborative learning environment encourages cooperation, effective communication, and the capacity to value other viewpoints. In addition to fostering stronger bonds and camaraderie, interacting with classmates outside the classroom benefits students' learning experiences (Han, 2020).

STEAM Learning

Applying hands-on learning entails the use of models to represent a concept. Davishahl et al. (2018) say that learners grasp more content when studying a particular model related to an image being taught. They will never forget the model's features whenever they get questions about the topic. STEAM learning promotes experiential learning's theme of enhancing good knowledge acquisition. It involves using mixed concepts of science, technology, engineering, art, and mathematics to enhance learners' critical thinking (MacCallum, 2021). The utilization of STEAM learning can help students improve their problem-solving abilities while also encouraging their creative thinking. The variety of disciplines employed in STEAM education encourages teamwork and inquiry-based learning (Andresen et al., 2020). Learners can explore a range of employment opportunities through STEAM learning, including creating computer programs, constructing robots, and creating novel goods.

Hands-on learning and STEAM education provide a greater grasp of real-world applications in addition to the advantages already highlighted. Students are more likely to perceive the application of their learning to real-world circumstances when they participate in hands-on activities and projects that combine STEAM ideas. Students build a better link between their academic knowledge and its practical application by working on real-life issues and obstacles. In addition to enhancing their educational experience, this relationship gives students vital skills they may use in various professional contexts (Alam, 2022). STEAM education and hands-on learning help students build critical 21st-century skills. Students need to have a broad range of talents beyond conventional topic knowledge in today's world, which is continually expanding. Learners are introduced to critical thinking, cooperation, communication, and creativity via hands-on activities and STEAM integration. These abilities are highly regarded in the contemporary workplace, where sophisticated problem-solving, flexibility, and invention are highly rewarded (Yannier et al., 2020). Students develop these abilities and improve their readiness for the difficulties they will face in their future occupations by participating in hands-on activities and STEAM projects.

The integration of STEAM learning into education has been found to increase student engagement and motivation. Through this form of experiential learning, students can gain real-world experience and learn through practice (Andresen et al., 2020). For example, students can participate in activities such as coding, creating virtual simulations, and using design thinking to create a product. The application of STEAM learning in the classroom can help students gain useful abilities, including creativity, critical thinking, cooperation, and problem-solving. Moreover, STEAM education can give kids comprehension of the various fields and how they might be used to address problems in the real world (Andresen et al., 2020).

Incorporating STEAM learning into the classroom promotes student cooperation and teamwork and raises student engagement and motivation. Students who engage in STEAM-related activities often collaborate in groups or teams to solve challenging issues. Through this collaborative method, students are encouraged to express their thoughts, communicate clearly, and gain insight from one another's viewpoints. Students learn vital interpersonal and social skills via teamwork, which is crucial for success in the contemporary industry. STEAM learning in the classroom encourages pupils to adopt a development mentality (Kareem et al., 2022). Experimentation, trial-and-error, and the readiness to accept failure as a step in the learning process are all common components of STEAM activities. Students learn resilience and tenacity via practical experiences and iterative problem-solving. They learn to see difficulties as chances for improvement and gain self-assurance in their capacity to go beyond hurdles. Students who adopt a growth mindset excel academically and are better equipped to handle the constantly changing demands of the modern workplace, where flexibility and ongoing learning are essential. STEAM education can close the knowledge gap between the classroom and real-world applications. Students who participate in STEAM activities develop useful skills and information that may be immediately applied to situations that arise in the real world (Prohl, 2022). For instance, coding abilities gained via STEAM education may be used in creating robotics projects, websites, or even applications.

Similarly, creating prototypes while working on STEAM projects enables students to comprehend engineering and manufacturing fundamentals. STEAM education prepares students for future employment by giving them the knowledge and experiences required to flourish in a quickly changing technology environment. It does this by tying classroom learning to practical applications (England, 2021).

Interdisciplinary linkages are fostered, and students are encouraged to draw links between many topic areas due to the incorporation of STEAM learning into schooling. Students may observe how these disciplines cross and impact one another in practical applications by mixing science, technology, engineering, art, and mathematics. For instance, in a STEAM project that entails designing and building a bridge, students must apply their understanding of physics principles, use mathematical calculations to ensure structural stability, use engineering principles to guide design and construction and incorporate aesthetic elements in their work. Students are encouraged to look beyond certain disciplines' confines and comprehend how information is interrelated by using this holistic approach to learning. STEAM education may help pupils develop an entrepreneurial attitude (Bucea-Manea-Țoniș et al., 2021). Students gain highly appreciated skills in the twenty-first-century workforce by working on practical projects and solving problems together. They acquire the skills of problem-solving, creativity, and critical thinking. Additionally, STEAM education fosters creativity and motivates pupils to take chances and explore novel concepts. These abilities are crucial for entrepreneurship because they help students see possibilities, adjust to changing conditions, and implement their ideas.

Perceived Learning

The idea that students may comprehend and assimilate the facts they have learned is known as perceived learning. It is a type of experiential learning since it requires the learner to use their experiences to make important inferences. Perceived learning can be utilized to close the gap between theory and practice, according to Morris (2020). This indicates students are able to apply what they have learned in the classroom to real-world situations. For instance, students can use the idea of linear equations to solve problems in the real world after learning about it in math class. Making connections between what they have learned, and their personal experiences

is another aspect of perceived learning (Karami & Tang, 2019). Students can expand their comprehension of the subject matter and arrive at more insightful views as a result. For instance, a student might read about a historical occurrence and then make a comparison to a comparable occurrence in their own life. This may enable them to comprehend the incident and its causes better. The learner can then utilize this knowledge to extrapolate additional conclusions about the incident.

Students' perceptions of their education are crucial in developing their critical thinking abilities. Students are encouraged to assess, evaluate, and interpret the knowledge they have gained when they participate in perceived learning. Through this critical thinking process, they may better comprehend the material and improve their capacity to think critically and independently. Students can better challenge presumptions, recognize biases, and develop fair judgments due to making connections between their classroom learning and practical experiences (Carpenter-Horning, 2018). Martin-Chambers, (2022) has been shown that perceived learning increases student enthusiasm and involvement in the learning process. Students become more engaged and committed to the subject matter when they can connect what they learn to their own experiences. This link between theoretical ideas and practical applications piques their interest and an inherent drive to study more. Students are thus more likely to remember the material and have a positive outlook on learning. Perceived learning has wider effects on students' personal and professional growth in addition to its effect on their academic success. Students could be better equipped to negotiate real-world difficulties and make wise judgments in various circumstances by bridging the theory and practice divide. The capacity to apply information to real-world circumstances creates flexibility and problem-solving abilities, two traits highly prized in today's society, which is undergoing fast change.

In addition to facilitating the application of information to practical circumstances, perceived learning motivates students to participate in reflective practices and critical thinking. Students may comprehend the material better by purposefully relating what they are learning to their own personal experiences. They can make connections, see trends, and get fresh perspectives via this process of contemplation beyond what is being taught directly in the classroom. Perceived learning also encourages students to feel ownership and authority over their educational experiences. Students become more motivated and committed to their studies when they believe that their material has value and relevance (Wang et al., 2021). Students are more inclined to take ownership of their education, look for new resources, and continue researching the subjects that interest them. In addition to improving their comprehension, this self-directed learning style encourages lifelong learning habits beyond the classroom walls. The development of well-rounded people may also benefit from including perceived learning in educational procedures. Educators may foster interdisciplinary thinking by encouraging students to draw connections between many academic fields, such as by fusing ideas from history and science or literature and mathematics. This all-encompassing teaching method fosters creativity, analytical thinking, and a larger worldview, enabling students to take on complicated problems that call for multifaceted answers.

Self-Efficacy

Self-efficacy represents the conviction that one can carry out an activity or accomplish a goal. It is built on a person's prior experiences, accomplishments, and failures (O'Connor, 2022). Activities that involve experiential learning can boost self-efficacy. By giving learners, a chance to take calculated risks, develop their abilities, and learn from their triumphs and failures, experiential learning activities can increase self-efficacy (Karami & Tang, 2019). By

participating in experiences and thinking back on them, students can increase their self-efficacy by believing that they are capable of succeeding in tasks despite past failures. Experiential learning activities can also be used to increase self-efficacy in specific domains. For instance, a student might sign up for a course on a subject they are unfamiliar with but take part in experiential learning exercises to get more at ease with it (Andresen et al., 2020). Exercises could be used by students to refine their skills, practice the topic, and receive feedback on how they are doing. They might be in a position to grow in the field and realize their full potential as a result.

Giving support and encouragement during learning is another successful method, in addition to increasing self-efficacy via experience learning. Positive reinforcement and encouragement from teachers or peers may greatly influence how confident students feel about their talents. Self-efficacy may be improved through supportive situations emphasizing effort, progress, and resilience. Setting achievable and realistic objectives may also be very important for increasing self-efficacy. Learners are more likely to believe they can accomplish their objectives when they define explicit goals and divide them into achievable phases. Achieving goals may help students succeed and become more confident in their talents (Black et al., 2020). Setting objectives also improves motivation and attention, promoting more perseverance and tenacity in facing difficulties. Teachers may design effective chances for improving self-efficacy by including encouraging surroundings, goal setting, and positive reinforcement in experiential learning activities. These extra elements combine with the experiential character of the activities in a way that gives learners the skills and perspective they need to overcome challenges, learn from setbacks, and ultimately succeed (Prifti, 2022). By fostering self-efficacy via these methods, students may gain assurance and faith in their skills, which will benefit them academically and practically.

Summary

The theoretical framework of this research focuses on the theory of Constructivism and Experiential Learning. Constructivism represents a principle-centered educational concept founded on the primary assertion that knowledge is constructed by reflecting on world experiences (Karami & Tang, 2019). In Constructivism, learning is student-centered, as the teacher remains the facilitator who expects the learners to engage responsibly and autonomously. The theory of Experiential Learning, proposed by John Dewey, acknowledges that all processes surround an individual is a social approach and that knowledge is created through one's experiences (Karami & Tang, 2019). The literature review compares the historical, theoretical benefits of additional experiential learning to the mean average of assessments by scholars without the addition to evaluate the dependence schools have on literacy assessments in grade schools and the relationship between assessments and mean test scores. It also examines the literature on its evaluation, hands-on learning, outings, and STEAM learning techniques.

The current gap in the research is the lack of understanding of the impact of experiential learning on perceived learning and self-efficacy on elementary fourth and fifth-grade students, especially those in inner-city and impoverished areas (Morris, 2020). With inner-city and higher impoverished demographics having a lower literacy rate as measured by test scores, there is a need to assess whether experiential learning can be used as an intervention to increase the retention of information and self-efficacy in learning. This literature review will assess the potential impact of experiential learning on formative assessments through perceived learning and self-efficacy to explore if this type of learning can help bridge the gap between low literacy rates and poverty.

Literacy aptitude is traditionally used to measure the comprehension and fluency of in-class learning. Experiential learning is a method of ascertaining information that can increase retention and facilitate an increase in literacy comprehension. Such increased intelligence is said to translate fluidly into comprehension methods like assessments. The emphasis on literacy output through assessments has plagued school systems. With the success being measured in test scores, the ways in which to advance scores continue to be a vital factor in how education is administered. The association between formative assessment and experiential learning is built by a common assertion that all involve student-centered teaching and the learning process (O'Connor, 2022). Experiential learning and formative assessment are regarded as enabling tools for the teacher and learner which facilitate coordinative learning. Experiential learning boosts learners' creativity and improves their critical problem-solving skills concerning real-world issues. Therefore, increasing experiential learning has the potential to increase student capability and subsequent literacy through assessments.

Research has been conducted that indicates learning can indeed happen outside of the classroom (Dewey, 1938). In addition, research supports the experiential learning theory that learning can be built upon through social interactions (Piaget, 1974). However, a gap exists in establishing a correlation between experiential learning and its potential benefit to assessment scores. It is unknown if the quantity of experiential learning has a notable effect on the mean perceived learning or self-efficacy scores. This study examines the benefit of constructivism, particularly experiential learning by way of field trips and STEAM educators could determine if the addition of hands-on learning could benefit the comprehension level as measured by assessments. This research has the ability to not only help elementary students but enhance the retention of knowledge of all scholars.

CHAPTER THREE: METHODS

Overview

The purpose of this quantitative, causal-comparative, non-experimental study was to determine if there is a difference in reading self-efficacy and perceived learning among fourth- and fifth-grade inner city students who participated in experiential learning and those that did not participate in experiential learning. The research questions and null hypotheses follow. The participants and setting, instrumentation, procedures, and data analysis plans are presented.

Design

This research used a quantitative, causal-comparative, non-experimental design to determine if any significant relationship exist between experiential learning and literacy achievement (Miller et al., 2020). Gathering numerical data to describe a phenomenon is a component of quantitative research (Muijs, 2004). Gall et al. (2007) described non-experimental, causal-comparative research as non-experimental investigations designed to examine cause and effect relationships based on the presence of an independent variable. Unlike true experimental designs, which randomly assign participants to conditions, a causal-comparative design does not entail altering one or more independent variables. Instead, ex post facto data collection includes data that was collected as it occurred (Gall et al., 2007). Because researchers do not change or influence the variables in a non-experimental design, this was the most appropriate for this study. Scientists explore potential connections between pre-existing, known factors. Researchers may learn more about more significant trends and possible causal interactions by examining the associations between variables that have previously shown relevance in prior studies (Miller et al., 2020).

In this context, a causal-comparative design is a commonly employed approach that warrants careful consideration due to its distinct features (Dennis et al., 2020). The independent variable is not manipulated but occurs naturally or is preexisting. In this research, experiential learning was the independent variable. Data was collected from the participants after they have been exposed to the independent variable. This design omits a pretest, which would have measured the participants' baseline characteristics before exposure to the independent variable.

The quantitative causal-comparative design offers several strengths. This design is often employed when random assignment is not feasible or ethical (Dennis et al., 2020). By examining groups with naturally varying levels of the independent variable, this design facilitates the study of phenomena as they naturally occur in real-world settings, thereby enhancing external validity. However, the absence of random assignment may lead to systematic differences between the groups, potentially introducing confounding variables that could influence the observed outcomes (Rapi et al., 2021), which are extraneous factors that may influence the relationship between the independent and dependent variables (Jabeen & Ch, 2021). Causal-comparative designs often rely on non-random samples, which may limit the generalizability of the findings to broader populations (Heppner et al., 2016). The characteristics of the selected sample may not be representative of the population, reducing the external validity of the study.

The study utilized six total classrooms, three that utilize experiential learning, and three control classrooms maintain non-experiential, traditional curriculum. The test group consisted of fourth and fifth graders already enrolled in and actively engaged in courses incorporating experiential learning. Researchers may examine the long-term effects of experiential learning on cognitive development, academic success, and engagement as they are presently using this educational strategy (Gall et al., 2007). Additionally, this already-formed group offers prior

knowledge and experience learning consistency, reducing confusing influences. The study's focus on cognitive development corresponds to the advancement of fourth and fifth graders.

Participant groups must be somewhat homogeneous in causal-comparative designs (Gall et al., 2007). Participants share the same socioeconomic environment, geographic region, zoning ward, and school district. Class sizes were comparable as well. Participants and participant groups were comparable based on similar demographics, school zones, socioeconomic factors—primarily poverty/family income—and age, even if it is hard to show total casualty in a non-experimental design.

The dependent variables in this research were perceived learning and reading self-efficacy. Bandura et al. (1999) refers to self-efficacy as individuals' belief in their capacity to perfume while perceived learning is defined as "changes in the learner's perceptions of skill and knowledge levels before and after the learning experience" (Alavi et al., 2002, p. 406). Reading self-efficacy relates to how much students anticipate themselves to succeed on a reading task (Peura et al., 2021, p. 3). Experiential learning (EL), defined as learning through interactions, in the conventional classroom curriculum serves as the independent variable in this study (Dewey, 1938). In education, traditional curricula employ printed paper and books (Gerhart et al., 2015, p. 92). The scope and sequencing of the English Language Arts curriculum are followed by both the test group and the control group. In contrast to the control group, who did not participate in experiential learning, the test group did participate in experiential learning via a district-partnered, experiential learning organization under contract.

Research Question

RQ1: Is there a difference in reading self-efficacy and perceived learning for inner city fourth and fifth-grade students' based on those who participated in experiential learning and those who do not?

Hypothesis

$H_0$1: There is no difference in reading self-efficacy and perceived learning for the inner-city fourth and fifth-grade students' based on those who participated in experiential learning and those who did not as measured by the Cognitive, Affective, Psychomotor perceived learning scale and Self Efficacy Reading scale.

Participants and Setting

This section entails a description of the population for this study. An explanation of the studies participants, sampling technique, and sample size is provided next. The section concludes with an explanation of where the study will be conducted.

Population

The target population for this study were fourth and fifth-grade students located in inner-city Northern Virginia area during the 2023-2024 school year. Participants for the study will be selected from a convenience sample consisting of students receiving experiential learning and non-experiential, traditional textbook curriculum. The group includes experiential learning intervention schools' pupils. Given its location, the area's population is a mix of White, Black, Hispanic, and other racial and ethnic groupings. The socioeconomic setting of the region suggests that a large section of the population may originate from low-income households, which may affect their access to resources and education. The participants included fourth- and fifth-grader students, ages 9 to 11.

Participants

The target population of participants for the study were drawn from a convenience sample of elementary school fourth and fifth-grade students located in area during the 2023-2024 school year. Demographic considerations, particularly socioeconomic origins, render participant groups homogeneous. The sample demographic has several socioeconomic disparities plague this area, specifically poverty/low-income, and housing. The total number of students was 163, which according to Gall et al. (2007, p.145), exceeds the minimum of 152 participants, assuming a medium at the statistical power of 0.7 with an alpha of 0.5. The test and control group are pre-existing and naturally occur within each school and classroom. The sample consisted of 91 females and 72 males. The test group contains 77 participants while the control group has 86 participants. Of the 163 participants, 79 are in fourth graders, the remaining 84 are in fifth grade. African Americans account for 96% of the participant sample, the remaining 4% are Hispanic.

Setting

The setting for this research was inner-city elementary schools in the Northern Virgina area. Northern Virginia Public Schools offer free education to all students. In addition, all students receive free lunch in accordance with the Title I community programming for communities with financial and achievement deficits (Ralton, 2023). Students enrolled in general education courses are enrolled in grade equivalent courses for mathematics, science, social studies, and reading. These subjects are required coursework. All the participants live in and are enrolled in inner-city Northern Virginia elementary school fourth and fifth graders. Classroom class sizes range from 18 to 24 students. Students sit and learn in collaborative groups.

Instrumentation

To measure the impact of experiential learning on student literacy, this study examined multiple indicators of literacy improvement. Instrumentation in this study will include a self-efficacy questionnaire assessment and a perceived learning survey. The self-efficacy reading assessment measured students' confidence in their ability to read and comprehend texts. At the same time, the perceived learning survey gauged their perception of how much they have learned in reading. These instruments provided valuable data to compare the self-efficacy and perceived learning scores of students who engaged in experiential learning versus those who did not. For the purpose of this study, two instruments were used to measure the dependent variables: the Cognitive, Affective, Psychomotor (CAP) Perceived Learning Scale and the Self-Efficacy Reading Scale.

Perceived Learning Scale

The CAP Perceived Learning Scale was used to measure the perceived learning of students (see Appendix A). The CAP Perceived Learning Scale was developed to access self-reported learning levels (Rovai et al., 2009). The CAP Perceived Learning Scale has been used in numerous studies. Carpenter-Horning (2018) used it to determine there was no significance between classroom enrollment types, while Alrushiedat and Olfman (2013) determined a significant difference in the utilization of online discussion boards within classroom. Flowers et al. (2014) also used the CAP Perceived Learning Scale to measure the efficacy of online classrooms and learning but focused specifically only African American students. Flowers et al. determined that African American online students displayed lower psychomotor learning than their counterparts engaged in in-person classroom learning. On the other hand, Wighting (2011)

used the CAP Perceived Learning Scale to find significant correlation between a sense of community and PL, the higher the sense of community, the higher the PL score.

The purpose of this instrument is to measure students perceived literacy. This instrument measures what students think about themselves and their learning ability by focusing on cognitive, affective, and psychomotor learning (Rovai et al., 2009). The CAP Perceived Learning Scale focuses on the amount of knowledge that students think they are learning as opposed to learning measured by grades and assessments (Pace, 1990). Through this instrument shows that despite grades being a prevalent method of measuring learning outcomes, it is not an effective measure of learning.

There are three subscales associated with the CAP Perceived Learning Scale: cognitive, affective, and psychomotor learning. Cognitive learning is the ability to recall knowledge, affective learning is the attitude towards learning, and psychomotor learning is the ability to perform associated task (Rovai et al., 2009). Perceived learning focuses on measuring learners' cognitive change, confidence, and ability, The examiner directions for implantation and question list is provided by the CAP Perceived Learning Scale (Appendix B). The instrument consists of nine questions. Upon completing the curriculum unit 4, the EL leader will provide their exit survey and PLS to all students. Question answers vary from a measurement scale of highly disagree, not at all (0) to strongly agree, very much so (6). The results are added and then averaged by the examiner. The Cronbach's alpha coefficient for the instrument is .79 (Rovai et al., 2009). Perceived learning scale scores range with a minimum and maximum of 0 to 54, each domain has scores ranging from 0 to 18. The lowest possible score is 0 and the highest score is 54. A high value score is an indication of perceived learning by students, therefore PLS scores can conclude if EL is beneficial in contrast to non-experiential, traditional learning.

For this study, permission was sought to use the instrument. Wighting gave permission for instrument use and guidelines to modify the language for elementary students (Appendix A). Specifically, within the questionnaire, the word “produce’’ in question two was changed to create. Additionally, self-reliant was modified to independent. Permission was granted by Wighting, the instrument's original creator which reflects the commitment to maintaining the integrity of the study and respecting intellectual property rights. As a result, granting permission promotes ethical practices.

Self-Efficacy Reading Scale

In addition, the Self-Efficacy Reading scale (SER) was administered (see Appendix C). The purpose of the scale is to measure student’s self-efficacy as it relates to reading, particularly the approved English, Language Arts elementary curriculum. The SER as modified by Pratt-Sala focused on comprehension literacy (Prat-Sala et al., 2010). The SER was created to demonstrate the importance of self-efficacy on motivation and learning to show a correlation between self-efficacy and improvement in reading academic studies (Prat-Sala et al., 2010).

The SER has been used in several studies. Comstock (2022) used the SER to determine if the Lexia program would increase literacy and self-efficacy. Although not statistically significant, data showed that literacy improved (Comstock, 2022). However, Shaver’s (2021) research indicated that self-efficacy could have a significant impact on learning if it is accompanied with an instructional strategy. Positive feelings about learning come from positive interactions with teachers and achievement (Shaver, 2021). Self-efficacy has a significant correlation with educational performance (Elia-Renaud, 2019).

The SER scale contains 12 statements of reading self-efficacy. The scale is assessed using a seven-point Likert scale that ranges from 1 to 7. A score of one is equivalent to “not very

well" in contrast to a score of seven, which is equivalent to "very well." Scores rand from 12 to 84 total points. A student could score as low as 12 indicating a low self-efficacy, up to 84 total points, indicating a high self-efficacy. The SER has alpha coefficients ranging from 0.881 to 0.897 and has been deemed reliable (Pratt-Sala et al., 2010). The EL leader administered the SER. Students had a maximum of 30 minutes to complete the survey. The data was then entered into SPSS by the researcher. The researcher received emailed permission from Prat-Sala to use this instrument (See Appendix D).

Procedures

To commence the recruitment process, the target population was initially identified, consisting of fourth and fifth-grade students in inner-city elementary schools. Permission to conduct research with the target population was obtained by the district leaders (see Appendix F). Next, prior to the start of data collection, approval from the Institutional Review Board (IRB) was requested to begin conducting research (see Appendix E). Inner-city Northern Virginia schools within the target socioeconomic demographic were identified. The district superintendent will be provided with information about the study that will be conducted. The district or educational authorities review the research proposal to assess its alignment with educational goals, ethical considerations, and the potential impact on students and the school community. If the proposal is deemed acceptable, the district grants permission for the study to be conducted within its schools. This authorization ensures that the study is conducted ethical manner as set forth by the district. Consent was also granted by the Districts EL intervention support team (Appendix G), providing permission to survey the students within their program of study. With consent from the district given by the ward academic coach (Appendix F), 12 school principals were contacted by email. Eight schools agreed to allow the researcher to work with

their students. However, only six were needed. Then hard copies of the parental consent forms to participate in the study were sent out and collected by all homeroom teachers (Appendix H); this guaranteed parental consent for students to participate within the study and that there would be no contact between the researcher and participants. Information on the study, purpose, and risk to human subjects, data collection and analysis were shared and approved from the district then provided to all participants to maintain maximum transparency and protection. Once permissions were granted, all communication was between the researcher and the homeroom teachers.

The next step is providing educators and EL support with the time needed to complete the unit lessons. EL support teachers a trained to incorporate experiential learning, students within the test group belong to classrooms that has EL interventions embedded within the coursework. Likewise, classroom teachers of traditional non-experiential learning are trained through the NVPS district to implement curriculum instruction. Additional trainings for the study are not needed. Students were then exposed to EL through field experience (field trips) that aligned with the current unit curriculum being administered within the classrooms per the district scope and sequence or textbook learning. After the exposure to EL and the close of the unit, the PLS and SER were provided digitally through Edulastic for students in both the control and treatment group, administered by their homeroom teacher or the EL staff. All of the students in NVPS have Dell Surface tablets at a one-to-one ratio. In addition, NVPS uses student name and password specific links to ensure only the assigned student completes their assignments. The scale will be administered by the EL staff over a period of 30 minutes. The researcher had no direct contact with students. Scores were collected digitally and evaluated for the total score.

Students within the control group will only receive curriculum instruction. Curriculum instruction specifically in English Language Arts primarily from textbooks, textbooks defined as

print materials while the treatment group will have both curriculum instruction and experiential learning (Gerhart et al., 2015). The study was conducted in conjunction with the school districts English Language Arts curriculum as literacy is the focus. The EL was administered during the traditional school day in conjunction with the district curriculum being administered to all participants. In addition, to the in-class learning, students within the sample groups received field experience in the form of field trips. In addition to ISA, rosters are kept monitoring student's actual participation in hands-on activities and field events. Only on field trips did the school environment differ. EL field trips were held in museums, art galleries, and on or around the Smithsonian's in accordance with the unit topics within the English Language Arts curriculum. Both educators and EL interventionist were present during the field work to facilitate and promote learning connections. Attendance is monitored to track participation fidelity in both the control and treatment groups.

During the duration of the research, confidentiality was maintained. The student waivers and consent forms were electronically scanned into an encrypted password protected file (consent forms located in Appendix x). In addition, all scales were logged into a spreadsheet and protected in an encrypted password protected file. All hard copies of instruments and supporting documents were shredded after electronic filing (Gall et al., 2007). No usage of student name, school, intervention program, or actual field trip date and time were exposed. Student and their parents were aware that at any time they could withdraw from the research. Fourth and fifth graders will be separated into test and control groups based on experience learning. If they belonged to a school that utilized the EL intervention, then they will be a part of the test group. Likewise, students attending schools within the ward that are not participants of the EL intervention will maintain exposure of primarily traditional learning. All student results are

attached to a number void of their actual name. The results will be immediately available to the researcher through the survey platform. Encryption and safe storage will protect participants' data during the study. Data will be kept for five years after the research.

Data Analysis

A MANOVA was used to determine if the hypothesis was supported and there was no significant difference between perceived learning and self-efficacy scores for elementary students in fourth and fifth grade that received experiential learning and students that did not. A MANOVA is the appropriate statistical measure to use in this study because a MANOVA tests multiple dependent variables. According to Gall et al. (2007), it is important to have accurate estimates when testing if two or more groups have a significant difference based on the dependent variables. This research will examine two dependent variables, both perceived learning and self-efficacy in reading; therefore, using a MANOVA was appropriate. To conduct a MANOVA, the researcher will collect the relevant data on self-efficacy reading and perceived learning scores from the participants in both the experimental and control groups. The collected data would consist of multiple observations for each dependent variable corresponding to the different participants. First, data screening will be conducted to check on discrepancies in the entry, where values were out of range and missing values that will be imputed.

A number of assumptions were tested prior to data analysis. First, there are two continuous dependent variables: perceived learning and self-efficacy. Second, there is one independent variable that consists of two categorical, independent groups. The study has a treatment (experiential learning) and control group (no experiential learning). The third assumption is independent of observation and that the two groups are not associated. In this study, the two groups include different students, and no participant could belong to both groups.

Schools that received EL intervention were separated from schools that did not. Students either received EL or traditional learning. The fourth assumption is a linear relationship between the dependent and independent variables. This will be tested with scatterplot matrices between each group of the independent variable. The fifth assumption is no multicollinearity, which will be tested by Pearson correlation between dependent variables and each group of independent variables. The sixth assumption is no univariate or multivariate outliers. The researcher will test for univariate outliers by examining boxplots for each dependent variable and for multivariate outliers using Mahalanobis distance. The seventh assumption of multivariate normality will be tested using the Shapiro-Wilk test for normality. The eighth assumption is the homogeneity of variance-covariance matrices. This will be tested using Box M's test of equality of covariances. Finally, a Levene's test of equality variances will be used to determine the assumption of homogeneity of variances. All hypotheses were assessed at the alpha level .05. The effect size will be measured by partial eta squared and based on Cohen's *d* (Gall et al., 2007).

CHAPTER FOUR: FINDINGS

Overview

The purpose of this causal-comparative, non-experimental study is to identify variations in reading self-efficacy and perceived learning among fourth and fifth-grade inner city students who participated in experiential learning and those who did not participate in experiential learning. Chapter Four presents a comprehensive data analysis, including descriptive statistics, and assumptions. This chapter connects theoretical framework and methodology by using empirical evidence to investigate the research question and address the null hypothesis. The findings obtained provide valuable insight into the research topic.

Research Question

RQ1: Is there a difference in reading self-efficacy and perceived learning for inner city fourth and fifth-grade students' based on those who participated in experiential learning and those who do not?

Null Hypothesis

$H_0$1: There is no difference in reading self-efficacy and perceived learning for inner-city fourth and fifth-grade students' based on those who participated in experiential learning and those who did not as measured by the Cognitive, Affective, Psychomotor Perceived Learning scale and Self Efficacy Reading scale.

Descriptive Statistics

Tables 1 and 2 below show descriptive statistics for experiential and traditional learning groups respectively. Descriptive information for the test group can be found in Table 1, the self-efficacy score of the experiential learning group has a higher mean of 65.97 (*SD* = 13.47) than the traditional learning group, as displayed in Table 2, which has a mean of 37.56 (*SD* = 20.07).

The median self-efficacy in the experiential learning group, shown in Table 1 is 69.00, while in the traditional learning control group, the median 34.00, as shown in Table 2. The mode of self-efficacy in Table 1 shows the experiential learning group as 74, while in the traditional learning group, shows the mode as 12 (Table 2). Self-efficacy in the experiential learning group has a minimum of 21 and a maximum of 86, while in the traditional learning group, self-efficacy has a minimum of 12 and a maximum of 85 as shown in a Table 1 to Table 2 comparison.

Based on a comparison of the descriptive statistics in Table 1 and Table 2, the perceived learning score of the experiential learning group has a higher mean of 39.32 (*SD* = 9.57) than that of the traditional learning group, which has a mean of 32.34 (*SD* = 11.85). The median of perceived learning Table 1 is 42.00, while in Table 2, the traditional learning group median is 33.00. Table 1 list the mode of perceived learning in the experiential learning group is 38, while Table 2 list the traditional learning group mode as 27. Perceived learning in the experiential learning group has a minimum of 9 and a maximum of 54, while in the traditional group, it has a minimum of 0 and a maximum of 53 as shown in a Table 1 and Table 2 data comparison.

Table 1

Descriptive Statistics for Experiential Learning

	Experiential Learning	*M*	*SD*	*N*
Self-Efficacy		65.97	13.467	77
Perceived Learning		39.32	9.573	77

Table 2

Descriptive Statistics for Traditional Learning

	Traditional Learning	*M*	*SD*	*N*
Self-Efficacy		37.56	20.070	86
Perceived Learning		32.34	11.851	86

Results

A one-way MANOVA was used to test the null hypothesis: "There is no difference in inner city fourth and fifth-grade students' reading self-efficacy and perceived learning between those who participated in experiential learning and those in traditional learning as measured by CAP perceived learning scale and SER scale." First, the data was screened, then descriptive statistics were calculated, then assumption tests were conducted, and finally, a MANOVA was conducted.

Data Screening

The results were screened to check whether there were missing values. However, the current data did not have any missing values.

Assumption Testing

Hotelling's T^2 requires that the following assumptions be tenable:

- linearity
- no multicollinearity
- no univariate or multivariate outliers
- multivariate normality
- homogeneity of variance-covariance matrices

- homogeneity of variances

Assumption of Linearity

The assumption of linearity was tested using scatterplots for each group. The scatter plot matrices in Figure 1 and Figure 2 below show a linear relationship between dependent variables (self-efficacy and perceived learning) and each group (experiential and traditional). The assumptions of linearity in Figure 1 was visually analyzed, and the data points appear to generally appears to follow a line; therefore, the assumption of linearity is met (Warner, 2013). Likewise, the visually analysis of Figure 2 shows a "cigar shape." Its presence indicates a linear relationship; thus, linearity is met (Warner, 2013).

Figure 1

Scatterplot for Experiential Learning

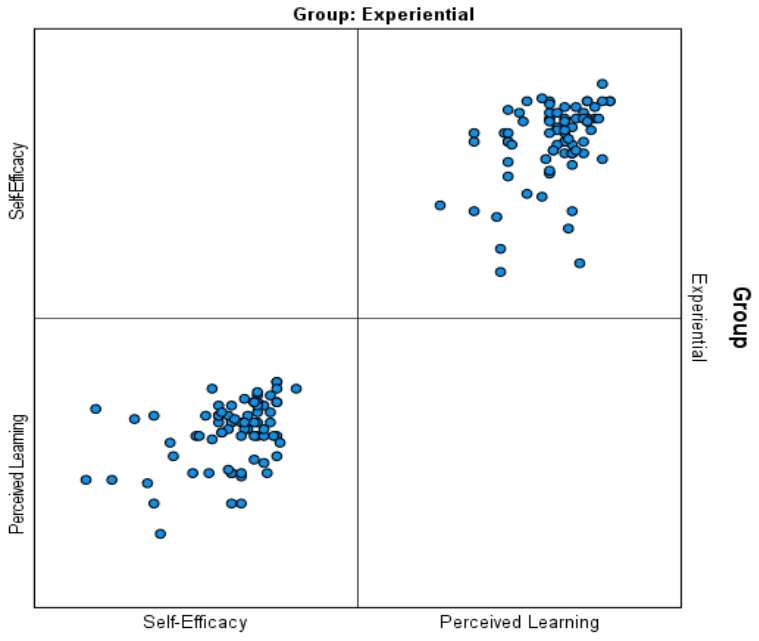
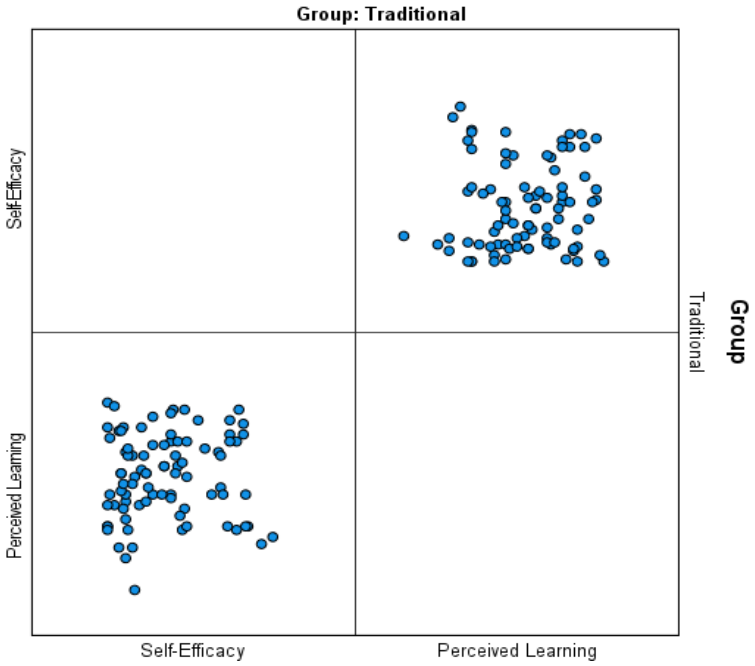


Figure 2

Scatter Plot for Traditional Learning



Assumption of No Multicollinearity

To test the correlation strength between the dependent variables, a Pearson correlation was conducted. This multicollinearity test checks the correlation strength of the dependent variables. The dependent variables should show a slight correlation. The assumption is tenable if the correlation is moderate and less than .9. The presence of multicollinearity can affect results by increasing the standard error (Rovai et al., 2014). Table 3 below shows a statistically significant moderate correlation at $r = .314$, $p = .000$, meeting the assumption of no multicollinearity (Papageorgiou, 2022).

Table 3

Collinearity Test Using Pearson Correlation

		Dependent variables		
			Self-Efficacy	Perceived Learning
	Self-Efficacy	Pearson Correlation	1	.314**
		Sig. (2-tailed)		.000
		N	163	163
	Perceived Learning	Pearson Correlation	.314**	1
		Sig. (2-tailed)	.000	
		N	163	163

**. Correlation is significant at the 0.01 level (2-tailed).

Assumption of No Univariate Outliers

The assumption of univariate outliers was not met on perceived learning, while it was met on self-efficacy, as shown in Figure 3 below. A univariate outlier is a data point that consist of an extreme value. Box plots were used to test for outliers. Due to this study being a MANOVA, both dependent variables were tested using individual box plots. Table 3 depicts a data point at roughly 65 which is outside the maximum value of 60. Therefore, the extreme point was removed to ensure the data meets the assumption of no univariate outliers.

Assumption of Multivariate Outliers

Mahalanobis distance was also used to check for multivariate outliers. Multivariate outliers are a combination of unusual scores on two variables (Rovai et al., 2014). This study contains two variables, perceived learning and self-efficacy reading. The data portrayed two multivariate outliers since their probability is less than .001, as shown in Table 4 below. Unusual scores can affect accuracy and distort statistical analysis (El-Marsi et al., 2020). Outliers can

distort statistical data, therefore, two extreme points were removed to ensure the data meets the assumption of no multivariate outliers, as shown in Figure 4.

Figure 3

Univariate Box Plots Showing Perceived Learning Outliers

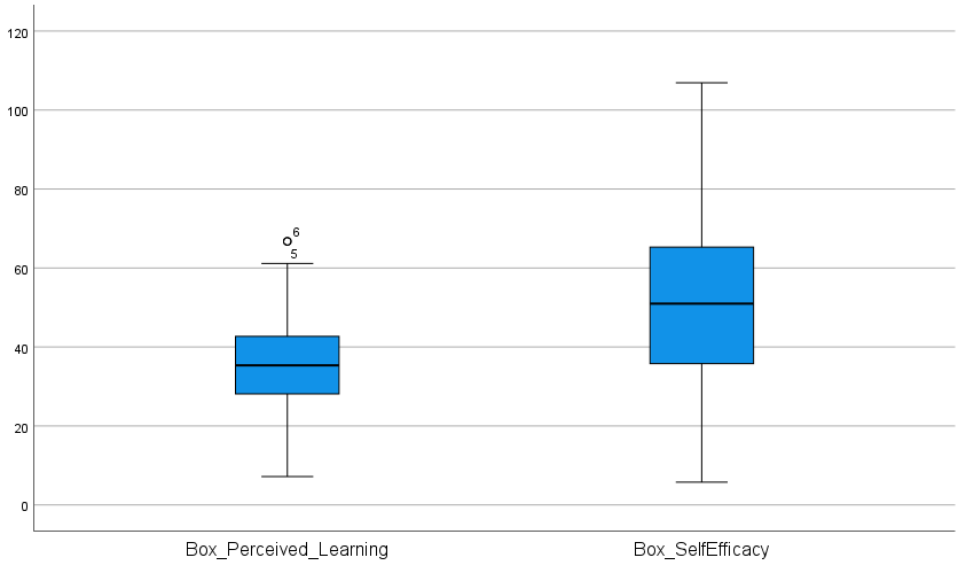


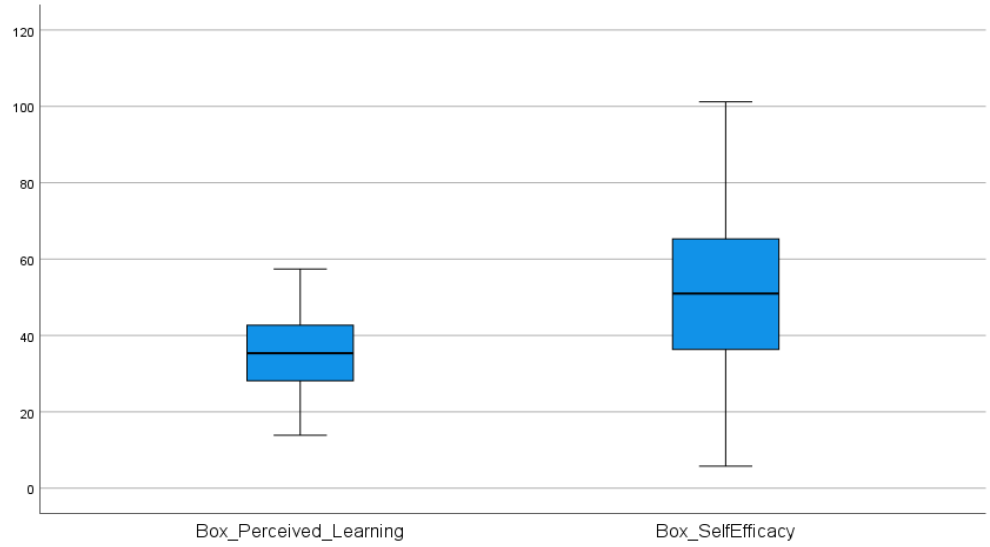
Table 4

Mahalanobis Distance and Probability Showing Multivariate Outliers

Mahalanobis D-Squared_	Probability Value _(p2)
13.28081	.0013
13.18455	.0014

Figure 4

Univariate Box Plot Without Outliers



Assumption of Multivariate Normality

Shapiro-Wilk test was used to test for multivariate normality. The Shapiro-Wilk test in Table 5 below has a *p*-value less than .0001 on both variables, indicating non-normality, a crucial assumption for MANOVA. To ensure that the data is normally distributed, box-cox transformation was applied. This allowed the data to be normally distributed, as shown in Table 6 below. Afterwards, the Shapiro-Wilk test for perceived learning had a *p*-value of .208, while that of self-efficacy has a *p*-value of .412. The *p*-values for both variables were greater than .05, implying that the data followed a normal distribution, therefore the assumption of normal distribution was tenable (Gall et al., 2007)

Table 5

Shapiro-Wilk Test Showing Non-normality

	Shapiro-Wilk		
	Statistic	*df*	Sig.
Self-Efficacy	.911	163	.000
Perceived Learning	.955	163	.000

Table 6

Shapiro-Wilk Test Showing Normality

	Shapiro-Wilk		
	Statistic	*df*	Sig.
Perceived Learning	.988	155	.208
Self-Efficacy	.991	155	.412

Assumption of Homogeneity of Variance Covariance Matrices

Box's M, also called the Box's Test of Equality of Covariance Matrices, was used to test the assumption of equality of variance-covariance. The assumption of homogeneity of variance-covariance matrices was met based on the results of Box's M = 7.34, $F(3, 7473509.012) = 2.413$, $p = .065$, as shown in Table 7. The *p*-value is greater than the critical value of .05, indicating the assumption of equality of variance-covariance was tenable.

Table 7

Box's Test of Equality of Covariance Matrices

Box's M	7.343
F	2.413
df 1	3
df 2	7473509.018
Sig.	.065

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.
a. Design: Intercept + Group

Assumption of Homogeneity of Variance

The assumption of homogeneity of variance was examined using the Levene's test. Levene's test of equality of variances in Table 8 below shows that the assumption of homogeneity of variances was met. The *p*-values in all tests based on mean, median, median with adjusted *df*, and trimmed mean are greater than .05, indicating equal variances (see Table 8).

Table 8

Levene's Test of Equality of Error Variances

		Levene Statistic	*df* 1	*df* 2	Sig.
Perceived Learning	Based on Mean	1.697	1	153	.195
	Based on Median	1.624	1	153	.204
	Based on Median and with adjusted *df*	1.624	1	148.671	.205
	Based on trimmed mean	1.645	1	153	.202

Self-Efficacy	Based on Mean	1.075	1	153	.301
	Based on Median	1.157	1	153	.284
	Based on Median and with adjusted *df*	1.157	1	147.653	.284
	Based on trimmed mean	1.072	1	153	.302

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Group

Results for Null Hypothesis

Hotelling's T^2 was used to test the null hypothesis that there is no difference in reading self-efficacy and perceived learning for inner-city fourth and fifth-grade students based on those who participated in experiential learning and those who did not as measured by the Cognitive, Affective, Psychomotor Perceived Learning scale and Self Efficacy Reading scale. The null hypothesis was rejected at a 95% confidence interval where $F(2, 152) = 48.253$, $p < 0.001$, Wilks' $\Lambda = .612$, partial $\eta^2 = .388$. MANOVA test results were significant with the test group outscoring the control group in both PL and self-efficacy reading with a mean score of 39.32 (*SD*= 13.47) and 65.97 (*SD*= 13.47) respectively. The data showed the null hypothesis was rejected, concluding that there is a significant difference between PL and self-efficacy reading scores of students that received EL and those that received traditional learning. Therefore, multivariate test results in Table 9 implied that EL will/can improve both perceived learning and self-efficacy and subsequently can increase the literacy rate. The effect size containing 163 participants is large (Gall et al., 2007, p.145), signifying that the type of learning accounts for 38.8% of the variation in reading self-efficacy and perceived learning as displayed below in Table 9. Therefore, the null hypothesis was rejected.

Table 9

Multivariate Tests[a]

		Value	*F*	*df*	Error *df*	Sig.	Partial Eta Squared
	Pillai's Trace	.388	48.253[a]	2.000	152.00	.000	.388
	Wilks' Lambda	.612	48.253[a]	2.000	152.00	.000	.388
	Hotelling's Trace	.635	48.253[a]	2.000	152.00	.000	.388
	Roy's Largest Root	.635	48.253[a]	2.000	152.00	.000	.388

Each F tests the multivariate effect of Group. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Exact statistic

Summary

In this chapter, the research question was investigated to identify if there is a difference in inner city fourth and fifth-grade students' reading self-efficacy and perceived learning based on those who participated in experiential learning and those who did not as measured by the CAP perceived learning scale and SER scale. Descriptive statistics were used to summarize the variables: self-efficacy and perceived learning. A one-way MANOVA was used to test the null hypothesis, where assumptions were tested to ensure the validity of the test. After meeting test assumptions, MANOVA was calculated, resulting in the rejection of the null hypothesis and concluding that there is a significant difference in reading self-efficacy and perceived learning for inner city fourth and fifth-grade students' based on those who participated in experiential learning and those in traditional learning as measured by CAP perceived learning scale and SER scale.

CHAPTER FIVE: DISCUSSION

Overview

Chapter Five contains the conclusion of this study proposed at determining the effect experiential learning had on the perceived learning and self-efficacy of fourth and fifth-grade inner-city students. The chapter begins with a discussion of the results as it corresponds with the current literature. Next, implications and limitations of this study are considered. Chapter Five concludes by proposing recommendations for future research.

Discussion

The purpose of this quantitative, causal-comparative, non-experimental study was to determine if there is a difference in reading self-efficacy and perceived learning among fourth- and fifth-grade inner city students who participated in experiential learning and those that did not participate in experiential learning. Northern Virginia Public Schools (NVPS) is an inner-city school district with various socioeconomic factors that contribute to the community like poverty and subsequent low literacy rates (Tien et al., 2021). In years previous, literacy and standardized test scores for elementary students were disproportionately low compared to their counterparts in more affluent areas within the area (OSSE, 2022). Currently, on average 79% students scored below their grade level literacy expectancy (Lumpkin, 2023). Lumpkin (2023) further noted that academic achievement gaps have been widening within the inner-city, English Language Arts scores specifically have not been this low since 2016.

In this study, the independent variable was experiential learning (EL). The dependent variables were perceived learning (PL) and self-efficacy reading. Both dependent variables are associated with achievement. Specifically, literature states higher PL and self-efficacy correlates with higher achievement. Van Dat Tran (2022) concluded, perceived learning increases student

enthusiasm and involvement in the learning process. As described, students that believe they are capable, prepared, and can achieve will ultimately achieve at higher learning outcomes than those without the same intrinsic perception. The development of self and cognitive abilities ultimately leads to academic success (Prifti, 2022). This notion can be seen in the data of this study. The test group outscored the control group in both dependent categories, reading self-efficacy and perceived learning. PL can be used to close the noted achievement gap by bridging theory and achievement. EL aids in the development of abilities and confidence that are needed to improve academically citing critical reflection as a key factor in comprehension retention (Morris, 2020). Matriano (2020) reinforces that EL allows learners to engage fully and responsibly as his quantitative research showed a significant increase in the performance and attitudes of his test participants. This study took the research that specifies the benefit of PL and self-efficacy has an influence on student achievement and attempted to discern if the addition of EL could force and increase in both. To measure perceived learning and self-efficacy the Self-efficacy Reading scale (SER) and Cognitive, Affective, Psychomotor (CAP) scale were used.

In this study, the null hypothesis was rejected. These finding coincide with Vygotsky (1978) who contends that interactions with the environment and social relationships help learners build their knowledge. Previous studies have found experiential learning to have learning benefits through the improvement of metacognitive abilities (Brad, 2016; Daud, 2022; Elia-Renaud, 2019; Lee-Esola, 2022). Analysis of EL showed its benefits by increasing both student self-efficacy reading and perceived learning. In turn, supporting the difference in data. The control group was outscored by the test group participants because they were not exposed to EL and therefore did not have the subsequent benefits of EL exposure. Previous literature supports this through examining the connection between experiential learning and formative assessments

concluding that students exposed to EL have deeper comprehension and application skills (Bhati & Song, 2019). The result of this literature supports previous, suggesting that the increase of PL and self-efficacy reading will have a positive effect of student performance (Andersen et al., 2020; Martin-Chambers, 2022).

Implications

The causal-comparative design of this study, although not definitive, implies a difference between the independent variable (experiential learning) and the dependent variables (perceived learning and self-efficacy reading) (Gall et al., 2007). The participants of this study exemplified how community factors specifically experiential learning, can have a dependent effect on achievement. The data supports the presence of EL unlike traditional learning, increases both PL and SER. Although the research does not provide a solution for poverty and test achievement, this study concluded that PL and self-efficacy reading could be improved by way of EL. Previously, there was a gap within the literature. However, this research implies that experiential learning can have a positive effect on self-efficacy and perceived learning. Not only does this add to the gaps in current literature but it helps inner-city school districts plan to assess and teach. Since, according to the data, EL has a significant effect on both PL and self-efficacy reading then it is implied EL can be used to increase student achievement ability. Watts (2022) theorized the importance of lower-income students receiving early literacy intervention to support development. (Watts, 2022). Although lower-income inner city students have historically scored lower on standardized testing, this study implies that EL can be used to bridge the existing learning gaps. This study provides information on a method for closing the achievement gap. Experiential learning is an intervention. If used as an intervention with fidelity, there will be a residual effect that can increase learning gains and ultimately increase literacy rates. Similarly,

the literature alludes to higher achievement being associated with higher self-efficacy and perceived learning (Black et al., 2020). As the data of this research details, experiential learning can increase student self-efficacy in reading and perceived learning. The results and information produced through this study not only adds to current literature but maybe helpful for future educational practices. School systems, specifically inner-city marginalized communities could incorporate EL by way of hands-on learning to their curriculum. Embedding project based learning and subsequent field experiences to all students especially those underperforming can increase their confidence and cognitive capabilities to retain and produce at a higher level. The incorporation of EL influences achievement and could be used to grow it.

Limitations

This study contains limitations which should be considered. First, as a causal-comparative study, definitive cause and effect relationships between variables cannot be established although a relationship is appropriate (Gall et al., 2007). The second limitation is within the population sample. All students within the age and grade range of the sample size were included without additional screening. In detail, students testing on, above, and below grade level were able to participate without additional screening or exclusions. Students test scores in the NVPS area took at stark decline within the last two years with only 37% of students reading at or above grade level (Lumpkin, 2022). Since students of varying academic levels were included and the study data was anonymous, the study is limited in knowledge of how much academic growth each student achieved. The statistical nature of this test could benefit from assessing prior knowledge or clustering participants based on ability prior to participation for more concrete growth analysis. This study duration covered a single learning unit however, there are four learning units each year. This is study is limited to one trial. Ferebee (2022) concluded

that clustering or targeting lessons based on student participants help to increase learning, retention, and instruction. This study focuses on a marginalized inner-city population to research potential literacy aid to assist in closing the literacy gap, therefore the target participants should be students that need aid in closing the literacy gap.

Recommendations for Future Research

Future research could create more concrete association of findings from this study. Recommendations for future research include:

1. Research should focus on students with literacy comprehension below grade level. The research shows an increase of self-efficacy and perceived learning when exposed to experiential learning, but due to the population sample, all academic levels were included. Isolating the population sample to only include students below grade level will provide insight on the thoroughness of the EL intervention on students with the most need.
2. The amount of experiential learning received during was not quantified by hours or length of total exposure. While the research extends over a literature learning unit of the NVPS curriculum, future research could extend to determine the effectiveness of the amount of experiential learning. The data supports experiential learning having an increase effect of perceived learning and self-efficacy reading, but little is known about how varying amounts of experiential learning influences the data. In addition, trials could be conducted to determine data consistency.
3. Including experiential learning as an intervention can increase perceived learning and self-efficacy reading. Continued research can be administered to show the correlation between standardized test to fully establish a potential impact on literacy.

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APPENDIX or APPENDICES

Appendix A

Permission to use Instrument

Thu 8/3/2023 7:59 PM
To: [redacted]

[redacted]

Good evening, yes you may use the CAP instrument in your research as long as you cite it accurately in all your papers.

Please do employ synonyms and I recommend you insert a key in your papers that explains which of your new words relate to the original instrument wording.

Best wishes for your studies!!

Hello Tabbetha, congratulations on moving ahead with your study!
Yes, do proceed towards publication, and please cite the CAP accurately in your paper(s).

[redacted]

On Aug 3, 2023, at 14:51, [redacted]

[redacted]

I am a Ph.D. student. My area of interest is experiential learning. I am studying the effects of experiential learning on self-efficacy and perceived learning on elementary students [redacted] During my research, I discovered the CAP Perceived Learning Scale.

I am writing to ask your permission to use the CAP Perceived Learning Scale for data collection. I am asking for permission to use this instrument in my proposal, data collection, and defense. In addition, may I please present this instrument with synonyms, so the language is obtainable for all elementary students? I would like to eliminate word choice being a limitation.

Thank you in advance for your consideration

Respectfully,

Appendix B
CAP Perceived Learning Scale and Scoring Guide

Using the scale to the right, please respond to each statement below as it specifically relates to your experience in this course.	**Not at all**	Empty Cell	Empty Cell	Empty Cell	Empty Cell	Empty Cell	**Very much so**
	0	1	2	3	4	5	6
1. I can organize course material into a logical structure.							
2. I cannot produce a course study guide for future students.							
3. I am able to use physical skills learned in this course outside of class.							
4. I have changed my attitudes about the course subject matter as a result of this course.							
5. I can intelligently critique the texts used in this course.							
6. I feel more self-reliant as the result of the content learned in this course.							
7. I have not expanded my physical skills as a result of this course.							

8. I can demonstrate to others the physical skills learned in this course.							
9. I feel that I am a more sophisticated thinker as a result of this course.							

Reference:

Rovai, A. P., Wighting, M. J., Baker, J. D., & Grooms, L. D. (2009). Development of an Instrument to Measure Perceived Cognitive, Affective, and Psychomotor Learning in Traditional and Virtual Classroom Higher Education Settings.*Internet and Higher Education, 12*(1), 7-13. https://doi.org/10.1016/j.iheduc.2008.10.002

CAP Perceived Learning Scoring Guide

Total CAP score

Score the test instrument items as follows:

Items 1, 3, 4, 5, 6, 8, and 9 are directly scored; use the scores as given on the Likert scale, i.e., 0, 1, 2, 3, 4, 5, or 6.

Items 2 and 7 are inversely scored; transform the Likert scale responses as follows: 0 = 6, 1 = 5, 2 = 3, 3 = 3, 4 = 2, 5 = 1, and 6 = 0.

Add the scores of all 9 items to obtain the total CAP score. Scores can vary from a maximum of 54 to a minimum of 0. Interpret higher CAP scores as higher perceptions of total learning.

CAP subscale scores

Add the scores of the items as shown below to obtain subscale scores. Scores can vary from a maximum of 18 to a minimum of 0 for each subscale.

Cognitive subscale: Add the scores of items 1, 2, and 5.

Affective subscale: Add the scores of items 4, 6, and 9.

Psychomotor subscale: Add the scores of items 3, 7, and 8.

Reference:

Rovai, A. P., Wighting, M. J., Baker, J. D., & Grooms, L. D. (2009). Development of an Instrument to Measure Perceived Cognitive, Affective, and Psychomotor Learning in Traditional and Virtual Classroom Higher Education Settings.*Internet and Higher Education*, *12*(1), 7-13. https://doi.org/10.1016/j.iheduc.2008.10.002

Appendix C

Permission to Use Instrument

[redacted]

Thu 8/3/2023 3:13 PM

I am a Ph.D. student. My area of interest is experiential learning. I am studying the effects of experiential learning of self-efficacy and perceived learning on elementary students [redacted] During my research, I discovered the SER Self-Efficacy Reading Scale.

I am writing to ask your permission to use the SER Self-Efficacy Reading Scale for data collection. I am asking for permission to use this instrument in my proposal, data collection, and defense. In addition, may I please present this instrument with synonyms, so the language is obtainable for all elementary students? I would like to eliminate word choice being a limitation.

Thank you in advance for your consideration

Respectfully,

Re: [EXTERNAL] SER Self-Efficacy in Reading Scale

[redacted]

Fri 9/1/2023 9:14 AM

Hello,

You have permission to use my published self-efficacy scale for reading.

Best wishes,

[redacted]

Appendix D

SER Self-Efficacy in Reading Scale

Each statement in this questionnaire refers to your beliefs about your ability in various activities associated with reading in Higher Education. Do not spend too long thinking about each answer, just answer according to your initial thoughts and beliefs.

1. How well can you identify all the key points when reading a journal article or academic book?
2. How well can you understand a journal article or academic book if you put a lot of effort in?
3. Whilst reading an article, how well can you identify other relevant references which you consider may be of further interest to read?
4. After you have read a text, how well can you answer questions on it?
5. How well can you understand the meaning of each sentence when you read?
6. How well can you recall the most important points (e.g., development of an argument) when you have finished reading a journal article or book chapter?
7. Before you critically evaluate a statement, how well have you understood its meaning?
8. How well can you search effectively for relevant background reading when writing an essay?

9. When reading, how well can you make notes in your own words?
10. If you cannot understand an academic text, how well can you understand it if you go to a lecture about it?
11. How well can you use a variety of different methods to enable your understanding of a book chapter or journal article? (e.g., highlighting, underlining, etc.).
12. How well can you select the most appropriate reading from a number of relevant articles and books?

Scoring:

The original scale used a 7-point Likert-type scale.

All items are positively loaded.

The scoring for each participant is formed by calculating the mean across the 12 items.

Reference

Prat-Sala, M., & Redford, P. (2010). The interplay between motivation, self-efficacy and approaches to studying. British Journal of Educational Psychology, 80, 283-305. DOI: 10.1348/000709909X480563.

Appendix E

IRB Approval

April 12, 2024

Tabbetha Harrison
David Nelson

Re: IRB Approval - IRB-FY23-24-1354 The Impact of Experimental Learning on Perceived Learning and Self-Efficacy in Literacy for Elementary School

Dear Tabbetha Harrison, David Nelson,

We are pleased to inform you that your study has been approved by the Liberty University Institutional Review Board (IRB). This approval is extended to you for one year from the following date: April 12, 2024. If you need to make changes to the methodology as it pertains to human subjects, you must submit a modification to the IRB. Modifications can be completed through your Cayuse IRB account.

Your study falls under the expedited review category (45 CFR 46.110), which is applicable to specific, minimal risk studies and minor changes to approved studies for the following reason(s):

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(2) and (b)(3). This listing refers only to research that is not exempt.)

For a PDF of your approval letter, click on your study number in the My Studies card on your Cayuse dashboard. Next, click the Submissions bar beside the Study Details bar on the Study Details page. Finally, click Initial under Submission Type and choose the Letters tab toward the bottom of the Submission Details page. Your stamped consent form(s) and

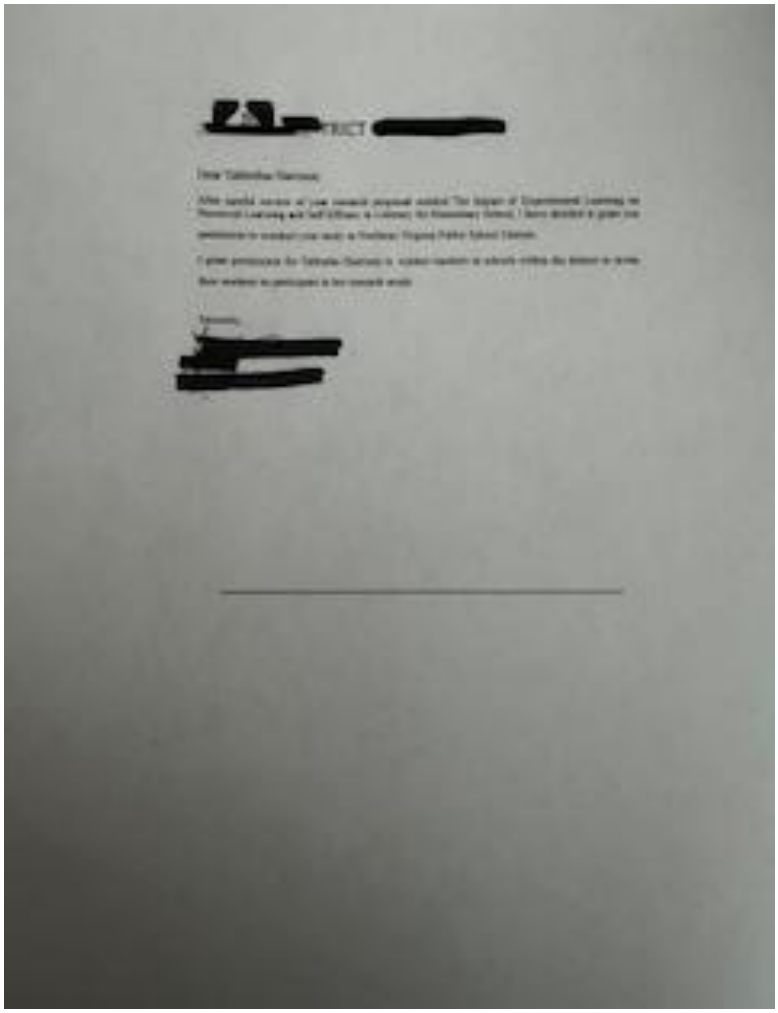
final versions of your study documents can be found on the same page under the Attachments tab. Your stamped consent form(s) should be copied and used to gain the consent of your research participants. If you plan to provide your consent information electronically, the contents of the attached consent document(s) should be made available without alteration.

Thank you for your cooperation with the IRB, and we wish you well with your research project.

Sincerely,
G. Michele Baker, PhD, CIP
Administrative Chair
Research Ethics Office

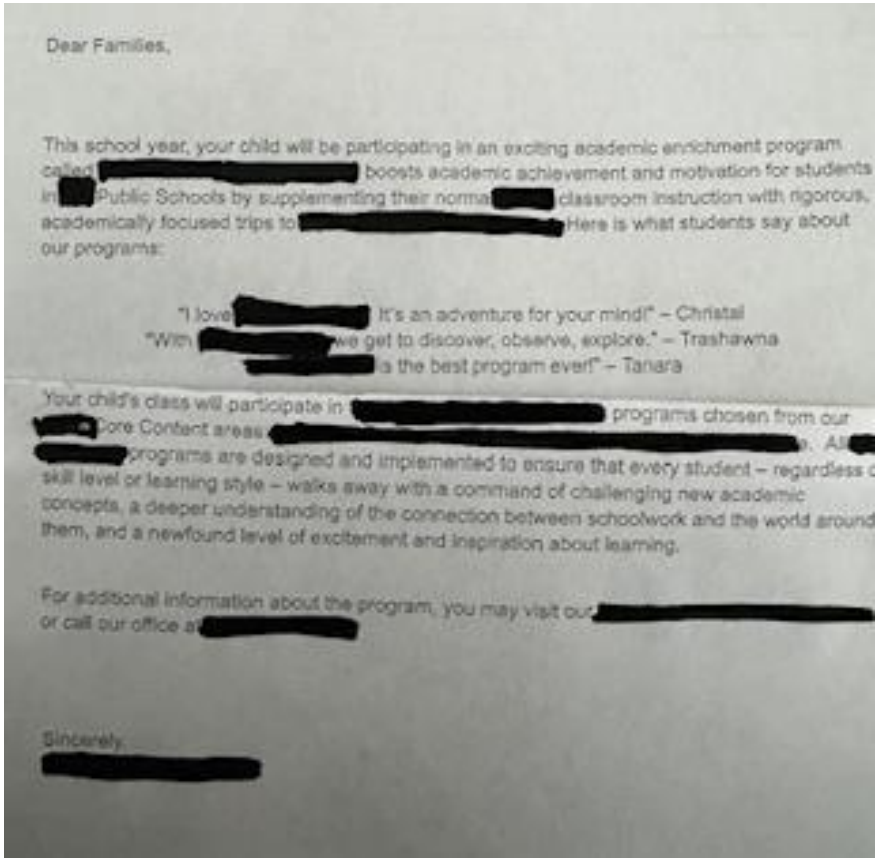
Appendix F

Consent From the District



Appendix G

Consent Approval from EL Coordinator



Dear Families,

This school year, your child will be participating in an exciting academic enrichment program called [redacted] boosts academic achievement and motivation for students in [redacted] Public Schools by supplementing their normal [redacted] classroom instruction with rigorous, academically focused trips to [redacted] Here is what students say about our programs:

"I love [redacted] It's an adventure for your mind!" – Christal
"With [redacted] we get to discover, observe, explore." – Trashawna
[redacted] is the best program ever!" – Tanara

Your child's class will participate in [redacted] programs chosen from our [redacted] Core Content areas [redacted]. All [redacted] programs are designed and implemented to ensure that every student – regardless of skill level or learning style – walks away with a command of challenging new academic concepts, a deeper understanding of the connection between schoolwork and the world around them, and a newfound level of excitement and inspiration about learning.

For additional information about the program, you may visit our [redacted] or call our office at [redacted]

Sincerely,
[redacted]

Appendix H

Parent Consent and Information

Consent

Title of the Project: Impact of Experiential Learning on Perceived Learning and Self-Efficacy In Literacy For Elementary Education
Principal Investigator: Tabbetha Harrison , Doctoral Candidate, School of Education, Liberty University

Invitation to be Part of a Research Study

You are invited to participate in a research study. To participate, you must be a fourth or fifth grade student between the ages of 9-11, attending Northern Virginia Public schools living within the Northern Virginia inner-city area. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to take part in this research.

What is the study about and why is it being done?

The purpose of the study is to determine if experiential learning as an intervention has an impact of perceived learning or self-efficacy in elementary fourth and fifth-grade students.

What will happen if you take part in this study?

If you agree to be in this study, I will ask you to do the following:

1. Attend your assigned Reading Language Arts general education course at your enrolled public school for the required 90 minutes daily.
2. Participate in the curriculum, specifically completing the assigned task during your 90-minute course.
3. **Use your Clever platform to complete your survey and questionnaire via Edulastic using your student number and password during your allocated 30-minute window at the close of your Reading unit.**

How could you or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include information on the impact of experiential learning. Data will be available to determine if hands on learning could increase literacy and standardize test scores which in turn could alter the current curriculum to ensure all schools incorporate experiential learning into traditional learning to maximize the literacy output.

What risks might you experience from being in this study?

The expected risks from participating in this study are minimal, which means they are equal to the risks you would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Research records will be stored securely, and only the researcher will have access to the records.

- Participant responses will be anonymous.
- Data will be stored [on a password-locked computer, in a password encrypted file. After five years, all electronic records will be deleted.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University or your current school. If you decide to participate, you are free to not answer any question or withdraw at any time, prior to submitting the survey without affecting those relationships.

What should you do if you decide to withdraw from the study?

If you choose to withdraw from the study, please exit the survey and close your internet browser. Inform the researcher that you wish to discontinue your participation, and do not submit your study materials. Your responses will not be recorded or included in the study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Tabbetha Harrison. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [redacted]
You may also contact the researcher's faculty sponsor, David Nelson, at [redacted]

Whom do you contact if you have questions about your rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. Our physical address is Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA, 24515; our phone number is 434-592-5530, and our email address is [redacted]

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Consent

Before agreeing to be part of the research, please be sure that you understand what the study is about. You will be given a copy of this document for your records. If you have any questions about the study later, you can contact the researcher using the information provided above.

I have read and understood the above information. I have asked questions and have received answers. I consent to participate in the study.

_____
Printed Subject Name

_____
Signature & Date

Parental Consent

Title of the Project: Impact of Experiential Learning on Perceived Learning and Self-Efficacy In Literacy For Elementary Education
Principal Investigator: Tabbetha Harrison, Doctoral Candidate, School of Education, Liberty University

Invitation to be Part of a Research Study

Your student is invited to participate in a research study. To participate, he or she must be between the ages of 9-11 and enrolled in the fourth or fifth grade attending Northern Virginia

Public Schools residing in the Northern Virginia inner-city area. Taking part in this research project is voluntary.

Please take time to read this entire form and ask questions before deciding whether to allow your student to take part in this research project.

What is the study about and why are we doing it?

The purpose of the study is to determine if experiential learning as an intervention has an impact of perceived learning or self-efficacy in elementary fourth and fifth-grade students.

What will participants be asked to do in this study?

If you agree to allow your student to be in this study, I will ask her or him to do the following:

4. Attend your assigned Reading Language Arts general education course at your enrolled public school for the required 90 minutes daily.
5. Participate in the curriculum, specifically completing the assigned task during your 90-minute course.
6. Use your Clever platform to complete your survey and questionnaire via Edulastic using your student number and password during your allocated 30-minute window at the close of your Reading unit.

How could participants or others benefit from this study?

Participants should not expect to receive a direct benefit from taking part in this study.

Benefits to society include information on the impact of experiential learning. Data will be available to determine if hands on learning could increase literacy and standardize test scores which in turn could alter the current curriculum to ensure all schools incorporate experiential learning into traditional learning to maximize the literacy output.

What risks might participants experience from being in this study?

The expected risks from participating in this study are minimal, which means they are equal to the risks your student would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Research records will be stored securely, and only the researcher will have access to the records.

- Participant responses will be anonymous.
- Data will be stored [on a password-locked computer, in a password encrypted file. After five years, all electronic records will be deleted.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to allow your student to participate will not affect your or his or her current or future relations with Liberty University or current school. If you decide to allow your student to participate, she or he is free to not answer any question or withdraw at any time prior to submitting the survey.

What should be done if a participant wishes to withdraw from the study?

If you choose to withdraw your student from the study or your student chooses to withdraw, please have him or her exit the survey and close her or his internet browser. Inform the researcher that your student wishes to discontinue his or her participation, and your student should not submit the study materials. Your student's responses will not be recorded or included in the study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Tabbetha Harrison. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [redacted]. You may also contact the researcher's faculty sponsor, Dr. David Nelson, at [redacted].

Whom do you contact if you have questions about rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. Our physical address is Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA, 24515; our phone number is 434-592-5530, and our email address is [redacted]

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Opt-Out

If you would prefer that your child NOT PARTICIPATE in this study, please sign this document, and return it to your child's homeroom teacher by March 24.

_____
Printed Child's/Student's Name

_____
Parent/Guardian's Signature Date

Appendix I

Child Assent

Child Assent to Participate in a Research Study

What is the name of the study and who is doing the study?
The name of the study is Impact of Experiential Learning on Perceived Learning and Self-Efficacy In Literacy For Elementary Education, and the person doing the study is Tabbetha Harrison.

Why is Tabbetha Harrison doing this study?
Tabbetha Harrison wants to know if hands on learning could increase the way students think and feel about learning.

Why am I being asked to be in this study?
You are being asked to be in this study because you are in the fourth or fifth-grade, you are 9-11, and you both live and attend school within the Northern Virginia Public School district.

If I decide to be in the study, what will happen and how long will it take?
If you decide to be in this study, you will attend school as you normally do. You will receive your designated instruction in your assigned reading course. At the end of your next unit, you will complete a survey on Edulastic through your Clever platform using your student number to log in.

Do I have to be in this study?
No, you do not have to be in this study. If you want to be in this study, then tell the researcher. If you don't want to, it's OK to say no. The researcher will not be angry. You can say yes now and change your mind later. It's up to you.

What if I have a question?
You can ask questions any time. You can ask now. You can ask later. You can talk to the researcher. If you do not understand something, please ask the researcher to explain it to you again.

Signing your name below means that you want to be in the study.

_____

Signature of Child/Witness Date

Tabbetha Harrison
[redacted]

Dr. David Nelson
[redacted]

Liberty University Institutional Review Board
1971 University Blvd, Green Hall 2845, Lynchburg, VA 24515
[redacted]

Appendix J

Recruitment Letter

Dear Potential Participant,

As a doctoral candidate in the School of Education at Liberty University, I am conducting research on the impact of experiential learning as part of the requirements for a Doctor of Philosophy degree and to better understand the correlation between experiential learning and both perceived learning and self-efficacy in elementary school students. The purpose of my research is to determine if the addition of experiential learning to traditional curriculum has a significant impact on perceived learning and self-efficacy as a method to increase literacy, and I am writing to invite your students to join my study.

Participants must be fourth or fifth grade students ages 9-11, attending an inner-city school within the Northern Virginia Public Schools district. Students must reside within the Northern Virginia Public School district. Participants will be asked to attend their assigned reading classes, participate in all corresponding activities, then take an anonymous online survey and an anonymous questionnaire at the close of their curriculum learning unit. Participants in the test group will receive experiential learning activities as part of their reading unit, while participants in the control group will receive standard reading unit activities. Experiential learning activities include curriculum aligned field trips, projects and science, technology, engineering, art, and math (S.T.E.A.M) based learning. It should take approximately 26 days to complete a single reading unit, 90 minutes daily during the reading unit to participate in assigned reading courses, and 30 minutes to complete both the anonymous survey and questionnaire. Participation in both the test and control groups will be completely anonymous, and no personal, identifying information will be collected.

A parental opt-out form is attached to this letter and will be sent home with your child. The parental opt-out form contains additional information about my research. If you do not want your child to participate, you will need to sign the attached parental opt-out form and return it to your child's teacher by [date].

Sincerely,

Tabbetha Harrison, M.A.T
Liberty University Doctoral Candidate

[redacted]

Appendix K

Opt Out

Parental Opt-Out

Title of the Project: Impact of Experiential Learning on Perceived Learning and Self-Efficacy In Literacy For Elementary Education
Principal Investigator: Tabbetha Harrison, Doctoral Candidate, School of Education, Liberty University

Key Information about the Research Study

Your student is invited to participate in a research study. To participate, he or she must be between the ages of 9-11 and enrolled in the fourth or fifth grade attending an inner-city Northern Virginia Public School and residing in the Northern Virginia Public School District. Students must be enrolled in classes that participate in traditional learning and follow the school scope and sequence for units of study or that have a partnership with the district experiential learning program. Taking part in this research project is voluntary.

Things you should know:

- The purpose of the study is to determine if experiential learning has an impact on self-efficacy and perceived learning for fourth and fifth-grade students. If you allow your student to participate, he or she will be asked to attend and complete their assigned reading unit, participate in all corresponding activities, and complete an anonymous online survey and an anonymous online questionnaire. It should take approximately 26 days to complete the reading unit, 90 minutes daily during the reading unit to participate in assigned reading courses, and 30 minutes to complete both the anonymous survey and questionnaire.
- Participants will gain knowledge in the reading courses. They will follow the scope and sequence closely and with fidelity. The test group will experience hands-on learning approaches like projects and S.T.E.A.M -science, technology, engineering, arts, and mathematics.
- Taking part in this research is voluntary. You do not have to allow your student to participate, and he or she can stop at any time.

Please take time to read this entire form and ask questions before deciding whether to allow your student to take part in this research project.

What is the study about and why are we doing it?

The purpose of the study is to determine if experiential learning as an intervention has an impact of perceived learning or self-efficacy in elementary fourth and fifth-grade students.

What will participants be asked to do in this study?

If you agree to allow your student to be in this study, I will ask her or him to do the following:

7. Attend their assigned Reading Language Arts general education course at their enrolled public school for the required 90 minutes daily.
8. Participate in the curriculum, specifically completing the assigned task during your 90-minute course. This curriculum will take approximately 26 days to complete over the course of the reading unit. Participants in the test group will receive experiential learning activities as part of their reading unit, while participants in the control group will receive standard reading unit activities. Experiential learning activities include curriculum aligned field trips, projects, and S.T.E.A.M (science, technology, engineering, arts, and math) learning.
9. Use their Clever platform to complete their survey and questionnaire via Edulastic using their student number and password during their allocated 30-minute window at the close of your Reading unit. Both the survey and questionnaire will be anonymous.

How could participants or others benefit from this study?

The direct benefits research participants should expect to receive from taking part in this study are gaining knowledge in the reading courses and following the scope and sequence closely and with fidelity. The test group will experience hands-on learning methods such as projects and S.T.E.A.M-science, technology, engineering, arts, and mathematics. Control group participants should not expect to receive a direct benefit from participating in this study.

Benefits to society include information on the impact of experiential learning. Data will be available to determine if hands on learning could increase literacy and standardize test scores which in turn could alter the current curriculum to ensure all schools incorporate experiential learning into traditional learning to maximize the literacy output.

What risks might participants experience from being in this study?

The expected risks from participating in this study are minimal, which means they are equal to the risks your student would encounter in everyday life.

How will personal information be protected?

The records of this study will be kept private. Research records will be stored securely, and only the researcher will have access to the records.

- Participant responses will be anonymous.
- Data will be stored on a password-locked computer, in a password encrypted file. After five years, all electronic records will be deleted.

Is study participation voluntary?

Participation in this study is voluntary. Your decision whether to allow your student to participate will not affect your or his or her current or future relations with Liberty University or current school. If you decide to allow your student to participate, she or he is free to not answer any question or withdraw at any time prior to submitting the survey without affecting those relationships.

What should be done if a participant wishes to withdraw from the study?

If you choose to withdraw your student from the study or your student chooses to withdraw, please have him or her exit the survey and close her or his internet browser. Your student's responses will not be recorded or included in the study.

Whom do you contact if you have questions or concerns about the study?

The researcher conducting this study is Tabbetha Harrison. You may ask any questions you have now. If you have questions later, **you are encouraged** to contact her at [redacted] You may also contact the researcher's faculty sponsor, Dr. David Nelson, at [redacted]

Whom do you contact if you have questions about rights as a research participant?

If you have any questions or concerns regarding this study and would like to talk to someone other than the researcher, **you are encouraged** to contact the IRB. Our physical address is Institutional Review Board, 1971 University Blvd., Green Hall Ste. 2845, Lynchburg, VA, 24515; our phone number is 434-592-5530, and our email address is [redacted]

Disclaimer: The Institutional Review Board (IRB) is tasked with ensuring that human subjects research will be conducted in an ethical manner as defined and required by federal regulations. The topics covered and viewpoints expressed or alluded to by student and faculty researchers are those of the researchers and do not necessarily reflect the official policies or positions of Liberty University.

Your Opt-Out

If you would prefer that your child NOT PARTICIPATE in this study, please sign this document, and return it to your child's homeroom teacher by April 24. If you consent to your child's participation, do not sign and return this document.

_____

Printed Child's/Student's Name

_____

Parent/Guardian's Signature Date