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Thinking Outside the [Text] Box:

The Effects of Multimodal Literacy Instruction on Middle School Social Studies Students'

Content Comprehension and Analytical Skills

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Abstract

This action research study examines the effects of multimodal literacy instruction on seventh grade social studies students' content comprehension and analytical skills. Multimodal instruction refers to any instruction that combines two or more modes of communication, and in this case, refers to a blend of discipline-specific, media, and digital literacy instruction. Over the course of three content units, I implemented three multimodal literacy instruction workshops. Prior to the start of each workshop, participating students completed a self-generated pre-test that measured their content comprehension and analytical skills. Following the completion of each workshop, participating students then completed a self-generated post-test that assessed their growth in the aforementioned skills. I have compared pre and post-test data in order to measure the way in which students' content comprehension and analytical skills have changed. The results of this action research study suggest that multimodal literacy instruction yields a positive outcome in increasing students' content comprehension and analytical skills among all learner subgroups, however, more research is needed to better determine the strength of this correlation.

Keywords: multimodal, literacy instruction, discipline-specific literacy, media literacy, digital literacy, middle school, Civics classroom

Introduction

Reading and writing are essential components of a social studies education. The ways in which individuals read and write in the twenty-first century are ever-expanding. In my own Civics classroom, my students consistently read and respond to articles and other news excerpts. When a student does not know the answer to a question, or even, if I myself do not know an answer, we work together as a class to research the correct answer. The skills that I ask my students to draw upon in my classroom extend beyond copying notes and rote memorization. Rather, I encourage my students to develop skills that will not only help them immediately in class, but also, as they continuously grow into new chapters of their lives and become active citizens. In this research study, I ask the following question: What are the effects of multimodal literacy instruction on middle school social studies students' content comprehension and analytical skills? "Content comprehension" refers to a student's ability to retain and understand facts and themes presented in the social studies curriculum. "Analytical skills" refer to a student's ability to apply their content knowledge to demonstrate a deeper understanding of the importance or linkage between social studies concepts (Barber, 2015, p. 35).

Rationale

Guiding my research are two main premises. First, research supports with evidence the positive effects of embedded, discipline-specific literacy instruction on social studies outcomes of content comprehension and analytical skills (Barber, 2015, p.67-9). While further research is needed to determine this relationship, present research is very promising in its linkage between these factors. In nearly every study conducted on the effects of embedded literacy instruction in a social studies classroom, social studies students perform higher on both content and analytical measures with the addition of embedded literacy instruction (Binkley, Keiser, & Strahan, 2011;

Joseph & Schisler, 2008; Manfra & Holmes, 2020). While it may sound obvious that such instruction is necessary to boost social studies outcomes, sadly, such instruction is frequently omitted in the social studies classroom due to challenges with lack of proper professional development, (P.D.) lack of teacher training in discipline-specific literacy instruction at the secondary level, and teachers' self-perception of bias when teaching discipline- specific and media literacy skills (Binkley, Keiser, & Strahan, 2011; Joseph & Schisler, 2008; Manfra & Holmes, 2020).

Multimodal literacy instruction refers to any instruction in which students are presented with content in a combination of the five major modes of communication: (1) linguistic; (2) visual; (3) gestural; (4) spatial; and (5) audio (Gayle Morris Sweetland Center for Writing, n.d.). Multimodal literacy instruction contrasts from more traditional instructional methods, such as completing worksheets, due to the varied way in which it allows students to interact with content. In the case of this study, this takes the form of a student, say, responding to a piece of news media through the assistance of instructional technology, or say, responding to and evaluating a news video based on its visual and audio components, therefore reinforcing both content comprehension and analytical abilities, while refining digital literacy skills along the way.

Key social studies education institutions, such as the National Council for the Social Studies (NCSS) advocate for such instruction and the inclusion of digital and media literacy within the social studies classrooms (Sperry & Baker, 2016, p.183). The necessity for such instruction is bolstered due to the current proliferation of virtual and hybrid learning environments due to the presently ongoing COVID-19 global pandemic. This unique and emerging environment offers schools and educators with opportunities to equip their students with the digital literary skills necessary to participate as twenty-first century global citizens (Dingler, 2017; Sperry & Baker, 2016; Virginia Department of Education Standards of Learning, 2015).

Literature Review

At the secondary level, "literacy instruction "is a concept commonly associated with an English course. However, literacy instruction plays a key part in helping students gain a deeper understanding of content in any subject area, including social studies. Studies on the effects of literacy instruction within secondary social studies settings are limited, but strongly support with evidence the positive effects of embedded multimodal literacy instruction on social studies outcomes, such as content comprehension and analytical skills. Multimodal literacy instruction is defined as any literacy in which the individual draws upon two or more modes of communication. This includes, but is not limited to, discipline-specific literacy, digital literacy, media literacy, and written and visual literacy. According to the National Council for the Social Studies, or NCSS, the purpose of social studies education is to equip students' with "the ability to draw upon historical and contemporary information in order to contextualize, respond to, and engage with trends and issues within their world" (National Council for the Social Studies, 2020). Further, such purpose is intended to help young people develop the ability to "make informed and reasoned decisions for the public good as citizens of a culturally diverse, democratic society in an interdependent world" (National Council for the Social Studies, 2020).

With this stance, the NCSS has also taken a positive stance on the role of media literacy among students, arguing that it is imperative that students engage in critical thinking not only within print text, but also the vastly rich contemporary media landscape (Sperry & Baker, 2016, p.183). Further, the promotion of civic competency is the main theme embedded in the majority of social studies-specific research on media literacy. In addition to the ability of students to navigate the biases and information presented in news media, students also must face the challenge of discerning between illegitimate, or "fake" news with legitimate news (Mason, Krutka, & Stoddard, 2018, p. 1-2). From these stances, it is clear that embedded, multimodal literacy instruction is necessary within the social studies classroom.

The Urgency of Multimodal Literacy Instruction in the Social Studies

While the memorization of facts or key concepts is one aspect of the social studies education, a holistic social studies education is not complete without a students' ability to draw upon themselves as a source of analysis. To do this, social studies students must be equipped with a variety of literacy skills. While this notion is rather new within literature, the value of students being able not only to understand traditional, text-based materials, but also, access and engage with content in a variety of mediums is essential (Dalton, 2017, p.17). Studies show that literacy skills are underutilized in secondary social studies classrooms (Vaughn, et al, p. 78). One such study indicates that, because social studies teachers frequently opt to replace text-based learning with bulleted presentations or teacher summaries, that social studies students are accessing texts on their own less than ten percent of the time during class (Vaughn, et al, p. 78). This is indicative of a significant learning gap within social studies that must be addressed.

Challenges to the Implementation

While it may seem obvious that the inclusion of reading, writing, and analytical strategies will boost outcomes in a subject that is reliant on a student's ability to think critically about the world around them, three main issues challenge the implementation of direct literacy instruction. These challenges, in order, include school-wide acknowledgement of the need for basic reading strategies within a secondary environment, the availability of professional development (P.D.) sessions, and educator's ability to confront and navigate their own bias towards media and other resources (Binkley, Keiser, & Strahan, 2011, p. 154-4; Joseph & Schisler, 2008, p. 145; Manfra

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& Holmes, 2020, p. 1). These challenges affect both the implementation of discipline-specific and multimodal literacy instruction.

Acknowledging the Need for Social Studies Literacy Instruction. To begin, an overall lack of acknowledgment of the continued need for basic and discipline-specific literacy instruction is present within secondary settings. While elementary students receive basic, embedded literacy instruction, this instruction begins to dwindle as students branch off into subject-specific courses as they enter middle and high school. This is frequently based on the wrongful assumption that secondary students simply do not need such literacy instruction in order to succeed in their courses (Joseph & Schisler, 2008, p.145). This is simply untrue however, as research indicates an "overall strong effect of teaching basic reading skills on adolescents' reading achievement performance, particularly on their fluency performance" (Joseph & Schisler, 2008, p.145). Specifically, these strategies include instructional techniques intended to boost word identification, fluency, and comprehension. This notion stems from a 1986-2006 meta-analysis that suggests a significant need for a "back to basics" approach of reading instruction in any secondary class, including, but not limited to a social studies classroom. Specifically, this approach suggests that secondary special and general educators should implement "explicit, systematic, basic reading skill instruction methods" in order to bridge gaps between their students as readers (Joseph & Schisler, 2008, p.145). While this study is specifically aimed at discussing intervention techniques, it nevertheless reinforces the need for such reading strategies to be included at the secondary level. If greater emphasis is placed on literacy at the beginning of instruction, it may be presumed the fewer reinforcements would be needed later in the curriculum.

Professional Development. Recognizing the need for embedded literacy instruction in the social studies classroom is the first major step towards boosting students' reading comprehension, content comprehension, and self-efficacy. With that said, two further roadblocks remain in the way of the implementation of such instruction. Inservice teachers rely on P.D. training to improve their instructional strategies. If proper P.D. is not provided on the integration of embedded literacy instruction in a social studies environment, then social studies teachers may face challenges in navigating its implementation of P.D. on the topic of integrating social studies and literacy yielded positive growth among teachers. Results of such studies suggest such P.D. training has a positive effect on teacher self-efficacy on their own ability to teach literary and media literacy strategies within their classrooms. These P.D. sessions consist of both instructional coaching and collaboration (Binkley, Keiser, & Strahan, 2011, p. 154-5).

Navigating Educator-Centered Bias. Finally, in order for P.D. sessions to have a truly transformative effect on social studies educators' ability to provide embedded literacy instruction, educators must confront their own ability to navigate bias within the media and other sources of information (Manfra & Holmes, 2020, p. 1). This sort of self-reflection is especially critical in the instruction of media literacy. Research suggests that a multifaceted approach to media literacy can help students develop civic online reasoning, navigate political bias, and participate in online civics activities (Manfra & Holmes, 2020, p. 1). In order to teach such media literacy, educators must improve their own efficiency by navigating social media, news, and other sources of information for themselves (Manfra & Holmes, 2020, p. 1).

The aforementioned article is useful in understanding the challenges faced by social studies educators in the implementation of direct and multimodal literacy instruction. Studies of

this sort show that educators find navigating their own media and literacy biases to be complex and difficult. Even when faced with opportunities to participate in news media lessons and open discussions, many educators found themselves fearful of providing deep feedback. Further, educators who did report having a deep understanding of news media felt unprepared to offer solutions or guidance on the topic (Schmeichel, Garrett, Ranschaert, McAnulty, Thompson, Janis, Clark, Yagata, & Bivens, 2018, p. 99). These roadblocks are certainly real challenges but should not deter educators from drawing upon news media as a means of promoting literacy among their students. Rather, these challenges should be celebrated and explored within the confines of a social studies classroom. Literacy is not an "extra" or afterthought to social studies education, but rather, a necessity (Schmeichel, Garrett, Ranschaert, McAnulty, Thompson, Janis, Clark, Yagata, & Bivens, 2018, p. 99).

Research on Direct Literacy Instruction in Social Studies

Social studies students are frequently required to navigate a variety of sources. These sources include, but are not limited to, primary and secondary sources of text, historical photographs, illustrations, and film, visual representations of data, and news media. In fact, it is included in all Virginia Standards of Learning (SOLs) for history and the social sciences that students are able to read, analyze, and respond to such sources (Virginia Department of Education, 2015).

All studies conducted on the effects of discipline-specific and direct literacy instruction on social studies outcomes support, with evidence, that such embedded instruction leads to growth in literacy skills among students (Barber, et. Al, 2015, p. 67-9; Dalton, 2017, p. 27; Geers, Boukes, & Moeller, 2020, p. 48; Kucan, Rainey, & Cho, 2019, p. 24-6; Mason, Krutka, & Stoddard, 2018, p. 1-2; Youngbauer, 2013, p. 184). While there is a distinct need for further research within this field, the existing studies may be broken into a few main areas of impact students' literal ability to read sources, or reading comprehension, students' ability to navigate course content, or content comprehension, and finally, students' belief in themselves and selfefficacy towards navigating various modes of literature.

Literacy Instruction as a Social Studies Intervention Strategy

The inclusion of direct and discipline-specific literacy instruction in the social studies is not limited to large-group instruction. Such instruction is also useful as an intervention strategy. Specifically, the infusion of universal design for learning (UDL) strategies with literacy instruction is proven to boost reading comprehension and reading self-efficacy among English Language Learners (ELLs) and English native-speakers alike (Barber, et al., 2015, p. 67-9). Universal design suggests that educators consider the needs of all learners when engaging in literacy instruction (Dalton, 2017, p. 27). This study follows the implementation of a reading intervention strategy specifically designed for a middle school United States history course. The findings of this study show promise for multifaceted comprehension instruction in social studies for middle schools with large numbers of ELLs. Like with more broadly focused strategies, further research is required on the topic of discipline-specific literacy intervention in the social studies.

Literacy Instruction as a Venue for Culturally Relevant Pedagogy

Finally, the inclusion of direct, discipline-specific literacy instruction in the social studies also provides an excellent venue for educators to implement culturally relevant pedagogy (C.R.P.). In 2019, a group of Philadelphia middle schoolers studied the historical documentation of the Hill District, a multiethnic Pittsburgh neighborhood that thrived in the 1930s and 1940s. Through an evaluation of mixed-methods data, this study reinforced not only the importance of embedding literacy instruction when asking students to navigate complex research questions, but also, the need for such instruction to be rooted in culturally relevant practices (Kucan, Rainey, & Cho, 2019, p. 24-6). This study highlights both a need for further research on the topic, as well as the way in which the social studies should serve as a venue for connecting students to their world. The 2019 Kucan, Rainey, and Cho study is of great use in understanding the interplay between multimodal literacy and culturally relevant pedagogy, however, further research is required within this subfield, as the majority of studies on similar topics are not couched within the confines of C.R.P., but rather, a general desire to boost students' cultural understanding through literacy (Youngbauer, 2013, p. 184).

Expanding Literacies: Multimodal Literacy Instruction in the Social Studies

If the need for direct literacy instruction within the social studies can be made clear by the variety of aforementioned studies, then it can be extrapolated that a need for embedded multimodal literacy instruction is the next logical step in improving social studies education. In many ways, embedded, discipline-specific literacy instruction already draws upon notions of multimodality, however, focusing on multimodality as a whole allows educators to incorporate twenty first century skills into their instruction. While multimodal literacy can simply refer to the combination of any number of literacies, two critical literacies that are in most need of attention within social studies are media literacy and digital literacy.

Media Literacy in Social Studies

A major component of literacy within social studies is the ability for students to navigate, interact with, and thoughtfully respond to news media. While the content and form of news media has altered drastically with the growth of social media in the past ten years, the recognition of the need for contemporary students to be media literature is not so new. In 2004, a meta-analysis examined the core curricular frameworks of social studies programs across the United States (Kubey, 2004, p. 74-5). Citing a distinct lack of emphasis placed on media literacy instruction and media education, this sixteen-year-old study may be seen as an early example of the origins of media education (Kubey, 2004, p. 74-5). Historically, while the study of media literacy as a field itself has changed over time, the field can be centralized to the theme of individual empowerment. Essentially, if an individual is capable of discerning between representation and reality within the media, then they are better suited to engage in democratic society through the act of power intervention and individual expression (RobbGrieco, 2014, p. 8). Media literacy is situated not on the fringe, but rather, the forefront of social studies. It is the position of the NCSS that students be equipped with media literacy skills in order to engage in the practice of citizenship through the use of historical, empirical, interpretive, and critical reasoning skills (Youngbauer, 2013, p. 183).

Boosting Civic Competence. Media literacy instruction may be seen as both a way to include direct literacy instruction in social studies and as a need to increase direct literacy instruction in social studies. Recent studies on the impact of media literacy instruction in a social studies environment suggest that media literacy should not be an afterthought of social studies, but rather, is a core tenant of the discipline. Media literacy education increases civic competence among students and is shown to increase political efficacy among lower-educated youth (Geers, Boukes, & Moeller, 2020, p. 48).

Navigating "Fake" News. As mentioned previously, it is of critical importance that todays' students are able to navigate and detect bias within today's vast media landscape. Research suggests that the introduction of content lessons on the history of propaganda can serve as a good starting point for such instruction (Mason, Krutka, & Stoddard, 2018, p. 1-2). Propaganda is a commonly used venue for teaching such skills, as it helps scaffold real life examples of media with historical and critical thinking skills (Rodesiler, 2010, p. 164-5). Teaching students argumentation skills is an excellent way to boost students' media literacy. Due to the individualized and discourse-based nature of contemporary news media, students must be able not only to read and understand, but also, respond to news media. One argumentation strategy, the Toulmin Method, suggests that educators begin by teaching students how to analyze visuals before moving on to text-based sources (Dingler, 2017, p. 112). This notion of using visuals as a foundation is reinforced in both the later discussed 2019 Elmore and Coleman study and the 2015 Callahan study. All of these studies reinforce the need for multimodal literacy instruction in social studies.

Digital Literacy in Social Studies

In addition to the need for students to be able to navigate news media, it is critical that students can navigate such media in the medium in which it is presented. Since the late twentieth century, news has grown from a radio or television-based medium to the expanded realm of social media. This expansion brings about increased dialogue and allows individuals to engage with the news and current events in an instant, personalized manner. This shift further reinforces the need for students to be able to navigate sources not only in a cherry-picked, school-confined manner, but also, within the context of the medium in which they are presented.

Navigating Social Media. Social media has allowed students to develop unique digital literacies and can serve as authentic platforms for learning. Studies show that there is great potential for these literacies to be harnessed in order to scaffold literacy instruction, however, the implementation of such instruction must be purposeful (Galvin & Greenhow, 2020, p. 57). While the majority of research on the topic of social media integration with literacy instruction has not

been conducted in a social studies-specific environment, select studies have been conducted on the effects of integrating social media based, digital literacy in a social studies classroom (Callahan, 2015, p. 57; Manfra & Holmes, 2020, p.121). Social media, particularly pictorialbased social media such as Instagram, Pinterest, or Tumblr, can serve as an excellent method of boosting social studies content knowledge in a familiar setting. Using this method, students could use social media platforms to navigate and discuss historical photographs, therefore blending their social use of technology with their emerging academic use of technology (Callahan, 2015, p. 57).

Analyzing and Contextualizing Memes. Diving further into the notion of using pictorial-based resources as a starting point for literacy education, the introduction of political cartoons and memes is another positive example of boosting multimodal literacy through familiar venues. This is because students are frequently exposed to memes through their use of social media and that, in order to critically read a meme, students must possess critical thinking and media literacy skills (Elmore & Coleman, 2019, p. 11).

Interdisciplinary Benefits. Outside of the context of a social studies classroom, more studies exist on the effects of developing multimodal and digital literacy in a middle school, secondary setting. Such studies including digital literacy reinforce the notion that, in order for students to prove content knowledge that is rooted in technology, they must be able to navigate such technology in an academic manner - such as the navigation of search engines and databases. Studies show that explicit digital literacy instruction boosts students' ability to navigate both technology and to engage in the writing process (Kimbell-Lopez, Cummins, & Manning, 2016, p. 224-5). While this study was conducted specifically in an English Language Arts classroom,

the underlying notion of equipping students with direct digital literacy skills may be applied with equal importance to social studies.

The Blending of Direct and Multimodal Literacy Instruction

Studies on the effects of embedded literacy instruction in social studies are limited but clear in their suggestion: the inclusion of literacy instruction will boost social studies outcomes. Due to the limited nature of social studies-specific studies on multimodal literacy instruction, the studies on direct literacy instruction may be used as a foundation point for expanding research on the effects of embedded multimodal literacy instruction on social studies outcomes. This is a significant gap within the field, as nearly all relevant studies focus on discipline-specific, media, or digital literacy within social studies as separate topics. This desired merge may take the form of using word identification, fluency, comprehension, and analytical strategies to teach students how to navigate both historical and contemporary text-based and visual sources on print and online mediums.

Suggestions for Further Research

The positive relationship between embedded literacy instruction and social studies outcomes is even further evident in a recent meta-analysis. This meta-analysis, which synthesizes quantitative research examining the effects of social studies literacy instruction on grades 6-12 students' academic content learning and reading comprehension proved both that embedded literacy instruction not only improves social studies outcomes, but also, in no way detracts from the acquisition of content knowledge (McCulley & Osman, 2015, p. 191). Importantly, this study suggests that further research is needed on the subject matter. Broadly, further research is needed to reinforce the relationship between embedded literacy instruction and social studies outcomes. This research would measure the effects of both the aforementioned blended instructional literacy techniques, or multimodal literacy, and varying mediums in question. This research may be interdisciplinary but should still yield social studies-specific data. Further research would help dictate best practices, both in general education settings and for intervention strategies, as well as describe the effects multimodal literacy instruction has on diverse learner groups.

Methodology

This action research study was guided by the following question: what is the relationship between multimodal literacy instruction on middle school social studies students' content comprehension and analytical skills? Multimodal literacy instruction is defined as any literacy instruction that includes two or more modes of communication. In the case of this study, this referred to the inclusion of discipline-specific, media, and digital literacy instruction via written modes of communication. Research suggests with evidence that the implementation of discipline-specific, multimodal literacy instruction boost student reading and content comprehension in social studies (Barber, et al., 2015, p.67-9). Further research is needed to determine the relationship between multimodal literacy instruction and students' content comprehension and analytical skills. The methods used to accomplish this study are described below.

Participants

This study was conducted in a seventh-grade Civics classroom in a suburban middle school in Virginia. Civics is taught daily in sixty-minute class periods, or blocks. The total school population is roughly 1,000 (Virginia Department of Education, 2020). Sixteen percent of students at this middle school are economically disadvantaged and receive free or reduced breakfast and lunch. This is half the county average of 31%. Thirteen percent of students at this middle school are classified with disabilities that require accommodations, which is on par with the county average. Five percent of students at this middle school are classified as English Language Learners (ELLs), which is lower than the county average of ten percent.

In this study, a total of nineteen students across all three blocks of grade seven Civics classes, taught by myself and my cooperating teacher, were studied. Participants' guardians

provided consent, and participants provided assent prior to all data collection. Only data from students who provided both parent consent and student assent were used. Of these nineteen students, a varying number participated within each of the three content units worth of multimodal literacy instruction workshops. Demographic information of all nineteen participants is listed in detail in the tables below.

The following table includes specific demographic information of each of the nineteen total participants. Pseudonyms have been given to protect the identities of participants. A random name generator was used to generate the pseudonyms.

#	Name	Block	Learning Model	Sex	Race/Ethnicity	Learner Subgroup
1	Rosa	1st block	Hybrid	F	White	None
2	Daniel	1st block	Virtual	М	Multiple Races	None
3	Cheyenne	1st block	Hybrid	F	White	None
4	Samuel	1st block	Hybrid	М	White	Gifted
5	Eleana	1st block	Virtual	F	Multiple Races	None
6	Regina	1st block	Hybrid	F	White	Gifted
7	Kristin	2nd block	Hybrid	F	White	None
8	Theodore	2nd block	Hybrid	М	White	None
9	Sylvia	2nd block	Virtual F		Hispanic	None
10	Maria	2nd block	Virtual	F	White	None
11	Aubrey	2nd block	Virtual	F	Hispanic	None
12	Scott	2nd block	Hybrid	М	White	Gifted
13	Sebastian	2nd block	Virtual	М	Multiple Races	SPED
14	Oswald	4th block	Virtual	М	White	Gifted
15	Brigitte	4th block	Hybrid	F	White	None
16	Edgar	4th block	Virtual	М	White	SPED
17	Benjamin	4th block	Hybrid	М	White	Gifted
18	Ahmad	4th block	Hybrid	М	White	None
19	Elias	4th block	Hybrid	М	White	SPED

Student Participant Demographic Information

The following table reflects the number of participating students per block. First block ran from 11:00 AM to 12:10 PM. This block also was an inclusion block and therefore had the highest number of students receiving special education (SPED) services. Second block is the shortest block of the day and runs from 12:15 PM to 1:15 PM. Fourth block was the final block of the day and ran from 2:55 to 4:00 PM.

Participating Students by Block

Block	# of Participants
1st Block	5
2nd Block	8
4th Block	6

The following table reflects the number of participant students by learning model. Learning model refers to the way in which students receive instruction. During the Spring 2021 semester, the schools' county offered students a choice of learning through the Virtual model, in which students attend class entirely virtually via Google Meet, or the Hybrid model, in which students attend class in-person twice a week, and virtually on the remaining two days in an "A" or "B" group rotation. "A Group" Hybrid students were physically in the building on Tuesdays and Wednesdays, and "B Group" Hybrid students were physically in the building on Thursdays and Fridays. Mondays were asynchronous days in which no real-time instruction occurs. On Mondays, students were assigned tasks to complete on their own time at home but did not meet in real-time for a class. Asynchronous Mondays were used multiple times throughout this study to assign students pre or post-tests.

Participating Students by Learning Model

Learning Model	# of Participants		
Hybrid	11		
Virtual	8		

The following table reflects the number of participating students by sex. To the best of my knowledge, this data is an accurate reflection of students' gender identities.

Participating Students by Sex

Sex	# of Participants		
Female	9		
Male	10		

The following table reflects the number of participating students by race and ethnicity. Unfortunately, data from participating students is not reflective of the overall class demographics, with the categories of Black and Asian students not being present within this action research study.

Participating Students by Race/Ethnicity

Race/Ethnicity	# of Participants		
Hispanic	2		
Multiple Races	3		
White	14		

Finally, the following table reflects the number of participating students by learner subgroup. Unfortunately, data from participating students is not reflective of the overall class demographics, with the category of English Language Learner (ELL) students not being present within this action research study. A label of "Gifted" refers to a student who is identified as gifted within their content areas. Students identified as gifted for a different marker, such as music or art, were not marked as gifted for the purposes of this action research study. A label of "SPED" refers to a student with either an IEP or 504 plan who is receiving some degree of special education services. A label of "none" refers to a student who receives general education services only. The "SPED" and "Gifted" labels indicate how a student has been identified by the school. These labels were pulled from the schoolwide gradebook. Only labels as given to a student by the school were used.

Learner Subgroup	# of Participants
Gifted	5
SPED	3
None	11

Participating Students by Learner Subgroup

Measurement

Data collection was strictly quantitative. Data obtained within this action research study may be broken into two categories: (1) data obtained from multiple-choice responses; and (2) data obtained from essay responses.

Quantitative Data Collection

Content Comprehension and Analytical Skills Pre and Post-Tests. During this action research study, students took three sets of self-generated content comprehension and analytical skills tests, administered twice each: once as a pre-test, and again as a post-test. Each of these tests were self-generated and modified and truncated from existing end-of-unit assessments. The purpose of this modification and truncation was to ensure that the tests could be administered in a reasonable amount of time, either during synchronous class time or asynchronous student work time.

Multiple Choice Questions. The multiple-choice section of the pre and post-tests consisted of five multiple-choice questions each that were truncated and modified from existing end-of-unit tests. The multiple-choice questions included only the content being taught within that period of the study. Multiple choice questions were only included during the second and third sections of this study. The first set of multiple-choice questions appeared during the "Political Parties" pre and post-tests. The second and final set of multiple-choice questions were not included during the "Legislative Branch" pre and post-tests. Multiple-choice questions were not included during the "Foundations of Government" pre and post-tests, which was the first set of pre and post-tests. The multiple-choice questions are primarily designed to assess content comprehension, or rather, the student's ability to understand and retain content from the curriculum.

Essay Questions. The essay question section of the pre and post-tests consisted of one short answer essay question each. An essay question was included on each of the three sets of pre and post-tests for the "Foundations of Government," "Political Parties" and "Legislative Branch" sections. Each essay question was self-generated but modified from existing essay questions used in previous years within the curriculum. Each essay question included a researcher-generated rubric that awarded students with up to twelve points on the "Foundations of Government" essay, or up to ten points on the "Political Parties" and "Legislative Branch" essays. The use of a researcher-generated scoring rubric allowed for these questions to be graded quantitatively. The essay questions are scaffolded to assess both content comprehension and analytical skills. Lower-order thinking questions, such as definitions, are included on the essay scoring rubric, in addition to higher-order thinking questions, such as explanations of significance, which are designed to assess analytical skills, or rather, the students' ability to use information to come to conclusions about the curriculum.

Data was collected during my time as a student teacher, after I took over all responsibilities of the classroom. Implementation of this action research study took roughly one week per section, and a total of two months overall due to both difficulties with course scheduling and the inclusion of Spring Break during the third week in March.

Research Design

This was a quantitative study. Analysis first compares data between each individual set of content comprehension and analytical skills pre and post-tests. Analysis will then compare overall data of growth for all pre and post-tests combined. Analysis is broken into both a discussion of overall pre and post-test growth among overall students and then among students by the following five categories: (1) block; (2) learning model; (3) sex; (4); race/ethnicity; and

(5) learner subgroup. Intersectionalities are also discussed in data analysis. Analysis of growth will assess the efficacy of three multimodal literacy instruction workshops, administered one each during their respective sections of content.

Procedure

Data for this study was collected after I took over all duties and responsibilities of my cooperating host teacher. I taught three units back-to-back in Civics. In order, these units were: (1) "Foundations of Government," which explores core principles and concepts of U.S. government, as well as founding documents; (2) "Political Parties," which explores the structure and function of both political parties and the voting system; and (3) "Legislative Branch," which explores the structure and functions of the legislative branch across all three levels of government. Each unit lasted roughly two weeks in length. The time between implementation of each pre-test, workshop, and post-test, or "research component," varied due to non-negotiable scheduling needs. The following calendar displays an overview of the day on which each research component was administered.

Unit	Pre-Test Administration	Workshop	Workshop Topic	Post-Test
Government Friday, January 12 16 and Wednesda		Tuesday, February 16 and Wednesday, February 17	Foundations of Writing Skills	Friday, February 19
Political Parties Tuesday, March 2		Friday, March 5	Jigsaw-Style Newsela Article Response	Friday, March 12
Legislative Branch	Monday, March 24	Tuesday, March 25	Individual Newsela Article Response	Monday, March 29

Administration of Action Research Components

The following tables explain the implementation procedures for each of the three

following sections of this action research study.

Section One – Foundations of Government Procedures

First Pre-Test Administration Administration Details: Asynchronous, on Canvas, completed on students' own time. Examples were not provided in advance. Purpose: Establish a baseline of students' writing abilities. Prompt: "Explain the significance of the concept 'consent of the governed.' Be sure to define the term and list at least one example. Use the rubric to guide you." Rubric/Scoring: Students were asked to include: (1) an opening sentence; (2) a definition of the term; (3) an example of the term; (4) an explanation of significance of the term; (5) a concluding sentence; and (6) formatting and mechanics. First Multimodal Literacy Instruction Workshop

Administration: Synchronously via Google Meet.

Process: Explain the pre-test prompt. Model literacy skills. Demonstrate the proper writing process for social studies.

Purpose: Model non-examples to provide reading instruction (incorrect introductions, explanations, conclusions).

Follow-Up: In a whole group setting, ask for student feedback in identifying and correcting non-examples. This allowed students to "teach themselves" proper techniques and gain confidence in writing.

Reinforcement: Publish completed presentations to Canvas. Ask students to review pre-test feedback.

First Post-Test Administration

Administration Details: Asynchronous, completed on students' own time.

Purpose: Establish a percentage growth of students' writing abilities.

Format/Prompt:

"Explain the significance of the concept 'democracy." Be sure to define the term and list at least one example. Use the rubric to guide you."

Rubric/Scoring:

Students were asked to include: (1) an opening sentence; (2) a definition of the term; (3) an example of the term; (4) an explanation of significance of the term; (5) a concluding sentence; and (6) formatting and mechanics.

First Round of Data Collection

Record student pre-test scores. Record student post-test scores. Calculate percentage growth for the following groups: (1) all students; (2) students by block; (3) students by learning model; (4) students by sex; (5) students by race/ethnicity; and (6) students by learner subgroup.

Section Two – Political Parties Procedure

Second Pre-Test Administration

Administration Details: Synchronously via Google Meets, on Canvas.

Purpose: Establish a new baseline of students' writing abilities, content comprehension, and analytical skills.

Prompt: *"List what the two major political parties are. Then, list and explain at least one similarity between the two parties. Next, list and explain at least one difference between the two parties."*

Rubric/Scoring:

The rubric asked students to include the following: (1) introduction; (2) listing of two parties; (3) similarity between two parties; (4) explanation of similarity; (5) difference between parties; (6) explanation of difference; (7) conclusion; and (8) proper formatting.

Second Multimodal Literacy Instruction Workshop

Administration: Synchronously via Google Meet.

Process: Explain the pre-test prompt. Introduce the Newsela reading, "In a Presidential Election, It's Almost Always About Two Parties" (Newsela Staff, 2020). Model analysis techniques. Provide instructions for Jigsaw article analysis activity. Students independently read excerpts and provide a 1-2 sentence summary using Padlet.

Purpose: Teach students to analyze texts using methods of chunking. Teach students how to combine summaries of sections to come to whole-article conclusions.

Follow-Up: In a whole group setting, discuss each Jigsaw group's excerpt summaries. Create a conclusion about the overall article.

Reinforcement: Publish each block's completed Padlet to Canvas. Remind students to review pre-test feedback.

Second Post-Test Administration

Administration Details: Synchronously via Google Meet.

Purpose: Establish a percentage growth of students' writing abilities, content comprehension, and analytical skills.

Format/Prompt:

"Define and explain what the two-party system is. Then, define and explain what a third party is. Finally, explain whether or not you are for or against our current two-party system. List and explain at least one piece of evidence from the article 'In a Presidential System, It's Almost Always About Two Parties' to explain your point.'

Rubric/Scoring:

Students were asked to include: (1) introduction; (2) definition of two-party system; (3) explanation of two-party system; (4) definition of third parties; (5) explanation of third parties; (6) your position: for or against; (7) evidence; (8) explanation of evidence; (9) conclusion; (10) proper formatting.

Second Round of Data Collection

Record student pre-test scores. Record student post-test scores. Calculate percentage growth between pre and post-tests for the following groups: (1) all students; (2) students by block; (3) students by learning model; (4) students by sex; (5) students by race/ethnicity; and (6) students by learner subgroup.

Section Three – Legislative Branch Procedure

Third Pre-Test Administration

Administration Details: Asynchronous, on Canvas, completed on students' own time. Examples were not provided in advance.

Purpose: Establish a final baseline of students' writing abilities, content comprehension, and analytical skills.

Prompt: *"What is the purpose of the Legislative Branch in the United States? In your answer, be sure to define the Legislative Branch and list what the Legislative Branch is called. Then, list the houses of the Legislative Branch and explain one of their differences. Finally, list and explain at least one function of Congress. Use the rubric to guide you."*

Rubric/Scoring:

Students were instructed to include the following: (1) introduction; (2) definition of legislative branch; (3) common name for legislative branch; (4) House #1, listed; (5) House #2, listed; (6) difference between houses, listed; (7) function of legislative branch, listed; (8) function of legislative branch, explained; (9) conclusion sentence; and (10) proper paragraph formatting.

Third Multimodal Literacy Instruction Workshop

Administration: Synchronously via Google Meet.

Process: Explain the pre-test prompt. Model whole-article analysis skills.

Purpose: Encourage students to practice analyzing an entire article on their own. Introduce the Newsela article, "The Powers of Congress" (Newsela Staff, 2017). Students will read and analyze the article independently using interactive guided questions.

Follow-Up: Provide individual feedback to students' interactive Newsela quizzes.

Reinforcement: Publish article to Canvas. Ask students to review pre-test and Newsela quiz activity feedback.

Third Post-Test Administration

Administration Details: Asynchronous, completed on students' own time.

Purpose: Establish a final percentage growth of students' writing abilities, content comprehension, and analytical skills.

Format/Prompt: "What is the purpose of the Legislative Branch in the United States? In your answer, be sure to define the Legislative Branch and list what the Legislative Branch is called. Then, list the houses of the Legislative Branch and explain one of their differences. Finally, list and explain at least one function of Congress. Use the Newsela article 'The Powers of

Congress,' and the rubric, to write your response."

Rubric/Scoring:

Students were asked to include: (1) introduction; (2) definition of legislative branch; (3) common name for legislative branch; (4) House #1, listed; (5) House #2, listed; (6) difference between houses, listed; (7) function of legislative branch, listed; (8) function of legislative branch, explained; (9) conclusion sentence; and (10) proper paragraph formatting.

Third Round of Data Collection

Record student pre-test scores. Record student post-test scores. Calculate percentage growth for the following groups: (1) all students; (2) students by block; (3) students by learning model; (4) students by sex; (5) students by race/ethnicity; and (6) students by learner subgroup.

Data Analysis

After data from all three sections of the study was collected, I analyzed it in the following way. As stated previously, I calculated average growth by points and percentage across six subgroup categories: (1) average overall growth; (2) average growth by block; (3) average growth by learning model; (4) average growth by sex; (5) average growth by race/ethnicity; and (6) average growth by learner subgroup. Students who earned a zero on any portion of their pre and post-tests for lack of knowledge (EG, not knowing the correct answers) were still included in data analysis. The purpose of this is to determine the efficacy of each individual style of literacy instruction, as each workshop scaffolded upon the next in terms of rigor and skills practiced and assessed. Students who did not however submit both a pre and post-test for each of the three sections of the research did not have their scores included, so as to not disturb the average scores. The number of participating students who submitted both a pre and post-test for each section does vary, however, these numbers are indicated in the data analysis.

After data was analyzed within each of the three sections, average growth was calculated across the six aforementioned categories for all three combined pre and post-tests. The purpose

of this was to determine the overall efficacy of the multimodal literacy instruction workshops themselves, as opposed to individual techniques.

The aforementioned data analysis is intended to serve two purposes: (1) to demonstrate students' content comprehension and analytical skills within subgroups; and (2) to evaluate potential patterns within said subgroups. Additionally, I am also curious to evaluate potential patterns among all students combined. For example – do all students fail to include one component of the essay over another? I have therefore broken down each pre and post-test not only by overall score, but also, by points earned on each strand. I intend to discuss patterns of growth between commonly missed pre-test questions or essay portions and the growth and whether or not students would correctly answer previously missed strands on their post-tests. This is because I recognize the difference in, say, a student losing points on an essay due to improper formatting or a missed definition of a term, as opposed to a student losing points on an essay due to lack of explanation of significance or other analytical skills. The same is true on the opposite end. I am interested to see whether or not student scores increase simply due to an increase in writing mechanics, punctuation, grammar, formatting, or the recollection of simple terms and definitions, as opposed to a student demonstrating growth in their ability to showcase analytical abilities through deeper explanation of a concept.

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Results

The purpose of this action research study was to assess the impact of multimodal literacy instruction on middle school social studies students' content comprehension and analytical skills. I have collected and analyzed data for this study by the six following categories: (1) overall growth; (2) block; (3) learning model; (4) sex; (5) race/ethnicity; and (6) learner subgroup. I have done this both within each of the three unit-based sections, and for overall growth.

Foundations of Government Section Results

The following chart demonstrates which participants submitted both a pre and post-test during the Foundations of Government section of this research. Only their information is reflected in subsequent growth charts.

Student Participants - Foundations of Government Section

* = Part	ticipating Student		= Non-Participating Student		
*Rosa	*Daniel	*Cheyenne		*Samuel	*Eleana
*Regina	*Kristin	*Theodore		*Sylvia	*Maria
Aubrey	*Scott	*Sebas	stian	*Oswald	Brigitte
*Edgar *Benjamin		Ahmad		*Elias	
Total Participants: 16					

The following chart demonstrates participating student growth, divided by the six aforementioned categories, between the Foundations of Government pre and post-tests. The Foundations of Government pre and post-tests were worth up to twelve points each. Point scores have been calculated into percentages. The chart includes information for all six categories: (1) overall student growth; (2) by block; (3) by sex; (4) by learning model, (5) by race/ethnicity; and (6) by learner subgroup.

		Average Pre-Test Score (%)	Average Post-Test Score (%)	% Growth	
Overall Student Growth	All Students	66%	73%	15% increase	
Student Growth	1st Block	62%	66%	6% increase	
by Block	2nd Block	67%	82%	23% increase	
	4th Block	63%	72%	15% increase	
Student Growth by Learning	Virtual	60%	76%	28% increase	
Model	Hybrid	68%	72%	7% increase	
Student Growth by Sex	Female	72%	78%	8.33% increase	
	Male	58%	71%	22.19% increase	
Student Growth	Hispanic	60%	58%	3% decrease	
by Race	Multiple Races	38%	63%	67% increase	
	White	69%	76%	11% increase	
Student Growth by Learner Subgroup	Gifted	66%	75%	14% increase	
	SPED	33%	47%	41% increase	
	None	75%	82%	101% increase	

Foundations of Government - Student Pre to Post-Test Growth Across Subgroups

Political Parties Section Results

The following chart demonstrates which participants submitted both a pre and post-test during the Political Parties section of this research. Only their information is reflected in subsequent growth charts.

* = Participating Student = Non-Participating Student				ng Student
*Rosa	Daniel	*Cheyenne	*Samuel	*Eleana
*Regina	*Kristin	*Theodore	*Sylvia	*Maria
Aubrey	*Scott	Sebastian	*Oswald	Brigitte
*Edgar	*Benjamin	*Ahmad	*Elias	
Total Participants: 15				

Student Participant Demographic Information - Political Parties Section

The following chart demonstrates participating student growth, divided by the six aforementioned categories, between the Political Parties pre and post-tests. The Political Parties pre and post-tests were worth up to twelve points each. Point scores have been calculated into percentages. The chart includes information for all six categories: (1) overall student growth; (2) by block; (3) by sex; (4) by learning model, (5) by race/ethnicity; and (6) by learner subgroup.

		Average Pre-Test Score (%)	Average Post-Test Score (%)	% Growth	
Overall Student Growth	All Students	51%	83%	61% increase	
Student Growth	1st Block	45%	84%	85% increase	
by Block	2nd Block	51%	83%	63% increase	
	4th Block	66%	81%	22% increase	
		-			
Student Growth by Learning	Virtual	62%	92%	49% increase	
Model	Hybrid	49%	78%	59% increase	
Student Growth	Female	59%	87%	46% increase	
by Sex	Male	50%	79%	60% increase	
Student Growth	Hispanic	57%	67%	18% increase	
by Race	Multiple Races	67%	100%	50% increase	
	White	57%	83%	45% increase	
Student Growth by Learner Subgroup	Gifted	55%	92%	68% increase	
	SPED	40%	68%	71% increase	
	None	59%	80%	36% increase	

Political Parties - Student Pre to Post-Test Growth Across Subgroups

Legislative Branch Section Results

The following chart demonstrates which participants submitted both a pre and post-test during the Legislative Branch section of this research. Only their information is reflected in subsequent growth charts.

* = Participating Student			= Non-Participating Student		
*Rosa	Daniel	*Chey	/enne	*Samuel	*Eleana
*Regina	*Kristin	*Theodore		*Sylvia	*Maria
Aubrey	*Scott	*Sebastian		*Oswald	*Brigitte
*Edgar	*Benjamin	Ahmad		*Elias	
Total Participants: 16					

Student Participant Demographic Information - Legislative Branch Section

The following chart demonstrates participating student growth, divided by the six aforementioned categories, between the Legislative Branch pre and post-tests. The Legislative Branch pre and post-tests were worth up to twelve points each. Point scores have been calculated into percentages. The chart includes information for all six categories: (1) overall student growth; (2) by block; (3) by sex; (4) by learning model, (5) by race/ethnicity; and (6) by learner subgroup.

		Average Pre-Test Score (%)	Average Post-Test Score (%)	% Growth	
Overall Student Growth	All Students	65%	75%	15% increase	
Student Growth	1st Block	77%	89%	14% increase	
by Block	2nd Block	66%	77%	16% increase	
	4th Block	52%	59%	14% increase	
Student Growth by Learning	Virtual	67%	79%	19% increase	
Model	Hybrid	63%	72%	15% increase	
Student Growth by Sex	Female	70%	82%	17% increase	
	Male	58%	68%	18% increase	
Student Growth by Race	Hispanic	70%	87%	24% increase	
	Multiple Races	48%	53%	10% increase	
	White	67%	77%	16% increase	
Student Growth	Gifted	79%	88%	11% increase	
by Learner Subgroup	SPED	22%	37%	67% increase	
	None	73%	81%	11% increase	

Legislative Branch - Student Pre to Post-Test Growth Across Subgroups

Overall Results

Finally, the following charts demonstrate student growth, divided by the six aforementioned categories, across all three pre and post-tests. Average percentages for each of the three pre and post-tests, and their six subgroup categories, were combined. These subgroup categories include: (1) overall student growth; (2) by block; (3) by sex; (4) by learning model, (5) by race/ethnicity; and (6) by learner subgroup.

		Average of All Pre- Test Scores (%)	Average of All Post- Test Scores (%)	% Growth	
Overall Student Growth	All Students	61%	77%	27% increase	
Student Growth	1st Block	61%	79%	29% increase	
by Block	2nd Block	61%	81%	31% increase	
	4th Block	60%	71%	17% increase	
Student Growth by Learning	Virtual	63%	82%	31% increase	
Model	Hybrid	60%	74%	24% increase	
Student Growth	Female	67%	82%	22% increase	
by Sex	Male	52%	73%	40% increase	
Student Growth	Hispanic	62%	71%	13% increase	
by Race	Multiple Races	51%	72%	42% increase	
	White	64%	79%	23% increase	
Student Growth by Learner Subgroup	Gifted	67%	85%	28% increase	
	SPED	32%	51%	60% increase	
3	None	69%	81%	18% increase	

Overall Averages - Student Pre to Post-Test Growth Across Subgroups, All Sections

Discussion

Across all subgroups, student performance positively increased on all three sections of pre and post-test. The average overall increase between pre and post-test scores was 27%, from an average of 61% on the averaged pre-tests to 77% on the averaged post-tests. Not only did average performance increase, but also, performance within each of the six studied subgroups increased. These results are in line with a multitude of relevant studies on the effects of embedded multimodal literacy education in social studies settings (Barber, et. Al, 2015, p. 67-9; Dalton, 2017, p. 27; Geers, Boukes, & Moeller, 2020, p. 48; Kucan, Rainey, & Cho, 2019, p. 24-6; Mason, Krutka, & Stoddard, 2018, p. 1-2; Youngbauer, 2013, p. 184). In the case of this study, embedded multimodal literacy instruction yielded positive, improved results among students' content comprehension and analytical skills across three different content modules.

Foundations of Government Section

The average pretest score within this section was 64%. The average post-test score within this section was 73%, which is a 15% increase. This section yielded the second smallest percentage increase of any section. This section's workshop consisted of a two-part, teacher-led whole-group activity that included instructional strategies of modelling and non-examples. The pre and post-tests within this section consisted of only one short answer essay question.

Political Parties Section

The average pretest score within this section was 51%. The average posttest score within this section was a significantly higher 83%. This section yielded a high percentage of growth of a 61% increase. This section's workshop was the first section to embed media literacy techniques and use the instructional strategy of jigsaw. Rather than only consist of a whole group, teacherled discussion, this section's workshop began with teacher-led modelling and was followed by student-driven jigsaw and ended with whole-group discussion of outcomes. The pre and posttests within this section consisted of five multiple-choice questions that remained the same between pre and post-tests, and, interestingly, one essay question that was modified to draw upon the assigned Newsela article, and therefore, be more in-depth, between the pre and post-test.

Legislative Branch Section

The average pretest score within this workshop was 65%. The average post-test score within this section was 75%. This section yielded the smallest growth of 15%. This section's workshop consisted only of a student-driven, interactive, Newsela-based activity. In this workshop, modelling was used to introduce the activity, but each student worked independently to navigate material on Newsela. Feedback was not discussed as a whole group, but rather, only given to individual students. The pre and post-tests within this section consisted of five multiple-choice questions and one essay question that all remained the same between the pre and post-tests.

Discussion of All Sections

Notably, the section that yielded growth far higher than either of its counterparts was the Political Parties section. Not only were students able to navigate two separate pre and post-test essay questions that were the most different from each other, in comparison to those of the two other sections, but they were able to show much higher improvement. A likely explanation for this is the success of the Political Parties workshop. The combination of modelling, jigsaw, and whole group wrap-up discussion was likely the most effective strategy in teaching content comprehension and analytical skills of all three workshop strategies used. During this workshop, students had the opportunity to deeply analyze a chunked section of information and benefited from coming together as a group at the end of class to discuss their answers. The combination of allowing students to engage with material on their own but reinforcing such engagement with whole-group discussion and teacher feedback yielded positive results. Another factor however that may have played into this section's higher percentage increase was the time between the pretest, workshop, and post-test. Because the post-test was administered one entire week after the workshop, students may have benefited from an added week of instruction on the topic of political parties. In fact, the administration of the post-test occurred on the same day as the students' end-of-unit Political Parties Test. While specific content instruction regarding the twoparty system and third parties was already taught prior to the implementation of this workshop, students likely benefited greatly from dedicated study time that just so happened to coincide with the administration of the post-test. Because of this, it cannot be definitively stated that the techniques used in the implementation of this workshop are solely responsible for the positive percentage increase, but these techniques are certainly worth noting.

Discussion of Data Across Subgroups

Average Growth by Block

Average student growth by block across all three pre and post-tests was fairly similar. Students in the first block, on average, demonstrated a 29% increase in scores, from an average of 61% to 79%. Students in the second block, on average, demonstrated a 31% increase in scores, from an average of 61% to 81%. Students in the fourth block, on average, demonstrated a slightly lower but still positive 17% increase in scores, from 60% to 71%. Interestingly, starting pre-test scores across all three blocks were extremely similar. One factor that may explain this could be the unique subgroup makeup of the fourth block, which consisted of two SPED students, two gifted students, and two general education students. On average, SPED students scored 32% on their pre-tests, and 51% on their post-tests. While this is a positive increase of 60%, this factor likely explains the lower increase in scores within the fourth block.

Average Growth by Learning Model

On average, Virtual students earned a 63% on their pre-tests, and an 82% on their posttests, yielding a 31% increase. Hybrid students earned a 60% on their pre-tests, and a 74% on their post-tests, yielding a 24% increase. On the surface, this contradicts potential notions that students always learn better when learning in-person as opposed to virtually. An examination of intersectionalities, may provide some insight on this. The following chart demonstrates the number of learner subgroups present in both learning models.

Learner Subgroups by Learning Model

	Gifted	SPED	None (Gen Ed.)
Hybrid	4	1	5
Virtual	1	2	5

As evident in the table above, both Hybrid and Virtual groups contain an equal number of general education students. However, there is one more SPED student who is Virtual as opposed to Hybrid, and three more students who are gifted in the Hybrid group as opposed to the Virtual group. When looking at average percentage growth among gifted, SPED, and general education groups, gifted students demonstrated a 28% increase, SPED students demonstrated a 60% increase, and general education students demonstrated a 18% increase. The inclusion of one more SPED student in the Virtual group than the Hybrid group may be a factor in explaining the higher increased average performance among Virtual students than Hybrid students, although this may be only a small factor.

Average Growth by Sex

On average, female students scored 67% on their pre-test, and 82% on their post-tests, yielding a 22% increase. On average, male students scored a 52% on their pre-test, and a 73% on

their post-tests, yielding a 40% increase. Overall, female students had higher pre and post-test scores than male students, although male students demonstrated almost double percentage growth as female students. The overall higher scores among female students but higher percentage growth among male students may also be explained by learner subgroups. The chart below demonstrates the number of male and female students per subgroup.

Intersectionalities of Sex and Learner Subgroup

	Gifted	SPED	None (Gen Ed.)
Male	4	3	3
Female	1	0	8

As evident in the chart above, there are four gifted male students and only one gifted female student. There are also three male SPED students and zero female SPED students. The majority of female students are general education students. The higher number of male SPED students compared to the total lack of female SPED students may explain the overall lower scores among male students, however, this is challenged by the number of gifted male students. At this point, the difference in performance between male and female students may not only be explained by learner subgroups, but also, individual student personalities. The inclusion of a "gifted" or "SPED" label is by no means the entire story of a students in the first block, is identified as gifted, but consistently scores extremely low on both of his pre and post-tests across all three sections. During the Foundations of Government section, Samuel scored a 3/10, or 30%, on both his pre and post-test. During the Political Parties section, Samuel scored a 0/15, or 0% on his post-test. During the Legislative Branch section, Samuel scored another 0/15, due to incorrect multiple-choice answers and lack of an essay

submission, on his pre-test, and a 9.5/15, or 63% on his post-test. In Samuel's case, these scores, particularly the 0% scores, are more likely a question of work ethic and academic tendencies than sheer lack of content comprehension or analytical skills.

Samuel is not the only student to whom this phenomenon is relevant. While, as evident in overall average scores, all students enjoyed increased performance between pre and post-tests, the inclusion of multimodal literacy instruction workshops is not the sole factor impacting student performance. Student attitudes and work ethic is shaped by both quickly and slowly shifting factors present in and outside of the Civics classroom environment.

Average Growth by Race/Ethnicity

On average, Hispanic students scored an average of 62% on their pre-tests, and 71% on their post-tests, demonstrating an increase of 13%. On average, students of multiple races scored an average of 51% on their pre-tests, and 72% on their post-tests, demonstrating the highest growth of all races and ethnicities at 42%. Finally, on average, white students scored an average of 64% on their pre-tests, and 79% on their post-tests, demonstrating a middle ground of 23% growth. When looking at average post-test scores by race, scores are relatively similar, as they are all in the seventy percent range. Students of multiple races did enjoy the highest average growth; however, this is likely because their pretest scores were lower than Hispanic or White students. It is also worth noting that, of all five subgroups examined in this impact study, race and ethnicity was the least representative of overall classroom demographics, with only three students of multiple races and two Hispanic students participating out of a total of nineteen participants.

Average Growth by Learner Subgroup

On average, gifted students scored an average of 67% on their pre-tests, and 85% on their post-tests, the highest post-test score of any learner subgroup. Gifted students demonstrated a middle ground percentage increase of 28%. SPED students scored an average of 32% on their pre-tests, and 51% on their post-tests, yielding a far higher percentage increase of 60%. Finally, students receiving general education services only demonstrated average pretest scores of 69% and average post-test scores of 81%, yielding the smallest average increase of 18%. It is notable that, while SPED students scored the lowest average scores on their post-tests, they saw by far the highest percentage growth. This indicates that the multimodal literacy instruction was still effective among these students in boosting their content comprehension and analytical skills, but that further research is required to determine the best practices to further boost learning outcomes in areas of writing and other such processing activities for SPED students. Information on SPED students' performance following multimodal literacy instruction is limited, as it is commonly excluded in performances due to "low implementation indicators" (Barber, 2015, p.43.)

Limitations

Despite best efforts to ensure that the implementation of my action research was methodologically sound, and despite best efforts to represent a diverse sample of students in my action research, a few limitations, which are described below, were encountered due to constraints caused both by the ever-changing nature of the COVID-19 pandemic. These constraints are discussed in detail below.

Participation

Guardian consent and student assent was obtained through the use of Google Forms. A Google Form containing information about this action research study, as well as opportunities to indicate consent or assent, was shared via email and in-class discussion with both guardians and students at least three times each between the beginning of February and the end of the first week of March. Despite repeated efforts, this request for participation yielded only nineteen out of seventy-eight overall students. Demographics of participating students are partially, but not entirely, representative of overall classroom populations. This is evident in the fact that Black and Asian students, who are present in the overall classroom population, are not represented at all. This is also evident in the fact that, in this action research study, white students comprise the majority of participants. While white students do comprise the majority of the overall classroom, they have a far greater majority in this action research study than the overall classroom.

Pre and Post-Test Methods

There were some discrepancies between the administration styles of pre and post-tests. For example, some pre and post-tests were administered both asynchronously, whereas other pre and post-tests were administered synchronously. This difference could have potentially altered levels of student participation and effort. Another limitation with the methods is the lack of a control group outside of pre-test scores. While pre-tests served as a baseline for establishing growth, there may be confounding factors that influenced students' content comprehension and analytical skills outside of the multimodal literacy instruction workshops alone. General class assignments may have also had an impact on these skills. The final limitation concerning the pre and post-tests was the difference in point value between some pre and post-tests. For example, the Foundations pre and post-test, which was only an essay, was worth twelve points. The Political Parties and Legislative Branch pre and post-tests were however worth fifteen points and comprised of one five-point multiple choice section and one essay worth up to ten points. These changes occurred due to challenges with creating rubrics and integration class materials and workshops in a timely manner. Each set of pre and post-tests also had a different amount of time between each other. This was unintentional, however, a result of further scheduling difficulties. The scheduling difficulties that impacted this action research study occurred as a result of three factors: (1) classes shortened to only sixty minutes due to COVID-19 schedule changes; (2) the use of a pre-planned curriculum with little room for inserting pre and post-tests or workshops; and (3) unforeseen snow days and weather events.

Duration of Workshops

The final limitation of this action research stud was the duration of each of the three multimodal literacy instruction workshops. Due to scheduling difficulties described above, I was unable to hold workshops lasting more than thirty total minutes in length. Both a desire to respect the time of my students and my mentor teacher, as well as the nature of the pre-planned curriculum made lengthening the workshops impossible. I hypothesize that longer or more indepth workshops would have yielded greater student growth.

Conclusion

The individual subgroup breakdown and overall average pre to post-test growth rates indicate a positive effect of multimodal literacy instruction on middle school social studies students' content comprehension and analytical skills. While specific percentages of average growth vary by subgroup, such instruction nevertheless yields a positive impact among all students. In particular, the most effective multimodal literacy instruction strategy implemented during the course of this action research study was that which occurred during the Political Parties section and included a combination of modelling, jigsaw, and whole-group discussion as instructional techniques.

Further research is needed to better understand the best practices of implementing multimodal literacy instruction, with particular attention paid to each of the five subgroups examined in this study. A future action research study on this topic could compare whole group versus student led strategies of exploration of and engagement with multimodal texts and resources. One potential way to improve the methodology of this study would be to utilize control versus experimental units in order to better assess the true effect of multimodal literacy instruction versus non-instruction or more traditional methods of instruction on students' content comprehension and analytical skills. Regardless, this action research study demonstrates the generally positive impact of multimodal literacy instruction on the aforementioned student learning outcomes.

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Appendices

Appendix A Foundations of Government Pre-Test and Rubric

Section One: Essay

Essay Directions:

Next week, we will be doing a short workshop to learn how to write in Civics.

Today, you will be answering a sample essay question about a founding principle of government. You will receive full credit for completing this pre-test!

The pre-test is open notes. You are encouraged to open your Foundations Digital Notebook in another window to help you.

When answering the prompt, be sure to include:

Essay Rubric:

- 1. Introduction
- 2. Definition of Term
- 3. Example
- 4. Explanation of Example
- 5. Closing Sentence

Essay Prompt:

Explain the significance of the concept "consent of the governed." Be sure to define the term and list and explain at least one example. Use the rubric to guide you.

Appendix B Foundations of Government Post-Test and Rubric

Section One: Essay

Essay Directions:

Next week, we will be doing a short workshop to learn how to write in Civics.

Today, you will be answering a sample essay question about a founding principle of government. You will receive full credit for completing this pre-test!

The pre-test is open notes. You are encouraged to open your Foundations Digital Notebook in another window to help you.

When answering the prompt, be sure to include:

Essay Rubric:

- 1. Introduction
- 2. Definition of Term
- 3. Example
- 4. Explanation of Example
- 5. Closing Sentence

Essay Prompt:

Explain the significance of the concept "democracy." Be sure to define the term and list and explain at least one example. Use the rubric to guide you.

Appendix C Political Parties Pre-Test and Rubric

Section One - Multiple Choice (* = Correct Answer)

Question 1

Select one. What kind of political party system do we have?

- A. *Two-Party
- B. Multi-Party
- C. Democratic Republic
- D. Single Party

Question 2

Select one. Which of the following is <u>not</u> a purpose of political parties in the United States?

- A. To get candidates to win elections
- B. To monitor the actions of officeholders
- C. *To write and pass laws for the country
- D. To educate the electorate

Question 3

Select one. Which of the following is not a purpose of Third Parties?

- A. Introduce new ideas
- B. *Fund campaigns of other parties
- C. Take votes away from other parties
- D. Give voters more choices

Question 4

Select one. Which of the following is not a way to register to vote in Virginia?

- A. By mail application
- B. Online
- C. In person at a designated site before the election

D. *In person at a designated site on the day of the election

Question 5

Select one. Which of the following groupings has the correct terms for their listed political party?

- A. Republican, Red, Donkey, Liberal
- B. Democrat, Blue, Donkey, Conservative
- C. *Republican, Red, Elephant, Conservative
- D. Democrat, Red, Donkey, Liberal

Section Two - Essay

Essay Directions:

Think about the two-party system and third parties and answer the prompt listed.

Your response should include:

Essay Rubric:

- 1. Introductory sentence
- 2. Two major political parties, listed
- 3. One similarity
- 4. Explanation of a similarity
- 5. One difference
- 6. Explanation of difference
- 7. Conclusion
- ... don't forget to write in complete sentences and use paragraph form!

Essay Prompt:

List what the two major political parties are. Then, list and explain at least one similarity between the two parties. Next, list and explain at least one difference between the two parties

Appendix D Political Parties Post-Test and Rubric

Section One - Multiple Choice (* = Correct Answer)

Question 1

Select one. What kind of political party system do we have?

- A. *Two-Party
- B. Multi-Party
- C. Democratic Republic
- D. Single Party

Question 2

Select one. Which of the following is not a purpose of political parties in the United States?

- A. To get candidates to win elections
- B. To monitor the actions of officeholders
- C. *To write and pass laws for the country
- D. To educate the electorate

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Select one. Which of the following is not a purpose of Third Parties?

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- A. By mail application
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Select one. Which of the following groupings has the correct terms for their listed political party?

- A. Republican, Red, Donkey, Liberal
- B. Democrat, Blue, Donkey, Conservative
- C. *Republican, Red, Elephant, Conservative
- D. Democrat, Red, Donkey, Liberal

Section Two - Essay

Essay Directions:

Think about the two-party system and third parties and answer the prompt listed.

Re-read Friday's article "<u>In a presidential election, it's almost always about two parties</u>" (links to Jigsaw Canvas assignment) for help.

Your response should include:

Essay Rubric:

- 1. Introductory sentence
- 2. Definition of two-party system
- 3. Explanation of two-party system
- 4. Definition of third parties
- 5. Explanation of third parties
- 6. Your position: For or against
- 7. Evidence
- 8. Explanation of evidence
- 9. Conclusion sentence
- ... don't forget to write in complete sentences and use paragraph form!

Essay Prompt:

First, define and explain what a two-party system is. Then, define and explain what a third party is. Finally, explain whether or not you are for or against our current two-party system. List and explain at least one piece of evidence from the article we read on Friday. (Hint: Check it out here on Canvas again for help).

Appendix E Legislative Branch Pre-Test and Rubric

Section One - Multiple Choice (* = Correct Answer)

Question 1

Select one. What is the legislative branch at the federal level called?

- A. The General Assembly
- B. The Supreme Court
- C. *Congress
- D. Parliament

Question 2

Select one. What is the main purpose of the legislative branch at the federal level?

- A. To execute the nation's laws.
- *B.* *To make laws for the country.
- C. To interpret the Constitution.
- D. To declare war.

Question 3

Select all that apply. Which of the following are houses of the legislative branch?

- A. *House of Representatives
- B. House of Burgesses
- C. *Senate
- D. Supreme Court

Question 4

Select one. Which of the following statements about the legislative branch at the federal level is true?

A. *It is more powerful than other legislatures in the world

- B. It is controlled mainly by the President
- C. It is less powerful than other legislatures in the world
- D. It rarely reflects the beliefs of the American people

Question 5

Select one. Which of the following statements is <u>not</u> true about both houses of the legislative branch?

A. *One house can start bills, another cannot.

- B. One house can approve presidential appointments, one cannot.
- C. One house can start revenue bills, one cannot.
- D. One house has 435 members, and the other has 100 members.

Section Two - Essay

Essay Directions

Think about the Legislative Branch. Answer the prompt listed below.

In your answer, be sure to define the Legislative Branch and list what the legislative branch is called. Then, list the houses of the legislative branch and explain one of their differences. Finally, list and explain at least one function of Congress.

Essay Rubric:

- 1. Introduction sentence
- 2. Definition of legislative branch
- 3. Name of legislative branch
- 4. House #1 listed
- 5. House #2 listed
- 6. Difference between houses, listed
- 7. Function of legislative branch, listed
- 8. Function of legislative branch, explained
- 9. Conclusion sentence
- ... and use proper paragraph form!

Essay Prompt

What is the purpose of the Legislative Branch in the United States?

Appendix G Legislative Branch Post-Test and Rubric

Section One - Multiple Choice (* = Correct Answer)

Question 1

Select one. What is the legislative branch at the federal level called?

- A. The General Assembly
- B. The Supreme Court
- C. *Congress
- D. Parliament

Question 2

Select one. What is the main purpose of the legislative branch at the federal level?

- A. To execute the nation's laws.
- *B.* *To make laws for the country.
- C. To interpret the Constitution.
- D. To declare war.

Question 3

Select all that apply. Which of the following are houses of the legislative branch?

- A. *House of Representatives
- B. House of Burgesses
- C. *Senate
- D. Supreme Court

Question 4

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A. *It is more powerful than other legislatures in the world

- B. It is controlled mainly by the President
- C. It is less powerful than other legislatures in the world
- D. It rarely reflects the beliefs of the American people

Question 5

Select one. Which of the following statements is <u>not</u> true about both houses of the legislative branch?

- *A.* *One house can start bills, another cannot.
- B. One house can approve presidential appointments, one cannot.
- C. One house can start revenue bills, one cannot.
- D. One house has 435 members, and the other has 100 members.

Section Two - Essay

Essay Directions

Think about the Legislative Branch. Answer the prompt listed below.

In your answer, be sure to define the Legislative Branch and list what the legislative branch is called. Then, list the houses of the legislative branch and explain one of their differences. Finally, list and explain at least one function of Congress.

Essay Rubric:

- 10. Introduction sentence
- 11. Definition of legislative branch
- 12. Name of legislative branch
- 13. House #1 listed
- 14. House #2 listed
- 15. Difference between houses, listed
- 16. Function of legislative branch, listed
- 17. Function of legislative branch, explained
- 18. Conclusion sentence
- ... and use proper paragraph form!

Essay Prompt

What is the purpose of the Legislative Branch in the United States?