THE EFFECTS OF FINE ARTS ON LANGUAGE AND LITERACY SKILLS IN CHILDREN

by

Lauren Culver

A Senior Honors Project Presented to the

Honors College

East Carolina University

In Partial Fulfillment of the

Requirements for

Graduation with Honors

by

Lauren Culver

Greenville, NC

May 2018

Approved by:
Dr. Marianna Walker, Ph.D.
Department of Communication Sciences and Disorders College of Allied Health Sciences

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Abstract

Current techniques of teaching literacy to elementary school students are commonly limited to the use of standard reading programs such as Macmillan, McGraw Hill and Houghton (LaJevic, 2013). Although systematic, these approaches do not allow for children to experience various ways of learning or engagement with these structured literacy programs. This study will utilize the constructivist approach to explore how children's experiences and reflections enhance natural literacy development. The purpose of this study is to determine if creativity and engagement in the arts enhance language and literacy skills in children.

By integrating art practices with literacy tasks, specifically dance and visual arts, children will use such active experiences to enhance specific language and literacy skills. Children, who participate in artistic activities, will excel in subsequent oral and written language activities.

Current art integration in classrooms and has been minimal and undervalued. Funding for art programs have substantially decreased making this study significant and necessary in order to discuss benefits of arts in school settings.

The study was completed in a school in Greenville, North Carolina and will include five students who are at a second grade reading level. Pre-experimental language and literacy testing was completed before the study in the areas of spelling, reading, and oral language. Experimentally, the children have participated in listening, dance and visual art activities. Following each activity, each child was asked to generate words and statements relating to that activity. Dependent variables will include number and type

(part of speech) of words generated (written), and number/type of written statements for each activity. Following each group activity, a group discussion was conducted followed by collection of data relating to word and sentence generation. Relationships of data to standardized measures of oral/written language were completed.

Background

Language and Literacy Development in Early Elementary School

A child's oral language and literacy skill development increases significantly within their first eight years of their life. A child's literacy development begins around the age of six months to one year of age when one is able to attend to pictures by patting, recognizing and showing preference of familiar objects, such as human faces (Wilson and Katz, 2009). A child this age vocalizes and babbles along with an individual reading a book aloud to them. As a child's development continues, the child is able to understand that words have meaning, and point and name objects within the illustrations (Wilson and Katz, 2009). This occurs around the age of twelve to eighteen months. It is at this time a child's oral language begins to occur. Between ten and fourteen months of age, a child's first oral words begin to emerge and by eighteen to twenty-four months of age, a child has developed a oral vocabulary of between twenty and 100 words (Wilson and Katz, 2009). A child's reading skills at this age allows for one to be able to read aloud, and recite passages he or she is familiar with. A child also begins to scribble around the age of eighteen to 24 months. Within the next twelve months a child's reading abilities continue to develop and he or she is able to "read" to him or herself, being able to recite phrases and familiar stories. This correlates with a child's oral narrative development at

this age (Wilson and Katz, 2009). By 36 months a child's ability to orally present sequences is developed and his or her expressive vocabulary contains 900 words by three years of age. By the age of four the plot of a story becomes a more important aspect to a child and he or she is able to listen to longer stories (Wilson and Katz, 2009). By four years of age, a child is also learns to recognizes some letters which correlates this one's writing and spelling abilities at this time. By four, a child's previous scribbling develops into characteristics of printings and he or she may be able to produce strings of letters. A child's writing abilities continue to develop and by four to five years old, a child develops the ability to write their first word, commonly their own name (Wilson and Katz, 2009). During this age, a child's expressive vocabulary develops to 2500 words and he or she develops phonological awareness presented by the ability to count syllables in words. By the age of seven, one begins to attempt to spell words based upon what they hear and what they say and learn to utilize convential spelling rules. A seven year olds reading abilities also continue to develop by mastering the ability to read on their own and he or she identifies with the characters in the story. A seven year old recognizes what sounds different letters represent allowing for the child to sound out words when reading an unfamiliar word. A child's oral language around seven years old contains more than 2500 words and the ability to orally present narratives and chain of words containing a logical sequence of events and a character develops. A child's phonological and phonemic awareness by the age of seven allows for him or her to identify the beginning, middle and the end of words, orally blend sounds together and begin to substitute sounds, delete sounds and spell phonetically (Wilson and Katz, 2009).

Typical second grade student's speech and language, abilities should be represented by intact phonological abilities. At this age and grade, the child speech should be represented by fully mastered phonetics and sound awareness allowing for the child to be understood without difficulty by the listener (ASHA, 2017). At this stage, a child is producing more complete sentences and able to clarify and explain his or her own ideas (ASHA, 2017). The child is able to focus on the deeper meaning of a story and understand the concepts presented in texts (Public Broadcast System, 2017). Second graders also develop the ability to relate their own experiences to written narratives of their appropriate reading level. Children at this age are continuing to learn new vocabulary through reading and gather information from books (PBS, 2017). Spelling patterns are becoming more developed and words that are commonly utilized are correctly spelled. Children at this age level also begin to utilize inventive spelling through sounds, for words that are not frequently used by the child (American Speech-Language-Hearing Association (ASHA), 2017). The development of writing various types of sentences occurs including the ability to write poetry, short narratives and essays (ASHA, 2017).

When a child begins school, he or she has developed many language skills that are seen in their writing including such skills as utilizing complete sentences, expression of various types of sentences, use of various verb tenses, as well as having a large vocabulary (Kuder, 2013). The elementary school period begins the time of teaching children to not only utilize correct oral language but also begin to understand and be able to discuss language (Kuder, 2013). Aside from utilizing and understanding oral language, students begin to apply these skills in order to read and write (Kuder, 2013).

Throughout the early school years, children continue to advance in their morphological and syntactic forms by learning more sophisticated forms of words accurately, such as correctly using inflectional and derivations suffixes (Kuder, 2013). The use of noun and verb phrases continues to develop by utilizing reflexives in order to identify the subject and by presenting the use of gerunds (Kuder, 2013). The ability to increase the length and complexity of one's sentences also increase throughout early school years (Kuder, 2013).

Semantic development also occurs throughout elementary school. By the end of the first grade the average student's vocabulary consists of 10,000 words (Kuder, 2013). This vocabulary derives aspects such a literature and new concepts presented to them in various subjects. The development of figurative language is also occurring during the school years. The ability to understand figurative language develops around the age of five and progresses throughout the rest of school. Children five years of have not yet fully developed the full ability to understand figurative language and due to this, aspects such as a sense of humor have not fully developed. It is not until one reaches the between the age of 9 and 12 years of age, he or she will understand jokes that include the meaning and sound of words (Kuder, 2013).

Pragmatics is also developing throughout the school years, and shows some of the most evident progress during these times. During kindergarten a child is capable of discussing wants and needs but has not fully developed conversational competence. Six year olds may not fully stay on topic, or have extended conversations with another individual. During this age, students begin to increase their ability to tell a monologue or a narrative (Kuder, 2013).

By the time a student enters school, a child should be capable of recognizing all English phonemes Children develop phonological awareness by being exposed to language in their environment. Nursery rhymes, stories, and movement games all allow for a child to become aware of various phonemes (Johnson, 2017). Throughout school, students apply this knowledge and become more aware of these sounds throughout language. This ability is known as phonemic awareness. By increasing phonemic awareness through dividing words into sounds, rhyming and recognizing the number of sounds in words, a student becomes more skilled at phonological awareness. A child's phonological awareness abilities have shown to correlate with one's reading and spelling abilities (Kuder, 2013) and will also relate to spelling abilities as well.

Constructivism

Constructivism is a method of learning in which an individual learns through his or her experiences as opposed to systematic content (Hedden, Worthy, Akins, Slinger-Friedman, Paul , 2017). By learning through interaction with one's environment it allows for a more sustainable and meaningful approach to knowledge acquisition. When engaging in activities, an individual is more likely to gain a greater understanding of a topic as opposed to systematic approaches such as activities presented by Macmillan, McGraw Hill and Houghton (Hedden et. al, 2017). Learning through one's environment and experiences allows for the development of critical thinking processes, the practice to finding solutions to real-world issues, and growth of interacting and engaging with others. The constructivist approach also allows for learning acquisition to utilize interdisciplinary methods. Interdisciplinary instruction allows for a relationship across subjects as opposed to isolation. By providing activities across disciplines that involve

active learning, students are engaged and can learn through experiences that are personally meaningful to them. Interdisciplinary instruction allows for the development of creativity and critical thinking skills by providing students the opportunity to internalize their learning experiences (Duerr, 2008). By learning actively, individuals are required to become more engaged and access a higher level of cognitive processes (Hedden et. al, 2017). By requiring higher-level thinking, students acquire more sustainable knowledge development in comparison to simply memorizing during repetitive teaching methods (Hedden et. al, 2017). The constructivist approach is also necessary in order for individuals to be able to actively integrate constantly changing and new knowledge with past information. The constructivist approach requires for learners to constantly consider their experiences allowing for the production of new ideas (Ayaz and Sekerci, 2015). The constructivist approach does not directly transfer information from teacher to student but allows for the learner to develop knowledge through guidance, produce new ideas through observation, and ask questions (Ayaz and Sekerci, 2015). Vacca and Vacca have stated, "The real value of literacy lies in its uses". By utilizing the constructivist approach and presenting language through interdisciplinary engagement, it allows for exposure to different genres and enhances the individual's personal experience with the subject. By providing personal interaction with a subject, it allows for increased complexity of language skills due to the students ability to connect meaning about a topic based on their experiences. It is also evident that when material is personally meaningful to an individual, one is more likely to retain information (Duerr, 2008). The fine arts offer a meaningful method of learning for students by requiring active and meaningful engagement. The fine art, such as engagement in dance, music,

and visual arts, can provide a personal learning experience allowing for cognitive benefits.

Cognitive Effects of Dance

Dance programs can allow for teachers to facilitate learning within their curriculum in an academic setting (Giguere, 2011). Dance not only allows for growth in an artistic setting but provides overall cognitive benefits that enhance one's academic performance. Dance allows for individuals to express emotions, feelings and ideas through movement. When creating or performing movement, one *naturally* evaluates the meaning behind the process increasing analytical skills during the process. Dance allows for cognitive, emotional and educational benefits. The process of dance for a child includes spatial awareness, self-discipline, recall, and intellectual commitment (Giguere, 2011). Dance allows for emotional benefits by providing a sense of stress release, a sense of one's self and freedom to create. By giving one the independence to construct movement and use dance as outlet to relieve stress an individual is able to release negative energy in a positive and beneficial manner. (Bond and Stinson, 2001). Dance has been shown to increase one's overall memory and procedural knowledge. Individuals who continue dance over a period of time have shown increased abilities to approach issues that arise. Dance allows for one to be more comfortable with uncertainty (Giguere, 2011). Through dance, individuals are also exposed to a wide range of vocabulary including specific terminology pertaining to movements, ideas and technique. Dance allows for collaboration and discussion with others. By allowing for a developing relationship between dancers, individuals are able to develop group cognitive strategies (Giguere, 2011). Dance allows for collaborative experiences causing for cognitive

effects. Cognitive development through collaboration requires an open-ended creative assignment, which can be presented in dance. By providing assignments that encourage personal investment and are open-ended, allowing for students to work in groups on topics of their choosing, cognitive enhancement occurs. Dance is only one form of the fine arts that has presented to show positive cognitive effects on individuals. Utilization of the visual arts has shown comparative effects on students and adults.

Cognitive Effect of Visual Art

The use of visual arts has shown to have both physiological and psychological effects on individuals. Recent studies have addressed the neural processes that are activated during active engagement in the visual arts. The visual arts is defined by any art created for the purpose of visual perfection such as drawing, graphics, painting, sculpting, and photography. It has been found that during engagement in visual art practices, such as creation of a painting or sculpture, cognitive processes, such as memory, self-monitoring and prospection are utilized (Bolwerk et al, 2014). Memory performance has shown to be significantly higher when completing a drawing task in comparison to writing, or viewing activities (Bolwerk et al, 2014). The emotional effect of the participating in visual art activities can positively influence test scores due to the decrease of anxiety and ability to reduce stress levels. Bolwerk, Mack-Andrick, Lang, Dörfler, & Maihöfner, 2014, utilized fMRI technology in order to measure cognitive activity during active engagement. 28 participant's cognitive activity was evaluated when viewing artwork in comparison to actively producing art in an art class. It was found that visual art production increased functional connectivity of the frontal and parietal cortices

allowing for psychological resilience. (Bolwerk et. al, 2014). The creative process allows for cognitive benefits due to engaging in a meaningful activity. While participating in visual arts, one processes information on a deeper level. The activation of various brain regions when one participates in creative activity, such as visual art, provides neurological evidence of the positive cognitive effects (Rosier Locker, & Naufel 2013). Locker, Posier, and Naufel studied the effect of adult participants by exposing each of the participants to various conditions including, writing, viewing visual art, and active art engagement. It was found that active artistic engagement, such as drawing caused for the most significant impact on one's memory. The engagement of arts have shown increased ability for the participants to identify characteristics such as form, color, movement, as well as develop increased aesthetic perceptions. (Rosier et. al, 2013). Arts instruction has been found to enhance and provide for a method to teach language and literacy skills. Dance has been used in order to prepare a student for individual reading, and music has been utilized by providing a context to assist in teaching language skills to children. Drama enhances student's ability to understand the plot of a story and increases story comprehension (Ruppert, 2006). The beneficial cognitive effects of the arts and the ability to utilize the arts to enhance teaching methods, the fine arts should be integrated into academic school settings. The benefits of art integration within the school setting are not currently utilized to its full extent.

Arts in the school systems

Due to the beneficial cognitive and emotional effects of art and creative activities, it is necessary for schools to integrate art into their curriculum (Ruppert, 2006). The

majority (93%) of Americans state that arts are necessary in order to produce a balanced educational experience for students, and 86% believe that by including arts in the school system, students have more positive attitudes towards school (Americans for the Arts, 2017). Although these statistics show that the majority of Americans believe in the benefits of art, it is always common that the arts programs in schools are always very vulnerable to suffering budget cuts. Because there have been no studies revealing the direct effects of visual arts activities on SAT exam scores, the significance and the relationship of possible benefits that art programs have on children may not have been fully acknowledge or formally measured in the early elementary grades. Yet it is shown that students with higher arts participation score on average 100 points higher on SAT scores and creativity is one of the vital skills business leaders state they look for when hiring new employees (Americans for the Arts, 2017). Although the benefits of arts are apparent through these statistics, only 38% of states in the United States include arts courses as an option in order to fulfill requirements for graduation (National Center for Education Statistics, 2017). Thirty-four percent of states require state, district or school level assessment of learning in the arts or specify arts education as a requirement for schools to be accredited (National Center for Education Statistics, 2017). Because of the underemphasized impacts of the arts, funding is commonly decreased for the arts causing for students to be deprived of the cognitive, and emotional effects of the arts. Based on the evidence, integration of visual art and dance participation within academics is crucial in order to provide the most effective learning environment for students. The proven cognitive effect of the fine art's provides evidence that active participation in dance and visual arts can assist in oral language and literacy development in children, but current

teaching strategies do not provide allow for students to be given the opportunity to gain these benefits.

Statement of the Problem

Teaching literacy to elementary school students is currently limited to standard, systematic approaches including Macmillan, McGraw Hill and Houghton (LaJevic, 2013). These practices ensure a student is mastering one concept at a time before proceeding to the next concept. These methodical approaches are exclusive and children are deprived from experiencing additional ways of learning. The repetitive nature of these tests do not allow for children to learn in a natural manner. The constructivist theory states individuals learn based on their own understanding and knowledge of the world and it is through reflection of these experiences one will learn (Dagar et. al, 2016). In order to effective learning to occur a balanced approach to language and literacy should occur (Cowen, 2005). By providing a research-based, integrated and dynamic strategy to language and literacy development, it allows students to acquire language and literacy skills in a meaningful and inclusive manner while increasing his or her understanding (Cowen, 2005)

Based upon prior evidence presenting the cognitive effects of active engagement of the fine arts, specifically dance and visual art, in order for students to develop language and literacy skills to his or her full potential, a learning approach involving engagement in the fine arts would be beneficial to students. Current studies have provided a basis that supports art-based and natural learning, but minimal research has occurred based upon these methods specific affects on oral language and literacy skills.

The effects of art integration on language output complexity in children have not been sufficiently investigated.

Purpose of the Study

The purpose of this study is to understand the correlation between creativity engagement through dance and visual art and the development of language and literacy in first and second grade students. This study aims to gain understanding of the effect of the constructivist approach on language and literacy by studying at the effects of engagement in the fine arts on language output complexity. The fine arts allow for a more natural and creative way of learning allowing for reflection in comparison to the commonly utilized systematic techniques. This study will assess the effects of active engagement in visual art and dance and its effect on first and second grader's written and oral language. This data will allow for a greater understanding of how students learn and develop language and literacy skills

Research Questions

1. Does the constructivist approach enhance language and literacy development?
2. Does creativity enhance lexical retrieval?
3. To what extent do artistic activities affect subsequent language and literacy abilities, as measured by the number of written words, type of words, and complexity of a student's oral and written statements?
4. How does interactive communication and peer interaction during engagement in fine arts activities influence language skills?

Methods

Participants

The participants in this study included first and second grade elementary school students who were recruited from an after-school child care center located in Greenville, North Carolina. There were five students that participated in the study, three girls and two boys. The ages of the students were seven years and five months, eight years and one month, seven years and three months, eight years and three months, and seven years and seven months. Prior to the study, a consent form, including information about the study, was signed by the parent of each student, which provided permission for his or her child to participate in the study. The study was approved by UMCIRB at East Carolina University prior to recruitment and implementation of the study. Following participation in the study, each student received a book of his or her choice (from a selection of three). The parents of the children who participated in the study received a $25 Barnes and Noble gift card.

Pre-experimental Testing

In order to determine the current language and literacy levels for each of the participants, pre-experimental testing was conducted individually with each child. The following tests/subtests were administered: the Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4), Test of Written Spelling, Fifth Edition (TWS-5), and Woodcock Reading Mastery Test, Third Edition (WRMT-III). The PPVT-4 measures receptive vocabulary. WRMT-III provides an assessment of reading language skills, and the TWS-5 measures spelling skills based on age norms.

Experimental tasks

In order to allow for students to experience language and literacy development through a constructivist approach, each of the students participated in fine arts activities, specifically dance and visual arts. To compare these activities with traditional techniques, a children's book was read to the participants. The reading, visual art and dance activity were completed at separate times. The students engaged in the same activity at the same time and participants completed the same task as one another, following the activities. Each section of the study included a pre-activity assessment that measured the number and type of written words. A passive activity then occurred in which the child is not activity engaged. Then each task included an active activity in which the participants actively participated in creating a written statement, a visual art painting or a dance movement. After the passive and active activity, data measuring written words and sentences was collected. After each task was completed, a group discussion occurred and the length of time for each group discussion was recorded.

Reading Task

Prior to the reading task, each child will be asked to orally respond to the question "When I say someone is brave, what do you think about?" After completing the pre-activity, the children will be read a short narrative book entitled, "Wolfie the Bunny" that depicts a time a character showed bravery. After the narrative, each child will reflect upon the book they just heard and individually write words that came to mind about the book that was just read to them. They will then be asked give examples in writing of how

the characters in the story showed bravery. The data collected based on each participants written responses will consist of number of words written, types of words written, length of written sentences, number of written sentences, complexity of written sentences, type of written sentence. Following this writing activity, a group discussion related to the participant's favorite part of the story will be facilitated by the primary investigator. The discussion will be filmed in order to measure the number of students to participate in the group discussion, the types of sentences orally presented, the length and type of oral narrative, and the length of group discussion.

Dance Task

The students will reflect upon what it means for someone to be strong and individually orally respond to the question "When I say someone is strong, what do you think about?" The number of written words and types of written words in the participant's definition will be measured. The children will be shown a short video of a dance performance pertaining to strength. The video will depict strong dance movements. After watching the short video, the participants will be asked to The students will then be asked to move in specific ways such as "move like the ocean", "how does a fox move", "how would you move through a pool of glue", "move like a strong lion." After the improvisation activity, the students will create a phrase from three of their movements they think best depict strength. After the active activity, the students will be asked to individually write meaningful words that come to mind after engaging in this dance activity. The number of written words, types of written words, spelling will be assessed for this response. After developing meaningful words, the students will be asked to then individually write about how the dancers in the video or how their own movement

presented strength. The length of written sentences, number of written sentences, and complexity of written sentences will be measured for every participant. Following the written responses, a group discussion about their favorite movement or part of the activity will occur. The discussion will be filmed and the number of students to participate in the group discussion, the types of sentences orally presented, the length and type of oral narrative, and the length of group discussion will be measured for each participant.

Visual Art Task

The participants will be asked to individually orally respond to the question "When I say someone is happy, what do you think about?" The number and type of written word will be measured for each of the participant's responses. After writing their own initial definitions of happiness, the children will be shown a piece of visual artwork, pertaining to happiness. The students will then be asked to individually paint a picture depicting their favorite memory. Following the creation of their painting, the participants will then be asked to individually write as many meaningful words that he or she thought of during the activity. The number of words, types of words and spelling will assess their response to this question. After writing words, the participants will then individually write how the painting they saw or they painting they created showed happiness. This response will be evaluated based upon length of written sentences, number of written sentences, and complexity of written sentences for each child. After each participant has completed the activity, the students will share their painting with the class and orally discuss their favorite part of their artwork or of the painting they saw in order to facilitate a group discussion. This group discussion will be recorded and the number of students to

participate, types orally presented of sentences, length and type of oral narrative, and length of group discussion will be measured for each child.

Selection of book: Following all experimental activities, each child will be given a chance to choose between 1 of 3 books in different categories representing each of the three experimental activities: - the actual book that was read, Wolfie the bunny, and a book about dance or art. The selection of the book will be noted for each child.

Data and Statistical Analysis:

For the pre-activity, when orally asked about the theme of the activity, (bravery, strength, or happiness) the participant's type of response will be recorded and whether the participant demonstrated a clear understanding of the theme. Following the active activity, two prompts will be provided. The first prompt for each task will ask the participants to individually write as many meaningful words that come to mind after completing the activity. The number of written words, types of written words and spelling will be assessed for each child. The second prompt for each task will measure length of written sentences, number of written sentences and type of written sentence.

A group discussion after each task will occur and facilitate discussion based upon their favorite aspect of each task. The group discussions were videotaped for data collection and analysis. Group discussion will be recorded and the number of students to participate during the oral discussion, and length of oral group discussion will be measured. After all prompts are completed, the initial written statements from before being presented art work, the statements created after being presented with the book, the dance or visual art each activity, and the student's statements they created after their own creation will be analyzed and compared. Data will be collected and compared between

and within each of the three experimental activities. Comparisons between activities (independent variables) will be statistically analyzed between conditions (experimental tasks – reading/listening, dance, art) for each of the dependent variables (each data point that you are collecting). Relationships between these skills and pre-experimental literacy tests will be tested for possible effects on data collected between the conditions.

Results

Pre-experimental Test Results

The participants' results for the pre-experimental testing standard scores are presented in *Table 1*. The participants' scores from the Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4) had a mean score of 97 with a standard deviation of 7.713. The scores ranged from 87 to 107. The results from the Test of Written Spelling, Fifth Edition (TWS-5) presented an average mean standard score of 100 with a standard deviation of 3.391 and ranged from 95-102. The participants' scores for the Rapid Automatized Naming portion of the Woodcock Reading Mastery Test, Third Edition (WRMT-III), ranged from 93 to 114, which presenting an average standard score of 103 with a standard deviation of 9.78. The participants' standard scores for the word identification subtest of WRMT-III had an average of 100.2 and a standard deviation of 12.1942 and ranged from 87 to 112. The children's scores for the Word Attack portion of the WRMT-III ranged from 90-110 and had a mean standard score of 99 and a standard deviation of 8.185. The listening comprehension standard scores ranges from 84 to 105 causing for a standard deviation of 8.590 and a mean of 97.6. Based upon the participants' results of the standardized testing, all children had average language and literacy skills, based upon their age and grade norms.

Pre-experimental Test Results

Participant	PPVT-4	TWS-5	WRMT-III RAN	WRMT-III word identification	WRMT-III listening comprehension	WRMT- III word attack
1	92	99	94	108	84	110
2	107	104	93	112	97	100
3	99	100	103	107	105	92
4	87	95	114	87	97	90
5	100	102	112	87	105	103

Table 1- Pre-experimental Test Standard Scores for each participant

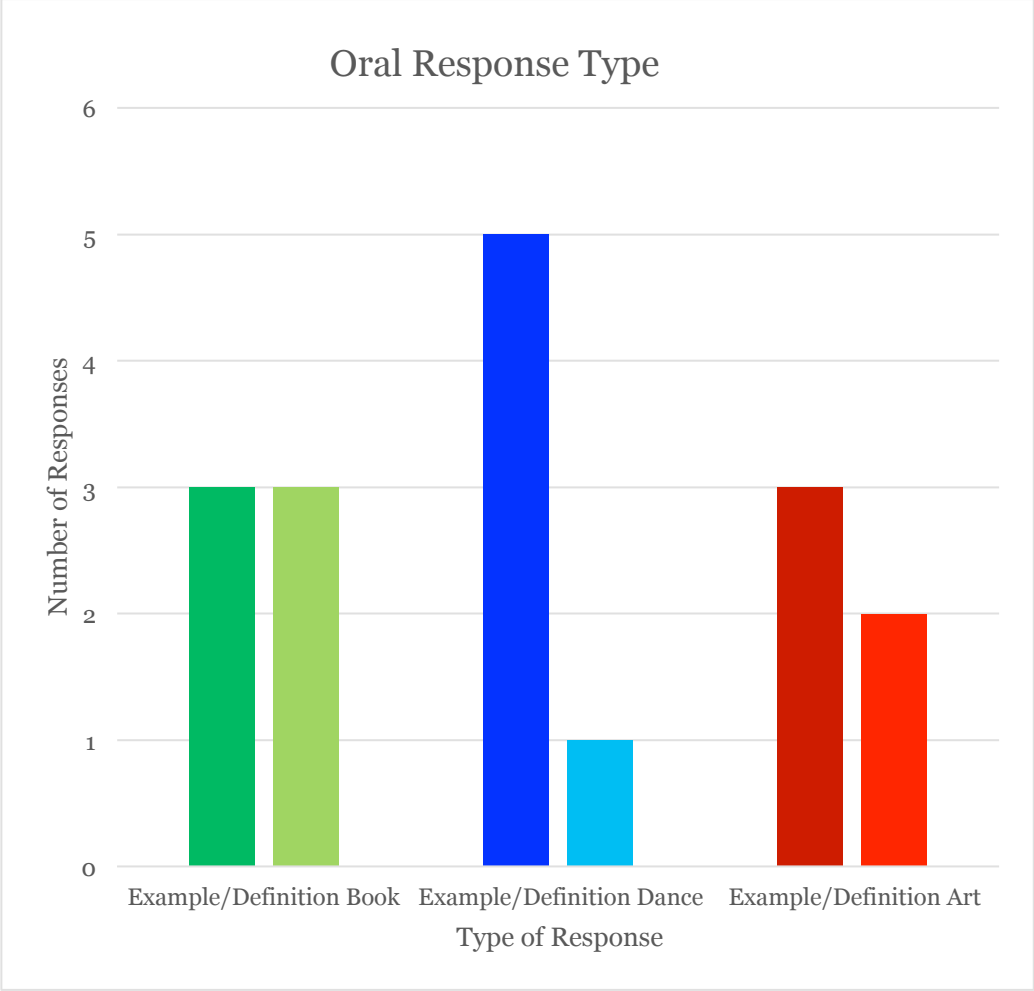
Oral Response Type

The participants' responses to the first oral question presented that all children within the study had a clear understanding of each theme. The participants provided either an oral definition or an oral example of the theme, when asked the pre-activity question individually. The results for each participant are recorded in *table and graph 2*. For the book task, two children provided a definition, two provided an example, and one child provided both. When asked, "When I say someone is brave, what do you think about?" for the oral pre-activity book task, the results showed that overall, the participants' responses presented three examples of bravery, and three definitions of bravery. For example, one child stated "Like Rosa Parks", while another orally responded, "When you're not scared of anything". Then when asked, "When I say someone is strong, what do you think about?" for the dance oral pre-activity, three examples and two definitions were given by the participants. For the dance oral pre-activity, none of the participant's provided both an example and a definition. Examples of their response to the question were "someone who can lift anything" and "like Black Panther". For the art oral pre-activity response, the participants provided five examples and one definition when orally responding to "When I say someone is happy, what do you think about?" Four of the participants provided an only an example, and one child provided both an example and a definition. An example of their responses for the art activity included, "I think about me because I'm happy!" The type of each participant's response is recorded in *table and graph 2*.

Oral Response Type

Participant	**Book Oral Pre-activity Response**	**Dance Oral Pre-activity Response**	**Art Oral Pre-activity Response**
1	Example	Example	Example
2	Definition	Definition	Example
3	Definition	Definition	Example
4	Example	Example	Definition and example
5	Definition and example	Example	Example

Table 2-Participant's Pre-activity Individual Oral Response Type



Graph 2- Participant's Pre-activity Individual Oral Response Type

POST-ACTIVITY

The numbers of written words for each participant following each activity were recorded and are presented in *table and figure 3*. *Table 3* shows the amount of words each participant wrote after completing each of the tasks. *Graph 3* shows the mean number of words the students wrote for each activity. The results for the number of written words when asked "Write as many words that come to mind of after hearing the story," for the book post-activity presented a mean of 12.6 words for all participants. After participating in the dance activity, and asked "write as many words that come to mind after participating in the dance improvisational activity" the participant's responses averaged 8.6 words. When asked, "write as many words that come to mind after participating in the visual art activity" the participants written responses averaged 11.8 words. The data showed that the book post-activity simulated the greatest average amount of written words, followed by the art activity. The children provided the least amount of words following the dance activity.

Number of Written Words

Participant	**Book- number of written words**	**Dance- number of written words**	**Art- number of written words**
1	10	6	20
2	5	6	5
3	22	10	17
4	19	14	11
5	7	7	6

Table 3- Participant's Post-Activity Response: Average Number of Written Words

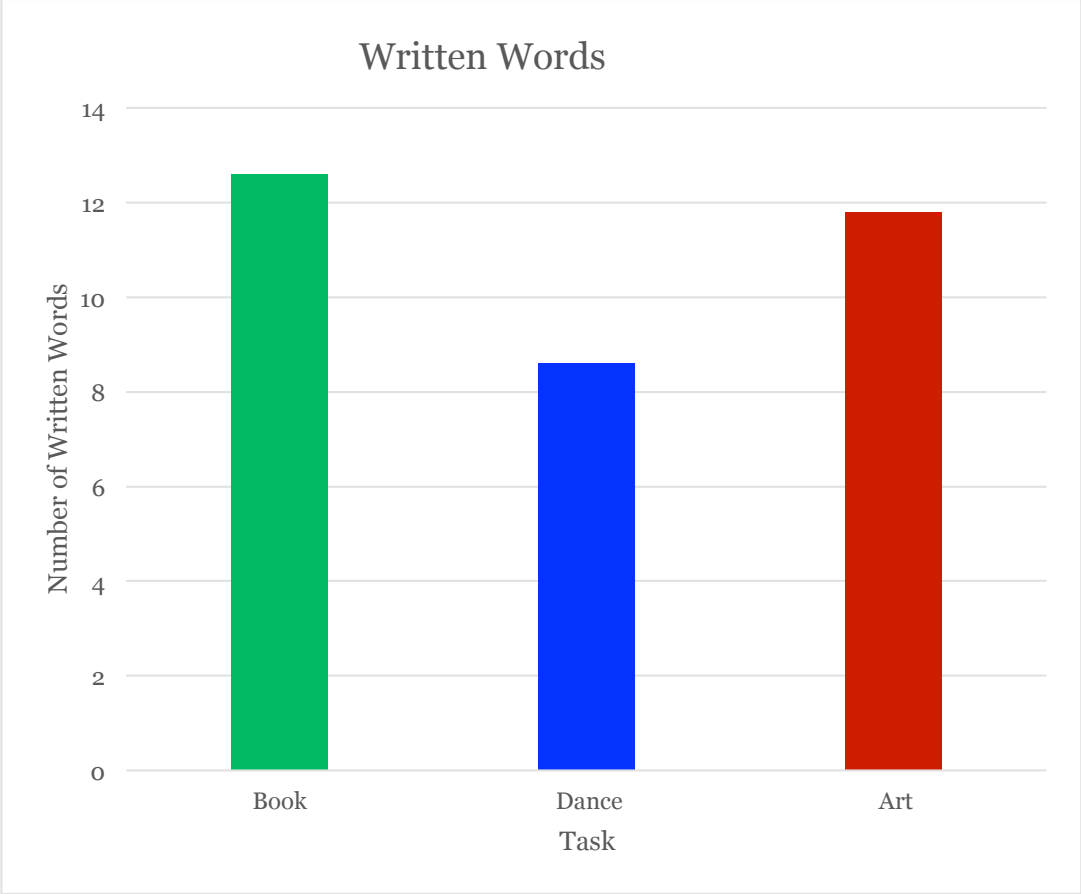


Figure 3- Participant's Post-Activity Response: Average Number of Written Words

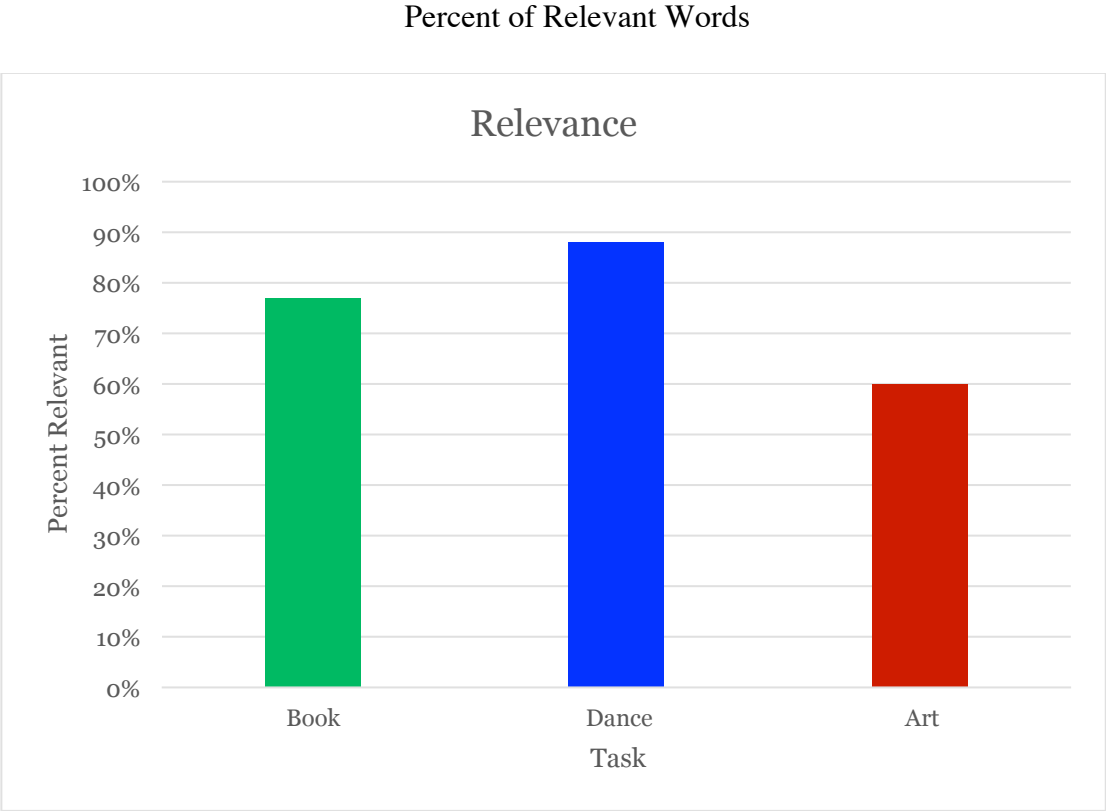
Post-Activity – Relevancy of written responses

The next aspect of the students' response that was measured was whether or not the participant's responses were relevant to the activity. The number and percent of relevant words in each participant's response was recorded and are presented in *Table 4*. The average percent of relevant words in the participant's responses in relation to the activity was found for each task and is shown in *Graph 4*. If the student's response was relevant to the activity, it showed the activity they had just participated stimulated relevant language pertaining to that topic. The average percent of the participant's written words that were relevant to the book activity was 77.4%. The average percent of the children words that were relevant to the dance activity was 88.4%. The participant's individual responses when asked about their favorite part of the visual art activity presented words that were relevant to the activity 60.2% of the time. It was found that the dance activity stimulated the most relevant written language for the participants. The book activity showed to stimulate less relevant language than the dance activity, but a higher percent of relevant language than the visual art activity.

Percent of Relevant Words

Participant	Book- # of words relevant to the activity	Dance- # of words relevant to the activity	Art- # of words relevant to the activity.
1	20/20 (100%)	6/6 (100%)	1/3 (33%)
2	0/0 (0%)	2/3 (66%)	4/4 (100%)
3	21/24 (87%)	10/13 (76%)	3/16 (18%)
4	31/31 (100%)	9/9 (100%)	9/9 (100%)
5	15/15 (100%)	4/4 (100%)	3/6 (50%)

Table 4- Number and Percent of Relevant Words in the Participant's Responses in Relation to the Activity



Graph 4- Percent of Relevant Words in the Participant's Responses in Relation to the Activity

Post-Activity - Spelling

Data pertaining to the spelling accuracy of the student's written responses when asked to write about their favorite part of the activity after each task was recorded and recorded in *Figure 5*. The participant's spelling when reflecting upon the book activity had a mean of 74% accuracy. The children's responses averaged 65% accurate when providing written responses pertaining to the dance activity. The written responses after the art activity showed an average of 79% accuracy. The dance activity caused for the least amount of words to be spelled correctly, and the book activity to have the highest percent of words spelled accurately. The number of words and the percent of words each participant spelled correctly within their responses is shown in *table* 5. The average of all participants' percent spelling accuracy is displayed in *graph 5*.

Spelling Accuracy

Participant	Book- Spelling Accuracy	Dance- Spelling Accuracy	Art- Spelling Accuracy
1	9/10 (90%)	5/6 (83%)	18/20 (90%)
2	3/5 (60%)	4/6 (66%)	4/6 (66%)
3	14/22 (63%)	4/10 (40%)	14/17 (82%)
4	16/19 (84%)	11/14 (78%)	10/11 (90.9%)
5	5/7 (71%)	4/7 (57%)	4/6 (66%)

Table 5 – Number of Words Spelled Accurately by Each Participant

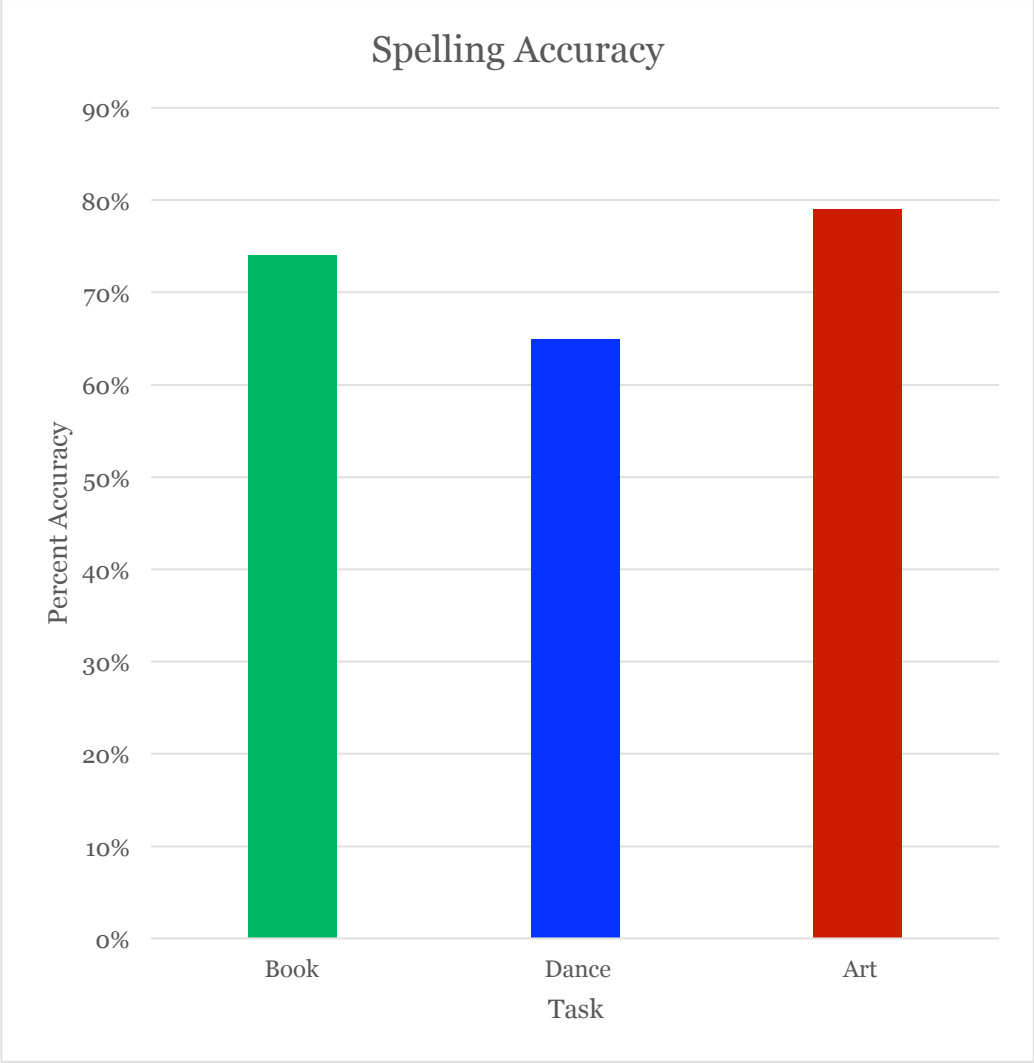


Figure 5- Participant's Post-Activity Written Response Average Percent Spelling Accuracy

Post-Activity - Word types

The types of words the students used during their post-activity written responses were also recorded. The percent of nouns, verbs, adverbs, and adjectives in each of the participant's responses were recorded. The book post-activity written responses presented an average of 39% of nouns, 30.7% verbs, 5% adverbs, and 10% adjectives. The dance post-activity written answers presented an average of 47% nouns, 42.1% verbs, 0% adverbs, and 10.5% adjectives in their responses. The art post-activity written responses showed an average of 10% nouns, 55% verbs, 15% adverbs, and 20% adjectives in their answers. Overall, the book and dance activity contained a higher percent of nouns in the participant's written language than the visual art activity. The art activity contained the highest percentage of both adjectives and adverbs in the participant's responses. The art activity also contained the highest average percent of verbs.

Group Discussion

The oral group discussion following the book activity lasted for three minutes and fifteen seconds. The oral group discussion following the dance activity lasted for one minute and forty seconds. The oral group discussion about the visual art activity lasted for one minutes and eight seconds. This showed that the group discussion following the book activity lasted the longest amount of time. The oral group discussion following the visual art activity lasted the least amount of time. The data is presented in *Graph 6* and shows the length of time each discussion lasted.

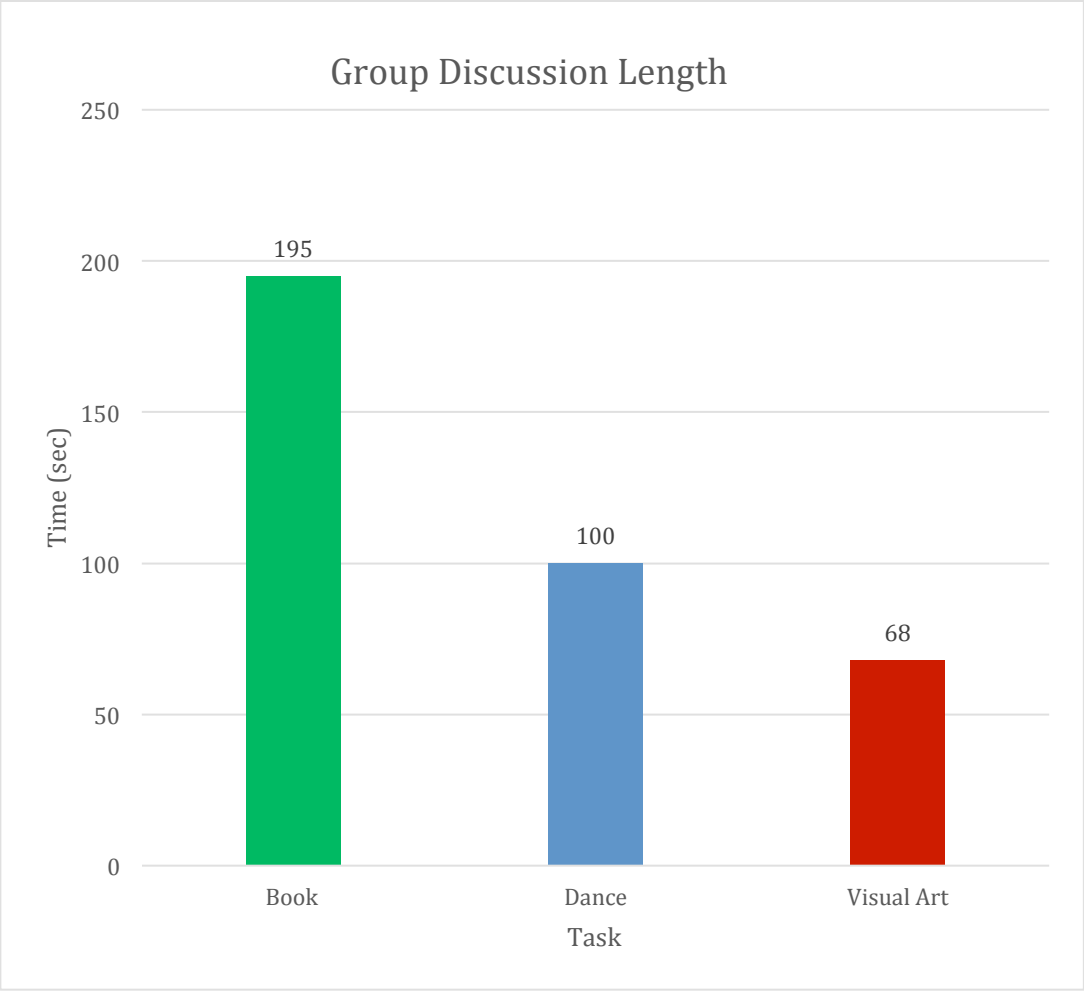


Figure 6- Length of Oral Group Discussion Based on Activity

Discussion

The constructivist approach discusses how individuals learn based on their own understanding and knowledge of the world (Dagar et. al, 2016). By using the fine arts as a method of facilitating active learning, it allows for individuals to learn from their experiences. Previous research has also shown that active engagement in the arts allows for cognitive benefits, such as increased memory. (Rosier Locker, & Naufel 2013). Prior to this study, extensive research pertaining to the effects of how participating in the fine art can influence language and literacy has not been conducted.

Based on the pre-experimental data acquired through the PPVT-4, TWS-5 and the WRMT-III suggest that all participants within the study scored within normal limits for their age. This presents that none of the children had at least average reading, spelling, and oral language abilities. This information suggests that these children were able to effectively use these skills to complete these experimental activities for the current study.

The data collected, provided by the study, when descriptively compared between the conditions suggests various language differences. The book activity yielded the greatest amount of written words, which may have been due to students being able to use words they had recently from the book. Since the book activity allowed for the students to listen to oral language before the written activity, they were able to write words they had heard or read in the story. During the dance and art activity, the students were not provided with as much oral or written language prior to having to provide their own written language response causing for them to have to create words on their own.

Although the dance activity yielded the least amount of written words, the words that the students provided were the most relevant to the dance activity. When reflecting upon the dance activity, the students individually wrote words that were relevant and applicable to the dance activity the student had just participated in. During the book and art activity, the students showed to more commonly write words that were unrelated to the book and art activity, such as "I like having snack", or "It was fun having you here". These responses were not relevant to the book activity or the art activity, and therefore suggest the activities did not simulate as relevant language as the dance activity did. This indicates that by participating in the active dance activity, it increases the relevance of the student's language to what they had just experienced.

The spelling accuracy of the participants written language showed that the dance activity had the lowest percent spelling accuracy of the three tasks. This may have been due to the children's choice of words they used to describe the activity. For the book activity, students commonly wrote words they had just seen in the book, such as names of characters or aspects of the plot. For the art activity, students commonly discussed colors or words within their vocabulary. When reflecting on the dance activity, the children's written responses commonly used creative words relating to their movement. Because the dance activity allowed for the participants to develop their own movement and choreography, the students developed their own words based upon their individual experiences. The creative aspects of the dance may have allowed for a more creative word choice and cause for students to write words they do not commonly use, therefore they may be not aware of how to spell these unfamiliar words.

Another finding this study suggests is that after participating in the visual art activity, students had a higher percent of adjectives and adverbs in their written language. The engagement in a visual art activity caused for students to provide information about colors, shapes and characteristics of their paintings. This varies in comparison to the participant's language after listening to the story. The participants commonly wrote about characters in the story, the setting, and the plot, resulting in the highest percentage of nouns in their individual written responses.

The oral group discussion showed that the book activity facilitated the longest oral group discussion by the participants in the study. The students reflected upon the book and were able to discuss the theme of the book. They also physically used the book during the group discussion and were able to see the words in the book. The dance stimulated the second longest group discussion and the children were able to share how they felt during the activity. The art oral group discussion lasted the least amount of time. The lengths of the group discussion may have also been influenced by the discussion that occurred during the art and dance activities. During the study, it was observed that the dance and art activity simulated more oral language than during the book activity. Because the students had to sit and listen to the book, the students did not engage in oral language production during the activity. During the visual art activity, the students orally conversed with one another throughout the entire task. Although their language was not always relevant to the activity, the participants continued conversation. The dance activity showed to simulate the most oral discussion throughout the activity. The discussion during the dance activity was relevant to the movement they were creating and how it made them feel. They also discussed the movement they saw their peers create.

This study suggests various relations between engagement in creative activity and it's influence on language, yet the small sample size is a limitation of the study. In order to gain more data, a larger population of students from various environments would allow for more conclusive evidence to support the current findings.

The data provided by this study supports the previous data that states active engagement in activity has cognitive effects on individuals. (Rosier Locker, & Naufel 2013). The differences between the participants relative to their oral and written language, i.e. provide evidence of how individuals participation in activities that require active engagement allows for cognitive differences in comparison to passive participation tasks. Based on the variations in types of words used, the amount of words used, and relevance of words shown in this study, it presents that engagement in different activities allows for cognitive differences. This is consistent with previous literature that states variation in cognitive process occurs when participating in active fine art activities (Bolwerk et. al, 2014). The data from this study provides evidence for how language and literacy can be influenced by learning through a constructivist approach. By engaging in active tasks, variations in the type of language used and the amount of written and oral language produced varies supporting the previous evidence that states active engagement influences learning.

Conclusion

In the present study, the effect of active participation in fine art activities on children's language and literacy skill was explored. Through use of the constructivist approach to learning, the participant's oral and written language differences after participating in a book, dance, and visual art task were examined. After collecting and

analyzing data findings showed an increase in written language after a book activity, the most relevant written language after actively engaging in the dance activity and decreased spelling accuracy when creating words related to their experiences. The study also showed an increased percentage of adjectives and adverbs in the participants written language after engaging in the book activity and an increased percentage of nouns after listening to a story.

These implications of the results from this study can be applied to creating teaching methods in order to facilitate creative language learning and allow for the arts to contribute to a child's language and literacy acquisition. Previous findings including Bolwerk et. al, 2014 and Rosier Locker, & Naufel 2013, have shown that active engagement in the arts has beneficial cognitive effects and our results provide evidence for how participation in the arts impacts language, including facilitation of increased production of specific word types and increased oral language with peers while participating in active tasks.

Future research pertaining to the effects of the fine arts on language and literacy skills in children should consider studying a larger population over a longer period of time. This would allow for one to investigate the impacts of implementing the fine arts with current teaching methods in order to gain data pertaining to the lasting effects of the constructivist approach on language and literacy skills.

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Informed Consent to Participate in Research
Information to consider before taking part in research that has no more than minimal risk.

Title of Research Study: The Effects of Fine Arts on Language and Literacy Skills in Children

Principal Investigator: Lauren Culver
Institution, Department or Division: Communication Sciences and Disorders/College of Allied Health Sciences
Address: East Carolina University; 3310YHealth Sciences Building Dept. of CSDI; Greenville, NC 27858
Telephone #: 919-306-5912
Study Coordinator: Dr. Marianna Walker
Telephone #: 252-744-6093

Researchers at East Carolina University (ECU) study issues related to society, health problems, environmental problems, behavior problems and the human condition. To do this, we need the help of volunteers who are willing to take part in research.

Why am I being invited to take part in this research?
The purpose of this study is to understand the correlation between creativity engagement through dance and visual art and the development of language and literacy in first and second grade students. This study aims to gain understanding of the effect of the constructivist approach on language and literacy by utilizing the fine arts. The fine arts allow for a more natural and creative way of learning allowing for reflection in comparison to the commonly utilized systematic techniques. This data will allow for a greater understanding of how students learn and develop language and literacy skills.

If you volunteer to take part in this research, you will be one of about nine people to do so.

Describe what the parent will receive following participation in the study.

The parent of the participant will receive a $25 gift certificate and your child's language and literacy test results. The child will receive a book of his/her choosing.

Are there reasons I should not take part in this research?
No, there are no more than minimal risks associated with this research.

What other choices do I have if I do not take part in this research?

You can choose not to participate.

Where is the research going to take place and how long will it last?
The research will be conducted at Walton Academy. The study will last over the span four weeks and the participants will participate in about 30 minutes of pre-experimental testing and 90 minutes for the research activity.

What will I be asked to do?
You will be asked to do the following:

Visit 1: During the first meeting with your child, early literacy skills will be tested. The Pearson's Peabody Picture Vocabulary Test, Pre-Ed's Test of Written Spelling and Pearson's, and Woodcock Reading Mastery Test will be utilized in order to gain baseline data.

Visit 2: During the second meeting with your child, your child will participate in a reading activity. The children will be read a book and ask to reflect upon themes throughout the book. A pre and post-activity pertaining to bravery will be conducted during visit two. A group discussion about the activity will also be held and recorded.

Visit 3: During the third meeting with your child, your child will participate in a dance activity. The children will be shown a dance on video and then will participate in an improvisational dance exercise. Pre and post-activities will be conducted pertaining to strength. The participants will write and reflect upon this activity. A group discussion will occur following the activity and will be recorded.

Visit 4: During the fourth meeting with your child, the participants will participate in a visual art activity. The children will view and create their own work and reflect upon the theme of happiness shown in the artwork. A group discussion about the activity will follow and will be recorded.

You will also be asked to complete a brief questionnaire regarding your child's initial creativity interests and involvement.

What might I experience if I take part in the research?
We don't know of any risks (the chance of harm) associated with this research. Any risks that may occur with this research are no more than what you would experience in everyday life. We don't know if you will benefit from taking part in this study. There may not be any personal benefit to you but the information gained by doing this research may help others in the future.

Will I be paid for taking part in this research?
We will not be able to pay you for the time you volunteer while being in this study. However, a $25 gift card may be provided to you for allowing your child to participate in the research.

Will it cost me to take part in this research?
It will not cost you any money to be part of the research.

Who will know that I took part in this research and learn personal information about me?
ECU and the people and organizations listed below may know that you took part in this research and may see information about you that is normally kept private. With your permission, these people may use your private information to do this research:

- Any agency of the federal, state, or local government that regulates human research. This includes the Department of Health and Human Services (DHHS), the North Carolina Department of Health, and the Office for Human Research Protections.
- The University & Medical Center Institutional Review Board (UMCIRB) and its staff have responsibility for overseeing your welfare during this research and may need to see research records that identify you.

How will you keep the information you collect about me secure? How long will you keep it?
Participation in this research entails no more than minimal risk to you personally. Your identity will be protected. Your responses to surveys and your child's academic information will remain confidential. The information used for research purposes will be coded and your child's name will be removed from that information. Any identifying information will be kept in a secure location on the campus of East Carolina University and destroyed when the study reaches its conclusion.

What if I decide I don't want to continue in this research?
You can stop at any time after it has already started. There will be no consequences if you stop and you will not be criticized. You will not lose any benefits that you normally receive.

Who should I contact if I have questions?
The people conducting this study will be able to answer any questions concerning this research, now or in the future. You may contact the Principal Investigator at 252-955-2014 (weekdays, between 9:00 am and 5:00 pm)
If you have questions about your rights as someone taking part in research, you may call the Office of Research Integrity & Compliance (ORIC) at phone number 252-744-2914 (days, 8:00 am-5:00 pm). If you would like to report a complaint or concern about this research study, you may call the Director of the ORIC, at 252-744-1971.

I have decided I want to take part in this research. What should I do now?
The person obtaining informed consent will ask you to read the following and if you agree, you should sign this form:

- I have read (or had read to me) all of the above information.
- I have had an opportunity to ask questions about things in this research I did not understand and have received satisfactory answers.
- I know that I can stop taking part in this study at any time.
- By signing this informed consent form, I am not giving up any of my rights.
- I have been given a copy of this consent document, and it is mine to keep.

_____

Participant's Name (PRINT) **Signature** **Date**

Person Obtaining Informed Consent: I have conducted the initial informed consent process. I have orally reviewed the contents of the consent document with the person who has signed above, and answered all of the person's questions about the research.

Person Obtaining Consent (PRINT)	**Signature**	**Date**

Faculty Research Supervisor (PRINT)	**Signature**	**Date**

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board
4N-64 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** ·
www.ecu.edu/ORIC/irb

Notification of Initial Approval: Expedited

From: Social/Behavioral IRB
To: Lauren Culver
CC: Marianna Walker
Date: 3/9/2018
Re: UMCIRB 17-002887
The Effects Of Fine Arts On Language And Literacy Skills In Children

I am pleased to inform you that your Expedited Application was approved. Approval of the study and any consent form(s) is for the period of 3/8/2018 to 3/7/2019. The research study is eligible for review under expedited category #6, 7. The Chairperson (or designee) deemed this study no more than minimal risk.

Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a continuing review/closure application to the UMCIRB prior to the date of study expiration. The Investigator must adhere to all reporting requirements for this study.

Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).

The approval includes the following items:

Name	Description
Background and Methods	Study Protocol or Grant Application
Child Verbal Assent Script	Consent Forms
Interview Questions	Interview/Focus Group Scripts/Questions
Parent Permission for Child	Consent Forms
Parent Survey	Surveys and Questionnaires
Research Flyer	Recruitment Documents/Scripts