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The Impact of Creating Visual Arts on Reading Comprehension in Third Grade Students

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An Action Research Report
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Abstract

The intent of this action research study was to determine how integrating visual arts activities into reading lessons could impact students' literacy skills. The study took place in a suburban elementary school and included both male and female students, aged eight to nine years old. The data was collected using comprehension tests, student/teacher reflections, and information gathered from the students' artwork. Student literacy skills did show gains as a result of this intervention. The study also exhibited ways in which visual art teachers can be valuable participants in the push to integrate literature into other content areas. Creating visual artwork after reading was helpful in terms of comprehension for many students. Students also showed an increased sense of engagement and enjoyment for reading when the artwork was involved. With the implementation of the methods described in this study, educators can help students gain comprehension and retention skills.

Keywords: visual art, literacy, comprehension, art integration, comprehension strategies

Art is often described as a universal language, its strength lying in its ability to speak to all people and cultures. However, the potential art has to support language, particularly reading and writing, all too often goes unrealized in education. Our school districts stress the need for proficiency in communicating through reading and writing, however 75% of literate high school graduates do not have the literacy skills college demands (Camnitzer, 2009). One of the contributing factors in this issue is that many students struggle in making the connection between images and text, which is a connection that can be powerful in the early development of reading and comprehension skills (Jester, 2003). The problem continues, as more and more schools dissolve their art programs to incorporate more technology. This realization prompted me to examine the connection between comprehension and visual art as well as effective ways in which to integrate visual art into literacy instruction.

The problem I selected to investigate is twofold: literacy skills are underdeveloped in many students, and visual art is an underutilized resource. I began by determining if this was in fact a problem, the scope of said problem, and whom it affects. Through the review of relevant literature, I began to discover more about the nature of the problem and the consequences it holds for students. Before I began the research process, I first needed to put aside my own preconceived ideas, thoughts, and feelings about the research question and focus on approaching the subject objectively. I read current literature regarding the need for arts education, the importance of literacy skills, and how the two can be used to support each other. The literature I read and reviewed regarding literature and visual arts overwhelmingly supported the concept of using visual art to support the transfer of knowledge, express understanding, and retain knowledge. The

process of drawing and creating artworks and relevant artifacts allows students the power and ability to communicate concepts they may not be able to articulate through speech or writing, as well as retain and integrate knowledge (Fung, 2013).

Catterall (2002) presents a neuro-function based argument which supports learning through the arts, specifically in the area of transferring learning from the arts to other areas of curriculum. Engaging students in discussion about images, details, artist's intent, and personal thoughts about an image can help students make connections to details in literature, author's intent, and how to support opinions or claims with evidence (Caterall, 2002). The research that has been completed on the benefits of art education support the notion of transfer, in which learning in one context supports the learning in a different context (Ruppert, 2006). After identifying the problem, I posed the question: in what ways will reading comprehension be affected by the process of creating visual artwork after reading?

I conducted my research with three different sections of third grade students, ages 8 to 9, who are transitioning from "learning to read" to "reading to learn". The research took place in the art room of a suburban school during regular class hours. I had 42 male students and 36 female students, of which students ranged greatly in reading, comprehension, and artistic ability. All students were fluent in English and were similar in demographics, including race, socioeconomic status and education.

Review of Literature

Complete literacy includes the ability to understand, respond to, and talk about visual images (NAEA, 2015). Teaching students to describe, interpret and analyze visuals also enhances students' powers of verbal expression. Many fail to make the connection between images and text, which is a connection that can be helpful for visual learners who are struggling to read and write at grade level. Most strategies that are implemented to help struggling students are verbal, which tend to be largely unsuccessful considering 15% of students are verbally weak (Jester, 2003). Educational institutions stress the importance of effectively communicating through reading and writing, however the potential to communicate through artworks and images is often overlooked (Camnitzer, 2009). Much of the literature reviewed supported the idea that learning and participating in the arts supports a host of other skills, including reading comprehension.

Artistic experiences create capabilities, connections, interests, and motivations that often manifest in other areas (Catterall, 2002). Studies show that there is a relationship shown between drawing, visualization, artistic reasoning and visual arts instruction and organizational skills in writing, interpreting texts, reasoning and reading readiness. Similar studies have also shown that involvement and instruction in the visual arts positively impacts the willingness of students to use their skills, interest in learning activities, and engagement in tasks (Catterall, 2002).

Incorporating the arts into the classroom can help students make connections to the common core standards through enhancing creativity, increasing self confidence and promoting collaboration along with offering alternative ways to teach concepts and assess learning (Fung, 2013). One can incorporate the arts by introducing art vocabulary, which allows students to connect spoken words with visual models. Teachers can also

incorporate art by encouraging students to clarify their thoughts, ideas and feelings by drawing and labeling.

Students can integrate and retain knowledge when they are given the opportunity to create relevant artifacts. The practice of allowing students to illustrate a passage from a story, or create a cartoon strip demonstrating a main idea allows students to store that information in two separate areas of the brain, which increases the chances of retention (Fung, 2013). By using art to respond to a text, students can often provide greater detail and description than they might provide in an oral or written response. Sketch to stretch is an effective visual arts response strategy (Duke, Pearson, 2001). Sketch to stretch is implemented by asking students to sketch an event or idea from a story that has just been read. Students are given one minute to sketch and then share their sketches with a partner or small group to discuss the sketch's content and explain why they decided to sketch that particular part of the text. Upon completion of the activity, students may revise their sketches in response to the discussion that may have led to a deeper understanding (Duke, Pearson, 2001).

When studying a piece of art, one must be able to analyze the individual parts that create the whole. Additionally, the ability to synthesize these parts into a whole work is critical to create meaning for each individual. Common Core Reading Standards have identified the need for this critical skill, and arts Integration may be a pathway to providing those learning opportunities (Riley, 2012).

Take for example a student we will call "J.N". J.N. is a student who struggled to comprehend texts that were two grade levels below her own. Her decoding and fluency were adequate, but when she tried to retell a story or answer a comprehension question, it

was clear that she was not able to locate the main idea of the text she had just read. She would often mention details sporadically with no connection or clear understanding of what the text was about. J.N.'s tutor then decided to use drawing after reading as a comprehension strategy. After each chapter in the book, J.N. was asked to choose a scene from the chapter. The concept was to create a thought process that would lead J.N. to choose the main idea. The tutor used modeling and scaffolded self-talk to promote this kind of thinking. Next, J.N. was asked to draw the scene in as much detail as possible. As she drew, she explained her choices to her tutor and how they made sense based on her interpretation of the story. Finally J.N. wrote a summary based on her drawing. Within a few weeks, J.N. acquired a much greater ability to locate the main idea of a text and identify supporting details using the scaffold and metaphors of the visual art decision-making process. This strategy was extremely useful and J.N. ended up raising her comprehension abilities to grade level expectations by the end of a five-week session (Trainen, 2011).

Methodology

The process of implementing visual art to support literacy began with a discussion between my students and myself. I began by explaining the project to my students and answering any questions they had. I explained that what they were about to participate in would not be graded as to ease some anxieties the students were feeling. I also informed them that their answers were only to help me in my research, but they should still answer to the best of their ability to make my research as accurate as possible.

The time span consisted of a five week observational and data collection period. The primary methods of data collection consisted of existing comprehension scores, comprehension tests, artwork which was scored using a rubric (see appendix A) and video reflections from students after the process. The students chosen were members of my third grade art class. I had three sections of about 25 students each, which provided me with a large pool of diverse participants from whom to gather data.

I completed some preliminary research on my own prior to involving my students. I reviewed the students' comprehension scores which are assigned after assessments which take place during the beginning of the school year. The purpose and importance of understanding this information was so I could provide a baseline for my research as well as determine individual improvements in conjunction with improvements as a whole. In addition to the baseline comprehension scores, I observed recorded student reactions to the introduction of my research study. Students who reacted positively had generally higher comprehension scores, while students who reacted negatively had generally lower comprehension scores.

The first intervention began with students reading a poem titled "The Butterfly" (see appendix B). One section of third grade students was asked to complete an artwork based on the poem after reading. I told students they should create their artwork based on what they read, however I did not give much instruction on how to complete the artwork as I did not want to sway the results. The artwork was diverse and varied in complexity, depending on the students' view of the poem. After completing the artwork, students took a comprehension test to determine how much information from the poem they retained and comprehended. The next section of third grade students received the same poem and the same test, however they did not create the artwork. The purpose of eliminating the artwork was to see if, and to what degree, the artwork affected student comprehension abilities.

The second intervention included the same process, however with a different text and a different group of students creating the artwork. The text used in this intervention was an informational, non-fiction genre titled "The Bee" (see appendix C). Students who did not create the artwork during the first intervention were given the chance to complete the artwork in the second intervention. This type of data collection method allowed me to compare individual student data as well as collective data in two different scenarios. I repeated this cycle of data collection so each section of third grade students received the intervention, either with or without the artwork, two times, with two different texts and two different tests. Whether or not the students completed the artwork was dependent on where that group of students fit in the cycle.

The third piece of data I collected was the student artwork itself. I analyzed the artwork to determine to what degree students included information and details from the

text. I utilized a rubric for this purpose (see appendix A). The goal of assessing the

artwork was not as much in aesthetics as it was literal and content based. I wanted to see

how many details from the text the student included in their drawings, how many of those

details were accurate, and what types of details they included, for instance, visual details

or allegorical details.

The study concluded with video reflection from the students. I was interested in

why the students chose to include certain details from the text and exclude others. I

wanted to hear their thoughts, but also be able to see the artwork about which they were

speaking. I selected a variety of students at random and asked if I could videotape their

responses to some questions. I gave them their artwork so they could make references

during the short video reflection. I asked them the following questions:

    1. What is happening in your drawing?

    2. Why did you choose that part of the text to illustrate?

    3. How does your drawing connect to the text?

Gaining even a small amount of insight into their work, given from the students'

perspective, allowed me to better synthesize the data and begin formulating a summary of

the data.

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Analysis of Data

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Upon completion of my study, I was able to analyze the data I had gathered over

the course of the five weeks. The data sources consisted of students' current reading

levels, comprehension tests, artwork, and video reflections from students.

The initial data tool consisted of the students' current reading levels, which I gathered in

order to establish a baseline and determine growth for individual students. The reading

levels were gathered from assessment scores, which are given to the students early in

each school year. I utilized said assessment scores to determine individual student

reading and comprehension skills. The graphs in figure 1 show which percentage of

students read in the following three categories: at, above, or below grade level.
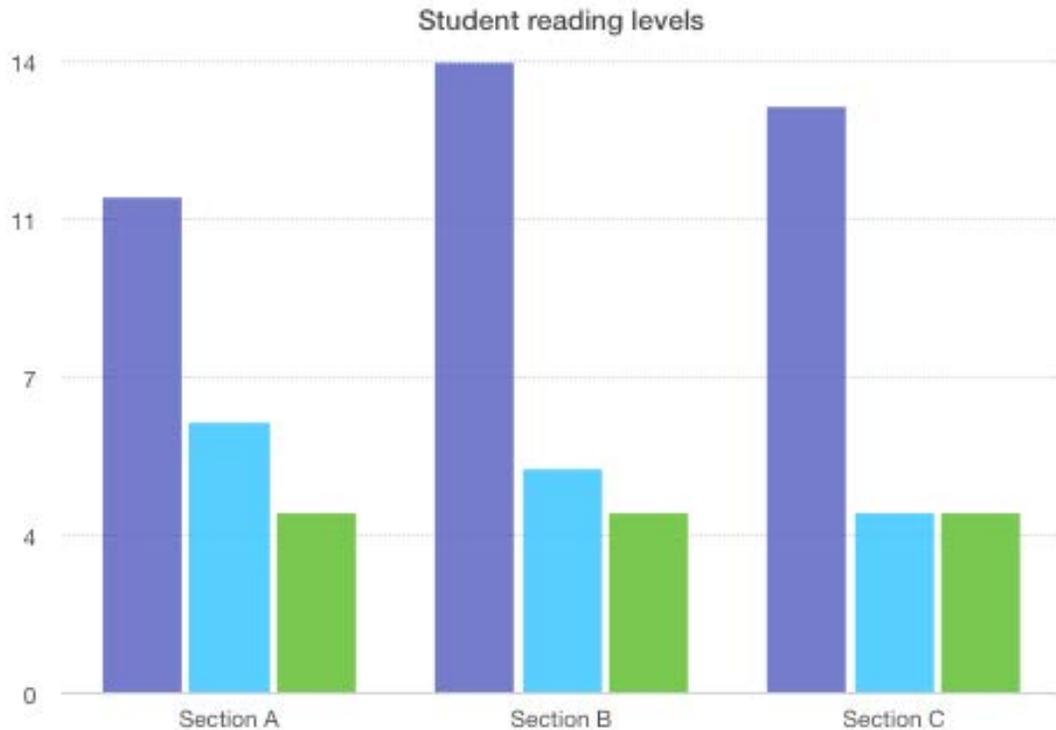
Student reading levels

DESCRIPTION	SECTION A	SECTION B	SECTION C
At	11	14	13
Above	6	5	4
Below	4	4	4

Figure 1. Student Reading Levels

The second data tool consisted of scores from student comprehension tests. Students read two texts, one titled "The Butterfly" (see appendix B) and another titled "The Bee" (see appendix C). Students in section A and C completed an artwork based on the text "The Butterfly" while students in section B completed an artwork based on the text "The Bee." The students first read the text, created the artwork, then completed a comprehension test. The next time they were in class, the students read the text, but did not complete an artwork. Rather, they took the comprehension test immediately after reading the text.

I was then able to compare the scores from the two comprehension tests for individual students to determine if completing the artwork had any impact on students' scores. I was also able to compare the data in a broader manner to determine what impact, if any, creating the artwork had on the class average. Lastly, I was able to compare the scores of students who took the test after creating an artwork with the scores of other students who took the same test, but did not create an artwork. This data collection method allowed me to compare scores in multiple ways, which helped to strengthen the meaning of my data. Figure 2 demonstrates the increased comprehension scores when the student was able to create a visual artwork after reading as compared to the scores when the student was not able to create a visual artwork after reading. The following scores are based on class averages.
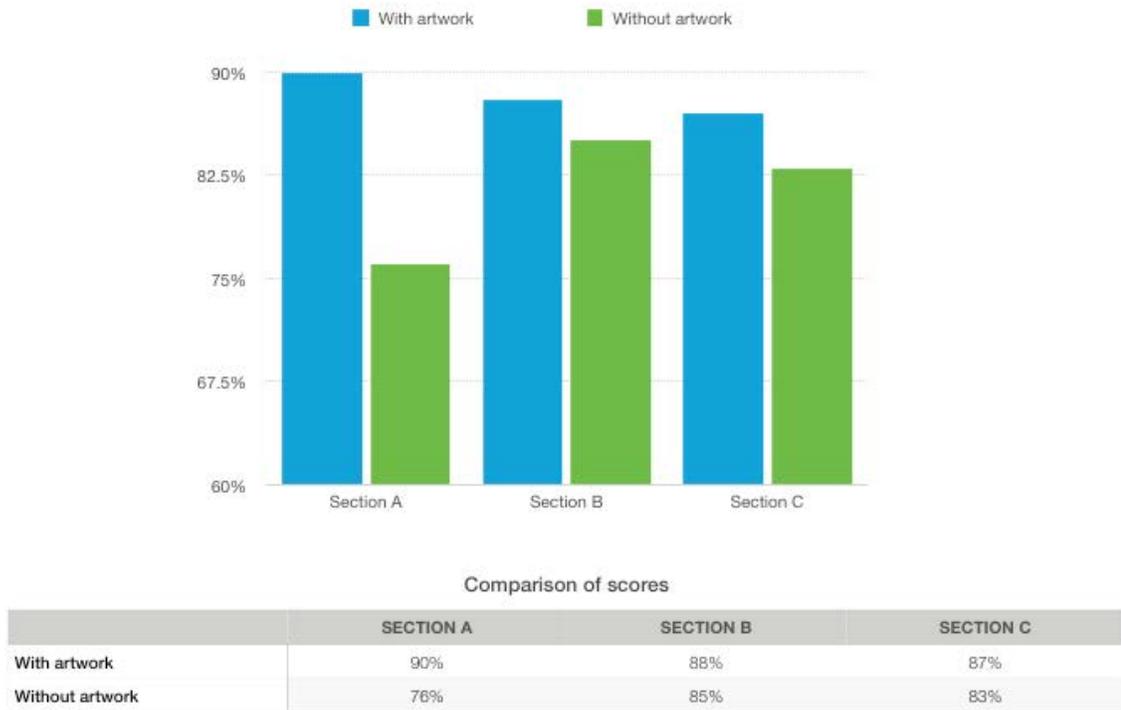
Comparison of scores			
	SECTION A	SECTION B	SECTION C
With artwork	90%	88%	87%
Without artwork	76%	85%	83%

Figure 2. Comparison of Average Scores

The third piece of data I collected consisted of the students' artwork that was created after reading. Evaluating student artwork helped to inform me of what the student saw as valuable from the text, as well as how well they were able to identify the main idea and retain information that was read. The artwork was evaluated on a scale of proficient, emerging, and developing. I was looking for three components while evaluating the artwork: 1. Number of text elements included in the artwork, such as characters and setting. 2. Illustration of the main idea and 3. Integration of details from the text into the artwork.

The results of analyzing the students' artwork indicated that the students who scored "proficient" in two or more categories also scored higher on the comprehension

tests. Figure 3 demonstrates the manner in which comprehension score and artwork score are related. The students who scored higher on the comprehension tests also scored higher on the artwork.
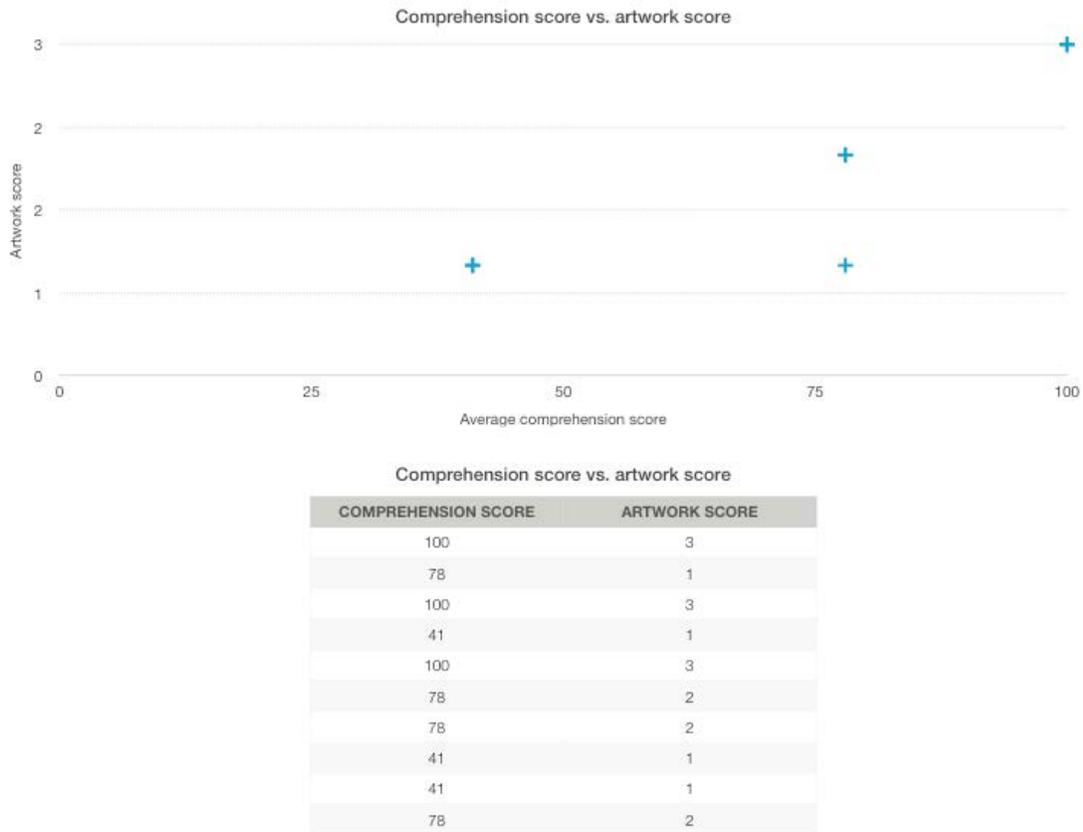

Comprehension score vs. artwork score

COMPREHENSION SCORE	ARTWORK SCORE
100	3
78	1
100	3
41	1
100	3
78	2
78	2
41	1
41	1
78	2

Figure 3. Artwork Scores vs. Comprehension Scores

The final set of data I collected included student reflections. I asked students three main questions: 1. What is happening in your drawing? 2. Why did you choose that part of the text to illustrate? And 3. How does your drawing connect to the text? I videotaped the student reflections as to enable me to capture the visual nature of their artwork, as well as to allow the student to make connections and references to the artwork while verbally reflecting.

After viewing the student reflections, I noted that students were able to reference the text they had read two weeks prior and relate that information back to their drawing to validate the choices they made in their artwork. This set of data told me that students were able to retain information when the student had a visual representation of what was read. I also learned that students had a sense of enthusiasm about the text when they were describing their artwork, which informed me that students experienced some excitement when they were given the opportunity to present their knowledge visually. Every student I interviewed was able to explain the main idea and central theme of their artwork, why they chose that particular idea to illustrate, and how it relates to the text. Students were able to do this in detail and with accurate references to the text they had read.

I observed and recorded students' enthusiasm and engagement before artwork was involved to after artwork was involved. I measured qualities like body language, facial expression and verbal comments (see appendix D). Figure 4 demonstrates the percentage of students who expressed excitement about reading when artwork was involved, students who remained neutral, and students whose excitement declined.
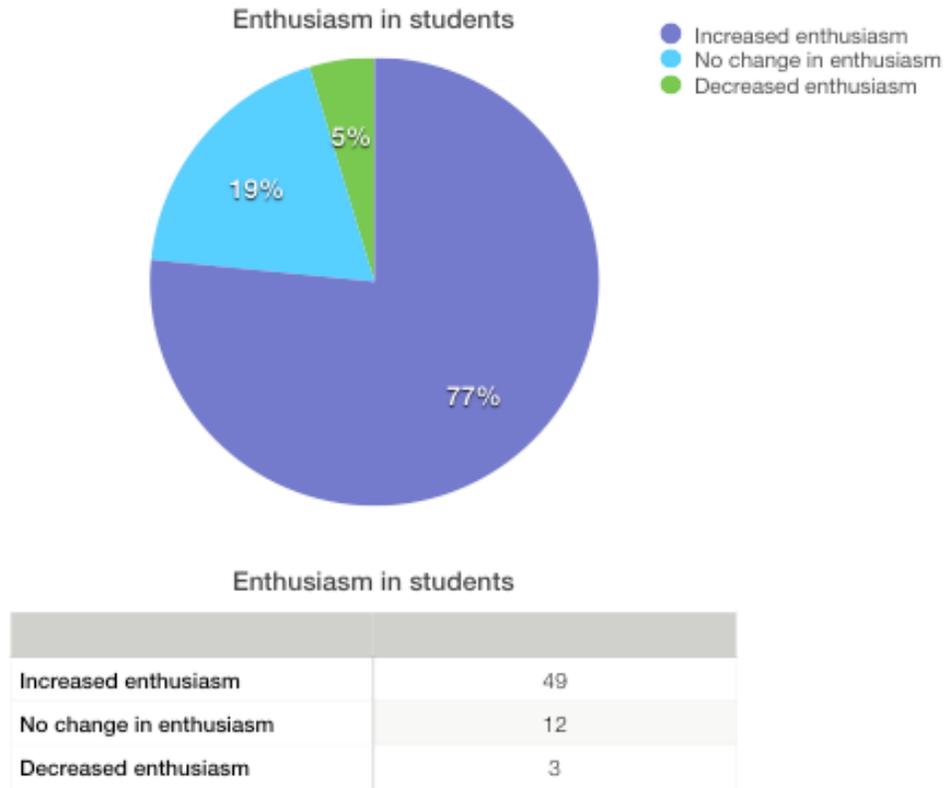
Enthusiasm in students

- Increased enthusiasm
- No change in enthusiasm
- Decreased enthusiasm

5%

19%

77%

Enthusiasm in students

Increased enthusiasm	49
No change in enthusiasm	12
Decreased enthusiasm	3

Figure 4. Student Enthusiasm

Action Plan

This action research study focused on how creating visual artwork could assist students in improving their reading comprehension. The school district in which I work is beginning to shed a special focus on reading, comprehension, and literacy skills. A new program was launched this year called "Literacy Collaborative" in which educators work to redefine their practice of literacy education. Literacy collaborative is student-centered and provides many opportunities for authentic reading and writing while also focusing on the elements of phonics, word study, and language development (Fountas, Pinnel 2009).

Upon researching our new, school-wide literacy reform, I began to wonder what role I could play as an art teacher in strengthening our students' literacy skills. After completing some research, I saw an opportunity to incorporate visual arts into reading comprehension strategies.

By analyzing the data results, I recognized a trend of increased student reading comprehension scores when students were given the opportunity to create visual artwork after reading a text that is congruent with students' reading level. I selected third grade reading materials for use in this study. The class average was higher every time the students were allowed to express their knowledge visually prior to taking the test, however not every student achieved a higher score through the creation of artwork. I began to delve into why that may be, and observed that students who did worse on the tests after creating artwork were also students who were currently below grade level in terms of reading. It could be deduced that the visual artwork caused a time lapse between reading and taking the test that caused that particular student population to forget some of what was read. I also observed that creating the artwork made students stronger in areas of understanding content and recognizing main idea, however it did not assist students in the area of vocabulary. I also acknowledge that creating the artwork had no impact on some students' scores. Upon making said observation, I went back to my baseline and determined that most of the students whose scores were not affected were reading above grade level. Based on my data, I can deduce that creating a visual artwork after reading a text helped most students who are reading at grade level achieve a better comprehension score.

The practice of creating a visual artwork was clearly helpful for many students, and could potentially be helpful for more students with some modifications. The qualitative data noted an increased sense of engagement and excitement for reading when artwork was involved versus when the artwork was not involved. Students expressed enjoyment when given the opportunity to display their knowledge and understanding in a different way while using different materials. During the art-making process, I allowed students to create what they remembered from the text and to draw in the manner they visualized while reading. Many students included details such as setting, characters, and colors that were mentioned. Some took it upon themselves to label the elements in their artwork, while others compared and contrasted characters and themes based on similarities and differences.

This action research has impacted my teaching practice through the discovery of how visual art can support core curriculum, as well as remain relevant in a time when many schools begin to dissolve their art programs to implement more technology and engineering programs. Visual art is often under used, however the potential it carries to help students understand other concepts is substantial (Catterall, 2009). I will continue to implement the methods used in this action research study throughout my teaching practice, which will both improve student comprehension abilities as well as establish a greater sense of appreciation for the arts.

The previous conclusions have been drawn through careful examination of the data collected during the five-week investigation regarding the impact of creating visual arts on reading comprehension skills in third grade students. With the implementation of

the methods described in this action research study, educators can help students gain comprehension and retention skills.

Through careful examination and analysis of the previous data, it is evident to me that the comprehension scores proved to be the most helpful piece of data in terms of showing trends and drawing conclusions. I was able to compare the data from comprehension scores in multiple different ways, such as deducing class averages, making comparisons for individual students, as well as between different sections of students. I was able to draw some positive conclusions for my students based on the data produced from this study. However, I believe further research needs to be completed in order to fully understand the best practices and methods for incorporating visual art into core curriculum, particularly reading comprehension. I do believe this research study has begun to help initiate a new vein of thinking about visual art and its capacities.

References

Camnitzer, L. (2009). Art and literacy. *E-flux journal,3.* Retrieved from

http://www.scribd.com/doc/49797291/Art-and-Literacy-by-Luis-Camnitzer

Catterall, J. S. (2002). The arts and the transfer of learning. *Critical links.* Retrieved from

http://209.59.135.52/resources/toolkits/criticallinks/cl_overview.pdf

Duke, Pearson. (2001) Reading Comprehension: Strategies That Work. *ETA hand2mind.*

Retrieved from https://www.hand2mind.com/pdf/miriam/ch2_clr3_6.pdf

Fountas & Pinnell (2009). *The continuum of literacy learning*. Portsmouth, NH:

Heinemann educational books

Fung, A. (2013). What you can do when the arts are missing from your elementary

school? Retrieved from https://www.teachingchannel.org/blog/2013/05/17/arts-

integration/

Jester, J. (2003). Of paint and poetry: strengthening literacy through art. *The*

Quarterly, *25*(4*).* Retrieved from

http://www.nwp.org/cs/public/print/resource/958

National Art Education Association. (2015). Why art education. *National art education*

association. Retrieved from http://www.arteducators.org/advocacy/why-art-

education

Ruppert, S.S. (2006). How the arts benefit student achievement. *Critical Evidence*.

Retrieved from http://www.nasaa-arts.org

Riley**,** S. (2012). Use Arts Integration to Enhance Common Core. *Edutopia*. Retrieved

from http://www.edutopia.org/blog/core-practices-arts-integration-susan-riley

Trainin, G. (2011). Visual Art and Reading Comprehension. *Guy's Edu Blog*. Retrieved

from http://guytrainin.blogspot.com/2011/08/visual-art-and-reading-

comprehension.html

Appendix A

Artwork Evaluation Rubric
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1. Number of story elements (setting, characters, etc.) included in the artwork:

Proficient	*Emerging*	*Developing*
4+	2-3	0-1

2. Illustration of the Main Idea:

Proficient	*Emerging*	*Developing*
Student artwork clearly captures The main idea of the text	Student artwork loosely relates to the main idea of the text	Student artwork does not relate to the main idea of the text.

3. Integration of details from the text into the artwork:

Proficient	*Emerging*	*Developing*
Student artwork includes many details that relate directly back to the text	Student artwork includes some details that relate loosely back to the text	Student artwork includes little to no details that relate to text

Appendix B

The Butterfly

Over grassy meadows
Beneath the clear blue sky
Through golden rays of sunlight
Drifts the lovely butterfly

She sways her slender body
As gentle as a breeze
Cheerful in her freedom flight
With pure and simple ease

Her beauty shimmers brightly
With colors all aglow
Feelings of peacefulness
Are only hers to know

Once a fuzzy creature
Without beauty and grace
She now flies so elegant
In all of time and space

Lauren Pierce ©

Appendix C

THE BEE

Bees live in a house that is called a hive. There are three kinds of bees: workers, drones, and queens. Only one queen bee can live in each hive. If she is lost or dead, the other bees will stop their work.

Bees are very wise and busy little creatures. They all join together to build cells of wax for their honey. Each bee takes its proper place and does its own work. Some go out and gather honey from the flowers; others stay at home and work inside the hive.

The cells which they build are all of one shape and size, and no room is left between them. The cells are not round. They have six sides.

Did you ever look into a glass hive to see the bees while at work? It is pleasant to see how busy they always are.

But the drones do not work. Before winter comes, all the drones are driven from the hive so that they don't eat the honey which they did not gather.

It is not safe for children to handle bees. Bees have a painful sting that they use in their defense.

Appendix D

Enthusiasm Rubric
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Increased Enthusiasm	Student body language, verbal comments, and facial expression show stronger interest in reading when artwork is involved	49 Students
No Change in Enthusiasm	Student body language, verbal comments, and facial expression show no change in interest in reading when artwork is involved.	12 Students
Decreased Enthusiasm	Student body language, verbal comments, and facial expression show decreased interest in reading when artwork is involved.	3 Students