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Stimulating Creativity, Originality, & Divergent Thinking

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Abstract

This thesis explores research relating to the growth and promotion of creative uniqueness and original ideation in the visual arts classroom. The research reveals a number of strategies that teachers can put into practice to increase students' creativity. These include: teaching skills in brainstorming and having original ideas through divergent thinking; using physical movement as a method of stimulating creative ideas; teaching metacognition of the creative thinking process; allowing freedom of exploration and experimentation with materials and concepts to promote discovery and trial-and-error; using copying- and imitation-based lessons as tools to teach basic skills; and others. The application materials include a sample visual arts unit which applies the concepts discussed in the research.

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CHAPTER I: INTRODUCTION

How many different ways are there to represent one landscape? Think of a picturesque mountain scene and all of the varying angles, vantage points, and perspectives it could be represented from; the difference in time of day and use of light and shadow; how each of the artistic mediums (drawing, painting, photography, sculpture, printmaking, filmmaking, and others) can represent that same mountain in so many different ways; how the aesthetics can be changed by the techniques used, color choices, and use of material. The possibilities in different representations seem endless. This mountain landscape concept illustrates the number of decisions an artist has to make when working creatively. It takes creativity to think of new and unique ideas; it requires divergent thinking, the process of generating creative ideas and multiple solutions to a problem, to come up with a variety and a breadth of concepts and the ways to apply them; and it also takes technical skills to know how to represent those ideas realistically, to convey the intended concepts using materials in different ways, and to have the background knowledge to decide which techniques, tools, and media to use.

Visual arts education has two acknowledged purposes- teaching creative thinking and teaching technical skills. Students should learn to express themselves, how to think creatively, how to use different materials, how to solve problems that do not always have a right or wrong answer, to create something unique that expresses their personal thoughts and point of view. The ability to be creative is recognized as a desired skill in today's workforce; according to a 2010 study by IBM, creativity was listed as the top desired skill by more than 1,500 Chief Executive Officers, and not only in traditionally "creative" jobs, but in 33 different industries and in 60 countries (Tomasco, 2010). It follows that if creativity is a desired skill for adults in the

workforce, children in our schools should be presented with opportunities to utilize and grow their creative thinking skills in order to be prepared to one day join that workforce.

However, Hetland & Winner (2001) warn against placing too much value on the creative arts field's ability to bolster academic achievement in other subject areas. Instead, they focus on the value of creativity itself in a well-rounded education, stating that the "arts are a fundamentally important part of culture, and an education without them is an impoverished education leading to an impoverished society. Studying the arts should not have to be justified in terms of anything else. The arts are as important as the sciences: they are time-honored ways of learning, knowing, and expressing" (p. 5).

There is a reason why "create" is the top tier higher-order thinking skill in the revised Bloom's taxonomy (Anderson, Krathwohl, Airasian, Cruikshank, Mayer, Pintrich, Raths, & Wittrock, 2001). The active process of synthesizing what is known to create a new product is a valuable method of learning and retaining information, as well as being a valuable method of learning in the visual arts domain, where creativity is considered to be one of the main goals of the educational experience. Creativity is accepted as something children should learn through their education. Students are oftentimes not being given opportunities to utilize and practice thinking creatively in any other subjects throughout the school systems aside from the visual arts classrooms. If these skills are being considered to be so important to future employers, then it falls to art educators to begin building those skills in the children who come through their classes.

Many of the research studies presented here concentrate on thinking. Thinking is the foundation of originality; it is crucial to look closely at student thinking in order to enhance their

learning, with the goal that creative output, creative thinking, and creative potential will flourish as a result. Frequently the focus in the art classroom lies more on the output and less on the thinking behind it, but if teachers want to enhance creativity, they should consider ways that thinking can influence those outputs.

Unfortunately, oftentimes in elementary level visual arts classes, students are taught to copy an example and to do each step of a complex project exactly as the teacher tells them, without ever having to use those problem-solving creative thinking skills they are supposed to be building in the art classroom. Dulama, Iovu, and Sbinca (2013), among other researchers and teachers in the professional field, point out that generally in visual arts classes children tend to deliver similar projects. Thinking back to the idea of creating an image of a landscape: in this type of visual art lesson, students are shown one example of a landscape and are told exactly how to make it look just like the teacher's. The paints are already mixed for them, the paper is already cut to the correct size, and there is not much expected of students other than to follow the directions and to make an imitation of the artwork they are shown. In this scenario, the teacher instructs students to use a material in one specific way, to create a product that pleases the teacher, and the student does what he or she thinks will get them a good grade. They learn a narrow application of one art skill without getting an opportunity to apply that skill in other manners. Are students being taught true creative thinking skills through copying? Is there enough quality practice and teaching in creative thinking skills, and is this teaching starting at a young age?

Hetland & Winner (2001) argue for the intrinsic value of visual arts education, contending that "the arts must be justified in terms of what the arts can teach that no other

subject can teach." (p. 3), which, among other things, includes the technical skills and creative thinking abilities that visual art education focuses on. Is just making things, just learning technical skills, enough? Shouldn't students be learning how to come up with something unique? Art is more than technical skills; it relies upon concepts and ideas and the way that they are utilized and applied. So how can art teachers foster creative thinking skills and divergent ideas in their students while also growing their technical skill and material mastery? What are some techniques that teachers can use to allow their students to truly exercise their creative potential in the elementary, middle, and secondary arts classrooms, rather than scratching the surface of one or two facets of the creative process?

Teachers need strategies that are practical and easy to implement, that don't take too much time, but are beneficial to the creative process in their classrooms. Many methods can be tried and found to be ineffective in eliciting unique ideas from students. One of the driving factors behind this literature review is the search for feasible, useful solutions to implement that push students past basic creative skills and into more advanced territory, where true learning in thinking creatively can take place.

This paper attempts to answer the question: how can visual art teachers foster and grow creativity and original responses in their students, and what are some effective strategies to enhance creative thinking and artistic growth in children?

CHAPTER II: LITERATURE REVIEW

In order to locate relevant studies related to the topic of creativity stimulation, research for this thesis was pulled from a wide variety of years, countries, and age levels and was primarily extracted from the EBSCO database ERIC. Keywords for online searching included words and phrases such as: creative experimentation, creative freedom, visual art and copying, visual art and originality, divergent thinking, creative thinking, creative problem solving, creativity and movement, and visual art education theory.

Teaching Creativity

The established fundamental goal of visual arts education is to teach creativity to students. There is a misconception that creativity and artistic talents are inherent, not skills that can be taught and learned, but things that a person is born with and has a natural predisposition toward.

However, research shows that the opposite is true and that originality can be learned. A research study conducted by Krop (1972) indicates that children who received "originality training" generate more original responses, meaning that if students learn how to be creative, they gain the potential to be creative. Krop asserts that "original thinking is self-reinforced operant behavior" (Krop, p. 510), but that there is a general lack of originality in students. The researcher suggests that this may be a result of teachers repeatedly telling students to think creatively, but only positively reinforcing students who give the "correct" answer. He poses that "creative originality most often goes unrewarded" (Krop, p. 510). His suggestion for teachers is that adults should reinforce all ideas, not just one desired response, and that children should be trained in originality from an early age (Krop, 1972).

Similarly, McClure (2011) is in agreement that creativity is not inherent. Her research suggests that children create their own knowledge of how things fit together, how materials can be used and manipulated, and how things can be represented visually and conceptually, and that they do this by experimenting and interacting with the world. McClure suggests that visual arts classrooms generally do not support this view of art education, and that children should be allowed to take more ownership over their learning in art, as they need to explore in order to understand. In her experience, that is how creativity is learned and grown (McClure, 2011).

Since the 1960s, dozens of researchers have attempted to measure and test creativity in a variety of different ways using "creativity tests" (Zimmerman, 2009). The concept of creativity has been approached and defined in a variety of different ways. The Oxford Dictionary (2017) describes it as "the use of imagination or original ideas to create something; inventiveness". Additionally, according to Kersting (2003), "the traditional psychological definition of creativity includes two parts: originality and functionality" (p. 40), meaning that the creative product should be something that is unique and it is also useful in some way. One of the accepted purposes of visual arts education is to teach creative thinking and behaviors to children. So, according to these definitions, making something both original and unique is what students should learn to do in the art classroom.

Hanson & Herz (2011) agree that the main purpose of visual arts education is to teach creativity, developing and preparing students to become lifelong creative individuals. They define creativity as a "commitment to long-term development of a unique point of view" (p. 3). The researchers pose that the definition should not be limited to just the ability to solve problems, but also problem-posing (Hanson & Herz, 2011 p. 2) and that teachers can and should

rely on a variety of different definitions of creativity and apply them to the lessons that make sense, depending on their goals for a specific unit. Each student may need to access their creativity in different ways, and variety in teaching and learning techniques is the key to allowing individual students to access their creative potential in the visual arts classroom (Hanson & Herz, 2011).

In addition, Hanson and Herz (2011) recommend a "toolbox approach" to teaching creativity, meaning that teachers and students should rely on an array of tools and techniques that can be pulled from in order to make creativity happen in the classroom. They define the teacher's toolbox as a set of concepts and techniques for helping students learn to think and act creatively, or different ways of teaching creative behaviors and approaches to their students. The class' toolbox includes the skills and techniques that are part of the classroom culture, brought about by the lessons taught by the teacher and by individual students, and each individual's toolbox consists of their personal interests and certain activities that motivate them (Hanson & Herz, 2011).

In agreement with both Krop and McClure, Zimmerman (2009) calls for a "model of creativity for the visual arts that is inclusive, rather than exclusive, and views creativity as possessed by all people, not just an elite… This view would infer that all students have ability to be creative" (Zimmerman, p. 393-394). Her research highlights the importance of art teachers using current research and data on creativity in order to help all students, even those who are not considered to have an innate creative drive or talent, to learn to think creatively. In her words, a "new conception of creativity and the visual arts should foster research and development that supports art learning in which novel responses are nurtured and students are encouraged and

rewarded to find and solve problems in unique ways that take into account their creative abilities" (Zimmerman, p. 394).

The question for art teachers is how to promote creativity in real, practical ways in the classroom. In a survey conducted by Fleith (2000), art teachers and experts in the field of art education shared their classroom experiences and their opinions on the best ways to foster creativity in their students. Teachers' suggestions included: more freedom of choice, boosting students' self-confidence, group time, flexible options, students working together, and open-ended, hands-on activities. Experts' suggestions include: discovery learning, student-centered teaching, and a wide variety in activities. Experts also assert that the teacher's attitude and teacher-student relationships are vitally important in promoting a creative environment (Fleith, 2000).

As suggested by the experiment conducted by Heid, Estabrook, & Nostrant (2009), creativity is enhanced when students are motivated, invested, and interested, and one way of inciting that motivation is to allow students choice of subject matter and production methods, both in individual work and group situations. Their qualitative research study examined the use of inquiry-based art instruction and student-led visual arts project development, revolving around an experimental visual arts unit.

Two mixed second and third grade classrooms each with eighteen students or less took part in a set of creativity- and idea-simulating class activities, then, as a group, they came up with their own creative "question" and used collaborative problem-solving to "answer" by creating a group performance involving acting, projections, and music. The introductory activities involving dancing, collaboration, use of geometric shapes, and drawing to music. All aspects of

the final performance were invented by the students collaboratively; however, it is noteworthy that the group chose to use aspects of most of these activities in their final performance, which included projections of students live drawing to music, students dancing and acting, and displays of artworks created in a collaborative manner. This experimental unit goes to show that students will use what is available to them, what they know, and what they are shown by a teacher, and that they have the capability of combining elements of what they are shown in order to create something new (Heid, Estabrook, & Nostrant, 2009). It is important to mention that in this experiment, the teacher functioned as a facilitator, not a traditional instructor. The discussions and activities were student-led, while the teacher guided through directing, assisting, and the asking of relevant questions. This strategy led to the final product being entirely decided, directed, and created by the students, and, in turn, creativity was enhanced while students became more motivated and involved. Researchers assert that the inquiry process (students defining their own question and problem-solving to reach an answer) gave students the freedom they needed to practice true creativity (Heid, Estabrook, & Nostrant, 2009).

Chan & Chan (2007) suggest that drawing may be the best medium for judging the creative abilities of children. Children's creativity and creative thinking skills grow through arts education, and drawing is particularly important in developing creative potential. In this study, children were asked to make a drawing of a house and a drawing of a person running; the drawings were then given scores of 1-3 points for drawing ability and separately for creativity, as judged by experts in the field (Chan & Chan, 2007). Findings suggest that students with more innate drawing abilities (tending to have a high perception of themselves as artistic or talented) are more motivated to acquire even higher-level drawing skills. Actual creativity level is not as

crucial to this as existing ability level and self-perception (Chan & Chan, 2007). This research leads to the question of how this attitude and self-concept can be grown and fostered in all students, not just those who already excel in drawing skills. The researchers assert that drawing is an important component to any visual arts curriculum as it builds creative skills and raises students' confidence in their own artistic abilities (Chan & Chan, 2007).

Divergent Thinking

Divergent thinking, or the process of generating a variety of different ways to solve a problem, is a trait of creativity that has been looked at by a number of researchers. Many of these writings offer practical techniques for enhancing divergent thinking, and thereby creativity, in the visual arts classroom.

A number of studies look at the influence and importance of the visual examples that art teachers show to their students in the teaching of a specific skill or project. According to one such study, if teachers give more options and suggestions to students about ways to make their project different from other students', creativity will be enhanced. Dulama, Alexandru, & Vanea (2010) state that if children are given new information about opportunities or ways to diversify the example they are shown, they will make more original designs. The more options or suggestions given by the teacher for ways to go about the problem, the more diversity is enhanced. Children in this study were told explicitly to avoid copying or imitating peers' work, and researchers suggest that this is another contributing factor to promoting originality (Dulama, Alexandru, & Vanea, 2010).

Dulama, Iovu, & Sbînca (2013) agree that the number and variety of examples shown by teachers has a major effect on the creativity level of artworks made by students. In this study,

twelve second grade children aged eight and nine took part in twelve artmaking activities, each with varying levels of specific directions and numbers of examples shown. Student work was then scored for originality, or difference from peers' work; researchers developed a scale for assessing originality for each artwork, where 1-3 points were given for each criteria with a total possible score of thirty points. The procedure began with a formative experiment in which students were able to choose any subject and draw or paint for fifty minutes. The artworks were then scored for originality, and these scores were used as a comparison point for the experimental lessons to follow.

In the end, the projects given with no restrictions generated more diverse and original products. If students were made aware of the variety of possibilities, such as the variety in types of fish, they tended to create more diverse products. Also, if asked to draw a number of fish, there was more variety than when just drawing one fish, and if students did a drawing where they were able to combine several elements, more variety was created than by just using one element. This study also proposes that verbal suggestions made by teachers have an important impact on students' creativity levels. If the teacher made a recommendation to include something specific, then students made less variety in their products. In addition, if students were explicitly discouraged from copying their peers' work, there was more variety. Overall, this study suggests that teachers' explanations and demonstrations can either help or hinder students' creativity, depending on their variety of examples and instructions (Dulama, Iovu, & Sbînca, 2013).

Another study by Simon & Stokes (2015) confirms the influence of teachers' examples on students' creativity ratings and that "visual examples matter" (p. 37). The researchers assert that creativity is difficult to measure, so they tested instead for variability, or how differently

something is done. The results reveal that young children need specific visual examples, not just verbal instructions, and that one single example can be limiting to creativity. It may lead students to think that the example is the only option or that they are being presented with a set of constraints to be followed. This study, using a test developed by creativity research pioneer E. Paul Torrance to examine Fluency, Flexibility, Elaboration, and Originality, tested the artworks of 90 1st, 3rd, and 5th graders, who were given a piece of white paper with 16 circles on it and a box of crayons. Children were divided into two groups; one group was shown a single visual example (a smiley face inside the circle), and the second group was shown two examples (a fishbowl and a bicycle, both of which had lines extending beyond the provided circles), and both groups were asked to make pictures using the circles on the paper.

The results show that with the same verbal instructions, the more detailed pair of example images prompted more varying response drawings than the single, more simple example, and that showing multiple examples provides an opportunity for elements of each to be combined in a variety of different ways. More than five times as many students in the single example group copied the example as those in the double example group.Visual examples can also give "performance criteria," which the research finds tends to be more effective with older children. Variability scores for 3rd and 5th graders that were categorized as "middle" or "advanced" were consistently 3-5 times higher in the group with the double examples. Variability scores were low for 1st grade children in both example groups. The researchers suggest that this may be due to the fact that younger children need more explicit instructions in both visual and verbal forms, and in order to succeed in following specific instructions they benefit from seeing an incorrect example next to a correct example (Simon & Stokes, 2015).

Haanstra (2010) suggests that another way creativity can be enhanced is by giving children more freedom to frequently choose their own subject matter and by using appropriate materials to match the assignments. He asserts that there is no point to the freedom if students don't have the skills to create what they are being asked to or what they are imagining (an idea that will be discussed further in the following sections). Art teachers are encouraged to provide students with more choice in subject matter, materials, and styles, and to provide students with a variety of educational strategies (Haanstra, 2010).

A study conducted by Reiter-Palmon & Arreola (2015) compared two methods of teaching idea-generation; one was a divergent thinking strategy, where participants were asked to come up with multiple solutions and ideas, and the other was a creative problem-solving strategy, where they were simply asked to solve a problem and come up with one solution. The results show that when asked to come up with many ideas, people are more likely to generate original, unique ideas, and the ideas are more likely to be elaborate (Reiter-Palmon & Arreola, 2015). The implications of this research are easily connected to the visual arts classroom;

Van de Kamp, Admiraal, van Drie, & Rijlaarsdam (2015) agree with other creativity researchers that the purpose of visual arts education is to teach students to be creative and to create original products. Their work poses that divergent thinking (originality, unique products, or original ideas) is enhanced by the teaching of metacognitive thinking, or the practice of recognizing one's own thinking. This study looked at 147 11th grade students in five classes, three of which were assigned to a group that received one intervention lesson and two of which were assigned to the group that participated in the same instructional unit consisting of regular lessons only. Students in the intervention group received one 50-minute lesson, placed mid-way

through a 19-week unit, on metacognition in creative thinking processes. They listened to a lecture and received explicit instruction in what is happening in the brain during creative and divergent thinking, and ways to become aware of their own creative thinking processes and potential. They then took part in a practice phase, with a goal of coming up with as many divergent ideas as possible. They received feedback on their thinking from teachers and peers.

Both groups of students took part in a pre-test where they were asked to list as many art-making materials as they could think of. The final projects of both groups were scored for fluency, flexibility, and originality, and these scores were compared with the pre-tests. This study concludes that students do benefit from explicit instruction in metacognition, particularly in developing skills in fluency and flexibility in divergent thinking. Students in the intervention group consistently scored higher than the control group in flexibility and fluency. Teaching metacognition as part of regular visual arts education does benefit students' creativity, and although this is not common practice, it has been confirmed to be effective in promoting divergent thinking (Van de Kamp, Admiraal, van Drie, & Rijlaarsdam, 2015).

Other notable aspects of the research of Van de Kamp, et al (2015) state that the positive feeling of being able to improve is the "driving force" in creative thinking processes and that understanding metacognition can help to reinforce the positive self-concept necessary to make divergent thinking possible. Similarly, common misconceptions about the creative process often lead to "negative self evaluations" that hinder creativity. The goal of teaching metacognition is that students become aware of their own thinking, how to control it, and how to improve their own potential as creative and divergent thinkers (Van de Kamp, Admiraal, van Drie, & Rijlaarsdam, 2015).

Explicit Instruction in Originality

Chung & Ro (2004) studied the effects of problem-solving instruction (teaching students to recognize problems and come up with a variety of ways to solve them) on creativity, originality, fluency, and flexibility and found that it almost doubled scores of originality in student work. 33 students in a control group that received regular instruction were compared with 33 students in an experimental group who received problem-solving instruction in addition the their regular lessons. Student work was scored before and after the experiment, and results show that creativity is indeed enhanced through problem-solving instruction. Scores for fluency and flexibility were also higher, meaning that students had better abilities to come up with more ideas and more ways to apply and change those ideas. The study shows that creativity as a whole can be markedly improved with long term problem-solving instruction. While this was a short term study, in this instance, the researchers found that traditional arts instruction was a hindrance to students' self-efficacy (belief in your ability to succeed), meaning that after doing the activity, students felt less confident in their abilities (Chung & Ro, 2004).

Similarly, Krop (1972) suggests that originality can be learned, and that "original thinking is self-reinforced operant behavior" (p. 510). According to his research, children who received "originality training" generated more original responses. 96 fifth and sixth grade students (aged 9-12) were divided into two groups; half were randomly assigned to the group that received originality training, and the other half received repetition training.

The first group took part in training consisting of a series of activities where children were explicitly told to come up with unique uses for everyday objects, and the second group received training where repetition and mimicry were praised. Pre- and post-tests were scored for

uniqueness and difference. Generally, there is a lack of original responses from students, and the researchers suggest that this may be a result of teachers repeatedly telling students to think creatively, but only positively reinforcing students who give the "correct" answer (as in the group that received repetition training). Since "creative originality most often goes unrewarded" (p. 510), the researcher suggests that adults should reinforce all ideas, and that children should be trained in originality from an early age (Krop, 1972).

Exploration & Experimentation

In addition to the previously mentioned work of McClure (2011), a number of other researchers have focused on the utilization of free exploration and experimentation with materials as a learning method in the visual arts classroom.

In a study by Robson & Rowe (2012), children were scored on their creativity levels when taking part in exploratory play, both individually and with peers. They found that free exploration leads to enhanced creative thinking and that children are most involved and invested in child-initiated activities. They are also more likely to persist in a child-initiated activity. Exploratory play with a group, particularly a group of friends chosen by the child, leads to more creative thinking, and interactions between or amongst children support creativity. However, adult suggestions have a bigger impact on children's further thinking, or more in-depth exploration, than those of other children, and interacting with an adult helped children to display their creative thinking (Robson & Rowe, 2012).

According to Jarvis (2011), the purpose of visual art for children is "not primarily to learn how to make images which accord to adult expectations and preconceptions, but to learn about how the world and its objects can be shown, represented and expressed through a sensitive

appreciation of, and practice with, different media, materials and processes." (p. 313). The author agrees with Robson & Rowe (2012) on the importance of exploration in the creative process, and he argues that there is too much emphasis on finished products in elementary level art classes and not enough on process, experimentation, and materials. He asserts that the focus on learning through the senses, often found in preschool age classrooms, should be continued through the elementary years, and that students need to experiment with materials in order to learn about them. Very young children do not set out to make "art" but to explore the world and learn through mark-making and experimentation. This idea of exploring and learning through the senses should not just apply to materials, but students need the hands-on experience of learning concepts, such as how colors are mixed or how patterns are made. Children will feel more confidence and skill with materials if they are allowed to learn about them through experimentation and the senses, and they should have the skills to make creative decisions about what materials best express certain imagery or concepts. Much of art-making practice comes from accident, in combination with skill and intention. The more you know about a material, the more you learn how to fix mistakes and master or control the accidents, and it is vitally important to give children the opportunity to practice. Jarvis suggests that teachers should play an "active role" in facilitating learning opportunities where students can learn through experimentation, and that they should be committed to allowing time for students to encounter materials on a regular, consistent basis. (Jarvis, 2011).

Physical Movement

One study found that physical movement has a positive effect on the amount of divergent ideas students can come up with in a brainstorming situation. According to Oppezzo & Schwartz

(2014), the body and mind depend on one another. They found that participants were able to come up with more original, divergent thoughts during and after walking. In their study, subjects participated in idea-generating activities while sitting, walking indoors on a treadmill, or walking outdoors at an average pace. It was found that walking increased creativity significantly, and that the most benefits came from walking outdoors, but walking indoors was also effective. Of those seated indoors, 50% were able to come up with at least one unique idea, while 100% of those who walked outdoors in nature came up with at least one unique idea. Residual effects continued even when they were seated after walking. The study concludes that walking benefits divergent thinking, and the researchers suggest that schools should consider the interdependence of the mind and the body. (Oppezzo & Schwartz, 2014).

This idea is confirmed by Slepian & Ambady (2012), who studied the effects of fluid arm movements on creativity. In this body of research, students who took part in a tracing-based drawing activity requiring large, sweeping arm movements had improved creativity ratings, and the "fluid movement enhanced creativity in three domains: creative generation, cognitive flexibility, and the ability to make remote connections". In addition, the students who took part in another drawing activity, one requiring structured, angular lines and specific arm muscle movements, generated less creative responses in all three categories. "Moving one's arm in multiple directions in a fluid and fluent manner seems to cue a metaphorically similar fluid thought process, enhancing creative processing and generation." (Slepian & Ambady, p. 628).

Copying & Imitation

In a way, all art that attempts to display reality, nature, or realism in some way is a type of copying. Oftentimes, the idea of copying, mimicking, or replicating an artwork is thought to

be at odds with originality and true creative thinking. However, many studies prove the effectiveness of copying as one of the most important building blocks in a visual arts education. According to Cannatella (2012), mimesis is a natural and intuitive way for kids to learn to make art. Haanstra (2010) asserts that there is "no point" to creative freedom if students do not possess the skills to create what they are being asked to or what they are imagining. Before students can be expected to effectively participate in experiential creativity-building exercises, they need technical skills. Ideas cannot be communicated effectively unless children have the skills and techniques necessary to express their original thoughts. Knowing the materials and techniques provides students with necessary background knowledge to create artworks that express their thinking. So, the question remains: can creativity be spurred through the use of imitation-based artmaking lessons?

Dulama, Iovu, & Rus (2012) find that creativity does improve through copying-based instruction. As an initial activity, fifteen kindergarten age children drew and painted freely for thirty minutes, and those drawings were scored and given 1-2 points for each category of skill, elaboration, flexibility, and synthesis (composition). Children were then involved in twelve learning situations, each employing different techniques, materials, and learning outcomes. During these activities the restrictions and directions were specific; children were expected to closely follow and imitate the teacher's technique. This method, referred to as "direct instruction", is recommended by the National Art Education Association as an effective teaching strategy. The teacher instructed students in a certain drawing or painting technique, and all details of subject matter and technique were explained and decided by the instructor. "Closed-ended" instruction is very effective in building skill with an art technique or process.

Copying in this case was used as the method to teach a certain skill, while the true test of the students' creativity was the final drawing of choice. As a culminating test, they again drew and painted freely for thirty minutes, and the resulting drawings were compared with the original drawings (Dulama, Iovu, & Rus, 2012).

Results show that at least two thirds of the students improved their creativity scores from the initial test to the final test, proving the effectiveness of copying-based instruction in advancing overall creativity. Dulama et al state that each "student acquires procedural knowledge and develops the abilities through active learning. The result of this active process is a personalized output" (p. 25). Additionally, it is worth noting that the diversity in methods, techniques, and materials is considered by the researchers to be an influential factor to students' success (Dulama, Iovu, & Rus, 2012).

In another study supporting the use of copying-based instruction, Haanstra (2010) found that a majority of students who create artwork on their own time outside of school use some form of copying as a primary technique. Most often they are trying to closely replicate existing images from pop culture and other available sources and making their own versions or copies of the images. This study finds that using reference images in this manner was one of the most important ways students gained skills in self-initiated art, or art without a teacher, and that oftentimes the most learning in these instances took place through the copying (Haanstra, 2010).

A study by Dulama, Iovu, & Rus (2012) found that teaching students a specific artmaking skill first before allowing them personal experimental freedom is a proven way to enhance creativity. They emphasize that the technique the teacher utilizes in giving the instruction and presenting the skills to the student is vitally important. The skill portion of the lesson is not

laissez faire; it is structured and specific. The true test of creativity comes later through an open-ended creative activity. All students in the group had higher creativity ratings across the board after receiving the instruction, a series of activities based on teaching skills. Once students had practice utilizing multiple new ways to paint and draw, they were more likely to create original products. Afterwards, students were involved in "experiential learning situations" where the teacher was present - watching, helping, instructing, and holding students to quality and technique standards. The research finds that students successfully built the skills and procedural knowledge to be more creative individuals (Dulama, Iovu, & Rus, 2012).

Having established the effectiveness of copying as a learning technique in visual art, the research of Sheppard, Ropar, & Mitchell (2005) provides a picture of some ways copying can be used with the most benefit. According to previous studies, the way something is taught, as well as the practice activities students have participated in, can increase chances for students to accurately copy an image. Children can generally copy two-dimensional objects more realistically than three-dimensional objects, and an object that has meaning (as opposed to abstracted shapes and lines) improves the ability to be copied accurately, but only when it is two-dimensional. The representation of three-dimensional objects can be improved through background knowledge and a basic understanding of spatial forms. It is also noteworthy that three-dimensional objects are especially difficult to understand and replicate for children under the age of seven (Sheppard, Ropar, & Mitchell, 2005).

As an instructional method in the arts, copying has been used and thought about for thousands of years (Cannatella, 2012). The question remains what the most beneficial way may be to strike a balance between closed-ended imitative lessons and open-ended lessons which

allow for creative freedom. As suggested by the previously mentioned work of Dulama, Iovu, & Sbînca (2013) students are highly influenced by seeing a model or example project, and theirs tends to look much more like it. This can be both a positive and a negative trait. It has been established that being able to closely replicate an artwork is one of the most effective ways to gain technical skills in artmaking. Therefore, when the goal is to teach students those technical skills, having available examples for them to look it is vitally important to their developing and mastering of techniques. Exhibiting a variety of unique art products using the skill previously taught may increase the potential for unique solutions from students. In lessons where creativity and divergent thinking are goals, models and examples have the potential to both help and hinder creativity.

In summary, research supports a variety of methods that art teachers can implement in order to increase creativity in their students. These include: allowing students to make more decisions and choices, displaying more in the number and variety of visual examples, teaching students explicitly how to generate unique ideas, giving time for exploration and experimentation with materials and concepts, granting opportunities for physical movement, and using copying-based instruction to teach technical skills before giving opportunities to exercise creativity and experimentation.

CHAPTER III: APPLICATION MATERIALS

The application section includes a sample unit for a middle school visual arts classroom which incorporates each of the key ideas presented above: freedom of choice, exploration of materials, physical movement, copying-based instruction, variety in visual examples, and metacognition. The lesson plans give a picture of how a teacher might incorporate all of the researched methods of enhancing creativity into one complete unit that is feasible and practical to teach. Of course, teachers do not need to include all of these techniques in each and every unit they teach, but committing to include them as often as is practical may be a great way to nurture and enhance student creativity. Additionally, this is just one example of how the methods may be utilized in a lesson; each of them could be applied in a variety of other ways.

Each portion of the lesson plan section below is included based on the theories researched in Chapter II and best practices in art education, and each one is accompanied by a description of the reasoning behind its inclusion and its relation to the researched methods of increasing creativity.

Lesson Plans

Unit: Figure drawing and motion

Age level: Middle school

Length: 6 days, 40 minutes per lesson

Project: Students will complete 15 thumbnail sketches, 2 large planning sketches, and one final two-dimensional drawing or painting project at least 9x12” in size. The project will include at least one human figure in movement and will use at least one motion technique discussed in the

practice activities. Students will include: 1) at least one human figure drawn/painted with correct proportions, 2) at least one figure showing motion, and 3) a setting or background.

Materials needed: drawing paper in various sizes and colors, drawing pencils, sharpeners, erasers, charcoal, chalk pastels, oil pastels, markers, watercolor paints, brushes, markers, colored pencils

DAY ONE: *The Human Figure*

1. *Slides*: The teacher will display a series of slides that show different and unique ways of drawing and painting the human figure in correct anatomical scale, accompanied by a quick discussion on anatomical drawing, use of correct proportion and scale, and the differences when looking at the body from various angles.

Theory: Number and variety of visual examples Students need to be exposed to multiple images of artwork examples as well as a variety of examples and methods of solving a visual problem.

2. *Practice Activity*: Wooden Figure Drawing
    a. Materials: drawing paper, drawing pencil, eraser
    b. Teacher uses one wooden figure in basic front-facing pose and shows students a step-by-step method of drawing the body using basic shapes and lines, discussing the ways that the various shapes are connected and can overlap. Students follow along and copy the teacher's drawing, focusing on drawing lightly and copying the specific lines and shapes used.

Theory: Copying

Beginning by building technical skills through copying-based instruction has been found to be an effective way to improve creativity.

c. The teacher will choose another, more complex pose. Students work on using the same shapes and types of lines from the first drawing to draw the new pose. At this time, the teacher will walk around the room and give students feedback and assistance on techniques.

3. *Wrap up*: Students tell a partner at another table one new thing they learned about drawing the human figure. The teacher will go around and ask for 6-8 people to share what they know.

DAY TWO: *Motion & Experimentation*

1. *Opening activity*: Students will tell an elbow partner the most important thing they learned in the last class about accurately drawing the human figure.
2. *Slides*: The teacher will introduce the idea of displaying motion in a single still image. The class will view slides showing photographs, paintings, and other artworks which display the use of motion in a variety of ways. Students will tell a partner one technique that other artists have used to show the human figure in motion.

Theory: Number and variety of visual examples

Students need to be exposed to multiple images of artwork examples as well as a variety of examples and methods of solving a visual problem.

3. *Practice activity 1*: Students will have a variety of different materials at their disposal (pastels, pencils, markers, colored pencils, paints, etc.) and a variety of different types of papers. They will take some free time to experiment with using and combining the materials in different ways, keeping in mind the idea of motion and how it could be shown.

Theory: Experimentation & exploration

When students are given time to freely experiment with materials, they add to their understanding of the technical aspects of the materials, and they have an increased rate of creativity.

4. *Practice activity 2*: Students will take part in a series of short figure gesture drawings, timed by the teacher and ranging from 30 seconds to 3 minutes in length. Each table of four students will take turns doing a motion while the others draw the motion using the materials available.

Theory: Physical movement

Research shows that students who are given opportunities for physical movement have higher ratings of originality.

5. *Wrap up*: Students will tell their table group one or two favorite ways of showing motion that they discovered in class.

DAY THREE: *Focus on thinking & brainstorming*

1. Opening activity: Students will go around the room and each share in 5 words or less a favorite method of creating motion that they have discovered so far.
2. *Discussion*: The teacher will present students with various thinking techniques and ways that they can control their creative thoughts and idea generating potential. The discussion will include: listing what you know; thinking about ways to advance, change, or combine ideas in unique ways to come up with something original; decontextualizing and recontextualizing; monitoring your own creative thoughts; and reflecting on your ideas so far.

Theory: Metacognition Students who are taught explicitly how divergent thinking happens in the brain and are shown techniques to come up with more original ideas tend to have higher creativity.

3. *Brainstorm activity*: Students will come up with ideas for their final project, which must include at least one human figure in motion. The person's clothing, the setting, and any other objects or subjects included in the image are up to the student. They will begin by making lists in three categories: media techniques to show motion, motions or actions, and setting. They will be challenged to come up with 20 different ideas for each list. Students will be provided with a simple checklist for developing new ideas, including: add something, subtract something, make smaller, make larger, change color, reverse, change shape, substitute, rearrange things, and combine things.

a. When finished, they will walk four or five laps around the classroom or once around the school. Next, students will make another list next to each of the first three, where they will combine different elements from the first list in new ways, trying to come up with 10 unique ideas. Last, they will choose their favorite idea from each list to include in the final project.

Theory: Physical movement Research shows that students who are given opportunities for physical movement have higher ratings of originality.

4. *Introduction to final project:* The teacher will introduce the students to the requirements of the final project and show the rubric they will be graded on *(included)*. The teacher will stress the importance of coming up with something unique.
5. *Thumbnail work time*: Students will have time to make sketches and thumbnails in planning for their final projects. They will be required to make at least 15 small thumbnail sketches and two fleshed out, medium-sized sketches, thinking about size, color, scale, and composition.
6. *Wrap up*: Students will tell two people at two different tables which techniques and materials they have chosen to use for their final project.

DAYS FOUR, FIVE, & SIX: *Final project*

1. *Opening activity*: Students will refer back to the lists and sketches made in the previous class and decide on their favorite idea. They will discuss their idea with their table group.

2. *Project work time*: Students decide what size and color of paper and which materials will best suit the needs of their chosen ideas. They will be given free time to create their final project. The teacher will be available at this time to conference with students and assist as needed.

Theory: Freedom of choice Students who are given freedom to choose their own subject matter, methods, and materials keeps them motivated and enhances their creativity.

3. *Closing activity*: Students will fill out the self-assessment column of the rubric and write down any comments their teacher should know.

Final Project Description

For the final project, students will be required to create a two-dimensional artwork (drawing, painting, mixed media, or other), at least 9x12" in size, which shows the human figure in motion.

Students should include: 1) at least one human figure drawn/painted with correct proportions, 2) at least one figure showing motion, and 3) a setting or background. The final project should be created with the student's best technical skills and quality craftsmanship.

Final Project Assessment Rubric

5- I went above and beyond what was expected. I put in extra time. I listened to feedback and made changes to make my work better.

4- I did what was asked, plus I added something extra (elaboration).

3- I did what was asked of me, but nothing more.

2- I completed it, but the quality of my work was not what the teacher asked for, or I am missing something I should have included.

1- I didn't try very hard, and my work wasn't the quality it should have been.

0- I did not make an attempt.

	Student	Teacher	Notes
1. Figure (The figure is drawn with accurate size, shapes, details, & proportions.)			
2. Craftsmanship & technical skills (The chosen media is used intentionally and skillfully. The drawing and coloring/painting are 1) done neatly, 2) fill the space, and 3) are complete.			
3. Originality (The student used the originality techniques from the practice activity and			

selected a design that was different from their peers' and other examples.)			
4. Use of motion (One of the motion techniques from the practice activity is used in the final artwork.)			
5. Setting (The background and other details are designed and colored, including at least 3 details.)			
6. Extras (Any extra details (elaboration) the student chooses to include.)			

CHAPTER IV: DISCUSSION AND CONCLUSION

If teachers ask their students to use their technical knowledge and creative thinking skills to visually represent, for example, a mountain with the hope that students will have the ability to create an original artwork, there are multiple proven strategies that teachers can use to ensure they are doing their best to promote creativity in their students. So, how can visual art teachers foster and grow creativity and original responses in their students, and what are some effective strategies to enhance creative thinking and artistic growth in children? The purpose of visual arts education is to teach creativity, technical skills, and creative problem-solving to students, and research shows that the approaches listed below are proven to be effective in accomplishing those goals.

Choice

Keeping students motivated by allowing them freedom of choice in the classroom is a vital way to make sure students are interested and invested in their own creative endeavors in art class. The research of Heid, Estabrook, & Nostrant (2009) shows that not only does giving options and choices keep students motivated, it also enhances their creative output. Students are motivated by being allowed to make decisions regarding subject matter and material use.

Experimentation & Environment

Allowing time built into the curriculum for students to freely manipulate and experiment with materials and concepts without the hindrance of turning in a "complete" project or worrying about a grade may be a tricky thing to organize in the classroom in a way that allows students to reflect on and build upon what they are learning. However, it is proven to be a vital step in the creative process, particularly for younger students. Some students may not naturally explore

materials freely and may need to see teacher modeling the use of materials in a variety of ways. As they are experimenting with and manipulating materials, students should feel comfortable to try new things and apply materials and concepts in ways they never have before, which may be aided by a positive classroom environment.

Creating a safe environment to take artistic risks, focusing on teacher-student relationships, and fostering a feeling of self-efficacy in students are all important factors in promoting students' creativity. When teachers are focusing energy not only on the creative aspects of art education, but also on building trusting relationships and how the interactions between students and teacher affects the atmosphere of the classroom, it will influence the flow of creativity from students.

Physical Movement

Including physical movement opportunities, whether it be an activity that includes art making or using motion as a mental break, has been proven to be an effective technique not only in keeping students engaged, but also in increasing their thinking and learning in creative endeavors. Teachers should build time into their classes for walking or other physical movement opportunities, especially during times of brainstorming and idea-generating, in order for students to receive the creativity benefits.

Copying to Teach Skills

The research shows that there are advantages to student learning from both 1) instruction based on artwork imitation and 2) instruction based on exploration, choice, and freedom of creativity. The big question for art instructors is: how can the two be balanced in a meaningful way in visual arts curriculum?

Using copying-based instructional techniques in an appropriate manner (not as a singular teaching method, but as a means of building a solid knowledge base for students in artmaking) have been shown to be effective. Imitation can also be used to teach the technical uses of various media and materials and to build an understanding of art movements and their historical contexts. Research provides an understanding of the value of utilizing imitation activities for learning, but not necessarily for a final product. Teachers should not stifle true creativity by impressing upon students that copying a "perfect" example is what it means to be a creative individual, and this is important for young students as well as in the middle and secondary school years.

Copying can be a dependable and proven way to teach art (Cannatella, 2012). However, although imitation is important and is proven to help build knowledge, copying is not akin to creativity, and students need those opportunities for exploration and freedom in order to exercise their own creative abilities. As shown by the experiment by Dulama, Iovu, & Rus (2012), a unit beginning with copying based instruction, and culminating in an assignment allowing for more student choice, allows the teacher to get a full picture of how students are developing in both technical skills and creative thinking- both vital skills in the visual arts domain.

Explicit Teaching on Thinking

Focusing on divergent thinking may be one of the best ways for art teachers to begin nudging their students towards unique, novel approaches to problems they come across in the art room. The research shows that if students are taught *how* to come up with multiple solutions to a problem, to brainstorm, and to use what they know to come up with something new, they will gain the skills necessary to increase their ability to come up with divergent ideas. When teachers

allow students more time to think about their thinking and teach students explicit divergent thinking skills, creativity will be heightened.

Number and Variety of Examples

Teachers need to pay special attention to the visual examples and explicit instructions given to students, whether the goal is learning a specific technical skill through imitation activities or allowing freedom of choice and material. Both methods are proven to be necessary pieces of a well-rounded visual arts education for children, but, especially when the goal is originality, exposing students to a wide variety of ways to solve a particular visual problem increases the chances that they will come up with a unique solution. Using the proper amount of variety in examples shown is vital in encouraging students to find solutions rather than just copying a singular example shown by the teacher.

Final Thoughts

Professional application: This topic is significant to art educators at all age levels and in all educational settings because their goal should be to enhance the creative output of their students, and these are proven ways to do so. It is important for those teachers to think of how true creative thinking skills can affect their students not just today but as they move forward in future endeavors. These are important things to practice and learn to do for all students, and they are applicable outside the context of visual art. Once those creative thinking skills are learned, students can begin to apply them in other subject areas, but the art classroom may be one of the only places students are allowed access to the time and resources to learn those vital skills in their educational experience.

Limitations & future research: A handful of the research studies presented here were not specifically situated in the visual arts domain, although the concepts are applicable. Additionally, this is not a definitive list of ways to enhance creativity and divergent thinking, but simply a presentation of some researched, proven methods. There are many studies dealing with general divergent thinking or general creative thinking, but more research is needed on how these concepts are being applied to visual art specifically. It would also be helpful to have data as to how these concepts apply to creativity specifically with elementary age students.

Conclusion: Creativity can be learned, but how should it be taught? Can the ideas presented in the research be employed in order to truly enhance creativity for students in a real-life classroom situation? The best way to discover the methods that are effective is to try to apply as many of these techniques as possible. Each of these research-based and proven concepts have practical classroom applications that teachers can utilize in promoting creativity in their students. Applying them to real life classroom practice is the first step in developing students into creative thinkers.

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