

THESIS

COMPLICATING CREATIVITY: STUDENT INSIGHTS INTO THE
PRODUCTION OF A LITERARY ANTHOLOGY

Submitted by

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ABSTRACT

COMPLICATING CREATIVITY: STUDENT INSIGHTS INTO THE PRODUCTION OF A LITERARY ANTHOLOGY

This study originated from my curiosity about the link between critical thinking and creativity and my desire to foster both in my high school visual art and English language arts students and classes. Using qualitative data--student interviews and field notes, and an examination of literature focused primarily on critical thinking and creativity--I attempt several things:

1. to *understand* and *define* how critical thinking and creativity interact or inform one another in practice;
2. to reconcile historical and contemporary models of creativity with my own observations, experiences, and student responses; and,
3. to identify and recommend classroom practices and approaches that best promote critical thinking and creativity in students across modes of literacy.

I also propose, and ultimately challenge, a conceptual theory for promoting creativity. I refer to this concept as “metacreativity,” which is an active process of considering the factors that affect the creative process during creative acts in order to “optimize” the process itself.

As a teacher and faculty advisor for a high school literary and art magazine, I conducted classroom research via initial and exit interviews with three students in my Writing for Literary Publication class. I also maintained field notes from my observations of student discussions and their written evaluations of student writing and art pieces submitted to the magazine, as well as discussions with colleagues and mentors.

Findings suggest that the curricular student-published literary anthology supports students' intellectual and creative growth in unique ways and offers tremendous opportunities for students to claim ownership of their learning. A review of the literature revealed numerous incongruities in the ways creativity is studied, understood, and defined, as well as the sophisticated yet often ambiguous nature of creative processes.

I conclude that most historical models or paradigms for understanding creativity are inadequate and/or problematic for either understanding or fostering creative thinking. I contend that a much more holistic approach to both examining and promoting creativity is necessary. More research is needed, but ultimately, I argue that the curricular model employed in Writing for Literary Publication is one of the most effective ways to promote critical and creative thinking in students.

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These three masters of content and pedagogy continue to shape my identity as a teacher and will serve as roll models for the rest of my career and life.

Finally, this thesis would not have been possible without the participation and shared curiosity of my students, who, along with my colleagues, serve as partners in inquiry.

DEDICATION

This work is dedicated to my family:

To my dad, for instilling in me a love of art, words, and teaching, and more importantly the curiosity that makes learning a way of life.

To my sister, Colleen and my stepmother, Karen, for your love, support, and sarcastic humor.

To my late mother, Diane, also a certified English teacher, for her loving-kindness and teaching me love and kindness.

And most of all to my wife and partner in all things personal and professional, Emily. In coaching, teaching, marriage, and life, your patience, advice, belief in me, and example make everything, including this thesis, possible and worth it.

TABLE OF CONTENTS

ABSTRACT.....	ii
ACKNOWLEDGMENTS.....	iv
DEDICATION.....	v
CHAPTER 1: INTRODUCTION.....	1
CHAPTER 2: REVIEW OF THE LITERATURE.....	4
CHAPTER 3: METHODOLOGY.....	30
CHAPTER 4: FINDINGS.....	41
CHAPTER 5: IMPLICATIONS FOR FUTURE RESEARCH AND TEACHING.....	65
REFERENCES.....	69

CHAPTER 1: INTRODUCTION

My fondest childhood memories involve two of my favorite artists: my dad and Theodore Seuss Geisel. More or less every day during my preschool and early elementary years, Dad would read to and with me such classics as *Green Eggs and Ham*, *The Cat in the Hat*, my personal favorite, *Hop on Pop*, and my dad's favorite, *And to Think That I Saw It on Mulberry Street*. Dr. Seuss's vibrant, detailed, and expressive illustrations drew me into the magical world of those books. Dad's vibrant and expressive reading of Seuss's joyful and chaotic prose kept me coming back to those books over and over.

These memories merge with those of my dad teaching and encouraging me to draw, paint, and create throughout my childhood and then doing those things alongside me. Art materials, as well as "non-art" toys like Play-Doh, Lincoln Logs, Erector Sets, and Legos filled my childhood home. These experiences, as well as the manner in which my parents introduced me to art and literacy, were the seeds of my life-long beliefs, approach towards, and views about virtually everything from social issues to entertainment to learning to politics.

While adolescence and *Ethan Frome* may have temporarily asphyxiated my early enchantment with the written word, I re-discovered the joys of reading and writing during college when I was able to take classes and read books, stories, poems, and magazines of my choosing. My love of art, however, never waned. I took every art class I possibly could throughout high school, and after a few professional detours, became an art teacher at the age of 32.

When I began teaching both visual and language arts, my childhood love of art and language coalesced into a more sophisticated consideration of the intertextuality between writing and art making: reading text and viewing art, and, ultimately, constructing literacy. As I accumulated more classroom experience, my inquiry into these topics deepened in relation to my students' growth and

responsiveness, as well as my own teaching practice, art making, and writing. Eventually, I began asking questions such as these: *How do the thinking skills required to interpret and create visual art and written text relate to and/or complement one another? How do reading and viewing art influence our writing and art making skills? Can critiquing art make one a better writer? Can critiquing literature, poetry, or non-fiction transfer to the visual artist?* My fascination with these initial questions continues and has extended into a more formal investigation represented by the current study regarding high school students' critical and creative engagement with texts in a course I have taught for the past eight years called "Writing for Literary Publication." In this course, students serve as the editorial board for our school's award-winning student-published literary art magazine, *The Sparrow*, for which I also serve as faculty sponsor.

In observing students' development of ever more sophisticated critical thinking in their evaluations of submitted work, I arrived at the focus for this study regarding how students transfer and apply critical evaluation skills to their own creative processes, whether that results in written, visual, performance-based, or any other mode or genre of creativity. My research is guided by the following questions:

These observations piqued my curiosity and led to the following research questions:

- Do the skills students develop by evaluating the creative work of others "automatically" transfer to the evaluation of their own creative works?
- If students do apply those critical thinking skills to their own creative work, how and to what extent do they do this, and to what personal end?

My intention in this study is to more formally examine these questions and explore the ways in which critical and creative thinking inform one another, as well as students' perceptions of their

own critical thinking and ability to produce creative work, whether that is written, visual, or another mode of creative output.

CHAPTER 2: REVIEW OF THE LITERATURE

In a poem, one line may hide another line,

As at a crossing, one train may hide another train.

That is, if you are waiting to cross

The tracks, wait to do it for one moment at

Least after the first train is gone. And so when you read

Wait until you have read the next line--

Then it is safe to go on reading...

-Kenneth Koch, "One Train May Hide Another"

For over a century, psychologists, educators, social scientists, and others have studied the relationship between critical thinking and creativity discussed in the introduction. Until the past decade, most of these researchers analyzed creativity and critical thinking in very rigid, categorical terms, often situating these aptitudes, abilities, or cognitive processes as near opposites (Eysenck, 2003). Additionally, when examining creativity on its own, most researchers have tried to break creative thinking down into constituent thinking processes or skills, often organizing individual skills into some sort of sequential, formulaic "creative process" with a given number of steps. Both of these approaches are understandable; organizing, categorizing, and classifying information have served humanity for millennia, so it makes sense to keep doing it. But is this approach best for understanding all types of information?

Critical thinking enables us to understand the world we live in, and is an integral part of creativity, but perhaps critical thinking is not the best way to *understand* creativity as an abstract concept. The creative process manifests in unique ways for different individuals, contexts, and purposes. Creativity functions in nonlinear and nonsequential ways. While characteristics of

creativity are observable, we must consider the process as a whole, rather than its component cognitive skills. Treffinger, Sortore, and Cross advanced a theory they referred to as the “full ecological system of creativity” (as cited by Cropley, 2001) for fostering creativity, which recognizes emotional and psychological factors, situational constraints, the nature of the creative product, and other contextually-dependent factors, all of which interact in acts of creativity. This model can just as effectively be used to study creativity as to foster it.

To address this question in my review of the literature below, I examine aspects of cognitive theory, including critical thinking, creativity, and the many ways these two intersect with an emphasis on education. Before digging deeper into researchers’ and my own claims about these topics, however, I clarify some definitions of the associated terms as they will be used in this study.

Glossary of Terms

Creative thinking or creativity: Creative thinking is commonly differentiated from critical thinking in that it requires ideation, or the generation of novel ideas (Finke, Ward, and Smith, 1992; Cropley, 2001; McGregor 2007; Lau, 2011). Most creativity researchers also identify distinct steps within the creative process in order to classify and sequence different processes within creativity. The definition or connotation of creativity/creative thinking I have in mind with regard to these terms is a mental activity requiring or resulting in some sort of “original” creative product. Note that these terms may be used interchangeably with divergent thinking in this paper, as is the example in much of the research.

Critical thinking: The majority of sources cited in this study consider critical thinking to be an intentional process by which individuals process, analyze, or transform information or other data by applying clear, systematic, and logical cognitive processes (Lau, 2011; McGregor, 2007). “Good” critical thinking also usually implies an ability to organize and deal with information and experiences

by applying specific structures, processes, and evaluation strategies (Lau 2011). As most people—researchers, theorists, teachers, and laypeople—generally have a common understanding of the term “critical thinking,” I will use it in this study within that common understanding: applying cognitive processes in order to interpret, analyze, classify, and evaluate information in order to communicate, make decisions, create and preserve meaning. Critical thinking may also be used synonymously with convergent thinking and/or intelligence, as is the example in much of the research.

Convergent thinking is frequently described as systematic thinking consisting of certain prescribed operations, applied to problems with a single correct solution, with critical thinking falling squarely in the convergent category (Cropley, 2001; Finke, Ward, and Smith 1992; McGregor, 2007).

Divergent thinking most often refers to the act of developing and exploring various possibilities or ideas emanating from a single situation, problem, or task (McGregor, 2007).

What Counts as Creativity?

While a working definition of creativity is provided above, that definition is for the purposes of this study, and is by no means exhaustive. Despite the attention given to creativity by psychologists and other researchers, many offer no precise definition, opting for a list of traits or characteristics in lieu of denotative explanations. Some researchers contend that creativity involves divergent thinking, is dependent upon making connections within a body of prior knowledge, is grounded in our use of language, and is social in nature (Finke, Ward & Smith, 1992; McGregor, 2007; Lau, 2011; Padget, 2013). Cropley (2001) offers definitions from other researchers, including Howard Gardner (1983), who describes creativity as “a way of applying intelligence”; Runco and Albert (1986), who similarly define it as “intelligence in action”; and Teresa Amabile (1996), who lists intrinsic motivation as a necessary condition of creativity. While these theories may illuminate

aspects of creativity, none provides a precise definition, perhaps suggesting that our understanding of creativity is contextually dependent. Indeed, Padgett (2013) acknowledges that “it may be impossible to define the process of creativity” (p. 4). So where does that leave us?

In attempting to study cognitive processes, specifically critical thinking and creativity, researchers have typically attempted to design and implement scientific experiments in which those cognitive processes could be isolated and thus examined individually. To this end, many researchers discuss creativity primarily in terms of problem solving (Finke, Ward, & Smith, 1992; McGregor, 2007; Lau, 2011). By creating controlled conditions under which creative thought can be observed, measured, or quantified in some way, one would imagine we could develop better hypotheses for understanding it. This equating or associating of creativity with problem solving is logical. By almost anyone’s definition, problem solving shares one essential characteristic with creativity: both require the generation of novel ideas created by making connections within existing prior knowledge (Finke, Ward, & Smith, 1992; Cropley, 2001; McGregor, 2007; Lau, 2011). Yet it is also problematic and limiting to consider creativity primarily in terms of problem solving because the attempt to create controlled conditions under which to observe creativity makes it nearly impossible to consider the natural, often spontaneous, and always intrinsically motivated creative activity of say, a poet or sculptor (Amabile, as cited in Cropley, 2001).

Despite the historical precedent of studying creativity through the lens of problem solving, many researchers (in fact, some of the very same researchers) have more recently acknowledged that while the two are related, there are significant differences. As early as 1992, Finke, Ward, and Smith discussed the advantages of temporarily suspending one’s expertise or knowledge in tasks that require open-ended thought or creative exploration (e.g., as when designing a product, focusing on features of similar existing products may limit the scope of innovation), while at the same time

recognizing that same suspension of expertise would certainly be detrimental in problem-solving situations (e.g., as when identifying and correcting a manufacturing defect, suspending one's expertise would not be useful). In acknowledging this paradox, the authors also hint that some level of cognitive dissonance may be inherent in the study of creativity.

Mark Runco (2003) further articulates that while intelligence tests may predict individuals' ability when presented with certain types of problems, "there is more to life than problem solving" (p. 71). Runco elaborates by addressing types of creativity, such as in acts of self-expression, which occur not in response to a presented problem, but arise from intrinsic motivations for idiosyncratic purposes (Zurmuehlen, 1990).

While the topic of problem solving certainly merits study, my interest in examining creativity within the context of this investigation has little to do with the traditional notion of problem solving, and much more to do with what Martin Buber called the "originator instinct" (Zurmuehlen, 1990, p. 3). Few researchers whose work I have reviewed explicitly define creativity in these terms, but there are several who implicitly address creativity through a lens more in keeping with my description above: that is, they at least refrain from using problem solving as their primary lens for studying creativity (Necka, 2003; Runco, 2003). For instance, researchers in the field of art education describe processes that help us notice the world, explore new possibilities, develop sensitivity to nuanced relationships through qualitative inquiry, become flexible thinkers, make things which did not exist before, and synthesize elements into a new whole (Zurmuehlen, 1990; Eisner, 2002; Siegesmund, 2004). Though these descriptors may specifically refer to the art making process (and its benefits), these traits also align with my definition of creativity in general—and are applicable to far more modes and mediums than exclusively visual art—than does problem solving (Lowenfeld, 1968; Zurmuehlen, 1990; Eisner, 2002).

Critical Thinking and Creativity

Psychologists and researchers have devoted more attention to critical thinking than they have to creativity, perhaps because critical thinking lends itself more regularly to traditional scientific methods of study. Furthermore, until the middle of the twentieth century, critical thinking was equated directly with notions of intelligence, and therefore considered a more important, more sophisticated type of thinking than creativity (Finke, Ward, & Smith, 1992; Cropley, 2001).

Generally speaking, there is also more of a consensus as to the definition of critical thinking than creativity. As discussed in the glossary, critical thinking involves comprehending, analyzing, and evaluating information. Lau (2011) adds that critical thinking, more than simply analyzing and evaluating, is a rational, precise, and systematic kind of thinking in which one applies logic and reason in order to generate and assess the value of new ideas (which are also cited by many researchers as components of creativity). While enumerating the differences between critical thinking and creativity, Lau acknowledges that they are “equally important” (p. ix).

Padget (2013) argues that defining critical thinking is not as simple as one might imagine, and contends that critical thinking also encompasses an ability to transfer knowledge and skills from one context to another. Both Lau, in suggesting that critical thinking involves coming up with new ideas, and Padget, by including transfer skills in this definition, imply that the critical thinker, in transferring their knowledge or skills, must also make connections, generate novel ideas, and transform their prior knowledge in order to apply it elsewhere, which also sounds remarkably similar to what we understand creativity to be. Are they the same thing?

Despite these similarities, critical thinking and creativity have more often than not been viewed as opposites or near opposites by researchers. Even while many philosophers, psychologists, and others acknowledge the ways critical thinking and creativity overlap, researchers have

consistently focused on the distinguishing characteristics between them. Cropley (2001) points out the flaws in early psychologists' belief that creativity and intelligence were separate and/or mutually exclusive, yet at times he still seems to equate critical thinking with conventional notions of intelligence. Cropley describes critical thinking and intelligence as requiring knowledge of facts, the ability to recall knowledge rapidly, and logically identify answers to factual questions, while he says creativity "involves departing from the facts" and "making unusual associations" (p. 23).

Finke, Ward, and Smith (1992) likewise identify seemingly contrasting characteristics of critical thinking (expertise, memory retrieval, synthesis, transfer) and creativity (temporary suspension of expertise, divergence, flexibility, exploration). McGregor (2007) similarly examines critical thinking and creativity primarily in terms of their differences: she views critical thinking as evaluative in nature, involving the analysis and critique of information through the application of specific criteria, whereas creativity is generative in nature, centering on the production of innovative perspectives, approaches, or designs. McGregor, however, goes one step further than the other authors in stating that creativity could be "the antipathy of critical thinking" (p. 168).

While acknowledging that critical thinking and creativity are clearly not the same thing, I could not disagree more with this idea. If anything, McGregor's claim is the antipathy of the relationship between critical and creative thinking. Creative and critical thinking differ in the ways mentioned in the previous two paragraphs, yet the two are inseparable in practice. Far from mutually exclusive, they are interdependent in more ways than we are capable of understanding.

To be fair, all of these researchers acknowledge that critical thinking and creativity are linked, and none of them imply that one is more sophisticated or important than the other. Also, this approach of systematically classifying information, in this case two observable cognitive processes, is part of how we construct understanding and meaning, and all of these authors have

conducted and/or are still conducting academic research on both critical thinking and creativity, which implicitly assigns great merit to both.

The approach of studying critical thinking and creativity through an oppositional lens poses many problems and limitations to our understanding of both. For over a century, the differences between critical thinking and creativity have been thoroughly articulated. Our understanding of these two processes would be better served by examining the similarities and ways in which they interact and inform one another, rather than continuing to identify and focus on the differences.

To this end, one researcher, H.J. Eysenck (2003), has identified many of the limitations presented by this dichotomous way of approaching research, not just with regards to creativity vs. intelligence, but within science, psychology, philosophy, and other fields of research:

It is customary for philosophers, historians of science, psychologists, and others interested in the study of creativity to think in categorical, either-or terms reminiscent of Hegelian thesis-antithesis confrontation, but lacking the synthesis Hegel would have imposed as the terminal point of such an analysis. (p. 95)

Eysenck (2003) points to the example of Thomas Kuhn, who in his book *The Structure of Scientific Revolutions*, contrasted what he termed “normal science,” which occurs in the context of justification, with “revolutionary science,” which takes place in the context of discovery. The author notes that in Kuhn’s second edition of this text, he revised his language around this dichotomy by redefining it in terms of a *disciplinary matrix* and shared *exemplars*. Eysenck describes a disciplinary matrix as “a kind of scientific *Weltanschauung* acquired implicitly through the educational process” through which one becomes an expert in a particular scientific discipline, and that this expertise is acquired through the study of exemplars (p. 96).

Eysenck implies that an either-or dichotomy is not an appropriate way to address or think about many subjects of research, including creativity and critical thinking. Indeed, I have come to view creativity and critical thinking as inextricable from one another and agree with Eysenck’s claim

that there “are many problems, often insoluble, that appear when a categorical distinction is made between the two extremes of convergent and divergent thinking” (101). Critical thinking and creativity do not operate in isolation from one another. Attempts to define them in isolation or opposition will more likely undermine both the creative process and our understanding of it than aid it.

How Best to Understand Creativity: Dissection or a Gestalt Approach?

The first two concerns regarding the approach to creativity research--equating creativity with problem solving and viewing creativity and critical thinking as opposites or near opposites--represent two contributing factors within a general approach to creativity which, while representing sound research practices in general, can be viewed in hindsight as limiting. This approach represents a predominantly rigid, categorical strategy for studying cognitive processes that by their very nature operate in organic and fluid ways.

As mentioned, researchers have historically studied creativity by attempting to identify its constituent thinking skills or processes, and to codify the sequence of and conditions under which these skills occur. The prevailing logic suggests that by identifying, observing, and in some cases attempting to measure these phenomena, these researchers could offer new insights into what creativity really is, how it benefits us in various realms, and how to foster it. As a result of conducting this study, I contend that this traditional approach to research—scientific and otherwise—is largely not applicable to the study of creativity. Creativity is an organic and intimate process, with many idiosyncratic differences stemming from individuals, contexts, purposes, and means.

Due to the unique characteristics intrinsic to the very nature of creativity, the practice and analysis of creativity require the acquisition and implementation of what Eysenck describes as a

Weltanschauung (2003). This concept, as Eysenck uses it, bears a strong resemblance to Eisner's notion of somatic knowledge (2002), which I describe in more detail below. Eysenck and Eisner use these terms to describe a general, overall awareness that operates on a sub- or preconscious level, and that is acquired implicitly through experience.

If one gives merit to these descriptions of the creative process, then identifying and studying the individual cognitive processes that “make up” creativity could be analogous to measuring someone's weight with a yardstick--it's simply not the right tool for the job. To be sure, *all* of the researchers cited in this study offer tremendous insight into the roles of creativity, critical thinking, and cognition in general in their respective fields, but ultimately, creativity is best viewed as a gestalt. Improving certain cognitive skills that are involved in creativity, such as memory retrieval or transfer of knowledge, can certainly aid the overall process, but neither that, nor adhering to a prescribed sequential formula for a “creative process,” is the best way to understand or foster creativity. There is, and can be no recipe for creativity. The practice of dissecting and labeling creativity is a form of abstraction that has ultimately moved us further from the thing itself. As the French poet and philosopher Paul Valery allegedly said, “Seeing is forgetting the name of the thing one sees.” Perhaps nowhere is this fundamental quandary of semiotics more evident than in our attempts to deconstruct and classify the basic human instinct of creativity.

As evidence, consider researchers' penchant for providing diagrams or other visual aids to represent the creative process or aspects of it. These include Finke, Ward, and Smith (1992), McGregor (2007), Lau (2011), and Padget (2013). Even Eysenck, whose approach is much less dogmatic than most, presents creativity and critical thinking in terms of a continuum, rather than a dichotomy. While calling for a more fluid interpretation than a dichotomy, a continuum is still to be visualized as a *line*, and like a dichotomy, contains exactly two variables that tend to be considered

as opposites. I believe if one must acquiesce to the urge to make a diagram, a complex three-dimensional form like a nebula, wherein all factors intersect with all other factors directly, would better represent creativity and its related cognitive processes.

In *Creative Cognition*, psychologists Finke, Ward, and Smith (1992) present another analysis and visual representation of the creative process. The authors explicitly set out to identify specific thinking skills that contribute to creativity in order to develop new methods for studying it. Among these cognitive processes and factors related to creativity, they list **generative processes** (i.e., retrieval, transfer, and synthesis), **preinventive structures** (i.e., visual patterns, mental models), **preinventive properties** (i.e., novelty, meaningfulness, divergence), **exploratory processes** (i.e., conceptual interpretation and hypothesis testing), and what they refer to as **product constraints**, which include the function, features, and components of the intended result of a creative process (pp. 20-28). While the authors do not propose a sequential formula for creativity, they do provide a general structure for the creative process, which they call the “Geneptore” model (fig. 1), which considers both generative and exploratory cognitive processes as the primary factors in creativity. Essentially, this model involves cycling or toggling back and forth between the generation and exploration of novel ideas related to a creative purpose.

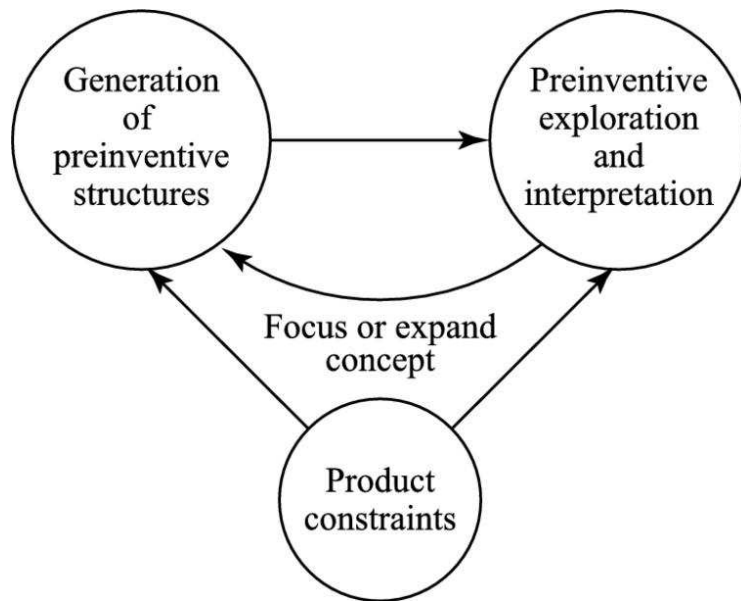


Figure 1: the Geneplore Model (1992, p. 18)

While this model accounts for the non-sequential nature of the creative process, it is nonetheless rather linear: the creator generates ideas, then explores the effectiveness of those ideas, then revises them, presumably repeating this set cycle until the “problem” is solved or the creative goal is satisfactorily met. The limitations of this model, however, lie in the fact that the person involved in a creative process often does not have a clearly identified “goal” in advance, and that both the goal (for lack of a more precise term) and the process are subject to change as a result of new ideas, exposures, the fluid nature of one’s somatic knowledge, and a variety of other intangible factors within creativity. The creator could quite possibly have a realization that causes them to abandon that particular creative act entirely, not in the sense of giving up, but perhaps because a new motivating factor arose, or an insight occurred to them, rendering the original creative endeavor unnecessary, irrelevant, or otherwise (Necka, 2003).

Lau (2011) presents perhaps the most dogmatic approach to studying and promoting creativity of any researcher I’ve encountered. In *An Introduction to Critical Thinking and Creativity*:

Think More, Think Better, he not only identifies specific thinking skills involved in creativity, but he presents the following four-step process, which I would consider a recipe for being creative (see pp. 218-219):

- Step 1: Preparation
 - Gather information collect data from many sources
- Step 2: Exploration
 - Start analyzing/digesting/organizing the information
 - Make connections
 - View from different perspectives
 - Draw conclusions
 - This step requires concentration, analysis, and patience.
- Step 3: Incubation
 - Set the work aside, relax (sleep is important in promoting creativity), and allow the information and analysis to simmer. Then come back to the work.
- Step 4: Verification
 - Check our creative ideas for validity. If they don't work, why not?
 - Come up with new ideas or adaptations.
 - Review the entire creative process to try to repeat it in the future.

To take this formulaic approach one step further, Lau even includes a case study as an example of “The creativity formula at work” (p. 220)!

In Lau's defense, the majority of his text focuses on critical thinking, not creativity. Most creativity researchers and I would agree that the components of creativity Lau identifies in his four-step process certainly do occur, though not in the rigid, sequential, or overt ways he suggests. As I

have previously argued, the creative process is much more holistic and recursive in nature than this. Critical thinking unquestionably plays a role in creative acts, but in a more sub-conscious manner than Lau suggests—in the background, so to speak. The creative person needn't be consciously aware of those critical thinking skills, as such an awareness would, indeed, inhibit the creative process.

Lau quotes Steve Jobs regarding creativity, in a context that supports, in my opinion, a more fluid, holistic interpretation of the creative process, and perhaps one of the most concise yet encompassing quotes I encountered in all of my research:

[Creative people] are able to connect experiences they've had and synthesize new things. And the reason they were able to do that was that they've had more experiences or have thought more about their experiences than other people have. Unfortunately, that's too rare a commodity...The broader one's understanding of the human experience, the better designs we will have (Wolf, 1996) (2011, p. 216).

Lau's formulaic approach could also be due to the fact that his book falls in the genre of a practical guide meant to improve thinking skills. In many ways, the book reads like a "think and do" workbook, as each chapter contains exercises intended to improve specific thinking skills, which could be applicable in the business world, education, or in people's personal lives.

One final example of this rigid approach to investigating creativity appears in Debra McGregor's *Developing Thinking; Developing Learning: A Guide to Thinking Skills in Education* (2007). Like many others, McGregor largely equates creativity with problem solving. She does not present a formulaic process for creativity, but she does offer one for problem solving, which includes clarifying the problem; considering multiple approaches to solving the problem and deciding on one; planning a solution, including identifying and sequencing steps within that plan; pausing to reflect on the effectiveness of that plan; and communicating and evaluating the solution and the tasks that resolved the problem (p. 240). Despite the fact that McGregor is explicitly addressing problem

solving here, following such an inflexible and prescriptive approach might actually stifle the natural creative process, even if it might result in solutions to some problems. Similarly to other researchers, McGregor identifies specific components within the creative process, such as identifying problems, divergent thinking, generating original ideas, making connections, incubation, and assessing the outcome of the process (2007). While she does not prescribe a formula for this process, McGregor's approach to carrying out and improving creative thinking resembles Lau's (2011) in its overtly conscious, intentional practice. Like Lau, she strongly advocates for what amounts to intentionally stopping the creative process in order to engage in metacognitive evaluation of the process itself. As noted multiple times, intentionally interrupting the creative process to reflect or analyze is extremely unlikely to aid creativity. The creative process simply does not follow such a linear trajectory.

McGregor's suggestions for how teachers can develop creativity in their students includes such specific advice as, "ensure [teaching practice] is] authentic," "present it in a stimulating and motivating way," and "apply existing knowledge...throughout the process" (2007, p. 187). Most experienced teachers would likely deem her recommendations so obvious, so vague, and so unhelpful as to be insulting. Despite the inclusion of case studies, to a relatively experienced teacher, her entire book seems to embody a "tell, don't show" approach that is not particularly insightful or helpful.

Towards a qualitative understanding of creativity

Every psychologist, educator, or researcher interested in creativity would benefit immensely from Eisner's approach to studying and articulating his insights about creativity (the arts). Eisner offers no "how-to" formulae for art making, meaning making, or anything else. His ideas and insights are complex, qualitative, nuanced, and challenging. It is precisely Eisner's refusal to label, codify, or otherwise oversimplify these concepts that makes his approach so authentic, valid, and relevant for discussing the arts and creativity.

In striving to understand creativity through traditional quantitative methods, many creativity researchers inadvertently ignore fundamental aspects of the nature of the thing they attempt to study. The fluid, organic nature of and individual idiosyncrasies inherent in the creative process must be accounted for in any examination of creativity. In the middle of the 20th century, researchers introduced the concept of “ambiguity tolerance,” a concept that has long been correlated with creativity (Frenkel-Brunswik, 1948; Zenasni, 2008). Zenasni notes, “The more individuals are tolerant of ambiguity, the more they tend to be creative” (p. 71). Since evidence shows that tolerance for ambiguity correlates closely with creativity, shouldn’t studies of creativity also incorporate that same tolerance?

Thankfully, some researchers have implicitly and explicitly taken the fundamental nature of creativity into account in their research and writing. Among these are Elliot Eisner, Mark Runco, and Edward Necka.

Over a six-decade span, Eisner contributed an incomparable wealth of theoretical and practical knowledge to the fields of education, the arts, and specifically, arts education. By describing the artistic process in qualitative terms, Eisner's work continues to challenge the preconceived notions so present in education today that theories have no value unless they can be quantified. Eisner’s focus is on the arts, not specifically on creativity, but his concepts of qualitative reasoning (2002) and somatic knowledge are particularly apt here. The non-linguistic nature of these two concepts make them particularly challenging to articulate and comprehend, which is, I believe, why they have been overlooked in so much of the creativity literature. According to Eisner (2002), qualitative reasoning essentially requires one to experience, appraise, make connections, and synthesize nuanced qualities given the constraints of a medium, field, or subject within which one works. In referring to Eisner’s work, Siegesmund defines “somatic knowledge” as “a felt reaction of

rightness within an experience” (2004, p. 81). While challenging and perhaps considered intangible by some, Eisner’s ideas much more accurately capture the creative process than the reductive approach so many researchers apply to creativity.

Perhaps what makes appreciating the relationships between qualitative reasoning and somatic knowledge to concepts like divergent thinking and generating novel ideas so challenging is that it requires one to apply those same concepts or skills in order to “get it.” That said, the development of these forms of thinking occurs (mostly) implicitly, and plays a fundamental role when we engage in creative acts.

Siegesmund (2004) relays the following example from Eisner’s *Cognition and Curriculum Reconsidered*, wherein Eisner illustrates the concept of somatic knowledge. In its expansiveness, Eisner’s description of the artist’s creative process thoroughly reveals the limitations in much of the creativity literature:

[Eisner] invites us to take an imaginary trip to Kansas, where a painter, born and raised in New York City, visits a small Midwestern town for the first time. As the painter attempts to take in the details of the new landscape — the rhythms of the local diner, to the immensity of the sky — her eye is not a roving camera that takes snap shots for a mental photo album. Her perception is searching and probing. It associates sensory impression with emotional response. The painter does not simply take an image of the people walking along the downtown sidewalk; she feels their pace and comportment. The painter retains in memory her non-linguistic emotional resonance that accompanies these sense impressions. Sense impressions laden in felt emotional response endure in memory. As such, they are not mere images; they are mental concepts. As mental concepts are experienced, shift, adumbrate, and reconfigure in the mind, they become diverse *forms of representation*, (pp. 82-83).

While Eisner examines creativity implicitly through the lens of art, the recent work of Mark Runco (2003) bridges the gap, to some extent, between rigid, analytical approaches and those that view creativity more holistically. Many researchers address the roles of emotion, motivation, and personality traits in creativity (Cropley, 2001; Necka, 2003; Miller, 2015), but Runco considers those factors on an even footing with cognitive processes.

Runco directly acknowledges that problem solving is just one aspect or type of creativity and also views the processes of evaluating and generating novel ideas to be concurrent and inextricable from one another. In so doing, Runco (2003) recognizes that the creative process is not a step-by-step sequence that can be followed like a recipe. Further, Runco points out that indicators such as divergent thinking tests “no more guarantee actual [creative] performance than profiles from...personality inventories or scores from tests of intelligence” (p. 70).

These recognitions set Runco apart from many of his historical and contemporary colleagues. While several other researchers cited in this study mention factors that complicate our analyses of creativity, such as acknowledging that not all creativity can be equated to problem solving and that creativity and critical thinking are *not* mutually exclusive (Finke, Ward, & Smith, 1992; McGregor, 2007; Lau, 2011), they primarily do just that--mention these factors without seeming to take them into account or address the implications for their own research and conclusions. A fitting if oversimplified analogy might be if you're planning to bake cookies at 8,000 ft. elevation, you cannot create or follow a recipe without taking that factor (the altitude) into account. Runco acknowledges--and considers--such complicating factors in his work and conclusions.

The researcher whose approach might best satisfy adherents of both camps is Edward Necka. Like many other researchers, Necka (2003) acknowledges the identifiable components of creativity (i.e., ideation, evaluation, judgment, novelty, metacognition) but he explicitly eschews formulaic, prescriptive models for describing it. In place of those models, Necka offers a schema for creative processes called *creative interaction*. Necka acknowledges that societal, environmental, and motivational factors external to the mind of the creator influence creativity in important ways, as do

I. Nevertheless, inherent in his model are the notions that creative ideas are conceived and

preliminarily judged within the creator's mind, that creation "will always be a private event," and that "any plausible theory of the creative process has to take [this] into account" (p. 116). The two actors in his interactive model are *goals* and what Necka refers to as *tentative structures*. A goal is relatively self-explanatory, but could include "imaginary and planned poems, symphonies, theories, inventions . . . anything that someone wishes to achieve in a new and valuable way" (p. 119). Tentative structures, in this model, refer to "ideas and voluntary movements...that people produce in response to the goal's requirements," while interaction here denotes "a process of continually and mutually affecting each other" (p. 119).

Creative interaction, then, is a recursive process in which a goal and the tentative structures put in motion by the creator mutually and continually interact with and inform one another. Obviously, the goal may largely determine the tentative structures, but the goal may also change as the creator comes to new understandings, generates new opinions, ideas, or perspectives; thus the tentative structure may also act on the goal. The goal may then be revised, tweaked, or even abandoned altogether in favor of a new goal. The revised goal(s) would in turn lead to new or revised tentative structures, which might also evolve, depending on their relative effectiveness and qualitative characteristics, and so on. This model is equally relevant for theorists and researcher who characterize authentic creativity as an intrinsically motivated, intentional act of expression, and for those who view creativity merely as problem solving. Therein lies the genius of Necka's proposed model.

One might argue that creative interaction could lead to an endless loop of revised goals and tentative structures, but this logical fallacy neglects the role of the individual creator. If we apply Eisner's concepts of qualitative reasoning and somatic knowledge to Necka's model, it becomes clear that throughout this interactive process, the creator's somatic knowledge will at some point

result in a creative outcome, when that “rightness of fit” (Eisner, 2002) between the goal and the tentative structures is reached, or when the creator feels the goal is met as closely as possible. An “end point” in a creative interaction cycle will always be reached--even if this involves abandoning a goal entirely. In any case, only the creator can determine this endpoint, given that creation is a private event (Necka, 2003).

One of the problems Necka identifies with traditional models of creativity (particularly those that equate it with problem solving), is that these models typically assume a known goal as the starting point of a creative act. Necka, by contrast, recognizes that a goal is not necessarily the inciting event in any creative act:

One may take up a creative activity not necessarily in response to a goal’s requirements but prior to a goal’s very existence...[The] first sketch of a drawing, or a single striking metaphor, may serve as the core of a future painting or of a would-be poem, respectively, although no specific idea of what the painting or the poem should be like yet exists. (p. 120).

Similarly, the ceramic artist Peter Voulkos describes his artistic process as ambiguously driven:

“Most of the time when I work I work in the dark, but sometimes I have just a vague idea of something and I want to bring it into being” (cited by Zurmuehlen, 1990). Both Necka’s theoretical model and Voulkos’s actual account illustrate the non-linear, non-sequential nature of authentic creativity (as differentiated from problem solving), thereby rendering step-by-step models for the creative process inadequate.

In sum, creativity, while closely related to and inextricable from critical thinking, is non-linear and qualitative in nature, thus to a large degree, it defies taxonomic classification. Some researchers may argue that creativity is a social act (Padgett, 2013), but creativity, as with all cognitive processes, is always private, as creativity occurs within an individual’s mind. No matter how much social interaction may influence an individual’s thinking, the connections that generate any idea always occur in the mind of the individual.

Metacreativity: Concentric Layers of Creativity

As I was originally identifying and defining questions for this study, I had a realization that, at the time, I thought might prove to be profound. In reflecting on the nature of creativity, its relationship to critical thinking, and the implications of that relationship for my students, I also considered the role of metacognition. I wondered if, by intentionally reflecting on their creative processes, my students might better understand their own creative tendencies and the factors that influence their own processes, and if so, whether or not such reflection might help them to grow creatively. I articulated this concept to myself as “metacreativity.”

While my idea of metacreativity borrows from the term metacognition (thinking about thinking), my definition of metacreativity is not precisely analogous in that I do not mean “being creative about creativity,” but rather thinking about one’s own creative process. In my own contemplations and discussions with students and colleagues the following sub-questions arose:

- What fuels your creativity?
- What conditions foster your creativity?
- Do you feel you create best individually, or can collaboration benefit your process?
- To what extent do you feel able to control the conditions that promote your creative process?
- Which aspects of your creative process are within your control and which do you need to “let go” of?
- How can you tell the difference?

I was initially optimistic about the idea of metacreativity, so I asked students in another class I teach, Creative Applications, a two-year course in which students investigate arts-related careers, to respond to the above questions in a written reflection and then discussed their responses with the

whole class. While my students were actively engaged in the conversation, I got the sense that they were somewhat indifferent to the concept itself. The next year, I had almost the same experience with a different group of students who participated in the same activity. This time, I simply asked them why they didn't seem too enthused about the idea. On the spot, most of them could not explain precisely why, but the gist of their responses was that creativity should be a free process. They expressed that creativity should be fun. Stopping to think about creativity while they were creating would take the fun out of it and make creativity feel like work, which they believed would not help them be more creative, if the goal was ever to "work on improving" their creativity. Their responses resonated with my own experiences as an artist, but as a teacher, I still hoped there was more there that might prove insightful or useful.

When I began conducting secondary research for this study, I found few sources addressing anything called metacreativity as I had been thinking about. Through some initial Google searches, I learned that metacreativity is a power in the game Dungeons & Dragons, which may be interesting to learn about, but is not exactly relevant. After searching for different variations of the term (e.g., "metacreativity," "meta creativity," and "meta-creativity"), I located two researchers who had used this term in creativity research in the past.

In her article "Metacreativity: Awareness of Thoughts and Feelings During Creative Experiences," educational psychologist Catherine Bruch (1988) described metacreativity as an approach to examining what to do and how to do it in creative processing, choosing and attending to the creative strategy under application, and reviewing in one's mind and feelings what happens during the creative process (p. 113). This definition, which one can pretty well infer from the title of her article, is very similar to the notion I arrived at through my own observations and reflections as an art and English teacher, as well as an artist myself. My idea, however, would more specifically

involve the creator consciously considering any or all aspects of the creative process during the process itself in order to make changes to improve the process.

In her article, Bruch advocates for further research into metacreativity, as well as for developing a conscious awareness of the creative process in all people, but especially in people possessing the “potential to express significant creativity” (p. 112), such as professional artists, writers, scientists, and musicians. Much like Csikszentmihalyi (2013), Bruch appears to subscribe to the “Big C/little c” view of creativity wherein a small number of individuals achieve prodigy status for acts of exceptional creativity, while most people are only capable of more modest creative acts.

Furthermore, while Bruch’s primary interest seems to be the creator’s perception of their own feelings and thoughts during creative acts, she also identifies eight “realms” of the creative process in which metacreativity could be applied: (p. 115-117)

- Process Selection
- Strategy Selection
- Representation Selection
- Processing Allocation
- Solution Monitoring
- Sensitivity to Feedback
- Translation of Feedback into an Action Plan
- Implementation of the Action Plan

Bruch’s “realms” closely resemble the taxonomic classification approach of many other creativity researchers. Also like other creativity researchers, Bruch discusses creativity almost exclusively in terms of problem solving, which I find reductive, as I argued earlier.

As I reflected on my own notion of metacreativity, Bruch's article, and the issues I had with much of the creativity research (defining creativity as problem solving; dichotomizing creativity and critical thinking; and taking a generally dogmatic, taxonomic approach to studying creative thinking), I began to realize that I was (and am) no longer enamored of my original idea. Upon further research and reflection, actually applying metacreativity during creative acts is more likely to hinder than help one's creative process.

This conclusion is logically supported if one considers Csikszentmihalyi's notion of "flow" in creativity (as cited in Miller, 2002): in short, actually applying the concept of metacreativity *during* creative acts would require a conscious pause in the creative process, thereby interrupting any state of "flow, the state of involvement in an activity that is so focused and intense, one loses track of all other distractions outside of the act itself, including time" that the creator had been engaged in, and hindering authentic creativity. This also relates closely to my criticism or meta-analysis of the approach to creativity research over much of the last century. I found myself drawn to the same logically tempting, but not necessarily accurate, approach as many of the researchers I have been critiquing. I, too, was on the verge of misrepresenting the creative process, which is by nature abstract, non-linear, and non-sequential, as a concrete, sequential practice.

Throughout my research, I have begun to acquire my own nascent *Weltanschauung*, or somatic awareness, regarding creativity itself. When I pay attention to that somatic awareness, I now view my (and Bruch's) notion of metacreativity as yet another variation of the rigid, reductive approach to creativity that I find so antithetical to the creative process itself. Ergo, I have more or less jettisoned this idea.

Runco (2015), however, provides a compelling, alternative view of meta-creativity, describing it as the practice of applying what we learn from creativity research in order to be more

creative in our approach to subsequent creativity research. In so doing, Runco addresses many of the problematic aspects of creativity research that I have discussed previously. In short, he argues that the field of creativity research would benefit from a more creative, flexible, and holistic approach: one that is tolerant of ambiguity and resists the temptation to label, identify, and order all of the “sub skills” that presumably constitute creativity, as the nature of the creative process is not conducive to study through these more traditional research practices or paradigms.

Summary and Research Questions

Research has traditionally approached creativity, as well as critical thinking, through a limiting approach that manifests in three primary ways: studying creativity by equating it almost exclusively through with problem solving, positioning creativity and critical thinking as opposites or mutually exclusive processes; and attempting to deconstruct the creative process, including identifying constituent cognitive processes within creativity and taxonomically classifying them, and often arranging those into a variety of step-by-step formulae for creativity.

Recently, scholars have begun to view creativity more holistically, generally becoming more flexible in their thinking about creativity and in their approach to research, changes that are essential to furthering our understanding of not just creativity, but all cognitive processes. In response to this gap in the research, the present study attempts to evaluate and apply student perceptions of their critical and creative thinking skills, as well as the role of curriculum, in supporting the development of these cognitive skills.

As previously stated in my introduction, my observations of perceived growth in my student’s evaluations of submitted works throughout the semester piqued my curiosity about how that growth in critical, evaluative skills might transfer to my students’ own creative work, as artists,

writers, musicians, performing artists, etc. This led to the development of the following, more specific questions:

- How do the thinking skills required to interpret and create visual art and written texts relate to and/or complement one another?
- Can critiquing writing (or art) cross over and help one as a visual artist (or writer)?
- How do the thinking skills required to critically evaluate and create visual art and written texts relate to and/or influence writing and art making skills?
- Do skills developed by evaluating the creative work of others “automatically” transfer to the students’ own creative works?
- Is there a conscious connection and application of those critical evaluation skills that students make? (This is a concept I began to think of as *metacreativity*.)
- If students do apply those critical thinking skills to their own creative work, how, to what extent do they do this, and to what end as far as the students are concerned?

Because the context of this study was limited to my Writing for Literary Publication class, all of these questions fall under the much broader umbrella question of “What happens in the process of producing a student-published literary/art magazine?”

CHAPTER 3: METHODOLOGY

Context and Setting

The research participants in this study were students enrolled in Writing for Literary Publication, colloquially referred to as “Sparrow,” an English class I have taught at Shermer High School¹ in Colorado, for the past eight years. Shermer High School is one of four comprehensive high schools in Glenbrook School District, which serves over 29,000 students². Shermer HS is home to approximately 1840 students who live in an area covering over 1000 square miles. Forty-one percent of students live below the poverty line, and 8% are English language learners. By race, 1% of students at Shermer are American Indian or Alaskan Native, 3% Asian, 1% Black, 25% Hispanic, and 69% White. Ten percent of students have an Individualized Educational Plan (IEP) or 504 plan for learning, physical, intellectual, emotional, or other disabilities.

The course and magazine. Writing for Literary Publication is a one semester course in which students serve as the editorial board for our school’s award-winning, student-published literary/art magazine, *The Sparrow*, which has been published annually since 1985. In the American Scholastic Press Association’s Annual Contest and Review, *The Sparrow* has been awarded “First Place” or “First Place with Special Merit” every year since 1996, earning the highest award, “Most Outstanding Literary/Art Magazine,” on four occasions. Similarly, *The Sparrow* has also been rated “Excellent,” “Superior,” or “Highest Award” in the National Council of Teachers of English Program to Recognize Excellence in Student literary Magazines every year since 1997.

Throughout my eight years teaching this class, I have adapted the course structure, which was originally created by a previous instructor, and evolved over the past 33 years by various

¹ To ensure the anonymity of study participants, the names of all entities and participants related to this study have been changed.

² All data are from the 2014-2015 school year, as published on the Glenbrook School District website.

teachers. I have guided students through the process of selecting material, arranging printing services, and laying out all content for publication in the magazine, and all other aspects of producing a literary/art publication (fundraising, soliciting submissions, advertising, promoting, and selling the magazine, etc.). Student staff members evaluate between 750-1000 submissions, which requires them to identify criteria for accepting and rejecting work and to consistently apply advanced critical thinking skills in the creation, analysis, and evaluation of submissions. Students are also required to maintain specific written notes regarding every submission.

Students evaluate the majority of submissions outside of class time. During class, several student editors lead the voting process by which pieces are selected for inclusion into the magazine. If 2/3 or more of the students vote for or against any specific submitted piece, it is then accepted or rejected, respectively. If the vote is split, students discuss that particular piece according to the following protocol:

- One student who voted in favor of that piece addresses the specific characteristics of the piece that led them to vote for it.
- One student who voted against that piece addresses the specific characteristics of the piece that led them to vote against it, *without* offering any sort of rebuttal to the comments of the first speaker.
- A third student may volunteer a comment either for or against the piece, if their input has not already been addressed.
- A second vote is taken to attempt to reach the 2/3 majority either for or against the piece.

The purposes of this protocol are to foster civil discussion about the merits and specific qualities of creative writing and artwork, to allow students to understand what others may notice in a work of art or writing that perhaps they did not consider, to model the critical and evaluative skills

for less experienced staff members, and to give all staff members an opportunity to reconsider their votes with the insight of having heard the observations of others.

All primary data for this study were collected in the spring and summer of 2015, via student entrance/exit interviews³ and my own field notes/written reflections.

The participants. For this study, I chose three students in my Writing for Literary Publication class in the spring of 2015. This was the second year in this class for all three of these students, as they had also served on the magazine's staff in 2014. During students' first year of participation on the magazine staff, they learn an abundance of routines and procedures, as well as software programs and applications used for content input and layout of the publication. Additionally, the process of evaluating submissions might be likened to grading essays for an early-career English teacher: it takes quite a bit of practice to be able to grade those essays (or evaluate submissions) quickly, thoroughly, and critically, all while providing specific, meaningful feedback for the student. The same practice is essential for first-year students in the course to learn and apply.

I chose three second-year students for this study because they were all familiar with the routines and were more practiced at the process of evaluating work. Also, I had established relationships with all three students from their 9th grade year through the time of this study, as I had either taught them in multiple classes, been their coach in cross country, or both. My reasoning was that their past experience as *Sparrow* staff members would likely allow them to reflect more meaningfully and have more to say about the topics and questions I posed to them, and our established rapport might allow them to feel more at ease discussing their own creative processes, interests, and views with me.

³ Keep in mind that the first and second interviews were conducted approximately eight months apart. Participants did not have access to their responses from the first interview, other than their own recollection, for the second interview, which may be significant when considering similarities and differences in participants' responses from one interview to the next.

All three of the students whom I asked agreed to participate in the study. All three were seniors in the spring of 2015, all three are female, and as mentioned, I had known all three since their ninth-grade year. Two of the young ladies, Grace and Shauna, were four-year athletes on our cross country team, for which I served as head coach. Although the coach-athlete relationship is no more or less dynamic and complex than a teacher-student relationship, it can often feel less formal since a coach's goal is not only to help athletes improve their performance, but also to foster self-efficacy, leadership skills, determination, and life habits in non-academic contexts. Having coached Grace and Shauna for five months a year, four years in a row, I had established both a rapport and trust with them that were perhaps deeper than those I typically develop with my students.

Grace and Shauna were both seniors in Shermer High School's International Baccalaureate (IB) Diploma Programme and had previously completed the IB Middle Years Programme (MYP) at Shermer, as well. The IB Programme places as much emphasis on written reflection and process as it does on outcomes, since one of the larger goals is to help with students' development of metacognition. Having been part of the MYP, which begins in 6th grade, both Grace and Shauna had had at least 6 ½ years of practice in intentionally and explicitly reflecting on their thinking, learning, and overall process by the time they participated in this study.

The third student-participant in my study was Simone, whom I had taught in four previous semester-long classes, including Writing for Literary Publication in the spring of 2014 as well as two visual art studio classes and a humanities course. As such, I had also gotten to know her quite well. Simone was a "traditional" student at Shermer HS, meaning she was not enrolled in the Diploma Programme, but was completing her second year in the IB Higher-Level (HL) Visual Arts course in the semester this study was conducted. Based on my experience as her teacher in multiple classes, I

knew that she also had strong reflective skills, and I had witnessed her art making, writing, and thinking skills improve tremendously from when I first met her in her ninth-grade year.

Researcher's Role

As both the researcher of this study and the teacher/advisor for *The Sparrow*, I have multiple stakes in this investigation as a teacher-researcher or practitioner researcher (Lytle & Cochran-Smith, 1989; Zeni, 2001). As a teacher, my primary responsibility, both ethically and professionally, is to my students' overall well being, including their academic development and success. Simultaneously, I occupy the role of researcher, conducting inquiry using my own students, my own classroom, and my own research questions. In some ways, this dual role also doubles my responsibilities to my students: all teachers must apply ethical decision making in their lesson planning, teaching, grading, and interactions within the teacher-student relationship, but teacher-researchers must also consider the ethics of responsible research and reporting—first to our students/participants, and to our audience—by revealing the factors that have shaped and limited the research and findings (Zeni, 2001).

Furthermore, as a member of a school and professional community, I also seek to improve the quality of *The Sparrow* and to provide a venue for the creative expression of all students in our school who submit their work for consideration. As the faculty sponsor of the magazine, I must also uphold the integrity of the process of creating the publication itself. This includes such aspects as maintaining anonymity of submitters; fostering a fair, open, and constructive selections process; addressing issues related to freedom of expression while publishing an age-appropriate magazine; and educating members of our school community about all of the above ethical practices.

Data Collection

I collected three forms of data, as follows, in order to gain insight into how students' growth in critical, evaluative skills might transfer into their own creative work: 1) interviews I conducted with the student participants; 2) field notes I recorded during class to capture my observations while students were engaged in evaluating pieces for possible inclusion in *The Sparrow*; and 3) brief notes I made during and after discussions with colleagues regarding my thinking about the study as it unfolded during the data collection process.

While I certainly had some hypotheses going into this study, namely that the process of evaluating such a large volume of student-created art and writing submissions would absolutely help the students who did the evaluating improve their own creative thinking, I did not embark on this study to simply confirm these hypotheses. Rather, I wanted to gain insight into *students'* perceptions of this idea, thus interviews were a logical choice. To this end, I generated a list of interview questions to be administered to students both before and after the semester in which the students were enrolled in Writing for Literary Publication, the answers to which I hoped would provide insight into my students' own creative workings and their perceptions of their experience in the class. I wanted to learn as much as possible about the "how," the "why," and the "what" in fostering student creativity as well as the relationship(s) between critical and creative thinking.

Working with my beginning list of questions, I developed a specific set of interview questions intended to be specific enough to garner responses relevant to my research questions, but broad enough as to leave room for expanded responses from the participants, where necessary or appropriate. These questions are listed in Figure 2. I conducted the second interview via email, as explained below, adding the following statement to the instructions: "If you are responding in

writing, please include as much information in response to each question as is possible and reasonable.”

I conducted the face-to-face interviews with the student participants at the beginning of the semester in January, and a second time in September. My original plan was to conduct additional face-to-face interviews with the girls in January and May as well, but with their IB exam schedules and end-of-year/graduation events, I was unable to do so until the following September, when all three girls were a month into their first semester of college. All of them opted to respond to the second interview via email rather than over the phone.

Questions for Thesis Study Interview:

Please address the following questions as thoroughly as you would like. Feel free to think aloud as you formulate your responses.

1. Subjectively, how creative do you consider yourself?
2. How often do you engage in creative activities (art making, writing, singing, dancing, performing or writing music, woodworking, metalsmithing, or any other activity you consider creating)?
3. For what purposes do you engage in creative activities? (Examples could include a school class, for an organized or informal group in which you are a member, for your own enjoyment or personal expression)
4. What is/are your primary modes of creating? (You may list more than one.)
5. Do you “consume” the creative work of others? (This could be considered reading, listening to music, viewing artwork, watching films or television, etc.)
 - a. If so, what types, how often, and for what purposes?
6. Describe your creative process.
7. When you create, what critical thinking skills do you apply to your own work while making it? After making it? (If necessary, I will ask clarifying questions, such as: Do you consciously think about formal, technical, or other elements of what you are creating while you are creating it? Is your creative process sequential or formal in some other way, or is it more intuitive or holistic?)
 - a. How did you develop any critical thinking skills that you apply during the creative process?
8. How important do you believe critical thinking is to your creative process?
 - a. What potential advantages or disadvantages do you believe critical thinking could have on the creative process for you and others?
9. To what extent do you feel your participation as a staff member for *The Sparrow* helped you develop critical/evaluative thinking skills?
 - a. Can you give any examples?
 - b. Specifically, what activities did you take part in that helped you develop critical thinking skills?

Figure 2: Interview questions

As the introduction in Figure 2 indicates, I designed a series of open-ended questions that would allow participants to respond as spontaneously as possible by thinking aloud as they formulated responses for all questions and by asking me clarifying questions, if necessary, to help them provide responses relevant to the intent of the research. I also asked my students follow-up questions as necessary to clarify my understanding of their responses.

After listening to the recorded interviews multiple times, I employed the method of “selective transcription” (Dyson & Genishi, 2005), focusing on what seemed most relevant to my overall research questions regarding critical and creative thinking, the creative process, and what role my participants felt their participation as *Sparrow* staff members played in their own creativity and critical thinking. I retained the audio recordings of the interviews so I could return to them if necessary during the analysis phase of my research. Obviously, no transcription was necessary for the email interviews, and I was not able to ask clarifying questions, as I was in the initial interviews. Regardless, after reading their emails, I felt I understood their responses sufficiently and did not reply to them with follow-up questions.

In addition to conducting these interviews, I recorded field notes consisting of my observation of and reflections on class discussions during the evaluation and selection process for *The Sparrow*. Many of these writings had as much to do with my own questions regarding this study as they did with what I had actually observed my students do and say during class. As such, my field notes helped to further refine my own inquiry, guide my ongoing secondary research, and ultimately to shape the lens through which I analyzed interview data.

Finally, I maintained limited notes from discussions with colleagues, including my wife, Emily, who teaches English at Shermer, and several of my professors, including all three of my thesis committee members, Colorado State University professors Cindy O’Donnell-Allen, Patrick Fahey, and Louann Reid. These discussions with colleagues and professors served to help refine my approach to this study, identify secondary sources, and consider the perspective of other professional educators, rather than as primary data.

Data Analysis

When listening to interview recordings and determining which segments to select for transcription, I took notes on several loose thematic categories within student responses. Analysis included three rounds of coding. In the first round, I took general notes that included my reactions to student responses that I found to be surprising or that might support or refute my emerging claims as well as common themes that recurred within each individual interview, as well as across the interviews with all three participants. In the second round, I took note of student responses that related directly to the themes I addressed in my literature review, and clarified common themes that emerged from student responses, both directly related to my research questions, as well as commonalities that arose spontaneously or unexpectedly. These themes emanated from my interaction with the authors' presented theories and my own experiences and observations throughout my teaching career (Hubbard & Power, 1999), so even as I was reviewing the secondary research included in my literature review, these ideas were brewing. After completing my secondary research, I augmented my preliminary notes about these topics to further identify common themes. In the final round, I double-checked the validity of my previous observations and recorded aspects of student responses that both influenced my conclusions about the study overall and raised new questions for future research.

Limitations of the Investigation

Reflecting the traditions of teacher and practitioner research (Cochran-Smith & Lytle, 1993; Zeni, 2001), this study is limited in scope to a single classroom focused on the production of a literary anthology and is highly dependent on this context. While literary anthologies are produced by many high schools and share some common elements, as evidenced by the consistently high rankings *The Sparrow* has received in national contests sponsored by the American Scholastic Press

Association and the National Council of Teachers of English, the anthology that is the subject of this investigation reflects the unique history and corresponding idiosyncrasies present within the class at hand and the larger context of Shermer High School. For instance, Writing for Literary Publication is a single-semester elective, and the structure and content of the course is closely related to the structure and content of *The Sparrow*. For these reasons, the course cannot be viewed as a completely reproducible model for a different context.

Furthermore, due to the small sample size, the results of the study are unlikely to extrapolate to all aspects of the relationship between individuals' creative processes, their critical evaluation of others' creative artifacts, and transferability between the two. Similar studies conducted in multiple, varying classroom contexts could result in more readily transferrable teaching practices that other teachers could implement in their own classrooms. Finally, significantly narrowing the focus of the study and/or the research questions that guided it might yield more data and perhaps more focused conclusions and insights into particular aspects of this study.

CHAPTER 4: FINDINGS

Due to the evolving nature of the research questions guiding this study, the themes addressed here generally parallel, but are not identical to, the questions presented in the introduction. Throughout this study, these initial questions changed somewhat, as informed by emerging data, observations, reflections, and discussions regarding the topics addressed. Primary data derived from student interviews, field notes, and brief notes address the following closely related sub-topics or ideas:

- The application of critical thinking during creative acts
 - How do the thinking skills required to critically evaluate visual art and written texts relate or apply to art making and writing skills (or individuals' creativity in general)?
- The creative process as described by students
- The ways in which the curricular model employed in Writing for Literary Publication supports both critical and creative thinking in virtually every way the experts advocate, regardless of their approach to studying or interpretation of creativity

I interviewed each student twice: once in February, and again in September. The participants' responses sometimes varied from the first interview to the second, potentially due to a variety of factors. When relevant, I present information indicating the timing of the interview, as well as the possible significance of differences and similarities in student responses from the first interview to the second.

Students' Views on the Role of Critical Thinking in Creativity

Students in Writing for Literary Publication evaluate an average of 750 student-submitted creative works per year. This equates to roughly 50-70 hours of work, depending on the pace at which students work and the number and nature of submissions we receive. Due to the timing of

submission and printing deadlines, almost all of this evaluating takes place during a six-week period, resulting in a depth of immersion that is rare in a classroom setting.

My participants and I agreed that for the purposes of this study, “critical thinking” refers to the cognitive skills they apply during evaluation of submitted works. While students likely apply some divergent or creative thinking processes while doing this evaluating (Eysenck, 2003), this task involves mostly critical thinking skills, as students must analyze, interpret, and evaluate (McGregor, 2007) the works to decide if they merit inclusion in *The Sparrow*, and then justify their decisions both in writing and class discussions. One might logically conclude that this level of practice could help students hone their critical thinking skills, and may even foster the application of those skills in other settings. Student responses corroborated this conclusion.

Simone. In my first interview with Simone regarding the importance of critical thinking in creative acts, she claimed, “For most people, critical thinking is the [creative] process,” drawing a direct connection between critical and creative thinking, which is consistent with the vast majority of research (Cropley, 2001; Runco, 2003; McGregor, 2007; Lau, 2011). With regard to *how* critical and creative thinking interacted in her own creative process, she said,

It’s pretty automatic, I guess. It used to be that I would just do it [make art] without thinking too much, but I realized that wasn’t completely working, so I had to take a few steps back and now I’m more conscious about it. But it’s not like I have to think about every little thing, either.

Simone corroborated her initial responses in our second interview, claiming that “Critical thinking is very important when I’m creating, however, whether I’m consciously thinking about it or not changes.” In most of her creative endeavors, Simone did not consciously apply critical thinking to her work, though at times she would pause and actively consider aspects of her art making such as composition, value, or application of media. Regardless of *how* she applied it, critical thinking was critical to Simone’s creative process, and she knew it.

Grace. Grace also applied critical thinking skills in her creative process to a relatively high degree, and directly stated, “I think critical thinking is really important to what I write.” She also addressed what that looked like within her process, stating that she had “a schema of what a poem is supposed to be, so I will think about the structure, the format, and the words I choose, because I feel like my poems should fit into that [notion of what a poem should be].”

Grace elaborated on her views, saying, “I very seldom write without using the skills I’ve acquired. Without those . . . writing becomes bland. Writing needs those elements.” Whereas Simone described the application of critical thinking within creative acts as “pretty automatic,” Grace seemed to apply those skills in a more overtly intentional manner: “I do consciously think about formal and technical elements while writing. Especially with poetry, those elements can add to the poem as much as [the language] you use.”

Shauna. Shauna also attested to the importance of critical thinking in creativity, both to refine one’s process, and to ensure the highest quality creative products. Shauna implied a somewhat less conscious implementation than Grace, and perhaps even Simone. In explicitly addressing how she applied critical thinking skills in creative acts, she replied,

I [think] I’m pretty much a natural writer. I don’t know, it just kind of comes out . . . I can’t do outlines in anything. I find that both in poetry and in-class [writing], I can’t know exactly where it’s going; it just has to grow upon itself. Then I can come back to it and change it, essentially.

Shauna’s comments suggested that critical thinking operated in an integrated fashion during her creative process, rather than being overtly or intentionally applied. If Shauna did consciously apply critical or evaluative thinking, it happened after the writing itself, in editing or revising.

During the act of creating, Shauna may have suspended critical thinking temporarily, despite acknowledging its importance, waiting until a later time to evaluate and make changes to her work. Elaborating on the significant role of critical thinking in creativity, she said:

There's value in just creating something for the sense of creating it just as it is, but I think if you don't go back and look at it, or if don't, when you're finished, think about why you did it, then I don't think you're going to grow as much. That might be IB seeping into me, but I think there's a lot of value in evaluating your own work.

Shauna directly stated that she did not think about technical elements while writing poetry, but still addressed the role of critical thinking within that process: "Writing poetry is sort of a critical thinking process within itself for me. I use poetry as a vehicle of critical thinking, so I can see emotions or experiences more objectively." This statement could be interpreted in two ways. It could simply be that critical thinking was inherent in Shauna's creative process and occurred somewhat subconsciously. It could also be that creativity (in this instance writing poetry) benefited her critical thinking, as well, because poetry served as a way for Shauna to critically think about her personal experiences.

Like Simone, Shauna suggested that the degree to which she consciously applied critical thinking varied depending on the creative event. While she described her writing process as mostly intuitive, she approached "drawing, painting, or writing music with much more of a focus on critical thinking (I'm equating that here with 'methodological' creativity). I do this because I'm less comfortable technically with these mediums." By explicitly relating her level of comfort to her expertise with different modes and media, Shauna's statement supports Eysenck's notion of a disciplinary matrix or *Weltanschauung*, which he describes as an acquired body of knowledge and experience through which one becomes an expert in a particular discipline (2003). It also substantiates the notion of somatic knowledge as described by Eisner, as well as Steve Jobs' claim that creative people have had more experiences and/or thought about those experiences more than other people have. Thus for Shauna, the need to consciously apply critical thinking *decreased* for modes of creativity in which she had more experience and expertise (poetry), and thereby had acquired a higher level of somatic knowledge.

Unquestionably, critical thinking relates closely to creativity (Runco, 2003; Lau, 2011). From my own experience, that of my subjects, and discussions with colleagues, exactly how critical thinking manifests during creative acts varies, depending on the individual (i.e., one's preferred style of learning and other cognitive factors), the person's experience within a given creative discipline, and other external or internal factors such as environment, purpose, and intention (Csikszentmihalyi, 2013). The degree to which one has acquired a disciplinary matrix or somatic knowledge in a particular medium, genre, or subject correlates strongly with how seamlessly they engage critical thinking skills within creative acts.

Students' Views on Their Creative Processes

The creative process varies among individuals and contexts (Cropley, 1992; Eysenck, 2003; McGregor, 2007). Purpose (e.g., intrinsically motivated acts of creative expression vs. creative thinking applied to presented problems) also determines the nature of the process. While many researchers present models of the creative process or creative cycle (Finke, Ward, & Smith, 1992; Lau, 2011), there is no single agreed-upon model for creativity or "the" creative process. As I argued previously in my review of the literature on creativity, such models cannot account for the individual and idiosyncratic aspects of creativity, as each creative act is unique.

Simone. Simone primarily worked and works as a visual artist, so most of her responses referred to visual art. Her strong interest in sequential art (storyboards and graphic narratives with some text) meant that some of her work also involved writing. In our initial interview, Simone described herself as "pretty creative," and described her creative process clearly. The organic nature of Simone's creative process required her to "wait for the inspiration to come, so I can't force it that much. And normally, it's really random."

In our second interview (after her first month of art school), she seemed less certain of her own creativity, in part because many assignments for classes were prescriptive or academic in nature, and in part because she was now considered herself to be surrounded by “**very** creative” people [emphasis in original]. She also seemed more ambivalent about defining her own creative process, as evident in her response:

At one point I knew how to describe my creative process, but now that I’m [in art school], I’m not sure anymore . . . When I feel like I’m really creating it’s when I’m just doing fast doodles in my sketchbook. Those are normally my most creative sketches because they’re so free.

The doubts that Simone expressed in our second interview in describing her creative process, as well as her assessment of her own creativity relative to others, can likely be attributed to the new setting in which she was creating: a prestigious art and design college surrounded by hundreds of other accomplished and talented art students. While still expressing confidence in her own abilities, Simone’s humility seemed authentic and appropriate, rather than self-effacing in any way, and demonstrated the contextually and individually dependent nature of one’s assessment of their own creative skills and processes and creativity itself.

In both interviews, Simone explicitly credited the practice of critically evaluating others’ artwork with helping develop and apply critical thinking skills to her own art making. While assigning significance to the role of critical thinking, she also keenly identified the potential pitfalls of too rigorously applying those same skills in creativity, stating, “[The] only disadvantage is that I start to think too much about what I’m creating and it discourages me from making anything at all.” Simone’s comments confirmed that she worked best when her process emanated from an authentic, intrinsic source of motivation and when she was less conscious of her own application of critical thinking.

Grace. Grace's primary creative interest was writing, specifically poetry, though she mentioned writing some short fiction and journaling frequently. She expressed confidence in her creative abilities, replying in both interviews, "I consider myself very creative." She cited self-expression as her purpose for writing, claiming, "[There] is no other purpose for me to write than to express my own thoughts," and added, "I would love to have my writing published someday, but not at the expense of my creative voice."

Regarding her creative process, Grace explained in our first interview that it varied, but usually, "[Whenever] I have a little thought I'll write it in my notebook, and then . . . I'll type it into a word document and let it sit there for a little while, unless I want to work on it right then." She also noted that at times when her notebook was not accessible, she might begin by recording her thoughts directly on her laptop. In order to record her work, she also transcribed her poetry back into her notebook "so that I have them saved in two places." Grace's explicit mention of "letting [her writing] sit there for a little while" is consistent with what many researchers refer to as "incubation" in the creative process, regardless of the level of prescriptiveness they bring to their interpretations (Runco, 2003; McGregor, 2007; Lau, 2011). The relative fluidity with which incubation or other theoretical "phases" of creativity occur will vary, as in Grace's example, again giving evidence to the individual, idiosyncratic nature of the creative process (Zurmuehlen, 1990; Eisner, 2002; McGregor, 2007).

In our second interview, Grace expressed more uncertainty in describing her process: "I'm not sure that I really have a process . . . I'll write down what I'm thinking or feeling. Many times, I [jot] down random thoughts from the day . . . and later transfer them to my laptop to be worked on later." Grace's description approximated the one she gave initially, yet her ambivalence in defining her creative process was notable, in that both Grace and Simone expressed more uncertainty the

second time they answered this question than the first. The participants' uncertainty in this regard may have emanated from a general ambiguity about the nature of creativity, which itself stems from the non-linear, holistic, and variable nature of the creative process. It could also indicate, however, that upon further reflection, both participants realized the creative process is more complex than they initially realized, perhaps even too nebulous to describe. Nevertheless, creativity varies for different individuals and under different circumstances, thereby defying any rigid definition of "the" creative process.

Shauna. Shauna reported engaging in creative activities of her own choosing at least four days per week, including playing piano, writing poetry, drawing, and painting. Like Grace, Shauna primarily engaged in creative acts for personal expression, but clarified this further by stating that creativity also allowed her to process her personal experiences, as well as local and global events. She also cited writing as an emotional release and a way to "slow down in the midst of a hectic schedule." In high school, she said she played piano for 45-60 minutes a day, which served as "a great study break, and focused a different part of my mind."

Shauna seemed somewhat flustered by the open-ended nature of some of my questions, particularly those pertaining to her own creative process. The following exchange from our initial interview illustrates this well:

CM: Subjectively, how creative do you consider yourself?

SB: Um, like on a scale of one to ten?

CM: No.

SB: What do you mean by subjectively?

CM: It's a subjective question.

SB [sighs audibly]: I'm pretty creative, yeah. I wish I had more time in school to actually take art classes or more time outside of school to pursue them, but I think I'm a creative person.

Even in our second interview, Shauna responded, "How about objectively? 7/10? This question is hard for me. I think I'm a pretty creative person, but I don't always have time to prioritize creative pursuits." As I argued earlier in my review of the literature, the creative process manifests ambiguity in both practice and analysis. Shauna's discomfort in addressing this question may also have stemmed from this general sense of ambiguity surrounding creativity.

Further illustrating the variable nature of the creative process, Shauna identified aspects of her creative process that were both intuitive and deliberate, as well as variations dependent on the nature and context of her creative acts. In describing how her creative process worked, Shauna was far more specific in her responses. During our initial interview, Shauna explained her creative process in detail:

Usually when I want to create something, it kind of just hits me and I have to be in the right mood. Like, I'll just go home and I'll say, "Okay, today, I really know that I want to write," and I'll kind of ignore all of my other obligations and . . . just work things through. Usually with poetry I'll hand write it first and then transfer it to the computer. I find that sometimes the mode in which you do things [writing by hand versus typing] changes the form of the poetry, almost. Like the line breaks: so I always run into trouble with that if, like, when I wrote it the first time I really intended to make a line break [in a certain place], or if it just happened because the page ran out. I usually find that I want to write poetry out and not type it, because somehow typing it first takes away from it. I don't know . . . Like it takes away the spark to just type on a computer. It feels fake somehow . . . for creative things, I think you should write it by hand first. With piano, I usually have three pieces at a time with my instructor and we'll sight-read them through, and work on the fingering, and then when I go home, I'll just practice them more. When we compose [original work] that's different: we usually use basic chord progression ideas or scales, and then there's this computer program for composing so that you're not composing by hand.

Shauna was acutely aware of the nuances of her own creative process. She articulated that when writing poetry, her motivation needed to be intrinsic, that when she found that motivation,

she needed to attend to writing, and that writing her first drafts by hand works best for her, as typing somehow diminished the experience. Her musical creative process embodied a more structured approach, which perhaps could be attributed to working with an instructor who to some degree defined what that process should look like.

While her response above was highly detailed, in our second interview, Shauna described a more intuitive approach to writing, particularly poetry, attributing that to her relative level of comfort with writing versus other modes of creativity:

I don't think about the technical aspects of writing when I'm writing poetry . . . I try to just express things organically...I think this is because [it's] the medium I feel most comfortable with, and writing comes very naturally to me. I don't really plan out what I'm going to write—it's more like the poem "finds" me . . . as soon as I write one line, the next just sort of appears . . . I might go back after I'm finished the poem and edit it or clarify it a little. This contrasts my practice when I'm writing an academic paper or essay—then, I correct and edit as I move along, and I almost never look back at the piece when it's finished.

Shauna's observations complicate claims related to over(t)ly-prescriptive approaches to creativity research, in that she described an authentic, fluid, and organic activity in which she simply *wrote*; yet, the fact that she returned to her writing later to revise and edit implicitly verifies that while specific "stages" need not be identified, because the process is recursive (Necka, 2003). Actions like incubation and revision do occur in creativity, just not in a set sequence and not in isolation. The process Shauna described here also owes its organic nature to her acquired somatic knowledge in the genre of poetry.

As the above excerpts demonstrate, students clearly differentiated between intrinsically and extrinsically motivated purposes for creativity. Shauna further identified differences in her process owing to her relative level of expertise with different media or modes of creativity. Shauna's creative processes for poetry, music, and writing for academic purposes included similar components: a purpose, which can be intrinsic or extrinsic; writing, which could be considered original ideation;

and editing or revising, which could be considered critical or convergent thinking. For Shauna, the order and manner in which these occur varied greatly depending on the context. Therefore, any step-by-step model of the creative process would struggle to encompass all, or even most, of her creative processes. When one considers Necka's creative interaction model (2003), such archetypal representations are rendered unnecessary.

The participants' relative hesitance in assessing their own creativity (Simone and Shauna) and/or defining the process (Simone and Grace) also speaks to the unique nature of each creative act. As implied by her hesitance when asked to subjectively assess her creativity, Shauna may simply have been more comfortable with concrete, measurable information and wanted to communicate that precisely. If so, this could indicate that Shauna struggled to tolerate ambiguity to some degree, although she considered herself "pretty creative." It is also important to note that her creative works, including poetry and visual art, were published in *The Sparrow* and recognized by teachers and peers for their originality and technical merit. Both things considered, at least in Shauna's case, a low tolerance for ambiguity may not always preclude high levels of creativity, especially in realms where the creator has acquired sufficient somatic knowledge.

The apprehension expressed by all three participants at certain times could also speak to something fundamental in the nature of creativity itself. Creation is an act of doing, of making, of expressing, and does not lend itself well to categorical analysis. Perhaps my participants' reluctance to describe their creative process or assess their own creativity relative to that of others originated from this disjuncture. Buber identified an "originator instinct" (Zurmuehlen, 1990), not a "label, codify, and describe instinct." As I argued previously in the literature review, we name, organize, and categorize ideas in order to understand measurable, observable phenomena. But the cognitive skills

required to understand external phenomena are non-generative. Creativity does not fit neatly into this paradigm.

Students' Views Regarding the Role of *The Sparrow* in Their Creative and Critical Thinking

Clearly, the students interviewed for this study understood their own creative processes well, and generally knew “what worked” for them and what did not. In my assessment, all three participants also exhibited strong critical thinking skills relative to their peers. Based on my own teaching experience, I would argue that many of my students, across academic tracks, have acquired reasonably strong critical thinking skills and at least some ability to assess the conditions that best serve their creative processes by their junior or senior year of high school. Given this, what are the conditions that promote creativity, how do students develop these skills and awarenesses, and how can teachers provide the conditions to best promote their students' thinking skills, both creative and critical?

Participants in this study at least partially attributed their growth as creators and thinkers to their participation as *Sparrow* staff members. In addition, the curricular model employed in Writing for Literary Publication incorporates many of the recommendations researchers offer to promote and encourage creativity and critical thinking (McGregor, 2007; Lau, 2011; Padget, 2013). The evaluation and voting process described earlier, other curricular components of Writing for Literary Publication, and student responses all corroborate these claims.

Simone. When discussing how she developed the critical thinking skills that she applied to her own creativity, Simone addressed a variety of factors that improved her creativity, art making, and critical thinking. Among other factors, she credited “critiquing more people’s art” for improving her critical thinking, which in turn benefited her creativity. As she pointed out, “Having to judge and evaluate so much work has helped me be faster about realizing the good and the bad in my own

art, too.” Simone suggested that after extensive practice, those critiquing skills became “programmed into me,” which allowed her to apply them to her own creative work, without consciously stopping during the making process to do so. Simone later confirmed this belief, stating,

I think my being on *Sparrow* [staff] was one of the biggest factors in why I can think critically. There was that constant practice of looking at other people’s creations and deciding how well it held up and that has translated to my own art. Seeing bad art also helped me learn what to avoid (haha).

In addition to recognizing how critical thinking benefited her creativity, Simone, who considered herself almost exclusively a visual artist throughout school, took a risk for creativity by enrolling in Creative Writing as a senior. She told me that evaluating artwork submissions to the magazine was fairly natural for her, due to her experience as an artist, but the ability to critique artwork did not automatically transfer to evaluating writing. She commented, “Last year, people said some things about creative writing that I didn’t realize weren’t very good . . . [In] Creative Writing this year, it helped my writing a lot, because I didn’t realize what things were good and bad about writing [before].”

As a teacher, Simone’s comment reminded me that students do not automatically learn or transfer existing skills to new situations and that by explicitly addressing transfer of learning, teachers can help their students intentionally apply skills and knowledge in new contexts. The practice of evaluating and discussing creative writing in structured settings, both in Writing for Literary Publication and Creative Writing, helped Simone recognize qualities that make writing effective or ineffective and then apply that awareness to her own writing, just as she had already done with her artwork.

Grace and Shauna. While Simone directly credited Writing for Literary Publication as a significant factor in the development of her thinking skills, in their initial interviews, Grace and

Shauna attributed their growth largely to the IB program and other factors. When asked how she developed her critical thinking skills, Grace replied,

I developed my critical thinking from reading other literature, poetry, etc. (mostly through IB English classes), and analyzing it based on style, format, diction, figurative language, connotation, etc. Especially in classes like Sparrow where I have to judge a piece of writing based on its artistic and technical merit, I will look to those skills to help guide my decisions.

While Shauna did not explicitly credit IB or Writing for Literary Publication for helping her develop critical and creative thinking skills, she acknowledged the value of evaluating submissions, both independently as well as in class discussions, adding,

I haven't come across too many writing [submissions] that have influenced me . . . I feel like a lot of the techniques I use in my own personal creative, whatever . . . The hugest [*sic*] influence on me has been books or poems that I've read. I notice that I'll read a book and if it's written in a certain style, then, when I'm writing, I'll kind of [subconsciously] mirror little details of that in my writing.

I admit feeling somewhat disappointed, and surprised at my own disappointment, that Grace and Shauna did not initially cite Writing for Literary Publication as a significant contributor to their critical and creative thinking skills. As mentioned previously, in conducting this study, I did not set out to confirm my initial hypothesis that this might be the case. Nevertheless, my observations of students' intellectual growth in that very class provided the catalyst for this entire study, so I clearly harbored that hope, even if unwittingly.

In our first interview, Shauna spoke in mostly general terms about the benefits of some of the protocols in Sparrow. She acknowledged that all staff members apply critical thinking in individually evaluating submissions and then discussing them in class and that this process can help staff members consider one another's perspectives, thereby broadening the lens they apply in future evaluations. She said she learned to catch herself during the evaluation process to "make sure that I

don't just judge something the first time I look at it . . . That's something I learned from last year-- to pay more attention to things and not just [say] 'Okay, I don't like it,' or 'Okay I like it.'”

Shauna also assigned “great value in the diversity we have in the class. (We) have IB kids, kids that are really into art, kids that are into poetry...They come from different backgrounds, so I feel like that's interesting and a strength of the magazine.” Finally, Shauna said she learned to appreciate the challenges inherent in working with a variety of art media she had previously been unfamiliar with. As she explained, “I probably learned about how difficult, like, woodworking is...[another] piece was an inkprint, and at first, some people didn't like it, [but] then someone said, ‘yeah, but printmaking is so difficult and they did it so well.” So, while Shauna addressed many beneficial features and practices within the class, she did not directly address the impact the class may or may not have had on her development as a thinker and creator

In their second interviews, however, both Grace and Shauna referred to Writing for Literary Publication more explicitly in their responses. In her written responses in our second interview, Grace commented:

Being a staff member/editor of *The Sparrow* has most definitely helped shape my critical thinking skills and develop them from the skills learned in English classes to evaluate literature. The anonymous viewing and voting process is essential to the class and in developing those skills. It helps to eliminate any preconceived notions one might have regarding a name or person or otherwise. The anonymity lets one evaluate a creative piece on merit alone, which is how one should judge creative work. The skills I learned and used in Sparrow I'll carry through the rest of my life, whether for my own writing or to evaluate the writing/creative outlet of another.

In order to remain faithful to my interview protocol, I did not ask Grace directly about the impetus for the changes in her thinking about the impact of the course on her critical and creative thinking that were apparent from the first interview to the second. My hunches, however, are that her more considered commentary in the second interview might be related to additional reflection time afforded by the seven-month interim. Additionally, the written nature of the e-mail interview

(as opposed to an in-person interview) might also have provided Grace the opportunity to respond more thoroughly or precisely. Regardless, her second reply addressed the role her participation as a *Sparrow* editor played in the development of her creativity and critical thinking more explicitly and specifically.

In her second interview, Shauna also more directly addressed the role *Sparrow* played in her learning. More than just discussing the importance of *applying* critical thinking in *Sparrow*, she addressed how that experience helped her *hone* those skills, stating, “I think being a part of *Sparrow* helped my critical thinking skills to a great extent. The main facet of the class that developed these skills was exposure to new opinions, new art forms, and new perspectives.” Shauna echoed Simone’s assertion that evaluating such a large quantity of work in class helped develop and then apply evaluative skills to her own creative work. She said that receiving a wide variety of submissions, “and then **evaluating** these works, really helped me develop my synthesizing skills. It also helped me reflect on my own artwork and creative expression, and evaluate that more objectively and in a different light” [emphasis in original].

Ultimately, all three participants attributed some of their growth to Writing for Literary Publication. While this reassured me as a teacher by confirming my initial hunches that the practices in that class support student growth, student comments about which specific practices fostered their growth the most also carry several other important implications.

Specifically, Simone, Grace, and Shauna spoke to the benefits of evaluating a large number and wide variety of submissions, as well as the process of discussing submissions as a class, which allowed them to consider other people’s points of view. I have long believed that the quantity of submissions affords staff members extensive practice in applying evaluative skills, which in turn led

me to assume that that practice also helped students develop those skills further. Student responses confirm this assumption.

With regard to in-class voting and discussions, multiple students have suggested in the past that we could expedite the voting process by simply having the web app through which we accept submissions tally all the staff members' votes, thereby minimizing time-consuming discussions. I have always responded to this request with a firm "absolutely not," because I believed the voting and discussion process to be one of the most powerful learning experiences in the class. My "teacher self" feels validated that students' comments support this belief with evidence. While automatically tallying votes would expedite the process of publishing the magazine, that would come at the expense of student growth and learning, which is my highest priority as a teacher.

How Creativity Research Supports Curricular Practices in Writing for Literary Publication

Interview responses certainly demonstrate that this class helps students develop critical and creative thinking skills. All three students consistently attributed at least some of their growth in critical thinking and creativity to their participation in Writing for Literary Publication. The creativity research supports the strategies and protocols employed in annually publishing *The Sparrow* (which I enumerated in the Methodology section) just as strongly as the primary data.

Minimizing students' fear in taking creative risks. Finke, Ward, and Smith (1992) give quite a bit of attention to the "fear" many people have of being creative, which they believe is a significant barrier to creativity. This may be true, as sharing one's creative work with others, especially strangers, always comes with the risk of failure. *The Sparrow* addresses this potential barrier by requiring that all student work be submitted and evaluated anonymously. This allows students to submit their work with less fear of rejection, and, as Grace attested to in her comments, also allows staff members to minimize bias in evaluating submissions. In this class, I also introduce

discussion protocols to help students acquire the skills of criticizing and praising submissions considerately, specifically, and constructively. Implementation of such protocols is also intended to prevent students from swaying other staff members based on emotion rather than evaluating the qualities of the work. Furthermore, if the anonymous submitter happens to be a staff member, and thus is part of the discussion, anonymity can provide the submitter with a degree of emotional protection. I intend for both practices to reduce any fear associated with creativity, but at the very least, they demonstrate to students that it never hurts to simply be kind.

Fostering individual and collaborative creativity in the classroom. In the review of the literature, I identified limitations in much of the creativity research; however, my analysis of the research and data in this study has led me to unconditionally acknowledge that many of the elements and cognitive processes the researchers identify as components of creativity absolutely occur. I also acknowledge the validity of researchers' recommendations for fostering creativity and critical thinking in schools, whether I agree with their approaches or not, and whether the researchers agree with each other on every aspect of creativity or not.

As an example, Padgett (2013) strongly emphasizes the social nature of creativity, whereas Necka (2003) argues, "the act of creation will always be a private event" (p. 116). Despite the seemingly irreconcilable nature of their claims, I contend that there is room for both possibilities, depending on the context of the creative event and how one interprets "social" and "private." This is especially true if we apply the notion of tolerance for ambiguity not only to creative acts, but also to our analysis of creativity in general. With regard to *The Sparrow*, for instance, these perspectives are not mutually exclusive and can simultaneously be accurate. In *Writing for Literary Publication*, staff evaluations of submissions represent individual acts of critical thinking, which, as Eysenck points out, still "imply creativity, if of a low order" (p. 101). Furthermore, student submissions themselves

may emanate from private acts of creative thinking, while also representing the culmination of social interactions and influences. The collaborative nature of selecting work through the voting and discussion process and then determining the magazine's layout for print certainly serve as examples of the social nature of creativity. Also, we have occasionally received submissions with more than one author or artist, which obviously demonstrates the social aspect of creativity.

Other teaching practices that support student creativity. In relation to instruction, Padgett (2013) claims that teachers can provide the right conditions for students to exercise creativity by designing “unusual and exciting learning opportunities that provide high-quality stimuli combined with the structure to generate enquiring language and provide deep support for the learners’ thinking and efforts.” He also emphasizes the value of collaboration in observing that “[l] earners are being creative when they are fully engaged in making meaning together through stimulating learning tasks of which they feel ownership” (p. 2). Similarly, Miller (2015) states:

Generative energy surges in climates of discovery, invention, and investigation—where people engage in higher-order thinking, probe with questions, and solve complex problems that have more than one answer. When ownership, engagement, and flow are central to learning; and where protective psychological constructs support learners as they befriend failure and embrace cognitive dissonance [*sic*] (p. 25).

The following practices and protocols employed in Sparrow fulfill every one of the criteria presented by Padgett and Miller:

- Writing for Literary Publication is a one-semester only, elective class in which students produce a literary/art anthology of exceptional quality. This certainly qualifies as an “unusual and exciting learning opportunity.”

- The quality and number of submissions and the wide range of what I refer to as learning, thinking, and doing tasks required to produce the magazine each year certainly constitute “high-quality stimuli,” as described by Padget.
- *The Sparrow* is a student-published magazine. While I provide significant scaffolding early in the semester, the release of responsibility to students, which is equally significant in scope, occurs within the first month of the course. Students claim authentic ownership of *The Sparrow*, both in process and product. This ownership greatly enhances the likelihood that students engage with and invest themselves in the content, the process, and the product.
- The processes of evaluating, discussing, voting, and laying out accepted submissions in the magazine exemplify what Miller describes in “a climate of discovery, invention, and investigation--where people engage in higher-order thinking, probe with questions, and solve complex problems with more than one answer.” In addition, the protocols for these processes provide the “structure to generate enquiring language and deep support for learners’ thinking,” as described by Padget, as well as offering “protective psychological constructs that support learners as they encounter failure and cognitive dissonance.” (And they encounter lots of both!)

Supporting the foundations of creativity in the classroom. Writing for Literary

Publication also strongly supports fundamental aspects of creativity as identified by Eysenck, Eisner, and Lau. Eysenck (2003) points to Kuhn’s (1970) notion of a disciplinary matrix as a model for examining and promoting creativity, which he describes as a kind of *Weltanschauung*, implicitly acquired through the study of shared exemplars. Eysenck uses these terms in relation to the sciences, but they apply just as well in any field that involves creativity. Eysenck’s description of a disciplinary

matrix also closely resembles what Eisner (2002) referred to as somatic knowledge. Jonathan Matthews (1991) elegantly expands on the definition of somatic knowledge provided by Siegesmund in the findings section:

By somatic knowing, I mean something different from, but not exclusive of, what cognitive psychologists refer to as kinesthetic knowing. I mean an experiential knowing that involves sense, percept, and mind/body---whole organism--action and reaction--a knowing, feeling and acting that is independent of distancing, disembodiment, discursive conceptualization. I mean a kind of knowing that is at the heart of the arts and physical culture and is at least as central to daily competence as the analytically discursive, distancing knowing that traditional schools cultivate (1992, p. 89).

Closely related to the concepts of somatic knowledge and a disciplinary matrix, Steve Jobs' claim that creative people are able to synthesize new ideas from their previous experiences requires a certain repertoire of experiences (as cited by Lau, 2011), which Eysenck (2003) also refers to as an associationist pool. Both Eysenck's definition of disciplinary matrix or *Weltanschauung* and Eisner's concept of somatic knowledge require the development of that associationist pool as a sort of prerequisite for creativity, which is in line with the majority of the research consulted for this study (Finke, Ward, & Smith, 1992; Cropley, 2001; McGregor, 2007; Lau, 2011; Padgett, 2013).

By evaluating and discussing hundreds of creative works, as well as making critical and creative decisions about the roughly 150 pieces that are accepted during the layout process, students in Writing for Literary Publication develop a rather extensive associationist pool in a single semester. It's like a somatic knowledge crash course on steroids. The evaluation and layout process also meet Steve Jobs' requirement that creative people not only have a lot of experiences, but that they think about and process those experiences. While there are certainly other classes and extracurricular experiences in school that provide some of these opportunities (I think primarily of theatre and musical productions and other arts classes), such experiences are rare and exceedingly difficult to implement in "core" curricular classes in which curriculum is expected to be "covered,

rather than uncovered,” as Eisner so eloquently advocated, long before Sir Ken Robinson was on the TED stage.

Further Advocacy for the Student-Published Literary Magazine

As demonstrated, the literary magazine model fosters critical and creative thinking in an abundance of ways, but there are other benefits, not necessarily tied to the creativity research, which are just as valid and just as compelling.

Boese, Byrne, and Silverman (1997), who sponsored a community college literary anthology, noted multiple benefits students experience through participation and submitting work. Among those were increased motivation, recognition that allegedly “average” writers can produce excellent pieces through effort and persistence, a greater willingness to analyze, evaluate, and comment on peer-produced writing than many of the model essays in textbooks, and increased student engagement due to the authentic purpose and nature of the task. I have witnessed all of these phenomena in *Writing for Literary Publication*, as students frequently find the inspiration or confidence to take new risks (as when Simone signed up to take Creative Writing), engage with and comment on writing and other creative works in ways I have struggled to authentically promote in core classes, and evaluate and revise their own work until it meets their standards, rather than abandoning it in order to “finish.”

Eisner (2002) advocated for the arts not in terms of their cross-curricular benefits, but for “their distinctive and unique educational contributions” (p. 234). Likewise, while participating on *Sparrow* staff may help students develop skills that help them in other classes and other situations, those benefits should be considered as secondary to participation itself. I fully agree with Eisner’s assertion that the “most significant kind of learning in virtually any field creates a desire to pursue learning in that field when one doesn’t have to” (p. 234). The student-published literary anthology

model described in this study can foster just such a desire. I know of at least four former staff members who have gone on to volunteer for their college or university's literary magazine.

Conclusion

The evidence reviewed here suggests that the curricular model employed in Writing for Literary Publication supports students' growth in critical and creative thinking in a multitude of ways. Student interview responses confirmed that the practice of evaluating a large number and variety of submissions fosters their critical and creative thinking. Further, discussing these submissions in a structured setting enables students to consider others' perspectives, thereby expanding their own critical and creative lenses. Students claim authentic ownership in every aspect of the class and the process of creating and publishing the magazine, which empowers students and promotes engagement and personal investment.

The research confirms the benefits mentioned in student testimonies, as well as supporting many other practices within the class. The anonymous submission and selection process helps minimize risk and thus encourages students to share their creative work. The protocols wherein staff members individually evaluate, but collaboratively select and lay out work for inclusion in the magazine foster critical thinking and creativity in both personal and collaborative contexts. Students in Writing for Literary Publication address complex "problems" with multiple solutions by consistently applying higher-order thinking skills such as qualitative reasoning. Students' depth of immersion in these tasks supports the very foundations of creativity by promoting the development of what Eisner calls somatic knowledge, and Eysenck refers to as a disciplinary matrix. Through their considerable efforts, students also exercise persistence, develop more flexible thinking skills, and cultivate a mindset that Patrick Fahey describes as "engage and persist." Ultimately, students are rewarded with tangible product representing the diverse voices, perspectives, and creative talents of

their peers and themselves. This nurtures a sense of pride, which in turn fosters the desire to pursue learning and engage in creativity “even when one doesn’t have to” (Eisner, 2003).

Just as there is no formula for creativity, no single course or curricular model can best support students’ creative and mental growth. The teaching and learning practices in Writing for Literary Publication should not be viewed as a recipe, but can be seen as a model from which other teachers can adapt whichever aspects best apply to the subjects and courses they teach in order to promote their students’ thinking and creativity.

CHAPTER 5: IMPLICATIONS FOR FUTURE RESEARCH AND TEACHING

One idea may hide another: Life is simple

Hide Life is incredibly complex, as in the prose of Gertrude Stein

One sentence hides another and is another as well.

-Kenneth Koch, "One Train May Hide Another"

The findings of this study indicate that the student-published literary anthology, *The Sparrow*, implemented according to the model of the Writing for Literary Publication described here, offers innumerable opportunities for students to practice and improve their critical and creative thinking skills. Data from student interviews and virtually all of the literature consulted for this study confirm this, both in practice and theory.

The protocols employed in *Sparrow* are unique to that curricular context, but many of them might be adapted and utilized in other contexts to effect some of the same results. Among the advantages that Simone, Grace, and Shauna identified from participating in the production of a literary magazine, the following emerged as most beneficial:

- The abundant number of pieces students evaluate not only allows them to hone the skills required in critically evaluating the work and to develop their own aesthetic sensibilities, but also equips them with the capacity to evaluate their own creative work in a similar fashion in the future.
- The anonymous nature of submissions reduces the risks inherent in sharing the products of their creativity.
- Class discussions allow students to recognize the aspects of the work and factors their classmates considered when evaluating submissions, thereby expanding, or at least more fully considering, their own analyses and evaluations.

- Engaging with creative content through the evaluation process and collaborating to arrange (during the layout process) selected works into a new original creative product (i.e., the literary magazine itself). This challenging process rewards students with a tangible product of which they can claim ownership and a genuine sense of pride and community.

At Shermer High School, I have observed that students have similar opportunities to collaborate, engage with and apply a wide range of new concepts and skills, and struggle with complex problems having multiple solutions in courses beyond Writing for Literary Publication. The curriculum models employed in classes such as Geometry in Construction, technical education classes, and many visual and performing arts classes that also support students in producing authentic products or performances for an audience wider than their classroom or their school. Consequently, teachers across all curricular areas can and should examine the learning opportunities offered to students in courses like these in their own contexts and then struggle with the challenges of authentically implementing aspects of those models into their own. I say “struggle” because that is what it requires, though the challenges this presents can prove to be the most rewarding aspect of teaching and learning for everyone involved. The struggle itself provides the motivation to continue.

This investigation also illustrated the complexities and nuances of studying the abstract constructs of creativity and cognitive skills in general. Creative processes vary tremendously depending on the individual, the purpose, the context, and a myriad of other factors. Likewise, we have seen that researchers purposes for and methods for studying creativity vary widely. As Padgett (2013) noted, it may be “impossible to define the process of creativity” (p. 4). All this ambiguity can make studying creativity seem overwhelming, but as the research demonstrates, the cognitive skills and processes within creative processes are observable, and therefore can be fostered.

When I began reading the research on creativity, I felt like something was “off.” I could not and do not argue with the elements of creativity or cognitive processes inherent in the creative process that researchers have identified. While it may be impossible to precisely define creativity, researchers should attempt to differentiate between different types of and contexts within which creativity takes place, thereby bringing greater precision to their studies and findings. Furthermore, even though creativity and problem solving share some common characteristics and cognitive processes, I believe the time has come for researchers to differentiate between authentic, self-initiated creative acts and problem solving, even in cases when the problem is identified by the person engaging in the creative act.

In reviewing my review of the literature in these areas, I discovered that most researchers studying creativity through the lens of problem solving focus on historical examples in the sciences and mathematics (Eysenck, 2003) or in laboratory studies that attempt to identify and quantify aspects of creativity such as divergent thinking. Perhaps what I consider “authentic” creativity is creativity in the humanities, whereas problem-solving creativity is the dominant mode in the sciences. These differences are analogous to Efland’s (1976) differentiation between child art and school art, where school art is made in response to an external prompt by a teacher and “child art is a spontaneous, unsupervised form of graphic expression usually done outside of school by children for their own satisfaction or in response to a need felt in an environment other than the school” (p. 37). Creativity that stems organically from the creator’s intrinsic motivation should not be equated with, or examined by the same methods as, creative thinking in the context of problem solving.

In any case, as researchers move forward with studies of creativity, they would be well-served by employing Runco’s (2015) notion of “meta-creativity” (being creative about creativity research) in their thinking and research design. In order to develop a more complete disciplinary matrix with

regard to creativity, researchers need to consider the wealth of experience and knowledge presented by those who study creativity, but who also live it, teach it, and breathe it: namely performing and visual arts education researchers, practicing artists, writers, and teachers, in addition to the scientists, cognitive psychologists, and mathematicians who have historically been consulted. These experts have a wealth of relevant knowledge and experience that can enable creativity researchers to apply the very thing they are studying to the study itself: creativity. By doing so, they will invite a diversity of voices and perspectives into their research, thereby enriching their findings. They will also develop a much fuller somatic awareness with respect to creativity and a tolerance for ambiguity that will allow them to more fully integrate their quantitative data and analyses with qualitative judgments about the ways in which creativity varies by context, individual, and purpose.

What we mean when we talk about creativity differs widely: One creativity hides another and is another as well. When faced with a topic this nebulous, one must pause to consider what is obscured by the generalized, “common-sense” ways we understand and use the term *creativity*.

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