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An Investigation Of Creative Thinking In Classical Schools

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AN INVESTIGATION OF
CREATIVE THINKING IN
CLASSICAL SCHOOLS

A Dissertation

Presented to the

The Faculty of the School of Education

The College of William and Mary in Virginia

In Partial Fulfillment

Of the Requirements for the Degree

Doctor of Philosophy

By

Amelia Louise Teague Wildman

November 2021

AN INVESTIGATION OF CREATIVE THINKING IN CLASSICAL SCHOOLS

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Dedication

To the First and Second Doctor Teagues in my family, who instilled in me a love of learning and a sense of wonder toward our world.

Doctrina sed vim promovet insitam, rectique cultus pectora roborant.

- Horace

If Virtue and Knowledge are diffused among the People, they will never be enslav'd. This will be their great Security.

- Samuel Adams

The faculty of creating is never given to us all by itself. It always goes hand in hand with the gift of observation. And the true creator may be recognized by his ability always to find about him, in the commonest and humblest thing, items worthy of note. He does not have to concern himself with a beautiful landscape; he does not need to surround himself with rare and precious objects.

He does not have to put forth in search of discoveries: They are always within his reach.

- Igor Stravinsky

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We drink from wells we did not dig. – Deuteronomy 6:11

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My family – and in particular, my PaBo and my Mother, dug the well for me and so perfectly led me to recognize the true, the good, and the beautiful in this world. With hope that I can build on their foundation for the glory of God and in the service of future seekers of truth, goodness, and beauty.

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Abstract

In the last few decades, classical education has greatly expanded across the United States. The philosophical roots of classical education span over 2,000 years of history, yet very little educational research has focused on these ever-expanding schools. The purpose of this quantitative study was to explore the relationship between implicit beliefs related to creativity and the uses of instructional practices related to creative thinking among classical school teachers. This study used quantitative research methods including exploratory factor analysis, multiple regression analysis, and bivariate correlations to establish a research basis for the importance of facilitating creativity, imagination, and wonder in classical school students. Study findings indicate that classical school teachers tend to hold democratic beliefs about creative potential, value creative thinking, and commonly utilize several instructional practices conducive to facilitating creative thinking ability in students. Research findings offer support for training and further professional learning to better assist classical educators in their ability to use creative thinking instructional practices. Recommendations for future research include deeper examinations into classical teachers' instructional practices coupled with epistemological beliefs of learning as well as examinations of classical administrators' beliefs and attitudes related to the importance of promoting creativity in classical schools.

AN INVESTIGATION OF CREATIVE THINKING INTO CLASSICAL SCHOOLS

CHAPTER 1: AN INVESTIGATION OF CREATIVE THINKING IN CLASSICAL SCHOOLS

At one time, in the vicinity surrounding Oakland, California, a group of high school students participated in a seminar over the works of classic literature taught by Dr. Mortimer Adler. The students were from every part of town, from every socioeconomic background; the basis for their selection was only their willingness to read “hard books” (Barzun, 1991, p. 128). Over the course of an engaging discussion of the great texts—the Declaration of Independence, the Constitution, and the Federalist Papers, as well as Machiavelli’s *The Prince*—students were asked to reflect on what they were reading. Students also reported that this was the first time a teacher had ever asked their opinion regarding topics such as politics and society. Indeed, the students so enthusiastic about their discussions that they composed a tribute scrapbook for Dr. Adler. As Barzun noted, the takeaway is that despite students’ differences in background and upbringing, they felt that they had gained something through this study of classic texts, writing that “their differences of color and upbringing never occurred to them” (p. 128). This anecdote provides a glimpse of the curriculum, pedagogies, and *raison d’etre* of classical education—namely the inculcation of wisdom and virtue through great texts and solid foundations of knowledge and skills. This inculcation is brought about by inviting students to think logically and to reflect on how this core of knowledge and skills is relevant to their lives (Barzun, 1991). Yet with such a focus in curriculum and learning, a question arises: what is the role of creativity in a classical school setting? And to what extent is a student’s natural inclinations toward imagination, curiosity, and wonder nurtured in a classical environment? A lack of knowledge can

invite assumptions and misconceptions about classical education, particularly about the philosophical rationale and curricular practices (Austin, 2019; Veith & Kern, 2015). For its part, classical education is vulnerable to perceptions that it is too academically rigorous, that its philosophical and curricular foundations are elitist, and that it privileges certain subjects (e.g., the humanities) over others (Bayon, 2003; Dey, 2018; Veith & Kern, 2015). Extending from these perceptions could be an assumption that the rigidity of the curriculum and overall philosophical view inhibit students' expression and opportunities for open-ended activities and creative endeavors (Veith & Kern, 2015), necessitating more research.

More recently, Veith and Kern (2015) published a concise survey of the historical foundations and current emergence of the classical model of education. The third edition of their book, published in 2015, began with a survey of the educational landscape in America over the last 100 years and observed a fissure in educational practices that took root around the turn of the 20th century. The critique that skills had become divorced from knowledge and content and that the process of learning had been cleaved from the acquisition of content knowledge and skills, gave rise to the classical school movement. Advocates of classical education looked to the restoration of the classical paradigm as a way to recover what has been called "the lost tools of learning" (Sayers, 1947/2016). In the last two decades, there has been a consistent and rapid re-emergence of the classical model of education across the United States (Duin, 2013). Schools using a classical or liberal arts curricular paradigm can be found every geographic region of the country and in such varied contexts as private, religiously affiliated schools, public charter schools, micro-pod schools, and homeschool cooperatives (McCoy, 2021). A closer examination reveals that private schools operating within a classical framework can be found in 45 out of 50 states across the country. Enrollment sizes typically range from 250 to upwards of 2,000

students. The Association of Classical and Christian Schools (ACCS) represents the largest collection of classical Christian schools, numbering 290 members across the United States; additional schools in partnership with ACCS can be found in countries such as Australia, The Bahamas, Canada, South Africa, and more. Other classical education organizations in the United States include the Classical Latin School Association, with approximately 70 member schools, and the Institute for Catholic Liberal Education, with approximately 120 schools, of which 63 are classified as *member schools*. Meanwhile, classical charter schools have also opened across the country, making a classical education available to public school students. Cohorts of classical charter schools have opened every year since 2012, with projected openings continuing into the 2020-2021 and 2021-2022 academic years. Thus, classical liberal education is on the ascent in contemporary American K-12 education, its influence neither limited by geographic or sectarian boundaries.

Classical, Liberal Education

Spanning over 1,000 years of Western history, what is now known as classical or liberal education was first explained by the early Greek philosophers as *paideia*, or a general education; in later centuries, Roman philosophers used the equivalent term *artes liberales*, or the arts of free men (Bayon, 2003). Derived from the Latin *libera*, meaning “free,” the aim of modern classical education is to cultivate in students wisdom and virtue through the pursuit of *truth*, *goodness*, and *beauty* (Nielsen, 2018; Veith & Kern, 2015). These three elements have been used consistently to underlie explications of the purpose and rationale of modern classical, liberal education (Adler, 1988; Clark, 2015; Guernsey, 2016; Hicks, 1981; Moore, 2014). Although now considered traditional in comparison to modern aspects of schooling, the classical ideal has endured largely because of adaptations and modifications to curriculum and instruction. The

ancient Greek emphases on grammar and rhetoric were modified by medieval and early modern scholars to emphasize logical reasoning. Rhetoric and logic were alternatively modified by addition or reduction, with the consequence that an 18th-century classical curriculum was not identical to one from the twelfth century (Bayon, 2003). Consequently, the 21st century classical curriculum is not identical to curricula from the 18th or 19th centuries. Rightly understood, the logical outcome of a classical, liberal education is the freedom of the mind, which Kaufer Busch (2018) called the “highest form of liberty” (p. 16).

Regarding teaching and learning, classical education is knowledge-centered and inquiry-based (Kaufer Busch, 2018; Veith & Kern, 2015) and aims to equip students with the tools and dispositions for a lifetime of learning and human flourishing. The objective of modern classical schools is to create virtuous citizens (Duin, 2013; Jordan, 2011; Little, 2021) who can think for themselves, utilize reason and logic to form arguments and communicate ideas, and to articulate their ideas eloquently and respectfully (Bayon, 2003; Veith & Kern, 2015). A classical, liberal education can also be recognized by what it disavows—“the skills-based, job-training, assessment-based paradigm” that characterizes modern education (Kaufer Busch, 2018, p. 14). Because it aims to “form the adult-to-be, not to liberate the child within,” (Veith & Kern, 2015, p. 54), classical education can be understood as neither student-centered nor teacher-centered. Teachers see students as “an apprentice adult” (Dey, 2018, p. 4). In the classical model, teaching is a cooperative art (Adler, 1988); it realizes the primary cause of learning is the activity in a student’s mind and the secondary cause of learning is the cooperative, secondary cause. In a later publication, Adler (2000) likened the teacher’s role to that of a farmer who does not produce the grain but helps it grow, or the physician who does not produce health but helps the body maintain its health. Bayon (2003) further added to the image of the teacher-student relationship

in articulating that the classical educator, recognizing that students, being naturally curious and with a natural capacity to learn, need to be shepherded in their cognitive and developmental growth by skilled and knowledgeable teachers.

Embedded in the curricular framework of a classical education is the Trivium. Properly understood, the Trivium is a methodology (ACCS Mission Statement, 2019) encompassing three stages of learning growth—grammar, logic, and rhetoric (Nielsen, 2018). The Trivium is a “key concept” of modern classical education (Heaton, 2010), regardless of organizational affiliation or private or charter status. The stages or skill sets of the Trivium are intended to set students on a course of learning for life (Kaufer Busch, 2018; Nielsen, 2018; Veith & Kern, 2015) and are succinctly distinguished by Caldecott (2012) as *be!* (i.e., grammar), *think!* (i.e., logic), and *speak!* (i.e., rhetoric). The overall pedagogy of the classical school Trivium consists of two broad stages, the first being mastery of the art of learning and the second being the use of skills and tools to study what originally constituted the natural sciences, philosophy, music, and theology (Veith & Kern, 2015). To be educated in any discipline, one must know its basic facts (grammar), have the ability to reason clearly about it (logic), and communicate its ideas and apply them effectively (rhetoric). This developmental progression of knowledge informs teaching and learning in all disciplines, which in the classical model are integrated across all disciplines rather than compartmentalized into rigid and clearly demarcated subjects (Bayon, 2003; McCoy, 2021; Nielsen, 2018; Veith & Kern, 2015).

Modern classical schools share a common philosophical orientation and curriculum design, although classical Christian education integrates the classical model, exemplified by the Trivium methodology, with a Biblical worldview (Anderson, 2016; McCoy, 2021; Veith & Kern, 2015). Relatedly, the *Paideia* curricular model that Adler (1988) developed was intended to

deliver the classical model of education to public schools, exemplifying Adler's lifetime commitment to classical, liberal education as *democratic* education (Adler, 1988; Veith & Kern, 2015). Prior to the advent of the progressive movement in education in the early 20th century, the classical or liberal arts model of education had been the dominant model of education in the West (ACCS, 2019; Bayon, 2003; McCoy, 2021).

Creativity and Creative Thinking

The construct of creativity has generated considerable research attention since the mid-20th century. Creativity is expressed in a multitude of ways and can manifest from a variety of activities and tasks (Ivcevic, 2009). According to Starko (2010), *creativity* is the purposeful effort to “make something work, to make something better, more meaningful, or more beautiful” (p. 7). Looking across the varied definitions of creativity and creative thinking, two characteristics emerge: originality and task appropriateness (Amabile, 1983; Ivcevic, 2009; Starko, 2010). Creative thinking can relate from the process of thinking and generating ideas to the final new product, and every stage, step, and idea in between (de Bono, 1999). A component of creative thinking is *lateral thinking*, or the ability to make connections among varied and seemingly unrelated content and skills (Schnugg, 2019). An individual's attributes and beliefs can also inform their potential for creative thinking (Ivcevic, 2009). Creative potential as a category within creativity research and scholarship has attracted considerable attention over the decades. A person's cognitive abilities (Torrance, 1988), personality (Karwowski, 2014), and motivation (Amabile, 1989, 1996; Torrance & Myers, 1970) all converge to create a profile of potential for engaging in creative thinking.

A growing body of evidence suggests that strategies that facilitate the development of creative thinking also support knowledge acquisition and depth of understanding (Starko, 2010;

Torrance & Myers, 1970), and this suggests that attention given to promoting creativity in the classroom is a rewarding and worthwhile endeavor. Moreover, creativity has been identified as a leading 21st century learning objective in K-12 education around the world (Adams, 2013; Bolden et al., 2020; Ferizovic, 2015). Especially in the last two decades, creativity and more specifically creative thinking have received significant attention in educational research, particularly concerning how it is understood and enhanced or repressed in modern classrooms. Teachers' attitudes toward their creative students and their perceptions of creative behaviors are recurring topics in the creativity literature (Aljughaiman & Mowrer-Reynolds, 2005; Hong et al., 2009; Karwowski, 2014; Westby & Dawson, 1995). The ways in which classroom teachers foster creativity are believed to play an important role in how students develop their creative thinking skills (Gralewski & Karwowski, 2018). Yet even teachers who claim to value creativity and aim to nurture it in their classrooms often have misconceptions about what creativity is (Aljughaiman & Mowrer-Reynolds, 2005). Ultimately, how teachers perceive the construct of creativity and the value they place on fostering it in their classrooms are integral for the recognition of creative students and for the development of creative thinking skills in all students. Researchers continue to call for more studies examining the classroom factors that influence teachers (Adams, 2013; Dababneh et al., 2010; Ferizovic, 2015; Schacter et al., 2006). The vast majority of studies examining beliefs and perceptions of creativity, however, have been conducted in public schools with public school teachers and administrators. The beliefs and perceptions of teachers and administrators in other settings, such as charter schools and private schools, remain under-represented in the literature. Implicit theories of creativity (Kaufman, 2019) and creative mindsets (Karwowski, 2014; Tierney & Farmer, 2002), specifically in the context of teachers and students in school environments, inform the conceptual understanding of

creativity for this study. Laypeople's implicit beliefs about creativity serve as standards by which creative actions are measured. Although professionals in their field, teachers are laypersons when contrasted with academics and researchers in the field of creativity (Gralewski & Karwowski, 2018; Kaufman, 2019; Starko, 2010). In the classroom, the behaviors, traits, and creations of students are thus measured according to the teacher's own beliefs, perceptions, and values regarding creativity (Gralewski & Karwowski, 2018).

What both creativity researchers and classical school leaders have in common are specific issues with aspects of modern schooling such as the mechanistic nature of modern schools, the inordinate focus on standardization and testing, and the lack of autonomy given to teachers (Ferizovic, 2015; Ivcevic, 2009; Veith & Kern, 2015) and, perhaps consequentially, the suppression of students' natural curiosity during the school day (Moore, 2014; Starko, 2010). Crucially, both creativity scholars and classical education advocates warn about too much frivolity or activities divorced from any connection to learning objectives (e.g., Jain, 2015; Starko, 2010), and both place great stock in the power and importance of students' imaginations (Clark, 2015; Courtney, 2014; Glâveanu et al., 2017; Moore, 2014; Starko, 2010). This also suggests similarities in desired outcomes for the knowledge, skills, and dispositions a student ought to possess. The ability to understand multiple points of view, to employ flexible and imaginative thinking, and to develop ideas into original understandings and insights can be developed through the cultivation of creative thinking (Schacter et al., 2006; Starko, 2010).

Problem Statement

As of 2021, no discovered studies exist that examine the construct of creativity in classical schools. Despite the rapid resurgence of classical schools across the country, this model of education has received scant attention in educational research. Indeed, research into classical

schools has been quite limited in recent decades. Although there have been few studies examining classical curriculum (e.g., Stanek, 2013), in the last decade it has mainly been doctoral researchers who conducted research into classical schools (e.g., Anderson, 2016; Austin, 2019; Dernlan, 2013; Grey, 2018; Mahan, 2020; Vaughn, 2018). The classical pedagogical approach was the traditional model of education until the early 20th century and is currently re-emerging in popularity, making the students, teachers, administrators, and parents worthy of representation in educational literature and research. A lack of knowledge presents a problem in itself, as there is a missed opportunity for professional development and other resources (Anderson, 2016).

The rationale for studying the beliefs and perceptions of creativity is evident in the continual research interest the topic of creativity has generated in the last few decades. There is considerable evidence to support the assertion that school culture and climate affect student creativity (Aljughaiman & Mowrer-Reynolds, 2005; Ferizovic, 2015; Kettler et al., 2018). Even when teachers express support for creativity as a worthwhile skill, evidence suggests that many teachers do not actually understand what creativity is—or at least, that their definitions differ from those held by creativity researchers (Aljughaiman & Mowrer-Reynolds, 2005; Gralewski & Karwowski, 2016; Kettler et al., 2018; Torrance & Safter, 1986). Moreover, this knowledge gap could adversely affect teachers' abilities to recognize the characteristics of creative students (Gralewski & Karwowski, 2016), the consequence of which would be a missed opportunity to nurture their creative potential and specific gifts and talents.

The possible connections between classical education and creativity warrants attention. For instance, how is the construct of creativity perceived in classical schools, and more specifically, what do the teachers in classical schools believe about the construct of creativity

and creative thinking? And do these beliefs manifest in and across the community and culture of the school? The processes of meaning-making which are faithfully used in classical schools might indeed be similar to the processes involved in creative thinking and the creation of original and task-appropriate products, and this possible connection (among other possible connections) warrants attention.

Research Questions

This study was guided by the following research questions that aim to understand the beliefs and perceptions of administrators and teachers at both classical charter schools and private classical schools.

1. What are the implicit beliefs and instructional practices of creativity of classical school teachers in both private and charter schools?
2. To what extent are there significant differences in the beliefs and practices of creativity...
 - a. between teachers in classical private schools and in classical charter schools?
 - b. between primary and secondary classical school teachers?
3. What does a factor analysis reveal about the covariance of creative thinking instructional practices? In other words, how closely do various instructional practices align with one another?
4. To what extent do creative mindsets, creative self-efficacy (CSE) and creative personal identity (CPI) individually explain variance in instructional practices in classical schools?
5. To what extent does the set of implicit beliefs of creativity (i.e., creative mindsets, CSE, and CPI) predict variance in instructional practices in classical schools?

Significance of the Study

This study was intended to illuminate classical school teachers' perceptions and beliefs regarding creativity and creative thinking and the value of creativity in both private and charter classical schools. Additionally, this study intends to provide a knowledge baseline for the types of creativity-facilitating instructional practices that classical teachers use in their classrooms and the frequency of use. It is evident that teachers can either encourage or hinder their students' creative development and expression (Beghetto, 2006), and that the ways in which teachers foster creativity in their classrooms can significantly affect their students (Gralewski & Karwowski, 2016; Hong et al., 2009). The results may be helpful in informing professional development considerations. One of the consequences of a lack of research into classical education is a lack of clear direction for supporting the professional development and continuing education of its in-service teachers (Anderson, 2016). Therefore, the results of this study may provide administrators with helpful information for developing professional development for their teachers.

Definition of Terms

Classical education refers to the purposeful structuring of education and curriculum rooted in the classical or liberal arts and utilizing the Trivium and Quadrivium; although classical and liberal or liberal arts education have been used interchangeably, for the purposes of this study, the terms *classical education* and *classical model* will be used.

Creative mindset: a set of beliefs associated with the nature of creativity, particularly beliefs about the stable-versus-malleable character of creativity" (Karwowski, 2014, p. 62); in other words, beliefs about the stable and/or malleable nature of creativity

Creative personal identity (CPI): “the extent to which creativity is treated as an important part of an individual’s identity” (Karwowski et al., 2018)

Creative self-efficacy (CSE): “the belief one has the ability to produce creative outcomes” (Tierney & Farmer, 2002)

Creativity refers to the process of engaging in original and task-appropriate thinking which leads to the output of an original and task-appropriate product; this study draws most heavily on the Amabile (1996) definition of creativity

Creativity self-assessment: self-reported measurements reporting laypeople’s beliefs about the construct of creativity (Kaufman, 2019)

Knowledge-centered refers to curriculum and instruction that prioritizes knowledge (i.e., content and skills)

Lateral thinking refers to the ability to make connections between ideas and seemingly unrelated content knowledge or skills (Schnugg, 2019)

Trivium refers to the first three of ultimately seven stages in the liberal arts curriculum: grammar, logic, and rhetoric

CHAPTER 2: REVIEW OF THE LITERATURE

The following literature review commences with the guiding philosophy and rationale that underscore modern classical, liberal arts education. An overview of historical foundations follows. The literature review continues with an explanation of the guiding pedagogies and curriculum in classical schools, as well as recent research into classical schools. The literature review next explores the construct of creativity and provides an overview of definitions and research foundations, as well an examination of creativity in the classroom environment, before concluding with a proposed synthesis between classical education and creativity, imagination, and wonder.

Classical Education: Philosophy and Rationale

As with most disciplines, the origins of classical education lie in antiquity. Classical education derives its common name from the classical period of Greek civilization, from circa 600 BC–476 A.D. (Perrin, 2004; Veith & Kern, 2015). “We use the phrase *classical education*,” explains Perrin (2004), “to refer not just to the educational practices of the Greeks and Romans, but also to authoritative, traditional, enduring and excellent education” (p. 6). Modern classical schools offer an approach to education that is holistic and knowledge-centered (University of Dallas, n.d.). The *raison d’etre* of modern classical education is the inculcation of wisdom and virtue in all aspects of an individual’s life (University of Dallas, n.d.). Perrin (2004) provides a clear articulation of the aims of modern classical education in declaring that “education is the making of a man, not the training of a man to do things ... this conception persists today in our

idea of the ‘well-rounded, liberally-educated man’” (p. 10). In this way, modern classical educators seek to train the mind, so that students can utilize the mind throughout life,

Historical Background

A brief overview of the approximately 1,500 years of classical education will provide an orientation of the leading thinkers and ideas that have shaped this oldest and most pedigreed of educational models.

Antiquity: Greeks and Romans

Both the ancient Greeks and Romans intended for education to provide the foundation that free citizens needed (Veith & Kern, 2015). Knowledge of the world and of human nature, the cultivation of virtue, and an active citizenship demanded this purpose-driven education (Veith & Kern, 2015), and Plato’s Academy provides an inspiration for the eventual structured classical curriculum (Anderson, 2016). In ancient Greece, there was considerable diversity in the curricula and pedagogical approaches in society (Perrin, 2004). Although most of the disciplines of what became the Medieval classical curriculum (i.e., the seven liberal arts) originated among the ancient Greeks, they were not part of the formal curriculum—or at least they were not incorporated into a single program of study (Bayon, 2003). Rather, education to the Greeks was grounded in the study of grammar, logic, rhetoric, and mathematics. The diversity in curricular foci can be largely attributed to conflicting priorities: some (e.g., Protagoras and Isocrates) believed that the study of rhetoric ought to be prioritized, as it would enable learned Greek men to pursue careers as civic leaders in the *polis*. Still others, such as Socrates and his pupil Plato, prioritized philosophy over rhetoric, believing that such a focus would enable men to find “truth, goodness, and justice” (Perrin, 2004, p. 10). The origins of inquiry can be found in the teachings of Socrates, and it is to Socrates that the first recorded process of educating others is attributed

(Anderson, 2016). His method, now known as the *Socratic method*, instilled the skill of critical thinking through a dialogue between teacher and student and interactive inquiry (Anderson, 2016). As a pupil of Socrates, the philosopher Plato also took the view of learning through inquiry and discovery. One of Plato's significant contributions to modern classical education is the view of learning as taking a life-long trajectory. Additionally, Plato was also the originator of the concept of *paideia* (Latin: *humanitas*), or the humanities, which was the basis of curricula at the Platonic Academy, circa 385 BC (Dernlan, 2013). Taking the view that man was a work of art, the purpose of an education was to craft him accordingly to a standard of *arete*, or excellence (Perrin, 2004). These disciplines formed the system of education that later guided the philosophy of modern classical, liberal arts education (Adler, 1988; Anderson, 2016; Perrin, 2004). Plato's pupil, the philosopher Aristotle advocated for the study of both the *dialectic* (or logic) as well as rhetoric (Bayon, 2003). Aristotle also believed that *wonder* was the beginning of knowledge and thus, that an education ought to encourage a curiosity of and desire to know one's natural world. Aristotle's concept of the *telos*—that is, the acquisition of wisdom and judgment (Dey, 2018). The *telos* underscored ancient learning and continued to form the basis for classical education. Perhaps Aristotle's most remembered contribution was the *logos*, the basis of *logic*, and the articulation of what came to be known as the steps of the scientific method, which forms the basis for empirical research.

The Romans were conquerors as well as connoisseurs of Greek culture and learning, and they duly incorporated Greek notions of knowledge (Perrin, 2004). The Romans were far less interested in philosophical pursuits, yet they maintained the tradition of knowledge gathered by the Greeks. The Roman rhetorician Quintilian (c. 35–100) is credited with the formation of *Trivium* (although the term was not used until the Medieval era), which took Greek ideas of

learning and put them in a structured progression of developmental stages (Anderson, 2016; Perrin, 2004). Quintilian was a considerable influence on the great thinkers of the late antiquity apostolic age, including Origen, Ambrose, Jerome, and Augustine of Hippo (Dernlan, 2013), all of whom contributed to the trajectory of learning and scholarship that continued into the Medieval era. The term *liberal arts* originated with the Romans as *artes liberales*, yet no official program of study was crafted until the twilight of the Roman empire, toward the end of the fifth century AD, when the *septem artes liberales* were organized to “a definitive course of study” (Bayon, 2003, p. 37). Taken together, the *liberal arts* represented the arts of free people, continuing from the Greeks the idea that education is fundamentally connected to the notions of liberty and human flourishing. Neither the earlier Romanization nor the Christianization of the late Roman world made much alteration to the original dialectic or rhetoric curriculum (Bayon, 2003).

Medieval and Renaissance: Scholasticism & Humanism

From the fall of the Roman empire in the West (476 AD), classical schooling was greatly truncated and much of the ancient texts were lost, later to be rediscovered and reintroduced in Europe by Arabic scholars (Bayon, 2003). Beginning with the rise of the Carolingian dynasty in the 9th century AD, medieval scholars began to reincorporate the classical methodology in monasteries, cathedral schools, and with private tutors; this provided the standard for educational instruction (Dernlan, 2013). The philosopher Boethius is credited with making the split between Trivium and Quadrivium; to the latter program Boethius added the mathematical studies Plato had referenced in his *Republic*; the ideal education was comprised of arithmetic, geometry, astronomy, and harmony (i.e., music; Bayon, 2003). Different disciplines were prioritized at different times, as the focus shifted between the logic or dialectic and an emphasis in

mathematics or rhetoric and an emphasis on theology. Theology, in fact, became the “queen of the sciences,” as it was added to the seven liberal arts as the culminating discipline (Perrin, 2004). Over time, and accelerating in the Age of Enlightenment, the aims and objectives of education expanded, then contracted and narrowed. Of considerable importance for the history of classical education in particular and the history of classical education in general is the nascent secularization of education; the purpose of education began to shift away from developing an understanding of Scripture and toward broader, more human aims (Bayon, 2003). Both scholastic and later proto-Renaissance humanist scholars continued to receive an education grounded in the classical liberal arts of the Trivium and Quadrivium. Even during the tumultuous Reformation, the liberal arts continued to dominate in Europe. The two leading figures of the Reformation, Martin Luther and John Calvin, had been educated in the classical tradition and both believed that the church should be comprised of individuals educated in the classic languages (i.e., Hebrew, Greek, and Latin) so that they might study the Bible for themselves in its original translations (Perrin, 2004). During this period of history, Bayon (2003) explained, “liberal arts education was an end in itself, an activity which justified its own value without concern for ‘practical’ uses” (p. 77). How the student applied the results of his education in his professional pursuits was entirely his responsibility. As the Renaissance gave way to the Early Modern Era and beyond, the defense of knowledge for its own sake became more difficult to rationalize.

The Rise of Modern Education and the Return to “Neoclassical” Education

The gradual erosion of classical, liberal arts educational tradition began in the 19th century (Perrin, 2004). Even in the Enlightenment, the classical, liberal arts provided the foundational curricula for the grammar schools and emerging universities in Europe and North

America (Perrin, 2004). Indeed, all of our Founding Fathers were educated in the classical tradition, and important documents related to the formation of our government (e.g., the Constitution and the Federalist Papers) reveal the rigorous classical education of their authors (Perrin, 2004). The decline of classical education accelerated around the turn of the 20th century (Perrin, 2004; Veith & Kern, 2015). Education became more pragmatic, more positivist, and less interested in maintaining a foundation of education as an end in itself. New approaches promulgated by educational theorists such as Horace Mann and John Dewey ushered in a progressive era of education, undergirded by a more pragmatic philosophy that saw education as a primarily social end, intended to train future citizens how to fit into a more productive, advanced, and industrialized society (Perrin, 2004). It is in this shift that *education* retracted, and *schooling* expanded (Gatto, 2017); characteristic of this change was more breadth and less depth (Bayon, 2003; Veith & Kern, 2015). Classical languages were increasingly dropped from the curriculum in K–12 and higher education, phonics instruction was replaced by a “whole language” approach to literacy, and history classes became more bifurcated. A focus on research and science overtook rhetoric and the foci of liberal arts (Adler, 1988; Bayon, 2003). Latin was no longer seen as a necessary language for students to master. Yet fragments of classical schooling persisted in progressivist-dominated schools even into the 21st century (Perrin, 2004), and several figures are worth mentioning for their contributions to the revival of classical, liberal arts tradition. An overview of the contributions of major leaders in modern classical education follows.

The classicist and mystery writer, Dorothy Sayers (1947/2016), is also remembered for her popular essay “The Lost Tools of Learning.” Sayers criticized what she saw as the failure of modern schools in their central mission to thoroughly educate students. Sayers charged that

students in both America and her native Britain were learning everything except the art of learning (1947/2016). To Sayers, such changes made people literate but not learned, prepared for a life as a worker but not as a thinker (Bayon, 2003). In the early to mid-20th century, public schools became markedly utilitarian in their focus on job preparation and programming students to fit into society (Bayon, 2003; Gatto, 2017; Hutchins, 1956). University of Chicago president Robert M. Hutchins charged that business and industrialist interests were being allowed to influence the curriculum, which produced the effect of education becoming more focused on job training than on the “ideals, substance, and methods” (Hutchins, 1956, p. 18) of traditional, liberal education. By the 1940s, American higher education curriculum had become so fragmented that Hutchins proposed the creation of “general education” (liberal arts) program for undergraduates. Hutchins and his colleague, Mortimer Adler, devised this program. In *Some Observations on American Education*, Hutchins (1956) wrote, “The doctrine of education for all is America’s greatest contribution to the theory and practice of democracy” (p. xiii). Echoing the views of the ancient Greeks that education ought to equip individuals with the tools needed for citizenship and human flourishing, both Hutchins and Adler believed that a thoroughly American understanding of classical education could and ought to represent the kind of education called for in a democracy (Adler, 1988; Hutchins, 1956; Veith & Kern, 2015). This understanding should bring the classical tradition out of the elite grammar schools and make it accessible for all. Many classical schools today, especially classical charter schools, share Hutchins’ (1956) and Adler’s (1988) views that recovering a classical, liberal arts tradition can and ought to be available in non-fee-paying schools.

To professor and philosopher Mortimer Adler (1988), a liberal arts education was one that “cultivate[d] the humanity of each student by disciplining his reason” (p. 142). Trenchantly

opposed to the notion of education as merely job preparation, and especially disputatious of vocational education, Adler (1982) proposed a reformist curricular program for K-12 called the *Paideia Program*. Borrowing the ancient Greek term, Adler structured the program according to the developmental needs of students, with a learning progression of knowledge from concrete to abstract in each discipline (Adler, 1987, 1988; Bayon, 2003; Veith & Kern, 2015). Adler's ultimate goal was no less than a total reform of K-12 public education (Bayon, 2003), and though he was ultimately unsuccessful in that regard, Paideia schools still exist throughout the United States, and today other classical programs and organizations follow the *Paideia* model of thoughtfully structuring learning according to stages of cognitive and social development toward the goal of cultivating lifelong learners.

Finally, professor and educator E. D. Hirsch (1988) contributed to the defense of sequential core knowledge with *Cultural Literacy*. Hirsch's work continued the theme of Hutchins and Adler in his advocacy of core knowledge and acculturation into a common tradition of learning. In response to critics of his work as too heavily focused on western culture, Hirsch (1988) offered an explanation of cultural literacy in particular that applies equally to classical education in general:

The claim that universal cultural literacy would have the effect of preserving the political and social status quo is paradoxical because in fact the traditional forms of literate culture are precisely the most effective instruments for political and social change. (p. 22)

The contributions of these figures form part of the impetus for a return to the classical, liberal arts tradition and the associating core knowledge, virtues, and habits of learning that provide the intellectual framework of modern classical education.

Particular Characteristics and Types of Classical Schools

Classical schools offer a robust, comprehensive program of study rooted in the intellectual heritage of an ancient view of learning and traditional teaching methodology (Austin, 2019). While there is no single “authorized” version of classical schooling (Bayon, 2003, p. 34), there are many time-periods, models, and specific frameworks to serve as exemplars. An understanding of the pedagogies, disciplines, and skills found in classical education of the past informs the formation of neo-classical education in the present. Veith and Kern (2015) propose four elements that define classical education: a high view of man, logocentrism, responsibility for the Western tradition, and a pedagogy that sustains all these elements. A *high view of man* enables classical education to achieve its primary function—that is, the cultivation of human virtue (i.e., excellence). The task of the classical educator, says Hicks (1981), is to prepare students for their future engagement in the civic community, as participants as well as leaders. With this sort of preparation, students become a wise and virtuous citizenry who can support their society through innovation and entrepreneurship, who can articulate their love of liberty and virtue through well-reasoned arguments that hold the powerful to account.

Indeed, the formation of character and the instillation of virtue have always been among the chief goals of classical education, from the ancient (e.g., Plato and Quintilian) to the modern (Perrin, 2004). A classical education also affirms the existence of a *logos*, or unifying principle (Veith & Kern, 2015), in which all knowledge and reason are rooted (Jordan, 2011). A logocentric view is one that recognizes that objective, organized knowledge can be discovered and learned. In seeking truth, one is able to perceive the nature of things in particular as well as their relation to each other (Adler, 1988; Hicks, 1981); the tools of learning enable learners to identify the nature of a thing and to relate to it in a manner suited to its nature (Adler, 2000; Veith & Kern, 2015). Without a guiding *logos* to put things into perspective, Jordan (2011)

noted, we become “cut off from tradition, from reason, and from norms connected to transcendent order” (p. 50). American classical education affirms the uniqueness of the Western tradition, which is the “property and inheritance” of all Americans (Veith & Kern, 2015, p. 15). Students educated in classical schools receive this tradition in order to protect and share it with those who have yet to come.

The final element of classical education concerns its pedagogy and is classified into two stages, the first being mastery of the art of learning and the second being the application of the requisite knowledge and skills (Veith & Kern, 2015). Having decided what students ought to learn, Adler (2000) explained, teachers and educators next take up the task of inspiring and motivating their students to learn by cultivating a “deep and lively interest in the very things that should be learned” (p. 181). Indeed, there are several kinds of schools in operation today that draw upon the classical tradition in some form. Additionally, the classical tradition is also present in the growing homeschool movement, as several curriculum resources and materials have been created for educating students in the classical tradition through homeschooling (Anderson, 2016). This study examined classical private schools as well as classical charter schools.

Classical Private Schools

The modern classical movement began with the formation of private Christian-affiliated schools using a classical curricular paradigm (Veith & Kern, 2015). Today, these classical private schools can be found in every geographic region of the United States. Many classical Christian schools are wholly independent, yet the majority of classical Christian schools have active membership in classical associations and organizations. The largest of these organizations is the Association of Classical and Christian Schools (ACCS). The Institute for Catholic Liberal

Education is another such classical education organization, overseeing and supporting Catholic education in the classical tradition across the United States. The member schools of these two national organizations form one half of the schools sought for participation in this study.

Classical Charter Schools

The *Paideia* program (Adler, 1982, 1988) was the dominant source of classical education in non-private schools until the ascent of the classical charter movement in the early 21st century. Although hundreds of classical charter schools exist around the country, the largest and most popularly known are the charter schools associated with the Barney Charter School Initiative. Sponsored and mentored by Hillsdale College, the aim of the Initiative is to bring Hillsdale's approach to classical schooling to public schools (Veith & Kern, 2015). The first cohort of schools opened in 2012, and schools have been opened each subsequent year up to the present. As of Fall 2020, the Barney Charter School Initiative constituted 25 affiliated schools in 11 states; a further six charter campuses are authorized users of the Hillsdale-developed classical curriculum resources (Hillsdale College, n.d.). Although private classical schools have been the subject of recent scholarly research (e.g., Anderson, 2016; Austin, 2019; Dernlan, 2013; Grey, 2018), little if any scholarly research has been conducted with classical charter school subjects. Owing to the considerable increase of classical charter schools across the country and the increasing number of administrators, teachers, parents, and children these schools represent, their presence in the educational research literature is warranted.

Curriculum and Instruction

Professor and educator E. D. Hirsch (1988) viewed education, at least in the strictest anthropological sense, as acculturation, the passing down of essential core knowledge from adults to children (Bayon, 2003). Although classical schools tend to uphold the value of cultural

literacy in their curricula, most, whether private or charter, view education as including the enculturation of moral character and civic virtue as well. The curricular and instructional aims of modern classical education are grounded in a knowledge-centered and inquiry-based curriculum (Veith & Kern, 2015). As such, modern classical schools tend to utilize the methodology and developmental nature of the Trivium, paired with the Western tradition (McCoy, 2021; Perrin, 2004). On the whole, the curriculum of classical education can be differentiated from other curricular approaches by its rejection of rigidity and limitations, such as the rigidity of subject constraints and a narrowed curricular focus. The inclusion of classic works of literature, typically unabridged, along with primary source documents in history and science classes, are also a hallmark of classical schools (Bayon, 2003; McCoy, 2021; Moore, 2014). In this way, students not only are exposed to great works of the past but also the cultural literacy that Hirsch (1988) believed to be crucial.

Pedagogical Approaches

Classical education also makes use of specific instructional methods, of which shared inquiry and mimetic and Socratic instruction are perhaps most commonly used. *Mimetics* (i.e., to imitate) involves learning by imitation. In a mimetic sequence, students begin by imitating the skill that is to be learned, and they end able to embody what they learned through experience and participation (Circe Institute, 2015). In the invitation stage, students are invited to participate by considering what they already know and then applying their knowledge or skill further, and in so doing, they activate their prior knowledge, curiosity, and interest in the topic. Next, the teacher presents examples—or types, to use the mimetic term—and models for the student how to perform the skill. In the third stage, the teacher, through questioning, invites the students to compare the types that were modeled. Students rely on their memory and imagination as they

make sense of the relationships between types. As students engage, the fourth stage of mimesis occurs, in which they recognize and make sense of similar but yet distinct types (Circe Institute, 2015).

In the Socratic method, a teacher purposely constructs a series of questions for students to consider in order to ascertain the truth. In keeping true to the original Socratic method, a teacher avoids directly answering the question but instead guides the student toward an eventual conclusion. More than simply asking questions, the Socratic method occurs in two stages; in the first, teachers ask questions that deconstruct the topic being studied, prompting students to confront their lack of knowledge or understanding. In the second stage, the disharmony from the first stage leads, via questioning and answering, to the recovery of harmony in understanding (Kern, 2011). Today, the Socratic method is widely regarded as the most powerful critical-thinking method because of the nature of the teacher-student dialogue and the role of interactive inquiry (Anderson, 2016).

The aim of shared inquiry is to stimulate discussion of a text in a group setting; students engage not only with the text but with each other, ask probing questions, listen to each other, and respond effectively (Great Books Foundation, 2014). More than merely comprehending a work, those engaged in shared inquiry take part in a quest for meaning, and they rely on each other as well as their own examination to find meaning. Readers must support their observations with textual evidence; this protects against an overreliance on personal, subjective interpretation. When used in the classroom, shared inquiry reinforces positive and respectful dialogue, as listening and responding appropriately are among the main actions of the method, in keeping with Adler's (1988) identified basic intellectual skills. This dialectic teaching is intended to be engaging and student-centered. In contrast to analysis, which requires outside investigation and

objectivity, dialectic is more reflective and participatory (Hicks, 1981). Students find their voice, then they use their voice to engage in the lively conversations that cultivate their knowledge in pursuit of the good and the true (Jordan, 2011).

It is important to remember that the stages of the Trivium are artistic skills rather than demarcated, separate subjects (Bayon, 2003; Nielsen, 2018). As such, the skills and dispositions within each of the stages can be applied to all disciplines (Perrin, 2004; Veith & Kern, 2015). To be educated in any discipline, Veith and Kern (2015) specify, one must know its basic facts (grammar), have the ability to reason clearly about it (logic), and communicate its ideas and apply them effectively (rhetoric). The Trivium represents modes of learning, and the skills developed within each of the stages can be applied to any academic subject or discipline (Nielsen, 2018; Veith & Kern, 2015). More detailed information about each stage of the Trivium is briefly provided below.

Grammar. The grammar stage roughly corresponds to the elementary grade levels (K-5/6). In this stage, students build a foundation for future learning by developing the knowledge and skills in each of the academic disciplines. The grammar stage concentrates on concept-learning and harnessing the skills of memorization through recitations and memory drills (Little, 2021). The most vital discipline of the grammar stage, however, is literacy, and necessitates the mastery of phonics, vocabulary, and sentence structure (McCoy, 2021). In classical schools, literacy encompasses reading and writing. Additionally, the introduction of Latin is a core part of the grammar curriculum, typically commencing in Grade 3 for ACCS-affiliated schools (Dernlan, 2013). As mentioned, memorization is a hallmark of the grammar stage; history timelines, science facts, and grammar rules are put to memory with surprising accuracy and enthusiasm (Perrin, 2004). Writing is given special attention in the grammar stage, as the written

word has been and remains the paramount method of communication and expression of ideas in the Western tradition (McCoy, 2021). Ultimately, knowledge is acquired and accumulated in the grammar stage rather than speculated upon (Little, 2021).

Logic. The logic stage “accommodate[s] growing emotional and intellectual maturity” (Little, 2021, p. 117). This stage typically corresponds to the middle school or junior high years. The aims of the logic curriculum include training in formal logic or reasoning, including argumentation and debate (Dernlan, 2013), in preparation for the rhetoric stage. Students also delve deeper into critical assessments of literary works and historical references, the intention of which is to help strengthen objective reasoning skills. At this time, students develop their reasoning skills by engaging in argumentation with their teachers and peers with enthusiasm and spiritedness (Perrin, 2004).

Rhetoric. The culmination of the Trivium, students at the rhetoric stage integrate the knowledge and skills from the previous stages toward persuasive speech and writing (Anderson, 2016). Rhetoric students gain practice in writing in a variety of genres and styles (Perrin, 2004). Although the rhetoric stage corresponds to the high school years, the corresponding skills were introduced earlier in order to prepare students for this stage. Likewise, grammar skills continue to be emphasized as well (Perrin, 2004). As Perrin (2004) clarified, “the assumption...is that these subjects are always operating in some form, but that they are suited to be explicitly taught at certain stages in a child’s development” (p. 20).

The Role of the Teacher. Teachers in classical schools see their students not as little children to be entertained but as future adults to be guided toward the dispositions for lifelong learning (Hicks, 1981; Lowe, 2015). “The teacher aims to form the adult-to-be,” Veith and Kern (2015) evocatively explain, “not to liberate the child within” (p. 54). The overarching

philosophies of classical education sees the teacher as filling a prominent role, not teacher-centered but knowledge-centered, of which the teacher plays crucial roles reflective of students' different stages of development. Sometimes, the role of the teacher is that of a model for scholarship, aiding the student but not creating knowledge for the student, as well as that of a co-participant in learning (Veith & Kern, 2015, p. 55). Specifically, the teacher models for students the intellectual styles of learning as well as the moral understanding of a well-rounded, thoughtful and virtuous individual. Adler (2000) likened the teacher's role to that of a farmer who does not produce the grain but helps it grow, or the physician who does not produce health but helps the body maintain its health. Teaching is a cooperative art (Adler, 1988); it realizes the primary cause of learning is the activity in a student's mind and the teacher's instruction the cooperative but secondary cause (p. 171). More recently, Lowe (2015) remarked on the importance of the teacher to explicitly teach and instruct, explaining, "Young people want a challenge; they want to be taught...instead of the mistaken notion of learning as fun and exploration, we must return *gravitas* to the classroom" (pp. 4–5). This serious and thought-filled attitude toward the teaching of fundamental skills such as reading, writing, and early mathematical skills would lead to true excellence in teaching and learning in the elementary years and solidify the foundation for all that would be accomplished in the upper grades.

The Role of Creativity, Imagination, and Wonder in Classical Education

The connected concepts of creativity, creative thinking, imaginative thinking, and curiosity have been mentioned in seminal as well as recent classical education literature. Jacques Barzun (1991) asserts that teaching in what could be considered the classical paradigm is an inherently artistic endeavor, recognizing art as a creative endeavor requiring originality in thinking about and connecting different concepts and then expressing these connections as ideas.

More recently, Dey (2018) contrasted teaching as an art versus teaching as a science before concurring with Barzun's original assertion. "Artists," Dey (2018) explained, "are interested in the intangible and the transcendent" (p. 3). What classical educators (e.g., Barzun, 1991; Dey, 2018) understand in the dichotomy between teaching as art and teaching as science is the tendency of the latter to see students as subjects that can be measured and manipulated according to objective calculations and standards. Rather, students are unique individuals, and teachers respond to and nurture these individuals through experience, intuition, and creative activity that ought not to be reduced to formulas (Courtney, 2014; Dey, 2018).

Moral Imagination

The ACCS (2021) defines *moral imagination*, a term originally coined by British philosopher Edmund Burke, as "the part of a person that views the world in terms of goodness. It is imagination because it deals not in rules, but rather in stories, poetry, mental images, and memories." In other words, the moral imagination has to do with the integrative role—literally the "integrity"—of the imagination (Turley, 2014, p. 67). Pivotal to the mission of classical education is the development of a student's moral imagination. Burke was keen to understand how a civilization passed down shared virtue and moral instruction. The answer, he found, was not through dense rulebooks of conduct but rather through fables and myths, customs and traditions, and stories about virtuous and unvirtuous characters (Turley, 2014). In this way, the moral imagination helps individuals process and think about philosophical ideas, make connections across various ideas and disciplines, and develop new insights to better understand and communicate these ideas. Thus, a working imagination was believed to be crucial for initiation into the Great Conversation with authors of the past (Leithart, 2008) and remains a prerogative of classical education in the present.

Dispositions for Learning

To classical educators, creativity is another skill that students naturally possess, and which can be cultivated through purposeful and systematic initiation into the knowledge and skills of disciplines. Students are naturally curious, Clark (2015) asserts, therefore they do not need to be taught to wonder. An extension would be that students are naturally imaginative and thus do not need to be instructed in how to think imaginatively. However, in order for these natural gifts and dispositions to be harnessed, students need requisite knowledge and skills in the disciplines in order to produce works that are unique and useful. Awe and wonder are the attitudes and dispositions necessary for students to engage fully in the learning process (Lowe, 2015). Teachers can help students use their imaginations to make sense of, represent, or communicate ideas in the same way that great authors of the past (e.g., Shakespeare, Lewis, Tolkien) produced new works by thinking imaginatively about history, languages, and mythology (Courtney, 2014). The classical student, conclude Veith and Kern (2015), is actually more equipped to engage in the thinking necessary to create something original (e.g., artwork) than the student who has been “called to self-expression but...has been denied—because of the narrowness of analytical curriculum—the opportunity to explore...dimensions that would enrich the self he expresses” (p. 57). Looking specifically at the literary tradition of classical schools, students’ imaginations are nurtured through their access to “the great gift of literature,” wherein students “observe the lives of the wise and the foolish, experiencing those lives vicariously by entering imaginatively into their stories” (Clark, 2015, p. 32). To classical educators, a strong foundation in the knowledge, literature, and skills of the disciplines is what propels creative thinking and the making of imaginative connections. A further rounding-out of the curriculum to include music and the performing arts also encourages the classical student’s opportunities for

self-expression (McCoy, 2021). To give a student in the younger grades a prompt to write a creative story, when the child has only just begun to learn to write, is backward logic to the classical educator. Rather, facilitation of creativity should be considered with respect to students' knowledge and skill development (Courtney, 2014). In this way, *imitating the masters* is imperative in classical education in order to evoke and propel student creativity.

Classical Education in Recent Research

Peterson (2012) compared classical and non-classical Christian schools to determine the extent to which teachers actively integrated faith and learning in their teaching. Results indicated that teachers in both school types reported high levels of integrated faith and learning in their teaching practices, although the classical Christian school teachers reported higher levels of integration than teachers in the non-classical schools (Peterson, 2012). Peterson thus posited that the “unity-and-coherence” approach (p. 139) of the classical schools may have been a mitigating factor in the higher self-reports of faith and learning integration, as an imperative of classical schools is the unity and integration of knowledge across subject lines, in addition to the unity of Biblical knowledge with the curriculum seen in both types of Christian schools.

In order to gain insight into the spiritual formation (e.g., the formation of spiritual identity) of students, Dernlan (2013) surveyed fourth-, eighth-, and 12th-grade students in a classical Christian school and a non-classical Christian school; survey items included questions about students' knowledge, beliefs, and actions related to Christian doctrine and spiritual identity. Results revealed a significant difference in the spiritual formation of students in the classical versus non-classical school, with students in the former reporting significantly higher levels of spiritual formation. Dernlan (2013) posited that parental influence, school culture, and the integration of faith into daily subject matter may account for the differences between school

types. This explanation is similar to that of the unity-and-cohesion argument from previous research (e.g., Peterson, 2012).

Noting the instructional, curricular, and content-knowledge challenges faced by classical school teachers, most of whom were unlikely to have received a classical education themselves or to have been exposed to the classical approach in their respective universities, Anderson (2016) investigated whether teacher self-efficacy in student engagement and instructional strategies differed between teachers in classical versus non-classical Christian schools. Results indicated that no significant differences existed between teachers at the different types of schools regarding their student-engagement or instructional-strategies self-efficacy. In fact, the teachers' self-efficacy scores were quite high (Anderson, 2016).

Grey (2018) investigated the role of athletics in classical Christian schools and sought to determine how and to what extent the role of sports reinforce the mission and vision emphasized in classical Christian schools. Coaches from classical Christian schools took part in the study, and over 80% of respondents confirmed that the classical school values were reinforced through sports and that coaches fulfilled a necessary role in reinforcing these school-wide values. As many classical schools do not have athletics programs (Perrin, 2004), the results of this study highlighted the potential of sports to contribute to the overall purpose of classical education, as well as a “physical manifestation of the values” of such schools (Grey, 2018, p. 32).

Austin (2019) sought to determine the relationship between a classical Christian framework and academic rigor in approximately 35 secondary classical Christian schools (Grades 9–12) affiliated with the ACCS who provided publicly available, official relevant documents. A content analysis of documents relating to college admissions, median SAT scores, and descriptions of school curriculum revealed that the classical schools in the study were

academically rigorous, affirming earlier reports (e.g., Perrin, 2004) that classical school graduates rank among the top graduates in the nation.

Most recently, Mahan (2020) examined the purpose of classical schools according to their mission statements. Classical schools were examined alongside other non-classical private and public schools to ascertain commonalities as well as differences in stated educational missions and purposes of education. Classical schools were found to share commonalities with other non-classical religious schools related to purpose in education (e.g., spiritual development) and differ significantly from non-classical schools (e.g., lack of social development or vocational development according to mission statements). Mahan's (2020) findings confirmed that classical schools sought an educational imperative distinct from other types of schools.

Despite the different foci, the above recent classical researchers cited in this section mentioned a lack of relevant empirical research in the school populations of study. Because the number of classical schools across the country continues to increase, more research into this particular type of educational environment is warranted (Anderson, 2016). This is particularly relevant regarding research into classical charter schools; as yet, no empirical studies have been found that include classical charter schools as participating schools.

Creativity

Historically and culturally, an explicit, standardized, and historically consistent definition of *creativity* has been elusive. However, since creativity scholarship emerged as an academic discipline in the mid 20th century, a broad consensus has emerged. The two standard components included in definitions of creativity are *originality* and some term denoting *utility* or *value* (Amabile, 1996; Runco & Jaeger, 2012; Starko, 2010). Originality is a vital component of definitional creativity, but as Runco and Jaeger (2012) explain, it cannot be the only component,

since a creative product that is original might be entirely without utility. Thus, the inclusion of value is warranted. Value can be expressed with the terms *appropriateness*, *effectiveness*, or *usefulness* (Amabile, 1996; Starko, 2010).

The abundance of differently worded definitions of creativity can pose a challenge for researchers and practitioners alike. Its multifaceted and complex nature requires knowledge and context, and definitional disagreements in the field persist into the present (Henriksen et al., 2018; Runco, 2004). Over the decades, there has also been a shift in the definitional focus, as some researchers define creativity as one's abilities whereas others define creativity based on one's achievements or, even still, the social value produced by creative outcomes (Oldham & Cummings, 1996). The differences in focus amount to an understanding of creativity as ability, as a process, and/or as an outcome (whether necessitating social value or not). For the purpose of this study, creativity is defined as the process of engaging in original and task-appropriate thinking which leads to the output of an original and task-appropriate product.

Overview of Creativity Scholarship

Creativity as a scholarly field and area of academic research commenced in the 1950s with Guilford's (1950) speech to the American Psychology Association, where he called for creativity to be studied as a serious scientific construct (Ferizovic, 2015). Guilford is often recognized as the founder of modern creativity research (Hamza & Hassan, 2016), and among his significant contributions to the field is a recognition of the components that help to define the construct. In his writings, Guilford (1950) provided an implicit definition of creativity by underscoring the characteristic of *originality* as accentuated by *appropriateness* (later understood as some sort of *utility*). Ultimately, however, Guilford (1950) was vague about any specific definition, offering instead the oft-quoted explanation that "in its narrow sense, creativity refers

to the abilities that are most characteristic of creative people” (p. 444). Moving beyond Guilford’s (1950) definition by implication, Stein (1953) was the first researcher to use the standard definition of creativity “in an entirely unambiguous fashion” (Runco & Jaeger, 2012, p. 95). Nevertheless, Guilford (1950) still set the definitional standard of creativity as *originality* and *utility* or *effectiveness* that is still recognized by the community of creativity researchers (Runco & Jaeger, 2012).

For much of the 20th century, seminal research in creativity focused on the personality characteristics and cognitive abilities of highly creative individuals, as well as the construction of creativity measurements designed to identify creative individuals, and methods used to train creative thinking (Amabile & Gryskiewicz, 1987). Creativity is a multifaceted and complex construct; consequently, it can be studied and measured in several ways.

Different Levels of Creativity

There is an abundance of frameworks in the field of creativity research, with one of the most frequently cited being the 4-C model of creativity (Beghetto & Kaufman, 2013; Kaufman & Beghetto, 2009). In contrast to models and frameworks that focus on concepts such as domain-specificity and generality, models such as the 4-C examine different levels of creative output by individual (Beghetto & Kaufman, 2013; Kaufman & Beghetto, 2009). Big-C creativity denotes individuals recognized as eminent in their fields; the term *genius* is often used to describe such individuals (e.g., Beghetto & Kaufman, 2013; Royston, 2018). Meanwhile, little-c creativity denotes the everyday creative thinking and creative outputs of individuals. The 4-C model extends understandings of individual of creativity by adding pro-c and mini-c levels. Pro-c applies to creative processes and products related to professional work, such as a creative monument designed by an engineer, who uses professional knowledge and skills in combination

with his creative abilities. There is a linear progression in levels; with each progression, domain-specificity becomes more pronounced as individuals apply their creative thinking abilities toward the advanced knowledge and skills they gained in a particular subject or discipline (Royston, 2016). Because it is possible for individuals to possess high levels of everyday creativity but low levels of the Big-C or even Pro-c creativity, there is a need for more research to understand the relationship between the levels and how individuals progress from and experience one to another (Kaufman & Beghetto, 2009; Royston, 2016). This model is particularly valuable to this study because of its inherent recognition of different levels and outputs of creativity, that creative ability can manifest in different circumstances and yield different levels of output and recognition.

Creativity and Intelligence. The relationship between creativity and intelligence has been significantly documented over the last century. Until the mid-20th century, psychologists and other researchers tended to correlate creativity with intelligence (Ferizovic, 2015). Although closely related, the two are separate constructs. Indeed, the *threshold effect* has been used to describe the relationship of the two constructs up to a certain extent. Creativity can be correlated with intelligence up to an IQ of 120, but beyond that, correlation ceases (Guilford, 1967; Sawyer, 2006). In this view, creative abilities are confined solely to the purview of the intellectually gifted but instead lie within each individual (Guilford, 1950; Starko, 2010). Creative thinking deepens the ability to synthesize knowledge, especially from seemingly unrelated concepts and information (Guilford, 1950). Relatedly, creative potential is based on cognitive abilities, thinking styles, motivation, and an individual's self-concept (Amabile, 1996; Ivcevic, 2009; Torrance, 1988).

Implicit Beliefs of Creativity

A developing area of creativity research is the implicit self-beliefs of creativity. Implicit theories, as opposed to scientifically supported explicit theories, are beliefs and values inherent to individuals (Ramos & Puccio, 2014) and are often unexpressed and privately held (Runco, 1999). Nevertheless, these beliefs are genuinely and deeply held (Kaufman & Beghetto, 2013) and can provide insight into how creativity is viewed and practiced in the wider world. These “lay beliefs” of creativity provide insight into what creativity is, as well as which characteristics may be conducive to creative ability and performance (Baas et al., 2015, p. 1). For example, is creativity an innate gift within certain individuals, or is it a skill that can be developed incrementally? Certainly, the researchers and scholars have their answers, but in the wider world and across broad cultures, what are the beliefs of individuals? Individuals are influenced by and make decisions based on their beliefs, values, and judgments each and every day, and as such, interactions between individuals are likely to have more of an influence than research and scholarly findings. In other words, the implicit theories of creativity held by ordinary individuals may be at odds with what is known in the scholarly community, but in certain professional areas, the implicit beliefs may have more operational power. Implicit theories of intelligence have been a topic of interest in for several decades (e.g., Sternberg, 1985), yet research into implicit theories of creativity is still relatively new.

Research Into Implicit Beliefs of Creativity

In an early study of implicit theories of creativity, Runco and Johnson (2002) examined the beliefs of 150 teachers and parents in both the United States and India to determine how the participants felt about characteristics of creativity in children. Participants were provided with a list of adjectives for creativity and desirability. Results revealed that parents and teachers held consistent beliefs about the characteristics of creative and uncreative. Overall, both parents and

teachers tended to view creative characteristics desirably and uncreative characteristics undesirably. Crucially, results indicated that both parents and teachers recognized that some characteristics of creativity were indeed undesirable based on specific circumstances and environments. In their discussion of findings, Runco and Johnson (2002) explained that some characteristics (e.g., impulsivity) may be associated with creativity but that in a classroom, its manifestation in a student might be regarded as undesirable. The importance of research into the implicit theories of creativity held by parents and teachers is because “they function in the real world” (Runco & Johnson, 2002, p. 436).

Ramos and Puccio (2014) conducted a more recent study into laypeople’s implicit theories of creativity. A convenience sample of 523 participants from the United States and Singapore with no formal background or training in creative thinking were given a questionnaire in order to determine the participants’ definitions of creativity according to whether beliefs reflected an *innovator* or *adaptor* style of creativity. Innovator and adaptor styles belong to explicit theories of creativity (e.g., Kirton, 1976), with *innovator* referring to those who look for new approaches and solutions to challenges and *adaptors* referring to those who prefer to work within established paradigms and systems (Kaufman, 2019). These definitions in turn revealed the participants’ implicit beliefs about creativity. Most participants, regardless of nationality, held implicit views of creativity as *innovative* rather than *adaptive*. As Ramos and Puccio (2014) explained, the results of the study conflicted with Kirton’s (1976) explicit theory, in which innovators and adaptors are equally creative, differing only in their orientations.

Baas et al. (2015) examined laypeople’s beliefs about their conceptions of creativity. A total of 891 participants completed a survey asking about their beliefs about creative insights and the conditions in which these insights occur. Participants were also tasked with making several

decisions about how they might manage creativity in an organization (Baas et al., 2015). Results indicated that positive moods, defocused and flexible thinking, and intrinsic motivation are more positively associated with the conditions for creativity than negative moods, “systemic, persistent thinking,” negative moods, and extrinsic motivation (Baas et al., 2015). The implications of the findings reveal that people may seek and engage in choices that they believe will enhance their creative thinking abilities, in contrast to what has been determined through research and scholarly knowledge. Baas et al. (2015) recommend the importance of a more thoughtful understanding of the “scientific evidence” for creative thinking in order to share and advance more evidence-based conclusions.

More recently, Kettler et al. (2018) examined teachers’ implicit understandings of creativity to determine to what extent these views aligned with scholarly literature. A total of 371 participants rated student characteristics according to scales of desirability; in addition, participants completed a self-reported survey of personal creativity. Research findings demonstrated that on the whole, teachers viewed characteristics associated with student creativity negatively but had a positive regard for characteristics “contraindicative” of creativity (Kettler et al., 2018), the implication being that teachers’ beliefs regarding the characteristics of creative students is the opposite of what evidence demonstrates to be characteristics of creative individuals. Kettler et al. (2018) pointed out that even with the added emphasis on creative thinking as an increasingly relevant 21st century skill, teachers’ perceptions of student creativity characteristics are much the same as they were several decades ago. However, results revealed evidence that teachers who viewed themselves as creative had a higher regard for student creativity (Kettler et al., 2018).

Clearly, there is a tension between laypeople's beliefs and what is taken to be scholarly knowledge. Despite recent research, there is still much to learn about how laypeople's beliefs about the behaviors, styles, and circumstances that they may believe to be conducive to creative ability (Baas et al., 2015). Additional research is warranted in order to examine implicit beliefs of creativity held by individuals across and within different cultural contexts (Runco & Johnson, 2002). The enduring value of these research studies is in their illumination of how creativity is conceptualized by ordinary individuals and how these strongly held beliefs of creativity may in fact differ from the scholarly literature. Differences in beliefs about the characteristics of creativity and creative individuals will be especially consequential when considering research into teachers' beliefs of creativity and characteristics of creative students.

Creative Mindsets. Creative mindsets, a subset of implicit theories of creativity (Karwowski & Brzeski, 2017) developed out of research in intelligence and academic performance (Royston, 2018), particularly Dweck's (1986, 1989) research into *fixed* and *malleable* or *growth* mindsets. Defined as the "implicit theories referring to the perceived source and nature of creativity" (Karwowski & Brzeski, 2017, p. 3), creative mindsets offer insight into how individuals across many environments view creativity and creative abilities. For example, some individuals may believe that creative ability is fixed, unchanging, and only to be found in eminent creators; such individuals, Karwowski and Brzeski (2017) explain, hold entity views of creativity. By contrast, some individuals may hold that creative ability is malleable (i.e., changeable) and able to be developed. These individuals hold incremental views of creativity. Such individuals are more likely to hold the dispositions and develop the skills necessary to cultivating creativity. Creative mindsets, as opposed to creative self-efficacy or creative personal identity), are not *self-beliefs* (such as creative self-efficacy or creative personal identity); the

impetus is not on one's own creative skills but rather on the perceived sources of creativity (Karwowski & Brzeski, 2017). These mindsets are malleable in that they "evolve and change under a variety of influences" (p. 6). At the center of scholarship into creative mindsets is the question of whether individuals can hold both fixed and malleable creative mindsets simultaneously (Karwowski, 2014; Karwowski & Brzeski, 2017). This is of considerable importance, as an individual's mindset influences effort toward and engagement in creative thinking (O'Connor et al., 2013). Karwowski and Brzeski (2017) also posit that one's mindset may be crucial to how one deals with failure or perseverance when engaging in creative thinking, with it being a reasonable assumption that those holding fixed mindsets may duly be more risk-averse and avoidant of challenging endeavors.

Individuals held the belief that ability and performance (e.g., academic, artistic, or athletic) were either fixed or malleable; one mindset was held over the other. However, recent findings suggest that individuals' mindsets are more nuanced. Not only can individuals hold fixed and malleable mindsets simultaneously, but the constructs themselves ought to be viewed as separate, rather than opposite ends of the same continuum (Karwowski, 2014; Royston, 2018). Thus, individuals can hold fixed mindsets when considering eminently creative people and simultaneously hold malleable mindsets when considering everyday creativity (Karwowski, 2014; Karwowski & Brzeski, 2017). Mindsets have been shown to predict how individuals respond to challenges and thus provide practical implications that can be beneficial to institutions and organizations (Karwowski et al., 2019).

One particular aspect of significance of creative mindsets to the field of creativity research is in how individually held mindsets influence individual performance and the amount of effort given to completing tasks (Royston, 2018).

Recent Research Into Creative Mindsets. O'Connor et al.'s (2013) research into the validity of creative mindsets sought to determine how laypeople's beliefs about the malleability of creative ability affect creative potential. Problem-solving, creative thinking, and self-reported creative achievement were used as measurements of ability and potential. Over the course of two correlational studies and one experimental study, O'Connor et al. (2013) confirmed that, although connected, creative mindsets and intelligence mindsets are separate constructs. Additionally, the findings revealed that a malleable creative mindset heightened the participants' abilities in creative problem solving.

Previous research into participants' views of creativity mindsets used implicit theory of intelligence scales, wherein *intelligence* was replaced with *creativity* (Royston, 2018). Karwowski (2014) created a measurement that actually assessed implicit mindsets of creative ability. Research into goal orientation (e.g., Dweck, 1989) revealed that individuals could hold any number of goals simultaneously; Karwowski (2014) posited that likewise, individuals could hold fixed and malleable mindsets of creative ability simultaneously. Karwowski (2014)'s findings concluded that individuals could indeed hold both creative mindsets simultaneously. The findings also illuminated a connection between creative mindsets and creative self-efficacy (CSE) as well as creative personal identity (CPI), as participants holding higher malleable views of creative ability also held higher levels of creative self-efficacy and creative personal identity. More information about this study is provided in the next subsection. It is important to note that Karwowski (2014) triangulated creative mindsets with creative performance and used problem solving tasks as a measure of creative performance. However, the problem-solving tasks might not reflect real-world, practical applications of creativity and might instead be more appropriately associated with intelligence (Royston, 2018). Consequently, there is need for

continued research into creative mindsets, particularly if and to what extent creative mindsets affect creative achievement or perceived abilities.

In a related study, Hass et al. (2016) sought to distinguish between creative mindsets, creative self-efficacy, and creative personal identity. The researchers used Dweck's (1999) scale, which was adapted for creativity instead of intelligence. To this they added Karwowski's (2014) creative mindset scale. The results of Hass et al.'s (2016) exploratory and confirmatory factor analyses confirmed fixed and malleable mindsets as separate constructs. Additionally, it was determined that Karwowski's (2014) creative mindset scale was a better measurement of Dweck's (1999) reworded mindset scale.

Recognizing that previous studies of creative mindsets did not take into consideration the level or type of creative outcome, Royston (2016) examined whether creative mindsets might predict Big-C, pro-c, or little-c creativity, three of the levels of the Four-C Model of Creativity (Beghetto & Kaufman, 2013; Kaufman & Beghetto, 2009). In a study of 157 university undergraduate students, Royston (2016) determined that malleable creative mindsets were generally positively correlated to creativity, whereas fixed creative mindsets were generally negatively correlated to creativity. Royston (2016)'s findings also confirmed that creative mindsets are related to goal orientation. As a direction for future study, Royston (2016) suggested that researchers should consider the level of creativity being assessed in the cases where creative mindsets are used to predict creative performance (e.g., eminent, Big-C creativity, everyday little-c creativity, or professional, pro-c creativity). Similar to Karwowski's (2014) findings, it is no surprise that an individual can hold fixed and malleable mindsets of creativity, depending on specific circumstances.

CSE. First developed by Tierney and Farmer (2002), CSE is defined as “the belief one has the ability to produce creative outcomes” (p. 1138) and extends Bandura’s (1997) construct of self-efficacy into the field of creativity (Beghetto, 2006). In practice, an individual’s creative self-efficacy represents his evaluation of specific capabilities that influence his ability to think and act creatively (Beghetto, 2006). Findings suggest that creative self-efficacy is an ample predictor of creative achievement (Tierney & Farmer, 2002) and has a mediating effect on creative potential and achievement (Karwowski et al., 2018). Karwowski and Brzeski (2017) posited that creative self-efficacy can develop as a result of mastery experiences and positive feedback and can influence one’s creative mindsets.

CPI. Creative personal identity is both an appreciation of and an attitude toward creativity (Karwowski, 2014). It is a closely related but ultimately distinct construct of creative self-efficacy (Karwowski et al., 2018). The differences between creative mindsets and creative self-concepts (e.g., creative self-efficacy and creative personal identity) are slight (Karwowski & Brzeski, 2017). Recently, Karwowski et al. (2018) combined the constructs of creative self-efficacy and creative personal identity to create the Short Scale of the Creative Self (SSCS). Taken together, creative self-concepts are more malleable and dynamic than more clearly defined personality traits (Karwowski, 2014).

Creativity in the Classroom

Children’s creativity is influenced, at least in part, by the adults in their life and the culture in which they learn and develop (Runco & Johnson, 2002). One of the most significant aspects of a child’s life is their schooling, and teachers fulfil an essential role in nurturing and facilitating a child’s creative thinking abilities (Eason et al., 2009; Ivcevic, 2009; Starko, 2010). For many individuals, their first forays into creative thinking occurred in the classroom

(Csikszentmihalyi, 2013). The importance of fostering creative thinking in the classroom has been well documented (Starko, 2010; Torrance & Myers, 1970; Torrance & Safter, 1986). “Abundant evidence” exists that when teachers utilize strategies that foster creative thinking (e.g., inquiry learning and divergent thinking) this helps to solidify content knowledge and process skills (Starko, 2010, p. 5). When teachers foster creative thinking in their classrooms, usually there is an increase in creative growth and involvement in their students (Torrance & Myers, 1970). As evidenced by definitional creativity, originality and utility are the aspects most recognized with creative activity, and this is true for creativity in educational contexts as well (Starko, 2010). However, when considering a child’s creative thinking, the concept of originality can pose the question “original for whom?” In consideration of this, Starko (2010) slightly amended the conceptual definition of creativity: “to be creative,” she clarifies, “a product or idea must be original or novel to the individual creator” (p. 6). This recognizes students’ potential for creative expression as they learn, make connections, and apply what they have learned in a meaningful way. In educational contexts, the component of utility is often referred to as task-appropriateness (e.g., Beghetto & Kaufman, 2013; Starko, 2010).

As mentioned, the benefits of fostering creativity in the classroom are numerous. In her research on the circumstances conducive to creative thinking, Amabile (1996) found that the social environment can have an effect on creativity and in particular that creativity correlated positively with intrinsic motivation. This is because motivation has been shown to positively correlate with interest, competence, and self-determination (Amabile, 1989). Starko (2010) connects Amabile’s (1989, 1996) research on intrinsic motivation to Bandura’s (1977) self-efficacy scholarship, explaining that the more “efficacious (i.e., confident) people feel, the more likely they are to begin [tasks] and persist in the face of obstacles” (p. 75). If nothing else,

fostering creative thinking skills in the classroom can have the effect of strengthening foundations in good work and study habits. Indeed, teaching for creativity has been shown to have a positive effect on students' classroom achievement and engagement in learning (Schacter et al., 2006; Torrance & Myers, 1970). Teachers and school leaders alike can be assured that the inclusion of creative thinking skills into curriculum and instruction, as creative thinking promotes and solidifies deeper understanding of content knowledge and skills. "Structuring education around the goals of creativity," Starko (2010) assures readers, "is a wonderful two-for-one sale – pay the right price for the learning and you may get creativity free" (p. 15). There is another important aspect of supporting creativity: nurturing through learning a child's natural joy, curiosity, and wonder (Starko, 2010). Flexible thinking and using one's imagination are hallmarks of creative thinking (Starko, 2010).

Since the 1990s, there has been a focus on instilling in students so-called "21st century skills" which will prepare them more amply for a dynamic and fast-paced global world. One of the most frequently cited of these skills is creativity, or the ability to think creatively (Adams, 2013; Florida, 2005; Henriksen et al., 2018). Business leaders, media outlets, and policymakers have all advocated for creativity to be included in some way in the curriculum (Beghetto & Kaufman, 2013). The prioritization of creative thinking for future success is not confined to the United States but is global in scope. Creative thinking is an international value (Henriksen et al., 2018; Ivcevic, 2009), and the education ministries in many countries have declared that creativity should be included explicitly in the curriculum (Henriksen et al., 2018). As an example, Taiwan's Ministry of Education has endeavored to make the country a "Republic of Creativity" wherein its citizens recognize the "indispensable" value of creativity to their lives (Niu, 2006, p. 381). With this recognition of value, both here in the United States and beyond in

the wider world, a question emerges: How does this occur? How is creativity fostered in the classroom, and by what methods or strategies?

Creative Teaching & Teaching for Creativity

Torrance and Myers (1970) believed that each teacher offered unique contributions to the education profession and that these contributions manifested in their instructional decisions. The “invention” of teaching, according to Torrance and Myers (1970), “takes place just like any other invention or creative production” (p. 44). Thus, there is a need to unpack the differences between creative teaching and teaching for creativity. Teachers can put their creativity to use to produce fun and enjoyable activities for their students, but the students’ creativity is not necessarily enhanced unless the activities involve opportunities for them to engage in creative thinking (Starko, 2010). Who is being creative—the teacher only, or both teachers and students? Many books have been written and activities curated that seemingly promote “creativity,” but looking beyond the fun, playful images and the bursts of color, oftentimes what students are asked to do is quite routine (Beghetto & Kaufman, 2013; Starko, 2010). Starko (2010) provides a clarifying example of a math activity in which students complete a color-by-number dragon containing addition problems. The product *is* an original creation, and it does indeed have utility or value, but even though the teacher exercised creative thinking to develop this activity, the students were still being asked to solve the math problem, record their answer, and color accordingly. However, if the students were asked to use their math knowledge plus a design element in order to create a lesson activity for other students (perhaps in younger grades), they would be engaging in creative thinking. Consequently, when teachers draw upon their own creative abilities to model the actions and dispositions of creative thinking to their students, there is evidence that they will incorporate more opportunities for fostering creative thinking in their students (Hong et

al., 2009). Moreover, there is evidence that with such opportunities, students' own creative thinking abilities will improve (Jeffrey & Craft, 2004). Affirming Torrance and Myers' (1970) assertion that each teacher was a unique thinker with unique contributions to teaching, the task then becomes helping teachers use their creative potential to facilitate opportunities for students to develop their potential. As teachers use their professional knowledge and skills to create and adapt lessons plans and units of study, they can be the impetus for facilitating and encouraging creative thinking in their students.

Creative Thinking Skills

The most straightforward way to foster creativity in the classroom is to weave creative thinking into the existing curriculum (Isaksen, 1988). Rather than attempting to teach skills in a contextual vacuum, creative thinking skills should be incorporated into existing units of study, optimally as a vehicle to conceptually connect knowledge across different disciplines. The knowledge and skills of a particular domain are necessary. A creative engineer must know the principles of engineering, just as a creative writer must know the mechanics of grammar and literary elements. Skills can be incorporated across various domains, but creative thinking occurs in context, and the context is crucial for learning.

At its core, creative thinking is about problem finding and problem solving (Starko, 2010) and the need to express oneself and communicate new ideas to others (Csikszentmihalyi, 1996). Teaching for creativity involves a set of strategies that can be added into the curriculum so that content knowledge and skills can be enhanced while the skills and dispositions for creative thinking are practiced as well. These strategies can help students problem solve, communicate with purpose and clarity, ask questions/inquiry, and represent knowledge and ideas with originality (Starko, 2010). Creative thinking skills enhance, rather than detract from,

learning. Among the most commonly referenced strategies for creative thinking are problem solving, lateral thinking, task commitment, collaboration, and divergent thinking (Chatzidaki & Kechagias, 2019; Hamza & Hassan, 2016; Hong et al., 2009; Starko, 2010)

Convergent and Divergent Thinking

At the core of creative thinking lies divergent thinking ability, and several techniques that aim to promote creative thinking are in fact exercises to increase divergent thinking (Starko, 2010). Guilford (1967) is credited with the concept of divergent thinking as fluency, flexibility, originality, and elaboration. Briefly, fluent thinking refers to the generation of many ideas, flexibility refers to thinking in terms of categories or multiple points of view, original thinking refers to unusual or novel ideas, and elaboration refers to the addition of details that improves original ideas (Starko, 2010). The link between fluent thinking and original thinking can be inconsistent, yet fluent thinking is still regarded as one of the most important techniques for generating eventual novel ideas and solutions—the rationale being, Starko (2010) clarified—that the more ideas one has, the greater the likelihood that one will be original and worthy of elaboration. Although divergent and convergent thinking are typically contrasted, Hamza and Hassan (2016) explain that both are essential to creative thinking (p. 589). As with any thinking strategy, Starko (2010) recommends that teachers utilize divergent thinking in situations where it is task-appropriate. “Teaching students to think divergently,” Starko (2010) cautions, “without teaching them when such thinking is useful can lead to inefficiency and wasted time” (p. 128). Divergent thinking is also one of the well-established predictors of creativity (Karwowski & Brzeski, 2017).

Brainstorming

Brainstorming is a particular technique of divergent thinking, the primary objective of which is to generate “a flood of ideas” without boundaries and by deferring judgment (Hamza & Hassan, 2016). In contrast to some creative thinking strategies that require the capability for more abstract thought, brainstorming can be incorporated at almost any age (Starko, 2010).

Lateral Thinking

The term *lateral thinking* refers to the ability to make connections between ideas and seemingly unrelated content knowledge or skills (Schnugg, 2019). Because the human brain has a tremendous capacity to think in mere seconds, Hamza and Hassan (2016) explain, innovative thinking can be a challenge, since it requires the kind of deliberate and purposeful thought that occurs reflectively, or slowly. The innovative connections made during lateral thinking seek connections among seemingly unrelated information and concepts. This is not only indicative of lateral thinking; it also is the consequence of an approach to learning that seeks inter-and-cross-disciplinary understandings of disciplines and subject matter.

Collaboration

Opportunities for collaboration are a component of the creative process (Hong et al., 2009; Starko, 2010). For several decades, certain strategies such as brainstorming have been used as a component of creative thinking in group training sessions (Parnes, 1988; Hong et al., 2009). However, the effects of collaborative brainstorming are inconsistent, as group cohesion becomes a critical factor for success (Hong et al., 2009). Collaborative activities also have been shown to have a negative effect on high-ability students (Matthews, 1992), a reason for further caution when planning to use creative thinking skills in group activities.

Imagination and Wonder

Expounding on the role of imagination in creative thinking, Starko (2010) listed the importance of instilling in students a sense of wonder about their world and—more closely connected to the classroom—the subjects of study. One particular outcome of wonder is that it generates interest in the subjects of study and encourages students to relate personally to these subjects. Starko (2010) further clarified, “instead of always asking, ‘What do you see?,’ we might sometimes ask, ‘Is there something here that puzzles you? What questions might we ask about this character, this soap bubble, this math puzzle?’” (p. 124). Instilling a sense of wonder in their world and in the subjects of study is a goal of teaching for creativity that connects quite explicitly with the philosophical goals of classical educators, arguably, in fact, the strongest connection between classroom applications of creative thinking and classical education.

Evidence of Success

Hong et al. (2009) examined possible relationships between elementary teachers’ epistemological beliefs of knowledge and learning and their instructional practices for fostering creativity using the Instructional Practices Questionnaire I. Their findings revealed that teachers’ own learning goals were the most significant predictor of their use of instructional practices that facilitate creative thinking. Those with “sophisticated” views about knowledge and those who reported high intrinsic motivation for their own creative work also were found to support instructional practices for creative thinking with greater frequency.

Schacter et al. (2006) examined the relationship between creative teaching behaviors and student achievement. Forty-eight elementary school teachers (Grades 3–6) were observed eight times over the course of an academic year, and findings revealed that although the majority of teachers did not implement any teaching strategies known to foster creative thinking, those who did had students who made substantial achievement gains (Schacter et al., 2006). These findings

suggest a connection between teaching for creativity and student achievement gains that is supported by previous research (e.g., Torrance & Myers, 1970).

A related study by Eason et al. (2009) sought to gain information on the perspectives of teachers in public and private schools. Their findings revealed that teachers in the younger grades (e.g., kindergarten) tended to value the teaching of creative thinking skills more than upper-elementary teachers (e.g., third-grade teachers). Moreover, private school teachers tended to hold more positive beliefs about creativity and valued its inclusion in the classroom more than public school teachers (Eason et al., 2009). The results of this study also confirm the concerning likelihood that the older students become, the less creative they tend to be, likely—the researchers surmised—because with each passing grade level, students have fewer opportunities to engage in creative thinking activities (Eason et al., 2009). These results confirm what Torrance (1968) originally termed “the fourth-grade slump,” a time in which students around the ages of 9–10 experience a diminishment in their creative thinking (particularly divergent thinking). Upper elementary children, then, need more attention given toward their creative thinking skills. Eason et al.’s (2009) study is particularly valuable as it is one of the few that has examined creativity in public *and* private schools—in other words, examining beliefs about a construct in different types of schools.

Dababneh et al. (2010) also investigated teachers’ instructional practices used to foster student creative thinking, the impetus for research being the need to determine to what extent teachers encourage or inhibit creativity in the classroom. The participants were 215 kindergarten teachers in Jordan who answered a 55-item survey with the following domains: knowledge and awareness of creative potential, lesson planning, educational materials, creative classroom climate, and creative instructional practices. Results indicated that teachers possessed an

appropriate awareness of creative characteristics of students and that overall, teachers possessed the necessary foundational knowledge to develop a creative classroom environment for their students but that they still needed training and support to better facilitate creative thinking in their classrooms (Dababneh et al., 2010). Some of the participants indicated that they did not have the necessary resources or support to supplement their curriculum to include more opportunities for creativity (such as play). This finding aligns with results from other studies (e.g., Olivant, 2015) about the degree to which teacher feel able to facilitate opportunities for creativity in their classrooms.

As with other skills, habits, and dispositions, creative thinking requires time and practice (Starko, 2010). “To help students realize creative thinking ability,” Hong et al. (2009) explained, “students must be given the opportunity to use it” (p. 194). This necessitates instructional time, curricular connections, and teacher support. It is important for creative thinking activities themselves to be task-appropriate; a balance needs to be struck between engaging and challenging (Hong et al., 2009). Naturally, fostering creativity in the classroom is not a panacea for overcoming any and all learning obstacles (Torrance & Myers, 1970). But for the teachers who understand the processes of creative thinking, strategies to promote creative thinking will also help reinforce and solidify content knowledge and skills as well as help to bridge the disciplines.

Impediments to Creative Thinking in the Classroom

There is evidence that teachers and researchers have different conceptions of creativity, viewing the construct through a subject-specific activity and placing more of an emphasis on the necessity of product creation (Kettler et al., 2018) over process and dispositions. Additionally, there is evidence that teachers do not place as much importance on task-appropriateness as on

originality or novelty (Kettler et al., 2018). The “mechanistic” nature of some school environments (Ferizovic, 2015, p. 130) can also be an impediment to a classroom-or-schoolwide culture that fosters the development of student creative thinking. The lack of focus on creativity and the development of creative thinking in students has been attributed to a focus on standardizing curriculum, in line with standardized testing (Henriksen et al., 2018). Standardized testing and the broader accountability culture create a ubiquitous focus on teaching to (state-tested) standards, “driving” instruction in a way that often results in a dismissal of learning opportunities beyond test preparation (Beghetto, 2008; Eason et al., 2009). For years, creativity researchers have been calling for a shift away from a focus on standardization and toward a more creative educational paradigm (Beghetto et al., 2015). Consequently, a focus on high-stakes testing tends to produce environments that detract from higher level thinking (Adams, 2013; Kettler et al., 2018). Somewhat ironically, creativity is viewed as a desirable skill for 21st century learning, and many school leaders have indicated a need for more creative thinking opportunities in their schools, yet there are indications that creative thinking skills are simply another mandate tacked on to an already crowded curriculum (Beghetto, 2008; Patston et al., 2017). This is especially problematic when considering that without adequate exemplars to guide teachers in fostering creative thinking in their classrooms, it is difficult for teachers to effectively facilitate creative thinking in their classrooms (Henriksen et al, 2018). Thus, students’ potential original thinking and opportunities to develop their abilities continue to be untapped.

There is considerable evidence affirming that teachers value creativity and want to nurture students’ creative potential in their classrooms. However, the accountability culture and testing demands can diminish their ability to do so (Adams, 2013; Olivant, 2015). In a recent study, Olivant (2015) sought to determine the experiences of elementary teachers’ efforts to

foster creative thinking in their respective classrooms. Results indicated that although teachers viewed creativity as an important skill worth developing in their students, and a skill that served to enhance engagement in learning overall, teachers felt restricted because of testing demands (Olivant, 2015). A lack of autonomy and diminished professionalism were especially singled out by the participants, as well as a narrowing of curriculum that suppressed their abilities to make instructional decisions. These results were similar to an earlier study that explored factors that affected creative thinking instruction (Adams, 2013). A positive, supportive school that encourages collaboration and teacher-design instruction were crucial to teachers' abilities to foster creative and critical thinking skills and feel supported in doing so. However, time constraints from a packed curriculum, lack of autonomy, and pressure to teach to standardized tests all work to inhibit and disempower teachers, and teaching for creativity tends to diminish (Adams, 2013). A lack of flexibility in the curriculum and learning objectives have been shown to have a constraining effect on teachers' attempts to incorporate more creativity instruction (Dababneh et al., 2010; Jónsdóttir, 2017). As it has been documented that curriculum is most effective for improving student achievement when it is designed by those who implement it (i.e., teachers), a case can be made that teacher agency and autonomy are significant factors in the achievement of their students. Therefore, teachers who believe it worthwhile to foster creative thinking in their classrooms need to be given the professional space to create such learning opportunities.

Yet this argument supposes that teachers' understanding of creative thinking, and their recognition of student creative potential, align with what is known about creativity through scholarly study. Torrance's (1963) seminal study of 650 teachers revealed that teachers' understandings of creativity differed markedly from the results of creativity research and

scholarship. More recent studies (e.g., Aljughaiman & Mowrer-Reynolds, 2005; Kettler et al., 2018) yielded results similar to the Torrance (1963) study, revealing that teachers' beliefs about creativity are often in contrast to creativity literature. Teachers struggle to define creativity in specific terms (Kettler et al., 2018); furthermore, there is evidence that teachers view creative students as disruptive and non-compliant (Westby & Dawson, 1995; Kettler et al., 2018) and may erroneously view desirable characteristics, such as compliance and cooperativeness, as characteristics of creativity (Runco & Johnson, 2002). In an often-cited study, teachers affirmed that creativity was a desirable attribute of their students but then went on to list certain creativity characteristics as undesirable (Westby & Dawson, 1995). These characteristics include playfulness, stubbornness, openness, and the tendency to be critical (Aljughaiman & Mowrer-Reynolds, 2005). In a study similar to Westby and Dawson's (1995), Aljughaiman and Mowrer-Reynolds (2005) examined 36 elementary teachers' beliefs about creativity in the classroom, their descriptions of creative students, and their definitions of creativity. Overall, teachers demonstrated a positive attitude toward creativity, affirmed that creative potential existed in all students, and that creativity can be developed in the classroom. Interestingly, only 33% of respondents agreed that it was the classroom teacher's job to facilitate creativity in the classroom, and Aljughaiman and Mowrer-Reynolds (2005) found that teachers may not feel that it is their responsibility or prerogative to develop their students' creative thinking skills. In a more recent study, Gralowski and Karwowski (2018) investigated the link between teachers' ability to recognize creative students and their implicit theories of creativity, hypothesizing that these theories affect the accuracy with which teachers rate their creative students. A total of 131 of teachers completed a questionnaire that asked them to rate characteristics of creative students related to problem-solving, personality, creative abilities, openness, independence and

nonconformity, impulsivity and sociability, and perseverance and motivation. Gralewski and Karwowski's (2018) findings confirmed previous research that teachers tended to characterize students in a manner inconsistent with the creativity literature. However, approximately two-thirds of the participating teachers held implicit theories of creativity that were consistent, at least to an extent, with what is presented in the creativity literature (Gralewski & Karwowski, 2018).

The results of these studies suggest that teachers either are unfamiliar with the characteristics associated with creative individuals—and therefore may not have the appropriate skill in relating to such students—or their beliefs of creative students are counterintuitive to what is documented in the literature. The effects of both are similar; it is unlikely that creative students will be supported in the classroom if their talents go unnoticed or discouraged (Henriksen et al., 2018). The contributions of the Aljughaiman and Mowrer-Reynolds (2005) study, however, have disturbing implications for creative students, as it reveals that although teachers do agree with researchers that creative potential exists in everyone and that these skills ought to be supported, teachers may not have the time, the resources, the support, or even the inclination to do so in their classrooms. Therefore, a deeper understanding of classroom teachers' beliefs and practices regarding their students' creative abilities is necessary.

Creativity in Classical Education: Toward a Synthesis

It has often been said that young children are like sponges. But, as Bauer and Wise (2004) remind us, if a dry sponge is squeezed, nothing comes out. The sponge first needs to be filled with something—water or soapy water. Classical educators thus believe it is counterproductive to ask students to “be creative” in a task if the students lack foundational

knowledge and skills to accomplish the task (Bayon, 2003; Veith & Kern, 2015). As Bayon (2003) elaborates,

Rather than systematically teach students the necessary skills of grammar first, logic and expression second, elementary teachers often ask their students to think critically and write ‘creatively’ before those same students have even mastered the fundamentals of grammar, ‘critical thinking,’ and expression (p. 201).

Starko (2010) makes a similar point that students must see the purpose of what they are being asked to do (i.e., creative thinking activities in a content-free, context-free vacuum are ineffective) and that such activities need to be grounded in some sort of knowledge or skill to be learned or further developed. This marks the first connection between creativity literature and classical education: the necessity of a foundation of knowledge and skills in a disposition; these are then cultivated through creative thinking. Classical education places an emphasis on the importance of first learning the skills, then mimicking the masters, then engaging in original production (Kaufer Busch, 2018), and this foundation is reinforced in creativity literature (Starko, 2010), particularly by those who view creative thinking as mostly domain-specific. Nevertheless, problem-finding, problem-solving, open-ended questioning, and the ability to meaningfully communicate ideas with others are best practices found in the creativity literature and in explanations of classical education.

Misconceptions abound about the nature of creativity and about the purpose and pedagogies of classical education. More specifically, creativity scholars and classical educators recognize the problems of viewing creativity through a mostly superficial, play-filled, context-free lens (Beghetto & Kaufman, 2013) in which students are given too little guidance and scaffolding (Classical Connections, 2014; Starko, 2010). But perhaps the strongest synthesis can

be found in the belief in *potential*—that is, creativity literature confirms that all individuals have creative potential and classical educators believe that the rigors and challenges of a classical education are for all individuals. In both cases, structure, a progression of development, and scaffolding are necessary in order to deepen one’s abilities.

Yet a review of classical education and the creativity literature reveals some tensions. Some classical educators (e.g., Bauer & Wise, 2004) believe that fostering creative thinking in the grammar (i.e., elementary) years is counterproductive to learning. However, creativity literature suggests that the younger grades are when students’ thinking skills most need to be developed, and it warns about the long-term effects of stifling creative thinking in the upper elementary grades (Eason et al., 2009; Torrance, 1968).

Despite this extensive search of the literature, no discoverable research studies have yet examined the construct of creativity in classical schools exists, nor has any study compared private classical schools to charter classical schools.

CHAPTER 3: METHODS

This study investigated classical school teachers' perceptions and beliefs regarding creativity and creative in both private and charter classical schools. The teachers who participated in this study represent a nationwide community of educators that continues to grow in size. Chapter 3 reviews the research design, relevant participant information, sources of data, data collection, and data analysis for this study. Of interest in this study were the beliefs and attitudes toward creativity held by teachers in two types of classical schools—private and charter—and whether these beliefs and attitudes differed based on school type. A quantitative, inferential statistical research design was used in this study and included descriptive statistics, bivariate correlations, exploratory factor analysis, and multiple regression analysis. Moreover, the study was designed to examine the relationship between a classical school environment (independent variable) and implicit beliefs about creativity (dependent variable) as well as the predictive relationship between implicit beliefs of creativity (predictor variable) and creativity-facilitating instructional practices (outcome variable).

Research Questions

The research questions guiding this study were

1. What are the implicit beliefs and instructional practices of creativity of classical school teachers in both private and charter schools?
2. Are there any significant differences in the beliefs and practices of creativity
 - a. between teachers in classical private schools and in classical charter schools?
 - b. between elementary and secondary classical school teachers?

3. What does a factor analysis reveal about the covariance of creative thinking instructional practices?
4. To what extent are creative mindsets, creative self-efficacy (CSE) and creative personal identity (CPI) correlated with instructional practices in classical schools?
5. To what extent does the set of implicit beliefs of creativity (i.e., creative mindsets, CSE, and CPI) predict variance in instructional practices in classical schools?

Participants

Full time, in-service teachers (as of Fall 2020) from classical schools across the United States served as participants in this study. Each school is a member of one of three national classical education organizations or networks: the Association of Classical and Christian Schools (ACCS) and the Institute for Catholic Liberal Education advise and oversee private schools, and the third organization—the Barney Charter School Initiative advises and oversees charter schools. Information about each organization’s member schools were found on the respective organization websites, and these databases were used to gather campus contact information to recruit participants. The schools in these organizations represented all geographic regions in of the United States, ranged greatly in enrollment size (from approximately 150 students to over 1,000 students) and represented all the grade levels of K-12 primary and secondary education.

Purposive sampling measures were used for gathering participants. This method involves identifying characteristics of a population of interest then seeking out participants who match those characteristics (Johnson & Christensen, 2019). A benefit of purposive sampling is that the method helps to ensure that the participant sample appropriately reflects the population being studied. Classical schools with full membership status and approximate enrollments of 150 students or more were contacted. As of Spring 2020, ACCS listed approximately 50 *full*

membership schools. From the available staff information listed on the ACCS profile school pages, this yields a population size of approximately 3,000 teachers. Relatedly, the Barney Charter School Initiative listed 25 affiliate schools as of Spring 2020. Estimating the number of faculty from available information, there were approximately 700 teachers. As of Spring 2020, the Institute for Catholic Liberal Education did not include demographic information about its member schools, so estimates about numbers of teachers could not be ascertained. Data responses was predicted to be low, as survey research responses tend to yield low percentage returns (Fulton, 2018; Saleh & Bista, 2017); the identification of a large population size, therefore, was necessary to try to obtain sufficient responses for adequate statistical power for the analyses planned.

Descriptive Statistics of Participants

A total of 307 teachers opened or began the survey in Qualtrics™. However, after cleaning the data of missing and incomplete responses, 267 participant cases remained. Participants were asked questions pertaining to their gender, the type of school in which they taught (e.g., private or charter), their total years of teaching experience versus their years of teaching experience in a classical school, their current grade level and/or teaching assignment, and their estimate of their campus' enrollment size. Table 1 presents demographic information pertaining to participant responses. Of the 267 participants, 80 participants (30%) reported teaching in a charter school, and 187 participants (70%) reported teaching in a private school. This polarity in participant type can be attributed to the fact that currently there are more classical private schools in operation compared to classical charter schools, and two out of the three classical school organizations from which participants were gathered were private. It can be logically inferred, therefore, that there are currently more in-service teachers teaching in private

classical schools than are teaching in classical charter schools. This polarity is thus reflective of the national ratio of private to charter teachers in the classical education field. Most participants were female, $n = 200$ (74.9%) compared to male, $n = 66$ (24.7%), with one participant (.4%) choosing not to answer. Elementary and secondary teachers were fairly evenly distributed: for elementary teachers (Grades K–5), $n = 109$ (40.8%), for secondary teachers (Grades 6–12), $n = 111$ (41.6%), and 46 participants (17.2%) indicated that they currently taught at both levels. Teachers from each grade level from kindergarten through 12th grade participated in this study.

Table 1

Participant Demographics

Survey Item	Survey Item Designations	<i>N</i>	%
Gender			
	male	66	24.7%
	female	200	74.9%
	prefer not to answer	1	0.4%
School Type			
	private	187	70%
	charter	80	30%
Teaching Level			
	elementary	109	40.8%
	secondary	111	41.6%
	both	46	17.2%
Total		267	100%

Teaching Assignments

When asked about their teaching assignment, more participants indicated that they were a “Generalist” classroom teacher (37.1%) compared to any other label; these are typically the elementary school teachers, though upper elementary grades occasionally are departmentalized

and thus may have identified with their subject matter instead of a “generalist” assignment. Fifty teachers (18.7%) selected “English, Writing, and/or Literature,” followed by 41 teachers (15.4%) who selected “Fine Arts,” and an additional 41 teachers (15.4%) who identified a primary teaching assignment of “Other.” The most common teaching assignment among participants who chose “Other” was “Latin,” with 13 responses (4.9%) recorded. “History, Geography, Government, Civics, or Economics,” teachers accounted for 15% of the participant total. Twenty-nine (10.9%) teachers selected “Math.” All other responses, documented in Table 2, were below 10%. It should be noted some participants taught multiple subjects, which means that although the total number of participants was 267, the raw number of participants based on teaching assignment exceeds 267. This is reflective of the schools for which these participants are representative in that faculty and staff numbers tend to be smaller and teachers often have multiple assignments per school year. Owing to the challenge of sifting participants by school subject, research questions instead focused on school level (e.g., elementary, secondary, or both) and school type (e.g., private or charter). Table 2 details information related to current teaching assignments.

Table 2*Raw Numbers and Percentages of Participant Teaching Assignment*

Teaching subject	<i>N</i>	%
Generalist	99	37.1
English, Literature, and/or Writing	50	18.7
Math	29	10.9
History, Geography, Gov't, Civics, and/or Econ.	40	15
Science	25	9.4
Religion / Theology	23	
Fine Arts	41	15.4
Other	41	15.4
<i>Latin</i>	<i>13</i>	<i>4.9</i>
<i>Foreign Language</i>	3	1.2
<i>P.E.</i>	4	<i>1.6</i>
Total Respondents	267	100

Note. The most frequently listed “Other” teaching assignments are represented in italics.

Teaching Experience

Total years of teaching experience were similar across all categories, with about a third of participants having taught 15+ years overall, $n = 89$ (33.3%). A similar number of participants taught for 4–7 years and 8–14 years, respectively, $n = 62$ (23.3%). The smallest category was 0–3 years, $n = 53$ (19.9%). One participant (.4%) did not respond to the question about total years’ teaching experience. Most participants were new to teaching in a classical school, with slightly over half ($n = 141$) indicating 3 years or fewer in a classical school. About a quarter of participants (23.6%; $n = 63$) had taught in a classical school 4–7 years, and 41 participants (15.4%) had taught in a classical school 8–14 years. Less than 10% of participants had taught in

a classical school for 15 years or more. Thus, although total teaching experience was evenly distributed, most participants have fewer than 10 years' experience teaching in a classical school.

Table 3 outlines participant experience.

Table 3

Raw Numbers and Percentages of Participant Teaching Experience

Teaching Experience	<i>N</i>	%
Cumulative		
0–3 years	53	19.9
4–7 years	62	23.3
8–14 years	62	23.3
15+ years	89	33.3
Total	266	100
In a classical school		
0–3 years	141	52.8
4–7 years	63	23.6
8–14 years	41	15.4
15+ years	22	8.2
Total	267	100

Participants were asked to approximate current enrollments at their respective campuses; 15.3% of participants ($N = 41$), taught at schools with an approximate enrollment of 150 or fewer students, and 26.5% of participants ($N = 71$) taught at schools with an approximate enrollment greater than 500 students. Nearly 60% of participants ($N = 156$) taught at schools with an approximate enrollment between 200 to 500 students.

The results of these descriptive statistics help to create a profile of the type of classical school teacher who participated in this study. The median participant can be described as female

teacher with more than 15 years' total classroom experience but only around 1–3 years' teaching experience in a classical setting, which is more likely to be a private school rather than a charter school. Additionally, there is a slightly more than average likelihood of being a secondary teacher, as opposed to being an elementary teacher or teaching at both levels. The median school environment is a midsize campus with an enrollment size between 200 and 500 students. This profile is reflective of the broad trends in classical education, as the momentum for classical education is still relatively new (i.e., within the last 2 decades) and has, until recently, been concentrated more frequently in the form of private schooling rather than charter schooling.

Data Sources

Sources of data for this study included two scales related to implicit beliefs of creativity (Creative Mindset Scale and Short Scale of the Creative Self), with the third scale (Instructional Practices Questionnaire-I) related to teachers' instructional practices in the classroom. Specific information about these measurement scales are provided below.

Creative Mindset Scale. The CMS is a 10-item scale that measures participants' perception of the nature of creativity, with five items measuring beliefs in the fixed nature of creativity and five items measuring beliefs in the malleability of creativity (Karwowski, 2014). The original study comprised of approximately 500 participants in the researcher's native Poland; participant ages ranged from 16 to 60 years. Participants indicated the extent to which items reflected their beliefs about creative ability using a scale from 1 to 5, with 1 indicating *definitely not* and 5 indicating *definitely yes*. In an exploratory factor analysis, Karwowski (2014) found that perceptions of the fixed and malleable natures of creativity constituted two separate factors. Five items loaded onto a *fixed* creative mindset factor while another five items loaded onto a *malleable* creative mindset factor. The two subscales together explained 50% of the total

variance. In two related studies, Karwowski (2014) reported internal consistency of the fixed creative mindset factor was satisfactory ($\alpha = .79$ and $\alpha = .78$) and the malleable mindset subscale was moderately reliable, then satisfactory ($\alpha = .65$, $\alpha = .73$). An example question from the fixed subscale is “Some people are creative, others aren’t—and no practice can change it,” and an example question from the malleable subscale is “Anyone can develop his or her creative abilities up to a certain level.” Results of this study should be interpreted with consideration to the CMS’s low reliability.

Short Scale of Creative Self. This measure was designed to measure participants’ creative self-concept (Karwowski, 2012; Karwowski et al., 2018). The SSCS consists of 11 questions, six that measure CSE and five that measure CPI. Original participants included 1,582 individuals ranging in age from 13 to 60 years. The internal consistency of both CSE ($\alpha = .87$) and CPI ($\alpha = .85$) was acceptable. Additional studies (e.g., Karwowski & Beghetto, 2018) reported higher Cronbach alphas for CSE ($\alpha = .93$) and CPI ($\alpha = .92$). An example of a question measuring CSE is “I am sure I can deal with problems requiring creative thinking,” and an example of a question measuring CPI is “Being a creative person is important to me.”

Instructional Practices Questionnaire I. Developed by Hong et al. (2006), the Instructional Practices Questionnaire–I is a 39-item self-report measure of teachers’ practices that they perceive to facilitate creative thinking in students (Hong et al., 2009). The original study comprised of 178 elementary-school teachers of Grades 3, 4, and 5 in a large metropolitan school district. A general stem (“Students in my class are given opportunities to”) begins the statement and is followed by specific classroom practices. Participants select the frequency in which specific practices are used, from 1 (*almost never*) to 4 (*almost always*). The questionnaire measures five constructs: *multiple perspectives in problem-solving* (MP; “solve problems with

more than one answer”), *transfer* (T; “apply their knowledge and skills in different or unfamiliar situations”), *task commitment* (TC; “do their best to complete tasks”), *creative skill use* (CS; “demonstrate brainstorming skills”), and *collaboration* (C; “work in groups”). For this measurement, the internal consistency of subscale scores conducted in previous studies ranged from .75 to .85, with a median of .80 (Hong et al., 2009).

Data Collection

Data collection commenced in the fall of 2020 with permission to conduct this study granted from the Institutional Review Board (IRB). Once schools from each of the three organizations were identified, principals or heads of school were contacted in order to obtain permission for their teachers to participate in the study. Slightly under 200 principals or heads of schools from approximately 165 schools were contacted. Of those contacted, 65 principals or heads of school representing 62 classical schools granted their assent for their teachers to participate in the study. However, 16 of the 62 schools had no teacher participation. As a result, 46 schools were represented in this study, out of approximately 165 schools; this is approximately 30% participation among the schools identified for this study. Of the participating schools, 37 (80%) were private classical schools, and nine (20%) were charter classical schools.

Upon receipt of their permission, links to the Qualtrics™ survey were sent to the heads of school to be forwarded to their teachers. In this way, no personal information about teachers or their unique identities (e.g., names or email addresses) were made known to the researcher. Participants who clicked on the link to the survey were presented with information about confidentiality and informed consent, and upon agreeing “Yes” to participate in the survey, questions were presented. Participants were not able to see any part of the survey until they gave their consent to participate. Responses were anonymous, and no information about the

participants' personal identities were asked. The only demographic information asked related to campus information, current teaching assignment, and total years of overall (i.e. classical as well as non-classical) teaching experience. Information about participants' response rate will be included in Chapter 4.

Data Analysis

This section denotes the methods of analysis for each research question; information about specific analysis procedures can be found in the subsection of each research question. A summary of the research questions, data sources, and analyses is provided in Table 4.

Research Question 1. Results from the omnibus survey were exported from Qualtrics™ to SPSS. Descriptive statistics were used to answer this question – specifically overall mean, standard deviation, and range.

Research Question 2. In SPSS, an independent samples *t*-test was conducted to determine if significance differences exist between beliefs and practices of classical charter school teachers and private classical teachers; a one-way analysis of variance (ANOVA) test was conducted to determine whether differences existed between beliefs and practices by teachers' grade level assignment (e.g., elementary, secondary, or both).

Research Question 3. In SPSS, an exploratory factor analysis (EFA) was conducted to determine the covariance of creative thinking instructional practices. Factor analyses often are used in the early stages of research into a topic in order to “gather information about (explore) the interrelationship among a set of variables” (Pallant, 2016, p. 182). For the purpose of this research, the variables are instructional practices taken from Hong et al.'s (2009) Instructional Practices Questionnaire-I.

Research Question 4. In SPSS, bivariate correlations were conducted to determine if there was a significant relationship between each of the implicit beliefs of creativity and instructional practices. For the purpose of determining statistical significance in this study, the alpha (α) was set to .05.

Research Question 5. In SPSS, a multiple regression analysis was conducted to determine the relationship between the implicit beliefs of creativity as a set and instructional practices. Multiple regression analysis is an appropriate tool to use when exploring the predictive ability of one set of independent variables with a dependent measure (Pallant, 2016). This analysis will identify the predictor variables that explain the most variance in instructional practices. For the purpose of determining statistical significance in this study, the alpha (α) was set to .05.

Table 4*Research Questions and Methods of Data Analysis*

Research Question	Data Sources	Data Analysis
What are the implicit beliefs and instructional practices of creativity of teachers in both private and charter classical schools?	Combined CMS/SSCS Scales + IPQ-I	Descriptive statistics; <i>M</i> , <i>SD</i> , range
2a. Are there any significant differences in the beliefs and practices of creativity between teachers in classical private schools and teachers in classical charter schools?	Combined CMS/SSCS Scales + IPQ-I	Independent samples <i>t</i> test
2b. Are there any significant differences in the beliefs and practices of creativity between elementary teachers, secondary teachers, or teachers who teach at both levels?	Combined CMS/SSCS Scales + IPQ-I	One-way ANOVA
What does a factor analysis reveal about the covariance of creative thinking instructional practices in classical schools?	Combined CMS/SSCS Scales + IPQ-I	EFA
To what extent do CSE, CPI, and creative mindsets explain variance in instructional practices in classical schools?	Combined CMS/SSCS Scales + IPQ-I	Pearson Bivariate Correlations
To what extent does the set of implicit beliefs of creativity (e.g., CSE, CPI, and creative mindsets) predict variance in instructional practices in classical schools?	Combined CMS/SSCS Scales + IPQ-I	Multiple regression analysis

Note. ANOVA = Analysis of Variance; CMS = Creative Mindset Scale; SSCS = Short Scale of Creative Self; EFA = Exploratory Factor Analysis; IPQ – I = Instructional Practices Questionnaire I; CSE = creative self-efficacy; CPI = creative personal identity

Delimitations, Assumptions, and Ethical Considerations

Delimitations. This study was intended to be an exploratory study of creativity in classical schools, providing a first glimpse into the implicit beliefs of creativity held by teachers in classical schools and whether these implicit beliefs influence instructional practices. This

study examined elementary and secondary teachers in order to gain the broadest initial picture of teachers' beliefs and practices related to creativity in classical schools. Consequently, this study did not focus too specifically on the specific nature of elementary or secondary teachers, their beliefs, or their practices. Additionally, because the research sample comprised teachers from schools that belong to one of three classical school organizations, findings and conclusions may not generalize to classical schools operating without any organizational or network affiliation. Finally, this study only focused on teachers; thus administrators, parents, students, and other stakeholders of classical schools were not accounted for in this research.

Assumptions. The measurements used are reflective of the constructs they intend to measure.

Ethical Considerations

The following safeguards were implemented in order to ensure that this study adhered to appropriate ethical standards.

1. Permission to conduct and solicit participants was by the university's Human Subjects Research Committee.
2. Participants were informed about the study's purpose in the Informed Consent Letter.
3. Participation was voluntary, and all participants were the opportunity to decline to participate in the study or discontinue with the survey once begun.
4. All participant data were anonymous.
5. Data related to participating schools (i.e., campuses) were kept confidential and were not reported in the research results. The hard copies of the survey were destroyed after data analysis was completed.
6. Participants were given the opportunity to request the final study results.

CHAPTER 4: FINDINGS

This study investigated classical school teachers' perceptions and beliefs regarding creativity and creative thinking in both private and charter classical schools. The process began with the building of a composite survey consisting of three independent measures: the Creative Mindsets Scale (Karwowski, 2014), which measures fixed or malleable mindsets related to creative skill; the Short Scale of the Creative Self (Karwowski, 2012; Karwowski et al., 2018), which measures creative self-efficacy and creative personal identity; and the Instructional Practices Questionnaire–I (Hong et al., 2009), which measures teachers' self-reported use of instructional strategies that can facilitate students' creative thinking development. This chapter provides an overview of study results and is organized by research question. Findings for this study are arranged according to research question. An overall summary can be found at the end of this chapter.

RQ1: What are the implicit beliefs and instructional practices of creativity held by teachers in both private and charter classical schools?

Overall, classical school teachers' implicit beliefs of creativity tended to be high. On a five-point response scale, the means were as follows: creative self-efficacy $M = 4.09$ ($SD = .60$), creative personal identity $M = 4.04$ ($SD = .87$) and the cumulative (i.e., fixed and malleable) creative mindsets $M = 4.12$ ($SD = .56$). These mean scores and standard deviations are similar to those reported by Karwowski (2014) when the Creative Mindset Scale was developed. Individual mean scores for malleable mindsets ($M = 4.27$, $SD = .539$) and fixed mindsets ($M = 3.97$, $SD = .761$) were also examined separately. Internal consistency reports ranged from acceptable to

high, with creative self-efficacy yielding a Cronbach's α of .82 and creative personal identity yielding a Cronbach's α of .90. The internal consistency for creative mindsets tended to be lower, with a Cronbach's α of .76 reported for fixed mindsets and a Cronbach's α of .57 for malleable mindsets. Alpha values between .80 and .89 are considered to be indicative of good reliability; values under .7, by contrast, may have limited interpretive applicability (Field, 2005; Pallant, 2016). It should be noted that the internal consistency for malleable mindsets was low by coefficient standards. Table 5 lists the outputs for implicit beliefs of creativity. In educational research, data sometimes are interpreted as skewed if the value of the mean is less than the value of the median (Johnson & Christensen, 2019). However, skewness reports between -1.5 and 1.5 are considered acceptable for data analysis, as the univariate distribution is not perfectly symmetrical but nevertheless close to normal (George & Mallery, 2010; Hong et al., 2011; Kline, 2011).

Results indicate positive implicit beliefs of creativity, particularly creative potential in students. As an example, over 80% of classical school teachers agreed with the statement that "Everyone can create something great if he or she is given appropriate conditions" and 47% of teachers *definitely agreed* with the statement. Conversely, approximately 85% of teachers *disagreed* with the fixed belief that "You either are creative or not, and no effort will change that." Stark statements about fixed creative ability yielded vast participant disagreement, yet these findings may belie more complex views about the nature of creativity and creative potential. For example, roughly 30% of classical school teachers answered *definitely not* to the statement that "although creativity can be developed, one either is truly creative or not," but nearly as many—26%—*definitely agreed* with the statement. While this statement allows for the possibility that creative potential can be developed, it also asserts that creative talent is innate. A

possible explanation for these results could be in the language of the statement, as statements that used absolute language tended to yield skewed responses. Likewise, the presentation of dichotomous, either-or statements tended to yield skewed responses. Teachers may have reacted more strongly toward the affirmative or the negative based on the perceived severity of the language in the statements. This possibility is further supported by more balanced responses to statements that were not as severely worded. For example, the statements “Although creativity can be developed, one either is truly creative or not” ($M = 2.48, SD = 1.25$) and “A truly creative talent is innate and constant throughout one’s entire life” ($M = 2.72, SD = 1.26$) were more evenly distributed.

Regarding creative personal identity (CPI), over 80% of classical school teachers agreed with the statement “I think I am a creative person,” with 46% responding *definitely yes*. In consideration of the creativity literature supporting the positive connection between teachers’ own creative identity and their amenability to facilitating creativity in the classroom (e.g., Patston et al., 2017; Eason et al., 2009; McKay et al., 2017; Tierney & Farmer, 2002), these findings are promising.

Table 5

Overall Variable Output of Means, Standard Deviations, and Coefficients

Variable	<i>M</i>	<i>SD</i>	α	<i>skew</i>
CSE	4.09	.606	.82	-.992
CPI	4.04	.873	.90	-1.00
creative mindsets	4.12	.558	.60	-.880
<i>cm_fixed</i>	3.97	.761	.76	
<i>cm_malleable</i>	4.27	.539	.57	

Note. CSE = creative self-efficacy; CPI = creative personal identity.

Findings also shed light on the instructional practices most frequently utilized by classical school teachers. The third portion of the omnibus survey related to teachers' frequency of instructional practices that support creative thinking development in students. As reported in Chapter 3, Hong et al.'s (2009) 39-item IPQ-I contained five constructs: multiple perspectives in problem solving (MP, 6 items); transfer (T, 5 items); task commitment (TC, 7 items); creative skill use (CS, 16 items); and collaboration (C, 5 items). The response scale ranged from 1 ("almost never") to 4 ("almost always"). The Top 15 most commonly reported instructional practices, along with the original Hong et al. (2009) construct abbreviations, are presented in Table 6. Together these practices represent practices that nearly half of classical school teachers used in their classrooms either "often" or "almost always."

Table 6*Means and Standard Deviations for Most Commonly Reported Instructional Practices*

Instructional Practice	Original construct (Hong et al., 2009)	<i>M</i>	<i>SD</i>
11. do their best when completing tasks	TC	3.7	.53
9. use their prior knowledge when solving problems	T	3.49	.59
18. stick with their tasks until completed	TC	3.45	.68
6. express their opinions and views freely	MP	3.41	.71
16. relate classroom learning to real life	T	3.28	.69
31. set high standards for their tasks and do their best to complete them	TC	3.28	.80
37. answer questions on their own before answers are given	TC	3.23	.73
30. correct their own mistakes	CS	3.16	.70
23. make connections between classroom learning and other learning	T	3.08	.74
14. use their imagination	CS	3.08	.77
7. demonstrate brainstorming skills	CS	3.03	.81
2. apply their knowledge and skills in different or unfamiliar situations	T	2.98	.73
1. solve problems that have more than one answer	MP	2.97	.75
22. think of various approaches to view and solve problems	MP	2.92	.76
8. explore and use different strategies for problem solving	CS	2.9	.81

Note. CS = creative skill use, MP = multiple perspectives in problem-solving, T = transfer, TC = task commitment

Tables 7 through 10, presented later in the chapter, further delineate the data according to IPQ-I categories. As seen in Table 6, results were relatively evenly distributed between *transfer* (T; 4 instructional practices), *task commitment* (TC; 4 instructional practices), and *creative skill use* (CS; 4 instructional practices), with *multiple perspectives in problem solving* (MP; 3 instructional practices) being slightly less. None of the Top 15 Instructional Practices belonged to the *collaboration* (C) category. Just under half of the participants reported that students are often or almost always given opportunities to *solve problems that have more than one answer* (no. 1) and *correct their own mistakes* (no. 30). Over half of the participants reported that students are often or almost always given opportunities to *apply their knowledge and skills in different or unfamiliar situations* (no. 2). Additionally, over half of participants reported that students almost always are given opportunities to *express their opinions and views freely* (no. 6); *use their prior knowledge when solving problems* (no. 9); and *stick with their tasks until completed* (no. 11). Item number 11 on the IPQ–I (including item stem) *students in my class are given opportunities to ... do their best to complete tasks* had the highest percentage among participants, with 73.5% responding that they “almost always” provided this practice for their students.

Results also bring to light the least utilized creativity-fostering practices used by classical school teachers. The Top 10 least used of the Hong et al. (2009) instructional practices are provided in Table 7. Classical school teachers reported using collaboration and student self-directed activities the least, the latter of which can be understood as those in which students are self-directed in selecting and pursuing topics for independent work activities.

Table 7*Means and Standard Deviations for Least Commonly Reported Instructional Practices*

Instructional Practice	Original construct (Hong et al., 2009)	<i>M</i>	<i>SD</i>
10. choose their own class activities	CS	1.71	.74
26. establish goals to accomplish team projects	C	1.83	.83
17. establish their own goals in a self-selected interest area (e.g., for individual projects)	MP	1.91	.83
3. select their own topics for assignments or projects	CS	2.02	.87
25. pursue their interests in an area of their choice	CS	2.03	.80
32. adopt and implement team members' ideas for group projects	C	2.04	.87
12. work on group projects	C	2.06	.91
33. propose ideas about group or class activities	CS	2.14	.82
19. play various roles while working in groups	MP	2.23	.93
24. plan and manage projects independently	TC	2.27	.90

Note. C = collaboration, CS = creative skill use, MP = multiple perspectives in problem-solving, TC = task commitment

RQ2: Are there any significant differences in the beliefs and practices related to creativity a) between teachers in classical private schools and teachers in classical charter schools; and b) between primary and secondary classical school teachers?

RQ2(a) Private v. Charter. The previous research question explored classical school teachers' implicit beliefs of creativity and their use of instructional practices that facilitate creative thinking skills in their students. A question remains if classical school teachers differ in their beliefs and practices when separated by school type, namely if practical, meaningful

differences exist between the beliefs and practices of private school teachers versus charter school teachers. An independent samples *t*-test was used to determine whether there was a significant difference in teachers' beliefs and practices related to creativity by school type. The results of the Levene's test for equality of variance were nonsignificant for all variables, which supported the assumption of equal variance between participant groups. Results indicated no significant differences among any of the implicit beliefs of creativity ($p > .05$). Rather, private school and charter school teachers had similarly high levels of CPI: $M = 4.04$, $SD = .62$ and $M = 4.22$, $SD = .56$, respectively. This was also true for CSE; although the mean score for charter school teachers' CSE appeared to be higher ($M = 4.22$, $SD = .56$) than the mean score for private school teachers ($M = 4.04$, $SD = .62$), the difference is not statistically significant. The mean scores for creative mindsets between private classical school teachers ($M = 4.12$, $SD = .56$) and charter classical school teachers ($M = 4.14$, $SD = .57$) were also quite similar. Relatedly, teachers' instructional practices were also not shown to differ between private ($M = 2.70$, $SD = .44$) and charter ($M = 2.65$, $SD = .39$). The findings suggest no meaningful differences in implicit creativity beliefs or creativity-facilitating instructional practices between teachers in classical private schools and those in classical charter schools.

RQ2(b) Primary v. Secondary. A one-way ANOVA along with a Bonferroni *post hoc* test were conducted to compare teaching level on beliefs and practices related to creativity. The assumptions of normality and homogeneity of variance likewise must be met when conducting an ANOVA. Although results indicated a statistically significant relationship between teachers who teach both elementary and secondary and their reported CPI (both: elementary = $-.38$, both: secondary = $-.41$), the calculated effect size ($\eta^2 = .03$) determined that the results did not suggest a practical difference between teachers based on their teaching level. Therefore, it can be

concluded that current teaching assignments—whether elementary, secondary, or both—do not significantly influence classical school teachers’ implicit beliefs related to creativity nor their instructional practices related to creative thinking.

RQ3: What does a factor analysis reveal about the covariance of creative thinking instructional practices?

An exploratory factor analysis (EFA) is a method of data reduction, the purpose of which is to reduce large numbers of items into smaller groupings that can be interpreted more concisely (Field, 2005). Hong et al.’s (2009) 39-item IPQ-I contained five constructs (*multiple perspectives in problem solving; transfer; task commitment; creative skill use; and collaboration*). These included six items for MP, five items for T, seven items for TC, 16 items for CS, and five items for C. The response scale ranged from 1 (*almost never*) to 4 (*almost always*). For this present study, the 39-item IPQ-I questions were subjected to principal component analysis. Factors were determined based on eigenvalues over one, results of a scree plot, and the interpretability of resultant groupings. Moreover, any item that had a coefficient below .4 or was dual-loaded above .4 was excluded in keeping with research recommendations (Hatcher & Stepanski, 1994). This resulted in the exclusion of eight items, most of which belonged to the original TC or T categories. Viewed together, these criteria suggested a five-factor solution, though the fifth factor only consisted of two items. Table 8 lists the eigenvalues, explained variance, and cumulative variance for each of the factors. Eliminating the fifth factor would have dropped the cumulative variance explained to approximately 50%. Further details of the outcome of this exploratory factor analysis are provided in Tables 8 and 9.

Table 8*Eigenvalues, Explained Variance, and Cumulative Variance for Exploratory Factor Analysis*

Factor	Eigenvalue	Variance Explained	Cumulative Variance
Factor I	9.274	30.91	30.91
Factor II	2.928	9.76	40.67
Factor III	1.706	5.68	46.36
Factor IV	1.580	5.26	51.63
Factor V	1.156	3.85	55.48

Table 9 details the reliability coefficients for each of the five factors. The Cronbach's α of subscale scores ranged from .69 to .86 (*median* = .82). Alpha values between .80 and .89 are considered to be indicative of good reliability; values under .7, by contrast, may have limited interpretive applicability (Field, 2005); this limited interpretive applicability should be considered especially for Factor V Processing Information, which is the only factor with a reliability coefficient under .7.

Table 9*Reliability Coefficients for Exploratory Factor Analysis*

Factor	Title (No. of Items)	α	<i>M</i>	<i>SD</i>
Factor I	Idea Generation (8)	.828	2.95	.538
Factor II	Developing Engagement (7)	.824	2.07	.583
Factor III	Collaboration (?)	.861	2.17	.737
Factor IV	Knowledge & Problem-Solving (5)	.802	2.98	.499
Factor V	Processing Information (2)	.689	2.44	.785

Together, these five factors explained over 50% of the variance and are presented below in descending order according to eigenvalues and the contributions of variance and cumulative variance. All factors correlated to each other, though some factor correlations were more meaningful than others. The magnitude of these relationships between factors depended on conceptual similarity (e.g., Factors I and IV are linked conceptually by explicit teaching practices). Tables 10 through 14 present the individual items that loaded onto each factor.

Factor I: Idea Generation. Factor I *Idea Generation* ($M = 2.95$, $SD = .538$) contained eight items and had a reliability coefficient of $\alpha = .828$. These items coalesced around a theme of generating ideas through brainstorming or open-ended questioning. This factor consisted of five items originally categorized by Hong et al. (2009) as CS and three items originally categorized as MP. Results of the Pearson r bivariate correlation analysis indicated that Factor I Idea Generation correlated with all other factors. The strongest correlation was with Factor IV (Knowledge & Problem Solving; $r = .62$, $p < .01$), followed by Factor V (Processing Information; $r = .59$, $p < .01$). Conversely, Factor I (Idea Generation) had a somewhat lower correlation with Factor III (Collaboration; $r = .39$, $p < .01$).

Table 10*Presentation of Factor I: Idea Generation*

IPQ-I Question	Item	Hong et al. (2009) original category
21	answer open-ended questions	CS
15	produce multiple answers	MP
7	demonstrate brainstorming skills	CS
6	express ... opinions and views freely	MP
40	develop open-ended questions	CS
1	solve problems that have more than one answer	MP
27	generate ideas through individual, group, or class activities	CS
14	use their imagination	CS

Note. CS = creative skill use, MP = multiple perspectives in problem-solving

Factor II: Developing Engagement. Factor II ($M = 2.07$, $SD = .583$) contained seven items and had a reliability coefficient of $\alpha = .824$. These items were conceptually similar in terms of student engagement in classroom activities. Four items were originally categorized as CS, two items were originally categorized as TC, and one item was originally categorized as MP. Factor II was moderately correlated to Factor III Collaboration ($r = .58$, $p < .01$) as well as to Factor IV (Knowledge & Problem Solving; $r = .43$, $p < .01$).

Table 11*Presentation of Factor II: Developing Engagement*

IPQ-I Question	Item	Hong et al. (2009) original category
25	pursue [student's] interest in an area of their choice	CS
17	establish their own goals in a self-selected interest area	MP
33	propose ideas about group or class activities	CS
10	choose their own class activities	CS
3	select their own topics for assignments or projects	CS
24	plan and manage [student] projects independently	TC
38	utilize [student] eagerness to learn the topic of their interest in their projects	TC

Note: CS = creative skill use, MP = multiple perspectives in problem-solving, TC = task commitment

Factor III: Collaboration. Factor III *Collaboration* ($M = 2.17$, $SD = .737$) contained five items and had a reliability coefficient of $\alpha = .861$. This is the only factor that I found that warrants the same title as the original measurement study (Hong et al., 2005, 2006). The items share a conceptual link of collaboration and working together to complete tasks. In fact, four out of five items were originally categorized as C and one item was originally categorized as MP, rendering this factor the most similar to the original Hong et al. (2009) constructs. The results of this EFA indicate that Factor III Collaboration was moderately correlated with Factor II *Developing Engagement* ($r = .58$, $p < .01$).

Table 12*Presentation of Factor III: Collaboration.*

IPQ-I Question	Item	Hong et al. (2009) original category
39	contribute toward completion of group assignments	C
5	work in groups	C
32	adopt and implement team members' ideas for group projects	C
19	play various roles while working in groups	MP
26	establish goals to accomplish team projects	C

Note. C refers to collaboration, MP refers to multiple perspectives in problem-solving

Factor IV: Knowledge & Problem-Solving. Factor IV ($M = 2.98$, $SD = .499$) had a reliability coefficient of $\alpha = .802$ and contained eight items. These items relate to each other conceptually by the use of prior knowledge and insight in activities that require solving problems. Half of the items in Factor IV were originally categorized by Hong et al. (2009) as CS, two items were originally categorized as T, one item was originally categorized as TC, and one item was originally categorized as MP, rendering Factor IV the most diverse of all five factors. Timewise, the factor items can be seen as happening during a lesson or activity—neither in the beginning nor at the end. Factor IV correlated the most closely with Factor I ($r = .62$, $p < .01$) and was less strongly correlated with Factor III ($r = .39$, $p < .01$).

Table 13*Presentation of Factor IV: Prior Knowledge & Problem-Solving*

IPQ-I Question	Item	Hong et al. (2009) original category
22	think of various approaches to view and solve problems	MP
28	experiment with different approaches and see which approach is more efficient or elegant	CS
8	explore and use different strategies for problem solving	CS
34	demonstrate originality in their problem solving or projects	CS
31	set high standards for their tasks and do their best to complete them	TC
2	apply their knowledge and skills in different or unfamiliar situations	T
9	use their prior knowledge when solving problems	T
30	correct their own mistakes	CS

Note. CS refers to creative skill use, MP refers to multiple perspectives in problem-solving, T refers to transfer

Factor V: Processing Information. The smallest of the five factors, Factor V ($M = 2.44$, $SD = .785$) had just two items and had the lowest reliability coefficient, at $\alpha = .689$. Both items (“develop comprehensive responses to problem situations by pulling together related information” and “develop and answer their own questions”) had previously been categorized as CS by the Hong et al. (2009) categories. Both of these instructional practices rely on *lateral thinking*, which Schnugg (2019) identified as the ability to form connections among varied and seemingly unrelated content or skills. In this way, these items actually share conceptual overlap with some of the *transfer* items, particularly those loaded onto Factor IV (e.g., Q2 – *apply their knowledge in different or unfamiliar situations*). Although small, this factor was found to

moderately correlate to Factor I. Without the inclusion of Factor V, the total explained variance would drop to 51%, just above half of the explained variance.

Table 14

Presentation of Factor V: Processing Information

IPQ-I Question	Item	Hong et al. (2009) original category
36	develop comprehensive responses to problem situations by pulling together related information	CS
35	develop and answer their own questions	CS

Note. CS refers to creative skill use

Table 15 indicates the correlation between the factors. As previously reported, eight items from the original IPQ–I Questionnaire were excluded due to dual loading on multiple factors. Seven of the deleted items share conceptual links as TC or T. Only one excluded item, “communicate [student’s] preferences and choices,” belonged to a different category—CS.

Table 15

Intercorrelation for Study Factors

Factor	II	III	IV	V
I: Idea Generation	.508**	.392**	.624**	.585**
II: Developing Engagement		.584**	.430**	.516**
III: Collaboration			.328**	.315**
IV: Knowledge & Problem Solving				.541**
V: Processing Information				

** $p < .01$

Referring to Hong et al.'s (2009) original categories, findings indicate that classical school teachers reported higher usage of instructional practices categorized as *creative thinking skills*, which account for 35% of the most commonly reported practices. *Task commitment* instructional practices was the next most frequent, accounting for 25% of the Top 15 most commonly reported instructional practices used by classical school teachers. *Multiple perspectives in problem-solving* and *transfer* each accounted for 20% of the most commonly reported practices. However, only one of the Top 15 instructional practices pertained to the *Collaboration* category, suggesting that opportunities for collaboration are not common instructional practices in classical schools. It is worth noting that Factor I and Factor IV contained practices that teachers commonly said they *often* or *almost always* utilized in their classrooms. Six out of eight of the practices in Factor I (*Idea Generation*) were included, as were seven out of eight of the practices in Factor IV (*Knowledge & Problem Solving*). Further, six of the most commonly reported practices were ones that were subsequently removed from the factor analysis. These findings will be discussed further in comparison to the original categorical factors from the Hong et al. (2009) research in Chapter 5. It should be noted, however, that the original Hong et al. (2009) categories did not hold up in this exploratory factor analysis, as the participants determined different conceptual relationships to the originally demarcated categories.

RQ4: To what extent are creative mindsets, creative self-efficacy, and creative personal identity related to instructional practices in classical schools?

In this study, a Pearson Bivariate Correlation was used to investigate the relationship between each of the implicit beliefs of creativity and instructional practices. The instructional practices excluded from factor loadings were likewise not included in this analysis. Table 16

details the correlations of the variables to instructional practices. A small but nonetheless significant correlation was found between malleable creative mindsets and instructional practices, $r = .276, p < .001$, as well as between fixed creative mindsets and instructional practices, $r = .214, p < .001$. A moderate relationship was found between CPI and instructional practices, $r = .362, p < .001$, as well as between CSE and instructional practices, $r = .408, p < .01$. These findings suggest moderate relationships between teachers' creative self-efficacy, creative personal identity, and instructional practices but a smaller relationship between malleable creative mindsets and instructional practices.

Table 16

Correlations between Implicit Beliefs of Creativity and Instructional Practices

Variable	2	3	4	5
1. Creative self-efficacy (CSE)	.643**	.255**	.437**	.408**
2. Creative personal identity (CPI)		.422**	.496**	.362**
3. Creative mindsets _ fixed			.459**	.214**
4. Creative mindsets _ malleable				.276**
5. Instructional Practices				

** $p < .01$

As expected, all implicit beliefs of creativity significantly correlated with each other. Creative self-efficacy was strongly correlated with creative personal identity, $r = .643, p < .01$. Creative self-efficacy was moderately correlated with holding a malleable creative mindset, $r = .437, p < .01$. Additional moderate correlations were found between creative personal identity and both creative mindsets, with both fixed creative mindsets and malleable creative mindsets, $r = .422, p < .01$; $r = .496, p < .01$, respectively. Fixed and malleable creative mindsets themselves were moderately correlated, $r = .459, p < .01$.

RQ5: To what extent does the set of implicit beliefs of creativity (mindsets, CSE, and CPI) predict variance in instructional practices in classical schools?

To explore the extent to which creative mindsets, creative self-efficacy, and creative personal identity explain variance in instructional practice among classical school teachers, a multiple regression analysis was conducted. The purpose of multiple regression analysis is to predict values of an outcome variable from several predictor variables (Pallant, 2016; Stern, 2010). This analysis sought to predict the value of instructional practices from the predictor variables of implicit beliefs of creativity. The squared coefficient, or R^2 , has a range of 0 to 1 and can be interpreted as the amount of variance that the predictor variables explain in the outcome variable. The F statistic determines if the amount of variance is significant (Stern, 2010).

Conducting a multiple regression analysis necessitates that certain assumptions are met. A Durbin-Watson test was conducted to test for independence of errors. Results showed that the value statistic (1.99) was between 1.5 and 2.5, which suggested that nonindependence of variables was not an issue. Collinearity diagnostics tests of tolerance and variable inflation factors (VIF) also were performed. All predictor coefficients (creative mindsets, CSE, and CPI) were within the range of 1 and 4, which indicated no evidence of multicollinearity. Table 17 details the results of the multiple regression analysis. With instructional practice scores set as the outcome variable, results indicated that a relationship exists between the set of implicit beliefs of creativity as predictors of teachers' instructional practices ($R = .44$, $R^2_{adj} = .18$, $SE = .39$). CSE independently contributed to explaining variance in instructional practices beyond that of the set of variables as a whole. Neither creative mindsets (fixed or malleable) nor CPI independently predicted instructional practices. The adjusted R^2 variable indicates that 18% of the variance in

instructional practices was predicted by the independent variables (here, implicit beliefs of creativity). Thus, nearly one-fifth of the variability in classical teachers' instructional practices was predicted by the set of implicit beliefs of creativity. The result of the standardized beta coefficient indicates that with each change in standard deviation of creativity beliefs, instructional practices could increase from 12% to 28%.

Table 17

Multiple Regression Analysis of Implicit Beliefs of Creativity on Instructional Practices

Model	β	t	Sig.
CSE	.288	3.891	.000
CPI	.121	1.519	.130
Creative Mindsets_fixed	.058	.896	.371
Creative Mindsets_malleable	.062	.903	.368

Note. β = Standardized beta, t = t-test statistic; CSE = creative self-efficacy, CPI = creative personal identity
 $R^2 = .19$, $R^2_{adj} = .18$, S.E. = .39 F = 15.396
 $p < .001$

Summary of Chapter

The purpose of this quantitative research study was to investigate classical school teachers' perceptions and beliefs regarding creativity and creative in both private and charter classical schools. Analyses included descriptive statistics to illuminate the nationwide classical school teachers who participated in this study, in addition to *t* tests and ANOVAs to understand the relationship between these teachers and the study's categorical variables, an exploratory factor analysis to ascertain the covariance of creativity instructional practices, bivariate correlations to explain variance among the study's category variables, and a multiple regression

analysis to explain variance among the study's variables when examined as a set. These findings will be discussed further in Chapter 5.

CHAPTER 5: DISCUSSION AND IMPLICATIONS

In the last 2 decades, the classical model of education has spread rapidly across the United States (Duin, 2013; Veith & Kern, 2015). Classical schools operate at both private and public (charter) schools and can be found in every geographic region of the country. The classical education curriculum focuses on the acquisition and developmental progression of knowledge and skills (as seen through the *Trivium* model), the centering of moral development and civic virtue, and the use of canonical and classic literary texts. This focus on the acquisition of knowledge and skills, along with training in logic and rhetoric, lends to some of the skills and dispositions needed for creative thinking, particularly problem solving, lateral thinking, and task commitment. Both classical education and educational creativity scholars share similarities in desired outcomes for the knowledge, skills, and dispositions a student ought to possess and both share similar critiques of many aspects of modern schooling. Creative thinking abilities involve the ability to understand multiple points of view, to employ flexible and imaginative thinking, and to develop ideas into original understandings (Schacter et al., 2006; Starko, 2010). Teachers are regarded as significant determiners of whether students' creative thinking abilities will be supported and encouraged or ignored or suppressed (Clark, 2004; Ivcevic, 2009; Starko, 2010). To this end, teachers' own views of creativity and creative thinking substantially impact students' creativity development (Patston et al., 2017; Eason et al., 2009; McKay et al., 2017; Tierney & Farmer, 2002). This becomes even more meaningful when attempting to account for classical teachers' knowledge of teaching and instructional pedagogies, as the training (or re-

training) of teachers is a significant and perhaps even ubiquitous issue in the ever-expanding classical school movement (Veith & Kern, 2015).

The purpose of this study was to better understand the relationship between classical school teachers' perceptions and beliefs regarding creativity and creative thinking along with their use of instructional practices that facilitate creative thinking skills in students. The purpose of this chapter is to present and elaborate on study findings. The chapter begins with a summary of the study and then proceeds with a review of research questions and subsequent findings. Thus, these findings serve as foundations for discussion. The chapter concludes with study limitations as well as implications and recommendations for research and practices.

Summary of Major Findings

In this study, two measurements of implicit beliefs of creativity (e.g., the Creative Mindset Scale and the Short Scale of the Creative Self) were coupled with a questionnaire of instructional practices known to facilitate creative thinking skill development in students. To review conceptual definitions, creative self-efficacy (CSE) refers to the belief one has the ability to produce creative outcomes (Tierney & Farmer, 2002), and creative personal identity (CPI) refers to the extent to which creativity is treated as an important part of an individual's identity (Karwowski et al., 2018). As examples of implicit beliefs of creativity, both creative self-efficacy and creative personal identity concern the extent to which an individual believes he or she is a creative person (Patston et al., 2017). Karwowski (2014) defined creative mindsets as "a set of beliefs associated with the nature of creativity, particularly beliefs about the stable-versus-malleable character of creativity" (p. 62). These beliefs can be fixed (i.e., stable over time) or malleable (i.e., changeable over time).

Current in-service school teachers from private and charter classical schools completed the omnibus survey. This study relied on purposive sampling of classical schools belonging to one of three national classical education organizations in order to attain some level of standardization of the classical paradigm. Findings revealed that classical school teachers could generally be characterized as holding malleable creative mindsets while also being tolerant of more innate, fixed conceptions of creativity. Classical school teachers did not differ significantly in their beliefs related to creativity nor in their instructional practices whether by sector (private versus charter) or by level. Although the relationships between mindsets and instructional practices were tenuous, findings suggest that nearly one-fifth of classical teachers' instructional practice usage could be explained by their creativity beliefs.

The results of the exploratory factor analysis provide insights into how classical school teachers order creativity-facilitating instructional practices, with the tightest relationship being between factors that related to the fluent generation of authentic ideas and the knowledge and skills related to problem-solving. Somewhat independent of their implicit creativity beliefs, classical school teachers generally reported that they either *often* or *almost always* used such hallmark instructional practices such as brainstorming, to encourage students to apply knowledge and skills in different or unfamiliar situations, to encourage students to use various and approaches to view and solve problems, to encourage students to demonstrate originality in problem solving, and, crucially, to encourage students' use of their imaginations.

Discussion of Findings

The findings of this research study reveal promising connections between classical education and the facilitation of creative thinking skills. The synthesis of study findings yielded three broad and interrelated categories of findings: those related to the implicit beliefs of

classical teachers, those related to the classical teacher and aspects of the classical classroom environment such as the use and frequency of particular instructional practices, and those related to the connection between beliefs and practices. A detailed discussion of these categorical findings is provided in the next sections, followed by how these findings can inform recommendations for practice and for future research.

Classical School Teachers' Creativity Beliefs

From the creativity literature, implicit beliefs of creativity relate to the assessment and the recognition of creativity (Gralewski & Karwowski, 2016). Teachers' implicit beliefs of creativity and the potential influence of these beliefs on instructional decisions underscored this research study. In particular, this study investigated creative self-efficacy and creative personal identity in relation to teachers' creative mindsets (whether fixed or malleable) and their use of instructional practices known to foster creative thinking skills in students. The role of the teacher is significant in the development of students' creativity; however, teachers' efforts to help in this development may prove to be a hindrance if they mischaracterize creativity characteristics or are otherwise unfamiliar with how to recognize and support creative thinking (Beghetto & Kaufman, 2014). For these reasons, it is important for teachers to understand what constitutes creativity, how it can be identified, and what practices can be utilized to advance the skills in students.

Consistent with previous research studies of teachers' perceptions of creativity (e.g., Aljughaiman & Mowrer-Reynolds, 2005; Eason et al., 2009; Eckhoff, 2011; Runco & Johnson, 2002), classical school teachers positively viewed the construct of creativity, particularly the creative potential of students. The majority of participating classical school teachers agreed, for example, that everyone can create something "great" if given the appropriate conditions. Likewise, teachers overwhelmingly agreed that one's creativity level can "always" be increased.

Additionally, the statement “*practice makes perfect – perseverance and effort are the best ways to develop and expand one’s capabilities*” attracted considerable agreement. It can reasonably be interpreted that the majority of the sampled classical school teachers believed in what Kamylyis et al. (2009) called the “democratic nature” of creative potential (p. 25), that is, that all students hold the potential to think and act creatively. In previous research studies, fixed mindsets were shown to have “inhibiting effects” on the ability to perform creative tasks (Karwowski, 2014). In consideration of the creativity literature supporting the positive connection between teachers’ own creative identity and their amenability to facilitating creativity in the classroom (e.g., Patston et al., 2017; Eason et al., 2009; McKay et al., 2017), these findings are promising. Regarding creative mindsets, findings seem to confirm research that identifies fixed and malleable mindsets as related but separate factors as opposed to two ends of the same continuum (Haas et al., 2016; Karwowski et al., 2019). As reported in Chapter 4, responses to the CMS questions may have been influenced by the language used in the questions, as teachers tended to either *strongly agree* or *strongly disagree* for some questions. As mentioned, classical school teachers’ creative mindsets were consistent, however, with the other teacher beliefs about the “democratic” nature of creative potential and that creative skills can be developed and strengthened (Kamylyis et al., 2009, p. 25). In terms of how the implicit beliefs of creativity related to one another, both fixed and malleable mindsets were shown to correlate to creative self-efficacy, although the magnitude of the relationship between fixed mindsets and creative self-efficacy was small. A malleable creative mindset, meanwhile, was moderately correlated with creative self-efficacy. What is more, both fixed and malleable mindsets moderately correlated with creative personal identity. Previous studies explained that although it might make sense for fixed mindsets to be negatively correlated to growth or malleable mindsets, the reality

is more complex and allows for seemingly contradictory beliefs to be held simultaneously (Karwowski & Brzeski, 2017; Karwowski et al., 2019; Paek & Sumners, 2019). Nonetheless, it is noteworthy that these findings seem to contradict the findings of previous research that fixed and malleable mindsets have a negative relationship (Holland, 2018; Paek & Sumners, 2019; Puente-Dia z & Cavazos-Arroyo, 2017). As with the Haas et al. (2016) study results, this was not shown to be the case. Because past connections have been made between creative mindsets and creative ability (e.g., O'Connor et al., 2013), these findings offer promising insight into what classical school teachers believe about creativity and the nurturance of creative potential in their students.

Related to creative mindsets is CSE, or the belief that one has the ability to produce creative outcomes (Tierney & Farmer, 2002, p. 1138). These judgments about one's capabilities for producing creative outcomes subsequently influence actions, whether to begin, persevere, and ultimately complete certain behaviors (Beghetto, 2006). Classical school teachers reported high levels of creative self-efficacy ($M = 4.09$), which suggests that the typical classical school teacher views her ability to successfully engage in creative actions with confidence. The ability to cope with difficult situations or solve complicated problems underscore creative action, as creative insights emerge from engaging with and solving problems (Starko, 2010). Teachers may also include their own personal actions to engage in creative pursuits or to utilize either creative teaching or teaching for creativity in their classrooms. Motivation crucially relates to creative self-efficacy (e.g., Beghetto, 2006; Hong et al., 2011) through a greater investment of effort and interest. It may be inferred that these participants reported high creative self-efficacy due to being highly motivated to engage in creative outcomes (such as teaching for creative skill development) or may regard their ability to perform (i.e., teach and facilitate) as indicative of

their high self-efficacy. The influence of teacher creative self-efficacy on instructional practices will be discussed in a later section.

In creativity scholarship, CSE is closely connected to CPI. In addition to the belief that creativity is an important component of one's identity, the literature (e.g., Plucker & Makel, 2010) supports a connection between individuals' creative personal identity and positive attitudes toward the construct. In this study, classical teachers' overall attitudes toward creativity, including their creative personal identity, were noticeably high ($M = 4.04$). As reported in Chapter 4, classical teachers overwhelmingly agreed with statements about the developmental nature of creativity (e.g., "it doesn't matter what creativity level one displays—it can always be increased"). In previous research, Karwowski (2014) found that individuals holding an incremental or malleable creative mindset tended to perceive themselves as more creative. In this study, teachers likewise held high views about the malleability of creative ability ($M = 4.27$) and strongly agreed to questions about the developmental nature of creative ability. Moreover, data suggest classical teachers value effort and perseverance regardless of creative ability. This provides a helpful glimpse into how classical school teachers may encourage their students and facilitate creative thinking skill development. Consequently, then, the connection between high CPI and holding a malleable creative mindset seems to hold true for classical teachers, even allowing for some agreement of entity or fixed mindsets of creativity.

Teachers' implicit beliefs of creativity relative to current teaching level (e.g., elementary, secondary, or both) does warrant further attention. Consistent with Patston et al.'s (2017) statistically significant-but-practically-negligible difference between teachers by level, in this study, a statistically significant difference was detected between classical teachers who currently teach both elementary and secondary students and those who teach only one or the other related

to their reported CPI and creative mindsets. Although the effect size ($\eta^2 = .03$) determined that this difference did not translate into a practical difference, it can still be argued that this subset of teachers might have implicit beliefs that differ from their colleagues related to their unique position teaching and meeting the needs of younger and older students. Additional studies may investigate the extent to which statistically significant results translate into meaningful, practical differences. The uses of creativity-facilitating instructional strategies by teachers with elementary and secondary students warrants further study.

Instructional Practices and the Classical Classroom

In addition to an investigation into what classical school teachers believe and understand about creativity, the other significant area of focus in this study relates to the student experience in the classical classroom—specifically, what if any instructional practices were reported that, according to the creativity literature, may facilitate the development of creative thinking skills.

The results of the Instructional Practices Questionnaire offer insight into the creativity-inspiring practices that classical school teachers use in their classrooms and also provide a baseline for comparison between creativity-inspiring practices and the hallmark instructional practices and pedagogies commonly described in classical education. As reported in Chapter 4, the Top 15 most frequently used instructional strategies offer insights into what goes on in classical classrooms related to the strategies and practices known to facilitate students' creative thinking capacities. The majority of instructional practices belonged to *creative skill use* (CS), *transfer* (T), and *multiple perspectives in problem solving* (MP), or based on the results of this research's exploratory factor analysis, *idea generation* (Factor I) and *knowledge and problem solving* (Factor IV). What can be interpreted from the data is that classical teachers already utilize several of the instructional practices most commonly associated with creativity and

creative thinking (Hong et al., 2009). Additionally, several of the most commonly reported instructional strategies relate to the concept of *excellence*—for example, students doing their best when completing tasks, sticking with tasks until completed, setting high standards for their tasks and doing their best to complete them, and correcting their own mistakes. A commonly cited characteristic of classical schools is academic rigor and excellence (Austin, 2019; McCoy, 2021; Perrin, 2004), so it is unsurprising that classical school teachers would report using instructional strategies related to the pursuit of excellence in academic work.

Instructional strategies explicitly related to such creativity concepts as brainstorming and using one’s imagination were also reported to be highly used in the classical classroom. Both of these strategies relate to divergent thinking (Starko, 2010) and are among the most commonly referenced practices for developing creative thinking skills (Beghetto & Kaufman, 2014; Schacter et al., 2006; Torrance, 1962; Zittoun & Glâveanu, 2018). As previously mentioned in the literature review, opportunities for students to use their imaginations and to develop a sense of wonder toward learning are core components of teaching creative thinking skills and can be applied in any of the academic disciplines (Starko, 2010). Classical schools often use language about instilling in their students a sense of *wonder* (e.g., Clark, 2015; Jain, 2015; Turley, 2014); it is evident that particular instructional strategies such as providing opportunities for students to use their imaginations, providing time for students to answer questions on their own before answers are given, and encouraging students to make connections between classroom learning and other sources of knowledge, support the classical commitment to wonder.

To help create a classroom in which creative thinking can “flourish,” Starko (2010, p. 120), explained, involves developing a classroom in which identifying, then solving problems, is welcomed. This study’s findings confirm that classical school teachers do in fact use several

instructional practices having to do with problem-solving. Additionally, according to the results of the Exploratory Factor Analysis, classical school teachers also conceptually recognize strategies related to brainstorming and problem-solving, identifying commonalities among *creative skill use* (CS) and *multiple perspectives in problem solving* (MP) pertaining to developing and answering open-ended questions, brainstorming, solving problems with more than one answer, and generating ideas through individual, group, or class activities. When considering the continuum of epistemological beliefs that Hong et al. (2011) categorized from “naïve” to “sophisticated” (p. 251), and when considering the instructional practices and pedagogies commonly described in classical education, such as the emphasis on inquiry and dialectic instruction, the data of classical teachers’ instructional practice usage and conceptual grouping of instructional practices suggests patterns of teaching that illuminate teaching for creativity.

Among the original Hong et al. (2009) categories, classical school teachers reported using Collaboration strategies the least. It would appear, therefore, that opportunities for student collaboration are not a regular occurrence in classical school classrooms. For some students, particularly those of high ability, collaborative activities, though related to creativity development, have been shown to have a negative effect on eliciting creative thinking when there is a lack of group cohesiveness (Hong et al., 2009). Less attention given to collaborative activities, therefore, does not seem to diminish teachers’ use of other creativity-facilitating instructional practices. Rather, findings indicate that classical school teachers commonly utilize *creative skill use* instructional practices in their classrooms. Findings suggests that classical students, indeed, are given opportunities to develop creative thinking skills but do not seem to have many opportunities to work collaboratively with classmates. Likewise, instructional

strategies to do with student self-directed activities were also the least used. Two possibilities offer explanations for these results. One pertains to the philosophy of teaching and learning in classical education. As a knowledge-centered curriculum, teachers play an essential role in instructing and facilitating student understanding of knowledge and skills, making it unlikely that teachers would utilize instructional strategies in which students are primarily self-directed for extended periods of time or for even the majority of an activity or assignment. Another and possibly more prosaic explanation concerns participant demographics of this study. Because 40% of the teachers indicated that they taught elementary grades, approximately the same number as secondary teachers, it is possible that the results reflect teachers' teaching assignments and the needs and constraints of those particular teaching assignments rather than pedagogical and instructional preferences. This can be seen in the use of divergent-thinking, brainstorming activities versus lesser-reported activities such as those calling for self-direction or collaboration, as elementary or grammar teachers may not have viewed these instructional activities as practical or useful in their classrooms.

Whether creativity is valued in the classical school classroom, and whether teachers directly or indirectly foster the development of creative thinking skills in their students, there does not seem to be a difference between what occurs in a classical private school and what occurs in a classical charter school. Rather, the overall philosophical commitments to classical education and pedagogical similarities seem to supersede any organizational (or even denominational) differences. In a similar study, in which classical school teachers at classical Christian schools were compared to their non-classical school teacher counterparts on their self-efficacy, no differences were detected between groups either (Anderson, 2016). Although research into the beliefs and practices of classical educators is still quite sparse, so far findings

suggest that teachers do not differ from non-classical school counterparts on such constructs as creativity beliefs or self-efficacy. This connection to previous literature is more than incidental, as no differences were detected between self-efficacy and now, no differences detected in creative self-efficacy. However, this conclusion should be relative to any newer findings. In other words, differences may exist and have simply not yet been brought to light. In discussing the findings of her study, Anderson (2016) noted that most classical school teachers were not products of a classical education, due to the relative newness of the field. Over time, classical teachers who matriculated through the classical education model might hold different beliefs about creativity or might report substantially different instructional practices in their classrooms.

The Combination of Beliefs and Practices

The third category of study findings relates to the synthesis of classical teachers' implicit beliefs of creativity and their use of creativity-facilitating instructional practices. All implicit beliefs of creativity were found to correlate with classical teachers' instructional practices, though the strengths of these relationships varied. Teachers' creative mindsets were significantly related to their instructional practices, though the relationships for both fixed and malleable mindsets were small. The correlation between holding a malleable creative mindset and instructional practices was statistically higher than holding a fixed mindset, but the differences were not practically meaningful. This is important to consider, as believing that creative skills are malleable (i.e., subject to change) does not seem to suggest a meaningful difference in the use of creativity-facilitating instructional practices. Additionally, study findings suggest that classical teachers' personal beliefs about their own creative abilities are not likely to be impediments to their willingness or ability to use creativity-facilitating practices in their classrooms. Rather, the literature supports the implication that teachers who identified as creative

individuals or who believed creativity to be important would be more likely to support creative endeavors, for example teaching creatively and teaching for creativity. However, the lack of influence of classical teachers' CPI on instructional practices warrants further investigation.

Ultimately, the most significant connection to instructional practices was found to be teachers' CSE. This is a logical finding, as in a prior study, Hong et al. (2009) found that teachers who used creativity-facilitating instructional practices also reported to enjoy creative work, had goal-and-growth-focused learning goals for students, and exhibited high professional self-efficacy related to their success as teachers. In this study, creative self-efficacy likewise made the most significant contribution to teachers' use of creativity-facilitating instructional practices. The results of the multiple regression analysis indicated that implicit beliefs, as a set, accounted for approximately 20% of variance in instructional practices. It is not clear, at this point, what constitutes the predictive ability for the other 80%, although some possibilities include the particular curricula and pedagogies of classical education, as well as overall school and campus culture. However, what is known about implicit beliefs of creativity is that these beliefs can be modified over time and through mediating interactions, such as peer influence or, in a professional capacity, training. As classical school teachers increase in their creative self-efficacy, it is plausible that the frequency of their use of creativity-facilitating instructional practices will increase.

As expected, the different implicit beliefs of creativity also related to each other. The strongest of these correlations was between teachers' CSE and their CPI. Patston et al. (2017) explained that teachers with high creative self-efficacy likewise would be more likely to view creativity as an important aspect in their lives and suggested that such teachers would be likely to facilitate creativity in their students. This correlational relationship thus aligns with prior

research (e.g., Karwowski, 2014; Karwowski et al., 2018). Creative self-efficacy and creative personal identity both have been shown to have a mediating effect on creative potential and creative achievement (Karwowski & Beghetto, 2018); therefore, higher creative self-efficacy could result in increased reporting of creative personal identity, as having the ability to be creative could (and has been shown to) affect one's identity as a creative person. Neither fixed nor malleable mindsets were shown to have a significant relationship on classical teachers' use of instructional practices. It makes sense that a teacher who does not recognize creative potential in all, or who believes creative abilities to be innate and fixed, would not focus much attention on fostering creativity in the classroom. What is curious, then, is why holding a malleable or incremental creative mindset was not found to independently contribute to the variance in instructional practices use, as opposed to the independent contribution of creative self-efficacy. A pragmatic but potentially disconcerting explanation might be that classical school teachers are unaware that certain instructional practices facilitate the development of creative thinking skills, and that their current use in classical schools is perfunctory. Even still, the relatively high output of instructional practices irrespective of teachers' own CPI or mindsets suggests that their own perceptions and beliefs are not the strongest predictor of whether or not instructional practices will be used. Rather, teachers do not seem to need to have a high personal identity (i.e., to see themselves as creative individuals) in order for the students in their classrooms to benefit from creativity-facilitating instructional practices. Self-efficacy was found to have a moderate relationship to instructional practices. This connection between self-efficacy and professional decision-consequences is consistent with the literature.

That classical teachers reported the use of many instructional practices strongly related to creative thinking suggests a promising environment for students' creative thinking to be

developed. Taken together, *multiple perspectives in problem solving, transfer, and creative skill use* are the categories of instructional strategies that require more creative, divergent thinking (Hong et al., 2009). It is noteworthy that 75–80% of the most-reported instructional strategies used by classical school teachers are those that promote divergent thinking, or the ability to explore many different mental categories in order to generate multiple, unique ideas or solutions through delayed judgment (Guilford, 1950; Starko, 2010). Consequently, the results of this research’s exploratory factor analysis found connections beyond the original Hong et al. (2009) categories that led to the reorientation of instructional practices into different factors. With the new factor categories, the top instructional strategies could be characterized as predominantly those that formed Factor I: Idea Generation and Factor IV: Prior Knowledge and Problem Solving. Because of the philosophical importance in classical education of acquiring knowledge and skills and making connections across the disciplines, it is not surprising that classical teachers reported using instructional strategies relating to the utilization of prior knowledge for investigating and solving problems or working through activities. Indeed, classical education takes a foundational approach to learning and the acquisition of knowledge, with Grammar forming the basis of learning that develops into the upper school stages of Logic and Rhetoric (Caldecott, 2012). At the foundational level of classical education, then, is in teaching students to understand their world, to relate to it, to wonder at it, and ultimately to interact with it. Teaching for creativity provides a complimentary approach to facilitating student wonder. When students are taught to value such creative skills as thinking divergently, bringing together prior knowledge to reach new (perhaps unique to the learner) conclusions, and using the imagination to make new discoveries, they not only engage in creative thinking; they engage in real, meaningful learning

(Starko, 2010). Teaching students to value the skills of questioning and wondering at the world therefore form a bridge to the philosophical commitments of classical education.

Implications for Policy and Practice

Creativity scholarship has shifted from an emphasis on the creative individual and creative outputs and products toward an emphasis on the processes of creativity, and this has especially been evident in the scholarship of creativity in education. Indeed, creativity researchers recently asserted that “creativity is as much about processes of ‘making’ as it is about ‘thinking’ new and original ideas” (Zittoun & Glâveanu, 2018, p. 69). A process-oriented focus, then, is less interested in the quest for the singular correct answer or interpretation (Scherer, 2018) but rather in the discoveries and insights made in the pursuit of knowledge or skill development. Beyond the exploratory nature of this research study, there are practical purposes for examining creativity in the context of classical schools, including bringing to light what teachers believe about creative potential and the instructional practices already used that can help to facilitate the development of creative thinking skills in students. It need not be assumed, for example, the prerogatives of classical education are misaligned with the processes of creative thinking, nor that their instructional practices are not already conducive to facilitating the development of creative thinking. After all, the aim of the classical school teacher is to form in her students “the adult-to-be, not to liberate the child within” and to recognize that all human beings yearn *to know* (Veith & Kern, 2015, p. 54). These eventual adults thus will recognize and value knowledge for its own sake and continue to seek truth, do what is right and good, and love that which is beautiful (Guernsey, 2016). A crucial part of this eventual aim is to nurture the student’s curiosity, inquisitiveness, and sense of wonder about the world being studied. For the classical educator, this involves effectively using appropriate pedagogies and instructional

practices. The following recommendations are provided to help teachers as well as school leadership meet the needs of their students in a targeted and more efficient manner.

Implications for Teachers

Teachers inside and outside the classrooms set a standard for how student learning, including original and useful ideas, is recognized, encouraged, and assessed. Further, it is known that teachers' attitudes and characteristics contribute substantially toward students' development of creativity (Ferizovic, 2015; Hong et al., 2009). In particular, teachers who value creativity are more likely to value creativity in their students as opposed to teachers who do not view themselves as creative (Eason et al., 2009). This realization can lead to positive change regarding teachers' instructional decisions as well as their own identities as creative, problem-solving individuals.

Recommendations for practice are offered in consideration of the oft-referenced classical motto of *multum non multas* ("much, not many"). Rather than significantly altering professional practice, the recommendation is for teachers to learn and use instructional strategies that align with the prerogatives of classical teaching and concurrently that encourage creative thinking in students. For example, grammar school teachers can use creative thinking instructional strategies to facilitate the classical prerogatives of memory, imitation, and mimetic instruction. Likewise, secondary teachers can incorporate certain creative thinking strategies at the logic and rhetoric stages, as students use the skills of communication and argumentation to engage with others and with the world. Deeper and more meaningful teaching is preferable to an increase in planning and preparation for incorporating a multitude of isolated strategies. Consequently, if teachers increased their knowledge and use of the specific instructional practices that can facilitate creative thinking skills, their students would likely benefit. From creativity scholarship, three

ways to facilitate creativity in the classroom are to intentionally teach the behaviors of creative individuals and the process of creative thinking, and additionally to use strategies that generate creative ideas and to encourage a classroom conducive to inquiry and problem-solving (Starko, 2010). However, even modest additions to the teaching practice can be beneficial for students. The manner in which feedback is phrased is one such example. Feedback that stresses effort rather than innate ability can encourage students toward incremental views of their learning growth (Karwowski & Brzeski, 2017). An understanding of fixed and malleable mindsets, both related specifically to creativity and to learning in general, can prompt teachers to moderate their interactions with students toward promoting incremental views of growth. Further, a familiarity with instructional practices that facilitate idea generation and using prior knowledge for problem solving can be applied toward cultivating curiosity and wonder, just as instructional practices that facilitate student engagement likewise can help foster classical pedagogies like shared inquiry and open-ended discussions. As classical school teachers are encouraged to plan their instruction in such a way that takes advantage of the integration of subjects, it is likewise a suggestion that classical school teachers develop a knowledge base in the instructional strategies that can be used to help students see connections among different subjects and disciplines, to pull related and unrelated information together toward a new understanding, and to help students strive toward excellence. In short, a familiarity with creative thinking instructional practices can help classical school teachers in their endeavors to cultivate the dispositions for learning.

Relatedly, recommendations for practice include opportunities for teachers to develop their own creative abilities. Lee and Kemple (2014) found that creative activities mediated teaching behaviors that promoted student creativity and suggested that engagement in creative activities might afford teachers the scaffolding to implement behaviors and practices that

facilitate creative thinking in students. Such opportunities relate to creative personal identity, which itself was found to moderately relate to instructional practices. In consideration of the important role that classical teachers serve as leaders of their classrooms and experts of their fields, opportunities for teachers to nurture their own creative thinking and identities as creative thinkers will consequently set a high example for their students.

Implications for School Leaders

This study's findings also have implications for leaders in classical education—particularly school leaders such as Headmasters/Heads of School and curriculum directors. On the whole, organizations can influence, either positively or adversely, their employees' sense of self-efficacy, of which creative self-efficacy is one such example. In the field of education, school leaders likewise can serve as catalysts for teachers' potential primarily by creating conditions that support and promote creative thinking skill development (Ferizovic, 2015, p. 140). Toward this end, it is necessary for school leaders to understand the construct of creativity, the characteristics associated with students who demonstrate high levels of creativity, how to utilize instructional practices that facilitate the growth of creative thinking, and how to assess creative contributions in the classroom. As Ferizovic (2015) pointed out, when principals respond positively to a new initiative or endeavor, the result can be teachers' increased sense of competence, confidence, morale, and positive affect, and likewise, when leaders model "risk taking" (p. 142) through their leadership actions, the consequence for teachers is often an increased sense of competence in their own abilities. Conversely, workload pressure can have an inhibiting effect on teachers' self-efficacy and professional competence—in particular for this research, their self-efficacy and competence related to creativity teaching (Eason et al., 2009; Ferizovic, 2015; Olivant, 2015).

To create a sustainable culture in which creative thinking skills are valued and promoted without causing undue external pressure for teachers, it would behoove classical school leaders to consider how their schools plan to recognize, nurture, and assess the development of creativity in their students. Echoing similar calls from recent research (e.g., Ferizovic, 2015), it is recommended that school leaders promote a culture in which creative thinking skills are valued for faculty as well as students, and their inclusion in the classical classroom is prioritized. Creative thinking skills have been shown to positively affect student achievement (Beghetto et al., 2015; Torrance & Myers, 1970; Starko, 2010), which serves to justify, at least in part, the attention directed toward facilitating creative thinking skills in students. In the organizational professions, Tierney and Farmer (2011) found that when employees believed their supervisors had an expectation of creativity in their work, their creative performance gradually increased. There is no reason not to assume similar outputs in school environments. Thus, if teachers perceive that their campus leaders value creativity and expect teachers to demonstrate creative outputs (e.g., utilizing instructional strategies that can facilitate creative thinking in students), it can be assumed that over time, teachers' own creative self-efficacy, their personal identity as creative individuals, and their use of creative strategies will increase over time.

To achieve these conditions, an environmental scan may be conducted as a first step toward ascertaining the school community and culture. This study serves as a first-round entry into scanning teacher attitudes toward the construct of creativity and their use of instructional strategies that have been shown to facilitate the development of creative thinking in students as well as the status of their classrooms as centers of inquiry and problem-solving. As part of such a scan, school leaders may consider what language, if any, is used in their campus websites and other public-facing accounts that speak to the importance of creativity and the imagination in

classical education. Mahan (2020) made a similar suggestion in encouraging classical school leaders to consider how the language employed in mission statements *reveal* core characteristics about the educational culture of their schools. In this study, results suggest that teachers are already using strategies that promote creative skill use and have promising beliefs about creativity as well as their own creative self-efficacy and creative personal identity.

As a next step, targeted professional learning can help teachers better serve their students. Professional learning is already a significant, if not central, component of training teachers to teach classically, especially in light of the fact that classical school teachers are unlikely to have had extensive training or prior pedagogical knowledge of classical education. Those coming to classical schools from university teacher preparation programs or from outside the classical education context may even need to “unlearn” certain teaching techniques and dispositions (Veith & Kern, 2015). Training teachers to recognize and cultivate creative thinking in their classrooms therefore could become a component of further professional development programs for classical schools. A deeper conceptual understanding of creativity, particularly how it can be recognized and facilitated in classical schools, will help to affirm what classical school teachers already do in the way of instructional practices, confirm the potential connection between their practice and student skill development, and suggest how they might adapt their practice to better align with a newer understanding of the construct and skills related to creative thinking. Training can be designed to meet the unique needs of classical education with the promotion of creative thinking skills. The benefit to teachers would be a greater depth of knowledge regarding the construct of creativity, in the instructional practices that support students’ skill development in creative thinking, and in understanding the ways that such strategies can be incorporated into the classical classroom with its unique learning culture. This present study found that classical

teachers have a positive regard for creativity, believe in its democratic nature, and see creative thinking skills as something developmental. Since it is understood that one's creative mindset can change over time (Karwowski & Brzeski, 2017), such change could be initiated through targeted and purposeful training in recognizing and assessing creativity, as well as in the instructional strategies that facilitate creative thinking in students. The targeted part would begin with what classical teachers already know, then would delve deeper in order to add to their knowledge base and pedagogical practices. A deeper understanding of the construct of creativity will help teachers better recognize the characteristics of creative students in their classrooms. Likewise, professional learning focused on instructional strategies may provide a two-pronged result: to establish a more sophisticated understanding of the strategies already in use as well as to encourage the implementation of some of the lesser-practiced strategies such as those pertaining to opportunities for student collaboration. Given that studies suggest that children's creative abilities can decrease the longer they are in school (e.g., Eason et al., 2009), targeted professional development aimed at grammar school teachers ought to be prioritized. Consequently, clarity about how classical education recognizes, supports, and encourages skills related to creative thinking should underscore all efforts. In heeding the call to cultivate the creative—as well as spiritual—lives of students (Circe Institute, 2020), classical school leaders may want to consider how their schools nurture the creative outputs and contributions of their students, and how teachers especially can nurture these skills.

Limitations

Among the limitations to this study are those related to sample size and balance. Although the sample size of participants was adequate for running the necessary analyses, the total ($N = 267$) is still quite small compared to the thousands of classical school teachers across

the country. Fulton (2018) specified that for published studies, the mean response rate is 34%. In this study, the participation rate was approximately 30% of classical schools that had been identified, which is close to Fulton's (2018) stated percentage. Additionally, the participant groups were unbalanced, and researchers (e.g., Jennen-Steinmetz & Wellek, 2005) have cautioned that when one group is over twice the size of the other group, problems with data can occur. As a reminder, 187 private school teachers provided data that could be used in this research compared to only 80 charter school teachers; this is a 70–30% difference. While this may be a logical outcome, given that there are considerably more private classical schools compared to charter classical schools, caution should still be used when drawing conclusions about study findings comparing these two groups. Generally, the smaller a study's sample size, the larger the standard error in data reporting (Fulton, 2018). A larger sample size might reveal different results regarding differences between teachers by school type or by grade level.

The nature of this study necessitated survey research, which consequently means that there could potentially be issues with self-reporting. Self-report scales have posed issues in research studies such as a potential unreliability in reporting that comes from requiring participants to select one among a predetermined incremental scale (Teague, 2017). Another potential consequence of data gathered through self-reporting is social desirability effect, in which participant responses may be inflated toward positive response that are perceived to be more favorable. Responses also might be based on inaccurate understandings of the construct or idea meant to be measured (Baas et al., 2015; Garwood et al., 2018; Kaufman, 2019). Although self-reported measures are quite common in empirical research, and approximately two in five

creativity research papers use self-reported data (Kaufman, 2019), they present potential issues related to how valid or accurate they are in generating objective data.

Generalizability constitutes another limitation. The small sample size may affect generalizability of study results. Moreover, because this study was delimited to in-service classical teachers at schools belonging to specific classical education organizations, these findings may not generalize to all classical school teachers, especially those who teach at unaffiliated classical schools. Naturally, these findings may not be generalizable beyond the field of classical education.

Additionally, the low reliability of the Creative Mindsets Scale (Karwowski, 2014) constitutes another limitation. The internal consistency for the Creative Mindsets Scale is lower than what is typically considered acceptable, possibly owing to the need to revise items or to increase the number of items included in the measurement. In its current edition, the low reliability this may have affected the resultant relationships among study variables, including the possibility of depressed hypothesized relationships (Royston, 2016).

The extent of study participants' knowledge of pedagogy and instructional practices constitutes another possible limitation. As mentioned in recent classical education literature, teacher training and re-training is commonplace in classical schools (Veith & Kern, 2015), given the specific philosophical and pedagogical prerogatives of this growing field. This research study confirmed previous literature about teachers in classical schools being relatively new to classical education; in this study, over half of the participating teachers had been teaching in a classical school fewer than four years. While this is a reasonable finding in consideration of the swift trajectory of the classical education movement across the United States in the last few decades, for the purposes of contextualizing study findings, it is possible that participants may have been

unfamiliar with particular instructional strategies and pedagogical knowledge and training related to classical education, which may affect certain study findings, particularly the predictive relationship between teachers' beliefs and their instructional practices. In consideration of this potential lack of knowledge or familiarity with classical instructional practices and pedagogies, the study participants' high response rates pertaining to their implicit beliefs of creativity may be at least partially attributed to social desirability bias. Other studies examining teachers in classical schools (e.g., Anderson, 2016) similarly reported elevated response rates and posited that social desirability, or the desire to be perceived as highly competent in the queried categories. Further research would help to solidify and contextualize the findings of this study.

A relatively unique aspect of data collection that may have affected participation had to do with the timing of this study, which was undertaken during the COVID pandemic. The pandemic has had an “upending” effect on conducting academic research (Clay, 2020, para. 1) and recent studies have reported impacts on data collection, particularly concerning participation (e.g., Espanen, 2020; Migur, 2021; Riley, 2020; Van Esselstine, 2021). This may offer an explanation into the overall small participation. Multiple headmasters and heads of school referenced the pandemic either as a factor in declining to participate or for longer response time. Efforts were made to mediate the pandemic's effect on participation, such as personalizing correspondence to explain the unique opportunity that this study's participation offered, providing estimates of time needed for survey completion and sending email reminders to the heads of school that could be forwarded to participating teachers. Regardless of the current pandemic situation, these efforts have been shown to be useful in increasing participation in survey research (Fan & Yan, 2010; Fulton, 2018; Saleh & Bista, 2017; van Mol, 2017).

Ultimately, the novel situation of navigating a school year during a pandemic had an impact on participation in this study.

Recommendations for Future Research

Results from this study suggest several lines of inquiry for future research. Thus, it would be prudent to gain deeper insight into how classical schools perceive, recognize, and foster creative and imaginative thinking. What remains unknown is the amount and extent of the creativity-facilitating opportunities for students, meaning how often these instructional strategies are utilized in a particular unit of study, or per academic quarter, or per grade level. Study findings provide a foundation for beginning to measure what is occurring in classical classrooms, but the extent of use remains unknown. Starko (2010) confirms that for creative thinking skills to take hold in the minds of students, teachers need to be deliberate about communicating the utility of creativity-facilitating strategies for accomplishing specific tasks, in order for students ultimately to see the utility in such strategies, whether brainstorming, utilizing imaginative thinking, asking and answering open-ended questions, and others.

Additional studies examining the relationship between implicit beliefs of creativity and the development of students' creative thinking skills would advance scholarship in the more developed and substantive field of creativity research as well as in the developing field of classical education research. As stated previously, no previous studies were found that examined the construct of creativity in classical schools. Moreover, despite the rapid resurgence of classical schools across the country, classical education has received scant attention in educational research. The need to explore this growing field, with or without the connection to creativity research, remains high. This entails additional research into the same focus but with different participants (e.g., administrators instead of teachers) or similar participants but different

foci (e.g., the inclusion of epistemological beliefs, classroom environment, or campus-wide culture related to beliefs and practices of creativity).

Classical School Leaders and Their Beliefs and Practices Related to Creativity

Research on classical school leaders and their beliefs about creativity and fostering creative thinking in schools would also add to the research base. Even outside of classical education, there continues to be a gap in creativity research related to school leaders (Scherer, 2018). It is known that administrators play a significant role in establishing a school culture and environment for their faculty and staff; consequently, their leadership is key to encouraging and supporting teachers in to promote creative thinking as part of the school culture (Beghetto & Kaufman, 2014; Richardson & Mishra, 2018). Additional research geared toward school leaders would provide beneficial information and recommendations more closely tailored to their needs and might provide insight into resources or training that would most optimally meet the needs of their schools (Lorfink, 2012).

The Classical School Environment as a Facilitator of Creativity

This study did not examine larger contexts for fostering creativity, such as campus-wide cultures and environments that support student creativity. As it is known that learning environments are essential to the development and further support of creativity (Eckhoff, 2011; Jindal-Snape et al., 2013; Richardson & Mishra, 2018), focused attention on the physical classroom environment, classroom climate, and the interactions between teachers and students will add depth to the field of creativity research in education. The paucity of classical education research presents an opportunity to understand and contextualize classroom environments in classical schools. The recently created Support for Creativity in a Learning Environment (Richardson & Mishra, 2018) is one such tool that could be used for research in this direction.

Examining beliefs and practices that foster student creative thinking as situated in an environment that supports or hinders creativity would help to broaden the understanding of the interactions of the wider school culture and creative thinking skill development in their students.

Teachers' Beliefs and Instructional Practices Related to Epistemological Beliefs

Additional studies could investigate the relationship between teachers' implicit beliefs of creativity, their creativity-facilitating instructional practices, and their epistemological beliefs related to teaching and learning. Similar studies have examined teachers' instructional practices in relation to their epistemological beliefs (e.g., Hong et al., 2009; Lorfink, 2012). Consequently, this study could be replicated to further investigate the extent to which, if any, epistemological beliefs correlate with implicit beliefs of creativity and instructional practices. The Epistemological Beliefs of Teaching and Learning (Hong et al., 2009) is one such measurement that could be used in this additional exploration.

Classical School Teachers' Recognition of Student Creativity

Continuing with the focus on teachers and their instructional practices, additional research studies could replicate, with classical school teachers, previous studies of teachers' recognition of creativity as a construct, including characteristics associated with creativity in students. In this study, teachers' beliefs about the construct of creativity, rather than individual characteristics perceived to be associated with creativity, were examined. A future research direction could utilize measurements such as Teachers' Conception of Creativity Questionnaire (Kampylis, 2010) to complement the findings from this study and broaden the still-developing picture of how student creativity is perceived and recognized in classical schools. As another direction for future research, this study's findings could lead to the creation of a new measurement organized around classical school teachers' five factors of creativity-facilitating

instructional practices. Prior research has suggested that teachers' perceptions of creative characteristics and behaviors in students often is misaligned with those identified by researchers (Kettler et al., 2018; Westby & Dawson, 1995). It would be beneficial to the creativity field to ascertain how classical school teachers characterize creative students, and if their ability to recognize student creativity converges or diverges from previous studies of teachers.

Development of a Creative and Imaginative Thinking Index for Classical Schools

This research study has sought to establish connections between educational creativity research and classical education, in part by looking for conceptual overlap between content knowledge and thinking skills such as insight problem solving that could also promote creative thinking skill development. But it may be the case that classical education's conceptualization of creativity differs from established creativity scholarship. This would warrant a clearer understanding of how creativity is defined, viewed, recognized, and assessed within the specific context of classical education. The development of an index or measurement of creative and imaginative thinking would add considerable insight into the fields of classical education and creativity research.

Summary

This study serves as a foundation for exploration into a current field of education that, while continuing to gain in popularity across the country, has received little scholarly attention. More specifically, these findings make what is believed to be the first attempt to understand how the construct of creativity is viewed and facilitated among classical school teachers. Classical schools have been found to share mission and vision statements, as well as core values (Mahan, 2020). This study confirms that teacher beliefs and instructional strategies are shared among

classical school teachers as well and provides suggestions for how classical educators can connect

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Appendix A

Letter to Headmasters requesting participation

Dear Dr. _____,

I am a doctoral candidate at the College of William and Mary as well as a grammar school teacher at a classical charter school in Colorado. I am conducting a research study for my dissertation, and I would like to know if you would be willing to forward an email to all of your faculty and ask them to complete an online survey that will take 10–15 minutes of their time.

The purpose of the study is to explore classical teachers' beliefs about creativity and their use of instructional practices that promote creative thinking. Likely owing to its relatively new little educational research includes classical schools – even fewer still include classical charter schools. This study represents the first of its kind to explore the relationship between the classical paradigm, curriculum, teaching methodologies, and the development of students' natural creativity. My hope is that the results of this research will be useful to you as a Head of School and may also be useful to teachers in both private and charter classical schools across the country.

If you would be willing to ask your teachers to participate, please respond to this email, and I will add you to the recipient list as soon as the surveys are sent.

Thank you for your consideration.

Kindly,

Amelia Wildman, MAEd.
Doctoral Candidate, The College of William & Mary

Appendix B

Creative Mindsets Scale

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Below you will find several sentences used by people to describe their attitudes and opinions toward creativity. Please decide to what extent each of these statements describe your opinion. There are no good or wrong answers – all are right, if they're frank.

(1) Everyone can create something great at some point if he or she is given appropriate conditions

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(2) You either are creative or you are not – even trying very hard you cannot change much

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(3) Anyone can develop his or her creative abilities up to a certain level;

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(4) You have to be born a creator – without innate talent you can only be a scribbler;

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(5) Practice makes perfect – perseverance and trying hard are the best way to develop and expand one's capabilities;

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(6) Creativity can be developed, but one either is or is not a truly creative person;

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(7) Rome wasn't built in a day – each creativity requires effort and work, and these two are more important than talent

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(8) Some people are creative, others aren't – and no practice can change it;

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(9) It doesn't matter what creativity level one reveals – you can always increase it;

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(10) A truly creative talent is innate and constant throughout one's entire life

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

Scoring:

Please consult Table 1 in Karwowski's (in press, PACA) article for factor structure and normative values. In case of interest in IRT item characteristics, please consult two attached reports.

Appendix C

Short Scale of the Creative Self

© by Maciej Karwowski, 2011

Below you will find several sentences used by people to describe themselves. Please decide to what extent each of these statements describe yourself. There are no good or wrong answers – all are right, if they're frank.

(1) I think I am a creative person

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(2) My creativity is important for who I am

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(3) I know I can efficiently solve even complicated problems;

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(4) I trust my creative abilities;

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(5) My imagination and ingenuity distinguishes me from my friends;

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(6) Many times I have proved that I can cope with difficult situations;

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(7) Being a creative person is important to me

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(8) I am sure I can deal with problems requiring creative thinking;

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(9) I am good at proposing original solutions to problems.

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(10) Creativity is an important part of myself

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

(11) Ingenuity is a characteristic which is important to me

Definitely not – somehow not – neither yes nor no – somewhat yes – definitely yes

Scoring:

Creative Self-efficacy: average items: 3, 4, 5, 6, 8, 9

Creative Personal Identity: average items: 1, 2, 7, 10, 11

Alternatively a Creative Self-concept scale may be scores averaging all 11 items

Appendix D

Instructional Practices Questionnaire I

Directions: Read each statement and indicate how you generally feel about your teaching by circling 1, 2, 3, or 4. There are no right or wrong answers. (1 = Almost never, 2 = Sometimes, 3 = Often, 4 = Almost always). Do not spend too much time on any one statement.

Almost never	Some- times	Often	Almost always
1	2	3	4

Student in my Class are given opportunities to:

1. solve problems that have more than one answer
2. apply their knowledge and skills in different or unfamiliar situations
3. select their own topics for assignments or projects
4. demonstrate commitment to tasks (e.g., enrichment activities, class projects, or projects of their choice)
5. work in groups
6. express their opinions and views freely
7. demonstrate brainstorming skills
8. explore and use different strategies for problem solving
9. use their prior knowledge when solving problems
10. choose their own class activities
11. do their best to complete tasks
12. work on group projects
13. communicate their preferences and choices
14. use their imagination
15. produce multiple answers
16. relate classroom learning to real life
17. establish their own goals in a self-selected interest area (e.g., for individual projects)
18. stick with their tasks until completed
19. play various roles while working in groups
- [21] answer open-ended questions.
- [22] think of various approaches to view and solve problems
- [23] make connections between classroom learning and other learning (e.g., out-of-school activities)
- [24] plan and manage their projects independently
- [25] pursue their interest in an area of their choice
- [26] establish goals to accomplish team projects
- [27] generate ideas through individual, group, or class activities
- [28] experiment with different approaches and see which approach is more efficient or elegant
- [29] apply their learning toward interdisciplinary tasks
- [30] correct their own mistakes

- [31] set high standards for their tasks and do best to complete them
- [32] adopt and implement team members' ideas for group projects
- [33] propose ideas about group or class projects
- [34] demonstrate originality in their problem solving or projects
- [35] develop and answer their own questions
- [36] develop comprehensive responses to problem situations by pulling together related information
- [37] answer questions on their own before solutions are given
- [38] utilize their eagerness to learn the topic of their interest in their projects
- [39] contribute toward completion of group assignments
- [40] develop open-ended questions

(* The Instructional Practices Questionnaire I (Hong, Hartzell, & Nadelson, 2005, 2006) is not to be reproduced in any form without the written permission from the author.

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