

**A COMPARATIVE STUDY OF RHODA KELLOGG'S CHILDREN'S
ARTISTIC DEVELOPMENT RESEARCH**

by

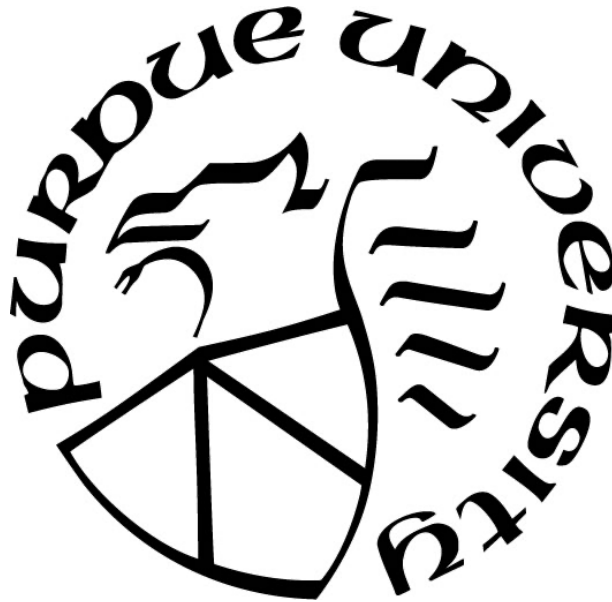
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*Thank you to my husband Jeff, my beautiful adult children Emily, & Connor,
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ABSTRACT

This investigation is a comparative study of the artistic development research of Rhoda Kellogg and the research of Helga Eng, Henry Schaefer-Simmern, and Viktor Lowenfeld. The intent of this investigation is to compare Kellogg's children's artistic development research to other theorists of the period to discover similarities and differences in her work, validating its significance. The criteria of the selection of the theorists limit the investigation to the research of children's artistic development stage theories in the mid-twentieth century. The results of this investigation found that Kellogg's children's artistic development research consisted of far more categorizations of marks in the scribble and pre-schema stages than Eng, Schaefer-Simmern, and Lowenfeld's research. The study also expands on the significance of Kellogg's children's artistic development research in the field of art education and the context in which Kellogg undertook her research. This investigation also brought attention to and documented Kellogg's research more extensively than previous studies.

CHAPTER 1. INTRODUCTION

Scholars have studied children's art for over one hundred and fifty years for various reasons. During this time, the examination of child art has been applied in several significant scientific approaches. In the early 20th century, psychologists used children's art as educational and diagnostic tools (Eisner, 1977). The research of psychologists such as G. Stanley Hall (1884-1924), an influential figure in the child study movement, pursued the connection of the taxonomies of human development and art to enhance pedagogy (Eisner, 1977; Gardner, 1976; Keil & Wilson, 2000; Young 2016). Other psychologists such as Alfred Binet (1857-1911) took notice of children's art and used spontaneous children's drawings to measure intelligence (Eisner, 1977). Another psychologist, Edward L. Thorndike (1874-1949), felt children's art was an effective method to measure other developmental characteristics and developed psychological metrics for assessing drawings (Eisner, 1977). Each of these historical examples demonstrated human development through art.

The study of art and how it changes during childhood is the discipline of children's artistic development. It is an area of interest to both psychologists and the field of art education (Keil & Wilson, 2000; Young, 2016). The study of children's artistic development is a significant aspect of this investigation which involves multiple theories, including the research of Rhoda Kellogg (1898-1987).

Kellogg published books and articles from 1954 to 1979 that were devoted to the study of childhood scribbles and early drawing. All her books are based on the study of a collection of preschool art collected starting in the mid-1940s from the Golden Gate Nursery Schools in San Francisco. She began writing about her theories of children's artistic development after she had collected 100,000 works of children's art. Her collection continued until she had amassed over one

million drawings (Kellogg, 1979). The first book dedicated to her scribble theory was *What Children Scribble and Why* (1955). It was self-published the year before *Finger Painting in the Nursery School* (1956a).

In Kellogg's earliest books, she drew from her teaching experience and observations of preschool-aged children. She pursued teaching after she earned bachelor's and master's degrees in early childhood education. Kellogg's career was a nursery schoolteacher and preschool director. She organized the first preschool in California in 1927. The preschool was founded to meet her daughter's needs and had thirty children attending. Kellogg also appeared on several television and radio programs featuring early childhood education in the San Francisco Bay Area, where she lived and worked.

Children's art and their artistic development were a scholarly pursuit well before Kellogg's research was undertaken. In this investigation children's artistic development needs to be understood within the framework of human development to appreciate Kellogg's research. The following is a brief discussion of the history of childhood development and children's artistic development.

Human and Childhood Development

Charles Darwin (1809-1882) founded modern evolutionary studies with his theory of evolution. This included the theoretical viewpoint of human growth as a process occurring across an individual's lifespan (Dixon, 1990; Kastenbaum, 1990, Lorch & Hellal, 2010). The study of human development refers to several types of advancement within an individual's lifespan, including cognitive, social, physiological, and psychological changes (Dixon, 1990; Spodek & Saracho, 2014).

Childhood development accounts for a significant period in the span of human development. Childhood is generally described as the time between birth and puberty (Baltes, Lindenberger, & Staudinger, 1998). The average age of puberty for girls is eleven years old, and the average age for boys is twelve years old. Within the theory of lifespan development, child development includes the stages of infancy (0 to 12 months), toddlerhood (12 to 36 months), early childhood (3 to 8 years old), and middle childhood (9 to 11 years old) (Baltes, Lindenberger, & Staudinger, 1998).

Several developmental psychologists established and advanced the field of childhood development (Lorch & Hellal, 2010). Psychologist Arnold Gesell (1880-1961) was among the earliest researchers to establish quantitative measures of intelligence in four behavioral areas: language, personal-social, neurological-motor, and overall adaptive development. Jean Piaget (1896-1980) was well known for his theories in child development, cognitive development, and genetic epistemology. Lev Vygotsky (1896-1934) studied psychological development in children, and he was known for his theory of Scaffolding and the Zone of Proximal Development (Lorch & Hellal, 2010).

Developmental Psychology

Compared to other areas of psychology, developmental psychology is a relatively younger field of study (Keil & Wilson, 2000). Since its inception, the study of human development has been understood to be a collection of several domains. The more familiar developmental domains are physical, cognitive, and psychosocial, but additional domains include behavioral, maturation, language, emotional, moral, language, music, and artistic development (Ayoub & Fischer, 2006; Milbrath, McPhearson, & Osborne, 2015). These and other human development theories account for the sequences of growth periods in human life. The nature of human growth is highly complex,

and it may have a mutually inclusive or exclusive influence from biological, evolutionary, and environmental sources (Costa & Liebmann, 1995). Another area of complexity in development is that individuals can be very different from one another, but still have similar developmental processes. This process means that within all the human development domains, individuals with the same chronological age do not necessarily achieve developmental milestones simultaneously (Costa & Liebmann, 1995).

Stage Theory in Human Development

Developmental psychologists use the concept of stages to describe developmental changes in human beings (Lerner, 2007). Stages are not simply an increase in development skills or behaviors but are recognized as new patterns of behaviors or thinking that have not been observed earlier in an individual (Lerner, 2007). The significant changes appearing in stages are described throughout the life span of an individual. The changes can be adaptive or sequential and are referred to as more qualitative than quantitative or incremental. Stages are also thought to be universal in their progression (Reese & Overton, 1970)

Gesell advanced the concept of stages in development, postulating that growth did not occur in one steady and evenly paced process (Knobloch, 1961). Gesell suggested that human development did not occur in a strictly linear fashion, but happened in brief and progressive stages (Weizmann & Harris, 2012). Specific characteristics are identifiable within each brief and progressive stage. These characteristics are often referred to as milestones (Weizmann & Harris, 2012). A significant aspect of the processes of child development is that these characteristics or milestones are commonly discovered among groups of children, and the age ranges of the groups of children are broadly defined. Therefore, in child development, individual children reach

milestones at different times (Luehrman & Unrath, 2006). As a framework for human development, stage theory is widely accepted today (Weizmann & Harris, 2012).

Maturation Theory

One of the oldest childhood development theories is the maturation theory. Maturation theory proposes that children's genetic makeup is the most significant influence on development (Spodek & Saracho, 2014). According to maturation theory, as humans mature, their inherited abilities contribute more than any other factor to their development (Spodek & Saracho, 2014).

The critical theorists who advocated for maturation theory were psychologists G. Stanley Hall, Arnold Gesell, and Frances Ilg (1902-1981). Hall was one of the first theorists to suggest that children should be taught through developmentally appropriate practices (Weizmann, & Harris, 2012; Strickland & Burgess, 1965). The basic concept of 'readiness' in education came from Hall's maturation theory. According to the maturation theory, readiness is the point in time an individual can learn from a particular level of instruction (Costa & Liebmann, 1995). The maturation theory also suggests an individual's chronological age is not correlated to their age readiness (Costa & Liebmann, 1995).

Currently, most educators and psychologists are resistant to the idea of an individual's readiness being solely based on their maturation age. A learner's experiences can also be used as a marker to determine readiness. For example, for at-risk children entering early educational experiences such as preschool, maturation age should not be considered at all (Kuther, 2018). Opportunities such as preschool provide needed experiences for young children to help them gain knowledge and increase their skills. Preschool programs are an example of a way to increase a child's readiness, and this action counters the theory of maturation (Spodek & Saracho, 2014).

Physical Development

Several well-regarded theorists studied physical growth development. These include Jean Piaget, Lev Vygotsky, Erik Erikson (1902-1994), Jerome Bruner (1915-2016), and Esther Thelen (1941-2004). According to physical development theorists, genetics play the most prominent role in physical development, such as when a children's height growth rate is closely related to their biological parents (Han-Na et al., 2010; Malina & Bouchard, 1991). As well as the growth of the body, physical development theory also incorporates the changes taking place within the brain. (Spodek & Saracho, 2014). Motor skill development is also a significant part of physical development. The refinement of large muscles is responsible for hand-eye coordination and complex movements. Fine motor skills are refined movements, such as using fingers to button clothes. These small movements are often challenging for young children and often use both hands and both sides of the brain (Broadhead, Howard, & Wood, 2010).

Psycho-social Development

Psycho-social (psychological and social) development includes human growth in emotions, personality, self-esteem, relationships, temperament, and attachment. The most highly regarded theory of psychosocial development is Erikson's Eight-Stage Theory. Erickson expanded on the theories of human development by Sigmund Freud (1856-1939). Erickson extended the impact of social experience across the whole lifespan of humans. Erikson put forth the theory that humans develop in psychosocial stages, rather than Freud's earlier theory which suggests of psychosexual stages of development. Erikson's theory consists of the eight stages of development: trust versus mistrust; autonomy versus shame and doubt; initiative versus guilt; industry versus inferiority; identity versus identity confusion; intimacy versus isolation; generativity versus stagnation; and integrity versus despair (Erickson, 1950; Erickson, 1968; Maree, 2021).

Cognitive Development Theory

Piaget was interested in the mechanisms of the growth of knowledge in human development, rather than in revealing the stages of cognition (Piaget, 1932). Central to Piaget's theory are his proposals that knowledge is a process and if children perform an action, then knowledge is generated (Piaget, 1932). According to Piaget, children grow cognitively through interaction. He labeled this as 'physical knowing' (Thomas & Silk, 1990, p. 53). Through physically knowing, children gain additional knowledge by actions, and subsequently, their knowledge increases over time (Piaget, 1932).

Of significance to both art and academics and according to the theory of cognition, it is suggested that children produce mental images and symbols after physical interactions with their environment. The symbols and images produced in children's minds represent the physical phenomenon with which the children interacted, such as an object or a person. Eventually, the mental images and symbols generated through physically knowing manifest into forms, words, and numbers (Piaget, 1932).

Sociocultural Development Theory

The sociocultural theory emphasizes the role of culture and outside influences in growth and development and recognizes the vital role they play in developing cognition. In the sociocultural processes of human development, children receive their beliefs and cultural values from social interaction with the community (Vygotsky, 1978). Vygotsky advanced this theory in the 1920s and 1930s.

A significant aspect of Vygotsky's research was that social learning theory contributes to and tends to come before meaning making. This claim is opposite to Piaget's theory of development that cognitive development precedes social and cultural learning. Vygotsky did not

propose general stages of development in his sociocultural theory and speculated that the critical processes in development, learning, and shaping thought came from the “zone of proximal development,” scaffolding, language, and dialogue (Vygotsky, 1978).

Moral Development

Jean Piaget developed and researched the concept of cognitive moral development in the 1930s. Decades later, educational psychologist Lawrence Kohlberg (1927-1987) extended Piaget’s theories (Kohlberg & Hersh, 1977; Piaget, 1932). In the original model, Piaget was interested in children’s moral reasoning. More concerned with what children think than their actions, Piaget discovered that as children aged, their moral judgments tended to evolve (Piaget, 1932). He defined two main types of moral cognitive thinking as heteronomous morality and autonomous morality (Carpendale, 2000; Kohlberg & Hersh, 1977; Piaget, 1932).

Kohlberg amended Piaget’s theory by adding four moral stages, which describe the transformations in children’s and adults’ structure of thought. Stage one is the punishment and obedience morality Piaget advanced in his theoretical stages. Stage Two is the instrumental-relativist orientation, which states “the right action consists of that which satisfies one’s needs and occasionally others.” Stage three is the “good-boy-nice girl” orientation, where others approve stereotypical good behavior. Stage four is “law and order,” or orientation towards authority. The last two stages are “the social-contact, legalistic orientation,” and stage six is the “universal-ethical principle,” which concerns self-chosen ethical principles. Given that the aim of education is both intellectual and moralistic, moral cognitive development is infused into the “building of character” (Dewey, 1964, p. 207; Kohlberg, 1971, p. 55).

Child Development and Its Role in Education

Education is primarily associated with schooling, and schooling has traditionally been associated with children. In the past, studies about childhood education involved the development of children or child development (Thomas & Silk, 1990). The two fields have been a necessary resource for assessing children's development levels in making educational decisions (Spodek & Saracho, 2014). Currently, the four development theories thought to have the most significant impact on education are maturation, cognitive, behavioral, and psychodynamic theories (Spodek & Saracho, 2014). Often these developmental theories may give different answers, and educators must use their experience and judgment to weigh all the resources (Spodek & Saracho, 2014).

Both children's development and education progress swiftly during the early years of an individual's life. Rapidly, children acquire new bodies of information each time they are challenged with a novel experience (Bruner, 1972; Vygotsky, 1978; Broadhead, Howard, & Wood, 2010). According to Piaget, the initial building blocks necessary for children's learning are the developmental tasks learned during the first five years of life (McCormick, Kuo, & Masten, 2011).

Analogous to human development, education spans an entire lifetime. Adult development, similar to child development, involves identifiable coordinated changes in learned knowledge and acquired skills (Darling-Hammond et al., 2020). Subsequently, as education continues in an individual's adult life, intellectual endeavors become more complex and challenging. The adult learner's knowledge advances and their skillsets increase significantly, radically changing from their early life stages (Broadhead, Howard, & Wood, 2010). Through this continuous educational process, learning does not terminate at the end of formal education. Instead, knowledge and skills are acquired more commonly through informal educational opportunities (Broadhead, Howard, & Wood, 2010).

Children's Artistic Development Theory

Developmental psychologists contend that artistic development emerges from the interaction of cognitive abilities, perceptual abilities, and creative talents (Gagné, 2009; Milbrath, McPhearson, & Osborne, 2015). According to several developmentalists, artistic development is thought to adhere to a similar developmental process as cognitive development (Gagné, 2009; Milbrath, McPhearson, & Osborne, 2015). Progress in the visual arts for children depends upon multiple influences. Of primary importance is a nourishing environment at home. Most younger children engage in some creative expression in the home. Still, the formal education students receive in school can provide resources, a safe context for creating art, and teachers who can foster children's engagement in the arts (Milbrath, McPhearson, & Osborne, 2015).

The artistic development of children's skills, such as drawing progress, occurs through a predictable sequence alongside cognitive, motor, and brain maturation (Kellogg, 1967). Young children's artistic development illustrates the interaction of cognitive and physical domains of development through fine motor control, planning skills, spatial understanding, and recognizing that pictures can symbolize objects, people, and events (Yamagata, 2007). As cognitive and fine motor skills improve, children create more sophisticated drawings (Cox, 1997). The ability to copy a design at an early age has been shown to predict cognitive and academic achievement (Cameron et al., 2012; Dinehart & Manfra, 2013).

Several scholars in art education have extensively researched children's artistic development. Researchers such as Helga Eng (1875-1966), Henry Schaefer-Simmern (1896-1978), Viktor Lowenfeld (1903-1960), Rhoda Kellogg, and others have contributed to children's artistic development theory. It remains an evolving field of study today.

As children's artistic development theories have become known in art education, some theories have been called into question. The questions that have arisen about children's artistic

development theory focus on disagreements about the number of stages children go through, the rate of growth in artistic development, how long children remain in certain stages, and whether the stages are universal among all children (Eisner, 1977; Gardner, 1976).

As with other educational disciplines, the importance of coordinating artistic development with students' appropriate skillsets and abilities is a necessity for quality art instruction. Art educators are aware of the learner's cognitive and physical abilities inferred by other domains of developmental processes when constructing objectives and learning experiences for students. Artistic development is the focus of consideration in constructing a sequential curriculum in art education, but the multiple developmental domains reviewed in this investigation contribute significantly to the process (Efland, 1976; Gardner, 1976).

The Intent of the Study

The intent of this study is to describe the extensive research conducted by Rhoda Kellogg about the early stages of children's artistic development and how her research compares with other children's artistic development theories. Her research is particularly important to consider in the scribble and pre-schematic development of children because her studies appear to be the most extensive available.

As a method of examining the extensiveness of Kellogg's work, this investigation intends to compare her research to three other children's artistic development theorists. Each researcher was working simultaneously in the mid-twentieth century. The selected researchers are Eng, Schaefer-Simmern, and Lowenfeld. The publications of these developmentalists' research are discussed in the literature review in Chapter Two. A detailed description of their research will also be covered in Chapter Four's analysis. The comparison of the children's artistic development

researchers, along with Kellogg's investigation, functions as a framework to determine the originality and importance of her work.

Need of the Study

Further research needs to be done to understand the full extent of the process of children's artistic development. Children's artistic development may eventually have greater possibilities and more recognition for its practicality, such as encouraging mental health and well-being. Investigators must understand the breadth of children's artistic development and assimilate its history to make discoveries.

Kellogg's research has the potential to be a guide to map the children's artistic development process more fully. If existing valid investigations do not recognize Kellogg's work, the worth of research may never be fully valued.

Existing historical documentation about Kellogg and her research in children's artistic development theory is limited. Information about her career is fragmented and appears inadequate. Presently, there is not a detailed account of her life and research in existence. This research attempts to add to the literature about Kellogg in the hope of bringing more attention to her research. The investigation attempts to analyze her work, gathering it into a useful resource to be used for further investigations.

Significance of the Study

A study such as this one is significant in a broader sense to better understand children's artistic development. The most current information needs to be accessible to early childhood educators to help them discover how to facilitate art for younger children. Early childhood education is a crucial subject today and the federal government needs to focus legislative initiatives

on providing quality preschool programming for children in families of all social and economic levels. This investigation may help others outside of the field of art education, such as legislators and voters, to understand the importance of children's artistic development in a quality preschool art program.

More specifically, a study such as this can provide a concise source of information about Kellogg's research in a form not available in the current literature. The comparative analysis of Eng, Schaefer-Simmern, Lowenfeld, and Kellogg's research in this study could be significant because it may provide art educators with a complete picture of Kellogg's theory of children's artistic development. This study could also inspire more contemporary research about children's artistic development. Building a larger framework for fully understanding children's artistic development theory may greatly benefit the art education community.

Statement of the Problem

Psychology, philosophy, literature, education, and art education have led to discoveries about children's artistic development (Waldron, 1983). An ongoing issue in art education has been difficulty assimilating and organizing children's artistic development research because there is a significant amount of information from multiple disciplines. Donna Darling Kelly authored a comprehensive text of the chronological history of children's drawing and art theorists from the 1700s through the early 1900s (Kelly, 2004). Kelly's work is one of the very few attempts to organize children's artistic development theorists in recent years.

Even fewer attempts have been made to compare children's artistic development research. In 2011, Xenia Danos and Eddie Norman from the United Kingdom wrote an article comparing Kellogg, Lowenfeld, and Gaitskell. The investigation included graphicacy, which Danos and Norman defined as "the ability to communicate using still visual images, such as graphs, maps,

drawings, etc.” Their focus in comparing the children’s artistic development research was to develop a taxonomy of graphicacy for use in common learning and teaching purposes (Danos & Norman, 2011, p. 109). Danos and Norman’s investigation is one of the few current efforts to confirm the use of previously conducted research in a new investigation.

Updated research about children’s artistic development needs to be conducted within art education. The bulk of the research available today is decades old or does not offer in-depth analysis, only summaries and overviews of past researchers. A comprehensive study about Kellogg’s research may be a springboard to encouraging more research linking children’s artistic development and other subjects. These investigations may reveal encouraging mutual relationships such as artistic development supporting other types of learning.

Furthermore, because there is a lack of information concerning Kellogg’s research, there is a possibility that some of her original work may be lost or forgotten. Kellogg’s work has been misassigned to other children’s artistic development theorists in the past. Her discovery that children making the mandala signs shows that they are ready to move from the pre-schematic stage to the schematic stage. This discovery is often mislabeled or is not attributed to any source. A description by Hurwitz and Day in their textbook *Children and Their Art: Art Education for Elementary and Middle Schools* (2012) describes a circular shape with marks in reference to the early symbol making stage, but nowhere in the text is Kellogg’s work described or credited (Hurwitz & Day, 2012).

Research Question

Few analyses are available comparing Kellogg’s research to other investigations of children’s artistic development. This lack of analysis raises some questions. One line of inquiry is that Kellogg’s work had deterred or delayed recognition because scholars have not compared it to

the work of other children's artistic development researchers. This problem is reflected in the following research question.

- RQ 1. How does Kellogg's children's artistic development theory compare to other children's artistic development theories?

Research Design

Methodology

In this investigation, the principal focus is on comparing Kellogg's children's artistic development theory with theories from other theorists in the field. The specific theorists in this investigation, Eng, Schaefer-Simmern, and Lowenfeld, were contemporaries of Kellogg as they all conducted research during the mid-twentieth century. The data used in the investigation was gathered from the four theorists' primary sources and all were written within ten to twenty years of each other.

The methodological approach chosen for this investigation is qualitative. This methodology describes the chosen phenomena completely through published written research data and has the ability to provide detailed contextualization and interpretation of the data gathered (Macdonald, 2008). The qualitative methodology allows for the documentation of the primary sources. This type of research methodology could not be accomplished through empirical data.

Research Design

The design used for this investigation is comparative analysis. Comparative analysis is an analytical approach of inquiry that allows for the detailed examination of the data by direct and cross-comparisons of information. The choice of using comparative analysis is made to complete an exhaustive examination of multiple instances in complex situations (Legewie, 2013; Pickvance,

2001). The instances in this investigation are the children's artistic development theorists' research. Their research will be chosen and discussed by several pre-determined criteria that share a common yet complex framework. After the analysis of the children's artistic development theorists' research takes place, an extensive explanation of the results will follow. The result of the comparative analysis has the potential to reveal the full depth of Kellogg's research, its unique properties, its relationship to the other children's artistic development theories, and its potential significance to the field of art education.

Historical Research

Historical research is a well-accepted methodology for art education research (Ary, et al., 2019). There are a significant number of published sources that include the history of American art education (Stankiewicz, Amburgy, & Bolin, 2004). Art educators have been stirred to conduct historical research within American art education since the early 1900s, beginning with the historical work of Isaac Edwards Clarke (1830-1907). Clarke's writings are significant, because he created a historical research framework for art education from its beginnings in the 1870s (Efland & Soucy, 1991). Although, historians did not publish significant quantities of the history of art education until the 1980s (Stankiewicz, Amburgy, & Bolin, 2004). The researchers from the 1980s are considered part of the second wave of the historical interest of art education. Historical research in art education continues to enjoy a consistent level of enthusiasm today (Stankiewicz, Amburgy, & Bolin, 2004).

In this study, the research question was answered by examining the historical text of each children's artistic developmentalist. According to Mary Ann Stankiewicz, a distinguished art education historian, if a researcher needs to ask, "what was?" as part of a study, then a historical research framework is appropriate (Stankiewicz, 2001). Stankiewicz states that the research in art

education includes two processes. The first process is collecting facts and data and the second process is using the findings to recognize patterns within an interpretation (Stankiewicz, 1997). In this study, I followed Stankiewicz's recommended process of collecting and examining data while looking for patterns in the data.

Instrumentation, Data Collection, and Analysis

NVivo

The software tool used to conduct the comparative analysis of the data in the investigation was NVivo. The advantages of the NVivo software are its ability to store digitized sources that remain in the original context or form (Bazeley & Jackson, 2015). Another important advantage of using the NVivo software is in its flexibility in coding. The coding system did not limit me to a single code for one passage when reading the collected material. Instead, I could use multiple codes for one text passage simultaneously, which better captured the data's multiple meanings (Bazeley & Jackson, 2015).

Data Collection

The codes in the NVivo software were set up by considering the scope of the research question. The software has the ability to store full texts used for data comparison. Five texts were uploaded to the NVivo software for comparison in the investigation. These texts were Eng's *The Psychology of Children's Drawings* (1931), Schaefer-Simmern's *The Unfolding of Artistic Behavior* (1948), Lowenfeld's *Creative and Mental Growth* (1947), and Kellogg's *What Children Scribble and Why* (1955) as well as *Analyzing Children's Art* (1969a). The criteria for the comparison were chosen, and each text was coded according to the criteria. A full list of the criteria appears in Chapter Three and includes the description of the development stage, the ages of the

children when the period of development occurs, and the number of stages in artistic development. These characteristics can be easily cross-referenced to find similarities and differences in the stage theories.

Analysis

A two-cycle coding process was used to collect, synthesize, and analyze the information gathered (Tracy, 2019). The first coding cycle was more general in assigning codes for the criteria. The second coding process went over the same data sets again to glean further data. The second cycle became a prolonged and reflective process as I worked through the data.

After the first wave of coding, I became more comfortable with the data, and it became easier to recognize the information associated with the criteria. In contrast to the first cycle of coding, I became skilled in the second cycle and could sift out the extraneous information, which was interesting, but did not lend any usable material to the investigation. It was crucial not to become too focused and push the data to fit a particular assumption that may have been consciously or subconsciously formed. I wanted to construct a reliable investigation, so staying as objective as possible was a goal (Saldaña, 2016).

These primary sources were uploaded into the NVivo software by either scanning the original published data, such as articles and texts, or scanning those published online. The data was uncovered by using the search engines Google Scholar and the Purdue Libraries database. The search for data has been extensive and continued during the investigation until a saturation point was reached. The saturation point was reached when the same data kept reappearing in searches (Tracy, 2019).

Assumption, Delimitations, Limitations

Assumptions

The first assumption is about the nature of qualitative research. I acknowledge that the nature of the research is value laden. Qualitative research is also context-bound and determining a high level of accuracy is difficult (Tracy, 2019). One appropriate solution involves saturation of the data collection among as many primary sources as possible and writing a rich and thick description of the phenomena (Tracy, 2019).

The second assumption in this study is the information from primary and secondary sources can be coded, synthesized, and analyzed in a manner that would satisfactorily answer the research question. This assumption is based on the opinions of scholars who have authored literature about qualitative analysis, such as Sarah Tracy (2019) and Johnny Saldaña (2016).

Delimitations

Not all the children's artistic development theories in existence are considered in this investigation, because not every theory included stages for children's artistic development levels. The delimitation is in the choice of only children's artistic development theories with multiple stages. Using stage theory as a criterion for selection ensures "like to like" comparisons in the investigation.

Limitations

A limitation of this study was that only Kellogg, Eng, Schaefer-Simmern, and Lowenfeld were chosen as subjects for this study. The findings in this investigation may not apply to all children's artistic development research. The research conducted is a historical snapshot of the time in which Kellogg and the other researchers were conducting their investigations. Their

experiences could have been different from other children's artistic development researchers based on the context of their research.

Another possible limitation comes from my career as an art educator with two decades of teaching. A limitation may be an unconscious bias due to my outlook, opinions, and experiences as an art educator. In this investigation, it was important to consider my views and not superimpose them on Kellogg's research.

There is also a limitation due to the decades included for the research in the investigations. The main research focus is the decades of children's artistic development theory during Kellogg's career. These dates are from the 1940s to the 1970s. A slight adjustment took place for the inclusion of Eng's work. Her dates of research begin a decade earlier, roughly from the 1930s to the 1960s. Eng was included because of the period in which she conducted her research, and because her theory of children's artistic development was based on stages.

Definition of Terms

The following defined terms are referred to in this investigation. These definitions of terms are the operational explanations and serve to standardize the terms in this investigation.

Abstract Art is "the term applied to art that is based on an object, figure, or landscape, that has been simplified or schematized," and the subject of the work of art is still recognizable (Tate, 2021).

Artistic Development is concerned with human development in the domain of art. Artistic development is considered a domain of human development (Kindler & Darras, 1997).

Child Art refers to "those processes children employ when using art materials which more or less result in products that resemble art" (Weider, 1977, p. 5).

Human Development refers to the sequence of basic growth periods in human life. Multiple domains are located within the general term of human development (Kindler & Darras, 1997).

Kindergarten: “Kindergartens are public or private educational classes for children over four and one-half years of age and under the age for the first grade, which in some public systems is five and one-half, in others six years. Children sometimes remain in kindergarten until after their sixth birthday, although most systems consider the child of six ready for the first grade” (Kellogg, 1967).

Gestalt Psychology is based on the psychology of how humans visually perceive “wholes,” or something made of parts. “Gestalt psychology emphasizes that the whole of anything is greater than its parts. The attributes of the whole are not deducible from the analysis of the parts in isolation” (Köhler, 1967, p. XVIII).

Non-representational Art is “art that does not attempt to represent an accurate depiction of a visual reality but instead uses shapes, colors, forms, and gestural marks to achieve its effect” (Tate, 2021).

Nursery School: “A nursery school is a school whose program and environment are primarily suited to the educational needs of preschool children. Stating this more elaborately, we can say that a nursery school is a place with indoor and outdoor space, which cares for a group of children from two to five years of age for not less than two hours a day, and wherein a supervised program is conducted by teachers who promote educational objectives through the use of well-planned equipment and materials” (Kellogg, 1949).

Scribble: The word scribble is different from other terms, such as mark-making. The term mark making is often associated with scribbles, but it applies to any type of mark an adult makes,

such as lines, patterns, or textures. (Tate, 2021). A scribble is a product of various directional muscular movements that children make even before the age of two but usually between two and four (Kellogg, 1967). Scribble in its earliest form is defined as uncontrolled markings from children who have little to no control over motor activity (Lowenfeld, 1947). Scribble in its later form show controlled repetitions of motions while children are demonstrating an awareness of movements (Lowenfeld, 1947).

Stage Theories: “Stage theories attempt to carefully trace development in early childhood. A number of researchers have described and interpreted scribbling behavior of children that seems to be universally shared” (Kindler & Darras, 1997, p. 19).

CHAPTER 2. LITERATURE REVIEW

Chapter One outlined the basis of how multiple children's development disciplines are connected to children's artistic development. In this chapter, the originators of the multiple development theories are reviewed, including those theorists in children's artistic development. This literature review serves as a foundation for understanding the basis for the comparisons between the children's artistic developmental theories examined in this investigation. Threads of commonality are seen in the historical review, and these connections are present in Rhoda Kellogg's research. In the context of a historical review, we can better understand Kellogg's research to be an addition and a continuation of the historical viewpoints espoused by other researchers of children's artistic development theory.

Scope and Sequence of Literature Review

The literature review begins with the eighteenth and nineteenth century philosophical views of child development. The early philosophical views of childhood development had great influence on the formation of educational practices, including art education. The historical events reviewed include the Child Study Movement and the pioneering children's development scholars.

Human development theory is also included in the review of the literature, because it is inseparable from children's artistic development. The theories of early childhood development are examined along with the most influential scholars in the field of developmental psychology such as Piaget, Vygotsky, and Erikson.

The last portion of the literature review addresses the theories of children's artistic development. The overview of the nineteenth century children's artistic development theory includes a historical examination of theories grouped by regions. Discussion of early 20th century

children's artistic development theory is followed by a description of Eng, Schaefer-Simmern, Lowenfeld, and Kellogg's children's artistic development research. This section also includes a review of Kellogg's most significant publications.

Historical Overview of Child Study and Development

Historical research reveals that as far back as medieval times, children were not shielded from the harsh reality of the adult world (Aries, 1962). Children old enough to be separated from their mothers became helpers and were introduced to the adult concept of work, often in the form of hard labor (Aries, 1962). In the seventeenth and early eighteenth centuries, moralists became aware of the concept of childhood, but this changed the nurturing of children very little (Aries, 1962). Many of the moralists were from strict religious communities excessively concerned with the moral guidance of children and reinforced misbehavior with harsh discipline (Aries, 1962). During this period children were mistreated and suffered terribly at the hands of adults.

Eighteenth and Nineteenth-Century Views of Childhood, Education, and Development

The eighteenth century included some far more enlightened philosophies of childhood and education from the Romantics. These artists and philosophers unveiled the innocence of childhood. Their philosophies formed the beginnings of the Child Study Movement. Later, the romantic notion of childhood gave way to a scientific study of childhood that included investigations into the origins of humankind and developmental change.

Rousseau (1712-1778)

Jean Jacques Rousseau was a leading influence on education through his publications *Julie ou la nouvelle Héloïse* (1761) and *Emile* (1762), in which he wrote about his views on humankind,

society, and the nature of children and their education. Rousseau believed children were primarily good and not born corrupt. In addition, Rousseau advanced his notion that children were not “miniature adults” and that they were engaged in a developmental process that leads into adulthood (Archer, 1964; Davidson & Benjamin, 1987; Rousseau, 2018).

Rousseau’s suggestion that a developmental process existed during childhood was a novel concept in his time. Children were being treated as miniature adults who were expected to achieve maturity without adult acknowledgment of their childhood (Kouvou, 2005). As a precursor to stage theory in child development, Rousseau promoted the idea that human development occurred in four stages. These stages included the animal stage (birth to four), savage stage (five to twelve), rational stage (twelve to adolescence), and social stage (from puberty to adulthood) (Rousseau, 2018; Archer, 1964).

Rousseau was an education advocate. His concept of education focused on the development of reasoning. He suggested that education needed to be delivered in an interactive setting between tutors and students. As an example of an interactive learning experience, Rousseau, in his book *Émile*, recommended that tutors should arrange learning opportunities to help students gain life experiences that included the development of drawing skills. He generally supported art as a valuable form of education and was one of the earliest advocates for developmentally appropriate education for children (Archer, 1964; Davidson & Benjamin, 1987; Kouvou, 2005, Rousseau, 2018).

Pestalozzi (1746-1827)

Educator Johann Heinrich Pestalozzi was influenced by Rousseau’s guiding philosophies about the notion of childhood. Founding several schools, Pestalozzi agreed with Rousseau’s observation that children’s development occurred in stages (Kelly, 2004). The concept that

development occurs in stages is based on the principle that growth is not a continuous process, but involves distinct plateaus or stages based on changing characteristics such as behavior, emotions, or ways of thinking. In time, stage theories came to include several domains such as psychosocial, moral, cognitive, and artistic development (Hayslip et al., 2006).

Froebel (1782-1852)

Pestalozzi significantly influenced Friedrich Froebel during a mentorship from 1805 to 1807. Froebel's most influential role in education was as the founder of the first 'kindergarten' or 'children's garden' school in Germany. Incorporated into the curriculum of kindergarten was Froebel's recognition that self-activity was a chief characteristic of childhood. He suggested that children's learning was driven by personal interests (F. Froebel & F. W. A. Froebel, 1893; Pound, 2019). Activities chosen by children allowed them to learn by doing. In this manner of learning, thought and action took place simultaneously. This fundamental concept of active experimentation as a core principle of learning became the pedagogical framework for the progressive movement in the 1880s (Dewey, 1934; Kliebard, 2004).

Froebel asserted that children were inventive, expressive, and driven toward creativity (Froebel, 2018). He believed that development in children could be promoted by exploring forms of self-expression. One of the three forms of expression he promoted, other than music and gesture, was art. Froebel provided his kindergarten students materials such as clay, paper, sand, and blocks to express themselves, and thus art education became part of the kindergarten curriculum.

Darwin (1809-1882)

In the last decades of the nineteenth century, Charles Darwin suggested that stages of individual development followed Rousseau's initial stages of childhood development. Darwin's

ideas of childhood development paralleled his work on the evolution of humankind (Leeds, 1989). Having a scientific interest in child development, Darwin kept a diary of his son's development (Darwin, 1887). Based on his observations, Darwin suggested that the development of children progressed through a series of stages. Darwin specifically reported on the development of communication by children. He found that the development of communication included four stages, ranging from voluntary crying to imitating words (Darwin, 1887). Darwin's study of evolution led other researchers and scientists to pursue his ideas, including studying the development of children and the Child Study Movement.

The Child Study Movement

A significant point in education and developmental psychology came with the Child Study Movement that was initiated in the United States in the 1880s (Davidson & Benjamin, 1987). The principal aim of the Child Study Movement was to establish an educational pedagogy based on the scientific methods of psychology. Before the Child Study Movement, pedagogical practices were based on unscientific methods that varied in technique (Davidson & Benjamin, 1987). During the latter half of the nineteenth century, experimental psychology brought together the study of child development and education in creating a more appropriate curriculum designed to benefit students. During the Child Study Movement, several groups were motivated to work together. They were psychologists studying childhood development, scholars from higher education, educational leaders from the early, elementary, and secondary levels, social workers, and child welfare advocates. The principal purpose of the movement was to establish a scientific pedagogy that centered around discovering every aspect of the child (Davidson & Benjamin, 1987). The exploration and understanding of children's memory, attention span, physical and mental characteristics, and many other abilities and capabilities brought a scientific method to education

designed to support its practices (Davidson & Benjamin, 1987). Educational practices were restructured to guide best practices in educating all types of students and diminishing learning methods of earlier curriculum (Davidson & Benjamin, 1987; Siege & White, 1982). Fundamental social shifts resulted from the Child Study Movement, including the Child Welfare Movement and the Parent Education Movement (Brooks-Gunn & Johnson, 2006).

Historically, the Child Study Movement began in 1883 and prevailed until the early decades of the 20th century (Siege & White, 1982). The founding of the Child Study Movement in America has been credited to G. Stanley Hall (1844-1924) (Davidson & Benjamin, 1987; Young, 2016). Hall primarily studied children from 1883 to 1918 and was inspired after a brief period in Germany. He was greatly influenced by the German educational system and its fundamental view about the nature of children (Davidson & Benjamin, 1987; Hall, 1948). Hall gathered information about children's artistic development from questionnaire studies he conducted of beginning school children in Germany. He used a questionnaire method for a similar study of Boston public school children after he arrived in America (Brooks-Gunn & Johnson, 2006; Davidson & Benjamin, 1987). Hall's study of children led him to suggest using child study as a new approach to education.

Another early psychologist, Englishman James Sully, published several books on childhood development, such as *Studies of Childhood* (1896). His studies of child development were pioneering (Lally & Valentine-French, 2020). Sully, along with G. Stanley Hall, became leading figures of the Child Study Movement. The work of Hall and Sully influenced many scholars in child development of that time (Brooks-Gunn & Johnson, 2006). The prominence of the Child Study Movement in science also is regarded as a significant era of interest in childhood development in the fields of education and art education (Brooks-Gunn & Johnson, 2006).

Domains of Human and Child Development

The scientific observation and study of children led to several domains of child development being established, and each domain had theorists who contributed significantly to their research areas. These theories are intertwined with child artistic development and their descriptions support the concept of children's artistic development being a key concept in children's overall development. Some of the most applicable theories of child development are presented as part of the general framework of the theories presented in the investigation.

Gesell's Maturation Theory

Maturation theory suggests a growth unfolding within children, and the role of education is to support children during this process (Davidson & Benjamin, 1987). Arnold Gesell observed that development in children unfolded in fixed sequences and conceived of individual growth rates due to genetics (Crain, 2005; Gesell, 1933). Gesell also observed children's social and cultural environments played a role in their development. Maturation theory opposes teaching children skills counter to their development schedule and advocates a child-centered approach to parenting and education (Crain, 2005; Gesell, 1933).

Piaget's Cognitive-Developmental Theory

Jean Piaget was influential in the area of developmental psychology. Piaget became interested in the cognitive processes of children, while studying with psychologist Alfred Binet in Paris (Huitt & Hummel, 2003). Through working in Binet's I.Q. test lab, Piaget observed that the younger children's cognitive processes such as thinking, knowing, and problem-solving differed from the older children he observed. His experiences set the groundwork for the dominant areas

of Piaget's theory, including the intellectual processes of knowing and the stages humans move through to grow in this ability (Huitt & Hummel, 2003).

Intelligence in Piaget's theory is defined as how living things adapt to the environment. He was interested in how behavior is controlled by intelligence. The term "schemes" was given to how intelligence alters behavior to adapt to the environment (Piaget, 1972). The initial schemes at birth were termed "reflexes," meaning how infants adapt to the environment, but through development, schemes replace reflexes. As schemes grow in complexity during development, they are replaced by "structures" (Huitt & Hummel, 2003; Piaget, 1972). This process is hierarchical in nature and similar to the growth in other domains of development, including artistic development.

In Piaget's stages of cognitive development, four fundamental stages are identified. These stages include sensorimotor, pre-operational, concrete operational, and formal operational. Substages are also present within each of these four fundamental stages.

The first stage, sensorimotor, occurs in infancy. Intelligence is demonstrated by the infant through motor activity. The motor activity is demonstrated before the stage of employing symbols (Huitt & Hummel, 2003; Piaget, 1972). The knowledge the infant has of their world is slowly developing with the acquisition of knowledge based on experiences with physical interactions. Some symbolic language abilities and the acquisition of object permanence are also demonstrated (Huitt & Hummel, 2003; Piaget, 1972).

The second stage of development is the pre-operational stage. Children in toddlerhood and early childhood demonstrate language development and nonlogical thinking. The preschoolers in Kellogg's research were of this age and would have been situated in Piaget's pre-operational stage. It is within this stage that young children demonstrate intelligence and express language through symbols. The idea of symbols may be similar to the production of scribble or a preliminary

connection to the early schematic levels of drawing. Imagination also develops during the pre-operational stage and thinking is nonlogical and egocentric (Huitt & Hummel, 2003; Kellogg, 1969a; Piaget, 1972).

The third stage is the concrete operational stage, which corresponds to elementary and early adolescence. Egocentrism diminishes and intelligence grows, which is demonstrated through logic such as the manipulation of symbols for concrete objects. Thoughts are reversible for the first time at the operational level (Huitt & Hummel, 2003; Piaget, 1972).

The final stage is formal operational. It occurs in adolescence and adulthood. This stage is described by an advance in the level of intelligence required to perform logically and the ability to utilize symbols that represent abstract thinking. According to Piaget, only one-third of the high school graduates in the industrialized world have the ability to perform at the formal operational level (Huitt & Hummel, 2003; Piaget, 1972).

Through Piaget's stages of development, the cognitive growth of children can be identified. Educators became more aware that children go through natural stages of learning and in constructing their identities and knowledge. This theory led to the adaption of instruction for learners who are at different levels of cognition.

Vygotsky's Sociocultural Theory

Sociocultural theory is associated with psychologist Lev Vygotsky, whose research began in the 1920s. Vygotsky, a Russian scholar and researcher, was influenced by the works of Piaget, Binet, and Freud (Fielding, 1989; Miller, 2011). In Vygotsky's theory, cognitive development occurs in two stages. During the first stage, cognitive development occurs through social interaction with other human beings. This concept implies that children's thought processes are moderated by the adults who interact with them. This idea suggests teachers can play a more

prominent role in children's cognitive development than realized by earlier psychologists. The second phase in Vygotsky's theory maintains that social interaction experienced by children is internalized psychologically. Internalization is a nonconscious mental process of assimilating the feelings or beliefs of others and adopting them as one's own (Loewald, 2007). Once internalized, children can rely on the recall of the social experience to act independently (Fielding, 1989; Vygotsky, 1978).

Vygotsky disagreed with Piaget's theory of rejecting any connection between learning and developmental stages. Development in children, according to Vygotsky, followed learning. Scaffolding, or the assistance of a more advanced peer to reach higher cognitive levels in learning, was advanced by Vygotsky. He also promoted the concept of the Zone of Proximal Development. The Zone of Proximal Development was the time before development stages occurred in children. This space of time, Vygotsky discovered, was when instruction could create a higher level of cognitive development (Vygotsky, 1978).

Erikson's Eight Stages of Life

Erikson's psychosocial development theory greatly influenced early childhood development in the 20th century (Maree, 2021). His work outlined a new perspective of human development based on Sigmund Freud's psychoanalytic theoretical stages. Erikson added three new stages of adulthood to Freud's original five stages (Crain, 2005). Erikson believed childhood development was only a part of the changes that occurred during a lifespan. Out of the eight stages of human development in Erikson's psychosocial theory, five stages are related to childhood and adolescence (Cherry, 2020; Maree, 2021). The characteristics of the childhood and adolescence stages exhibit a high correlation to the stage theories established in children's artistic development theory.

The first stage in Erikson's psychosocial theory is *Basic Trust Versus Mistrust*. This stage occurs from infancy to one year of age (Crain, 2005; Erikson, 1950). Children in this stage must decide if they can rely upon others around them. This first stage is too early to correlate to children's artistic development theory because the average age when children begin to scribble is at two years of age (Kellogg, 1969a; Lowenfeld, 1947).

The second stage of Erickson's psychosocial theory is *Autonomy vs. Shame and Doubt*. It occurs between one and three years of age. Contradictory and impulsive desires coexist as children choose to hold on to something one moment and relinquish it the next. According to Erikson, children have a need to achieve a sense of control and independence while learning to adjust to social requirements (Crain, 2005; Erikson, 1950).

Erikson labeled the third stage, occurring during the preschool ages of three and six years old, as *Initiative vs. Guilt* (Crain, 2005; Erikson, 1958). When this stage is achieved, Erikson advised children should be permitted to accomplish tasks singularly as they examine and explore their capabilities (Maree, 2021). This stage is when children begin setting goals or making plans and realizing their plans may fail. Children in this stage internalize the social mistakes they have made and in turn, this process produces guilt (Crain, 2005; Erikson, 1950).

The fourth stage of Erikson's psychosocial development theory is called *Industry vs. Inferiority*. Children in this stage range in age from six to eleven years of age. This age group is considered "school-age," because children are in first to sixth grade during these years (Ray, 2011). As children increase in critical cognitive and social areas in this stage, Erikson demonstrated that this stage is the most crucial for the growth of *Ego*. Erikson uses Freud's definition of Ego as the set of functions that judges reality accurately and regulates impulses (Crain, 2005; Erikson, 1950; Freud, 1933). Erikson felt this age was a time of relative calmness in which children were engaged

in learning. Also, within this stage, children experience an overwhelming feeling of inadequacy or a sense of being inferior (Crain, 2005; Erikson, 1950).

Erikson's fifth stage, *Identity vs. Role Confusion*, spans the adolescent years from twelve to eighteen years of age. It is during this stage that adolescents explore their independence and develop a sense of self. Simultaneously, feelings of doubt and shame may develop as well as role confusion in adolescence during this period (Crain, 2005; Erikson, 1950).

These developmental theories are of significance when examining the domain of children's artistic development. The descriptions of the developmental theories support the concept of children's artistic development, because there is an overlap in specific areas of growth. Domains such as cognitive, physical, and emotional development are intertwined with artistic development. Artistic development does not exist independently outside the other domains of development but is as significant in the framework of children's development as any of the other development theories.

Children's Artistic Development Theory

It is important to understand when considering children's artistic development theory that it serves additional purposes beyond describing the unfolding of children's artistic growth (Barkan, 1962; Efland, 1976; Gardner, 1976). Simply observing children and noting how their artwork changes over time is insufficient for fully understanding children's artistic development. A study of children's artistic development should focus additionally on underlying questions about children's initiative and their motivations for creating art. There are several additional areas involved in children's artistic development, such as the cognitive, physical, and psychological domains. The role of the children's artistic developmental researcher is to question what mediated

the change in the child (Gardner, 1976). The valid developmental questions focus on the mechanisms that have effected change and not only the description of the change.

The work of Piaget, Erickson, Vygotsky, and other theorists is essential to studying the artistic development in children (Gardner, 1976). Different developmental theories offer the necessary elements for understanding the process of change in children. Few of the developmental theorists were singularly interested in artistic development; however, they have shown in their theories how children construct basic knowledge or develop sensory and physical abilities. All of these developmental areas are integral to artistic activity, such as in understanding and manipulating symbols, color, patterns, and the other elements of art and principles of design (Gardner, 1976).

What is striking about artistic development is that its unfolding is similar in most children around the world. Understandably, children have individual differences in preferences for media, schemes, narratives, style, or expression, but the same principal stages of artistic development remain constant across all cultures (Gardner, 1976; Kellogg, 1969a). It has been shown that the influence of instruction has minimal effect on how children's artistic development unfolds, even when there are significant differences in educational systems employed around the globe (Gardner, 1976). Children have an internal development scheme that is not easily altered no matter where they reside or by wide variations of their circumstances (Gardner, 1976).

Children's artistic development theory remains among the fundamental underpinnings of art education, because it shapes curriculum, instruction, and assessment and is essential in constructing human experiences. Children's artistic development theory helps to understand the kinds of support needed for processing visual culture that includes more than instruction in the traditional visual arts (Freedman & Stuhr, 2004). The crucial role of children's artistic

development theory within art education appears in many forms, but children's artistic development is a fundamental part of human development and, therefore, intrinsically plays a role in all levels of childhood education.

In the following narrative, the overview includes the history of children's artistic development theory and the pathway it has taken. Some theories are only descriptions of what characteristics of artistic growth are seen in children, while other theories include a broad inquiry into the physical and psychological aspects of artistic growth. Since the 1880s, art educators and psychologists have been investigating artistic development, its integration into childhood development, reasons why children's artistic development manifests itself in similar ways worldwide, and how it can be used to improve the educational and expressive experiences of children.

Overview of 19th Century Children's Artistic Theory

Outlining the historical roots of children's artistic development not only suggests that it is tied inseparably to art education, but also that it is of interest to other disciplines. By the end of the 19th century, art education was of interest to many industrialists, educators, philosophers, child art researchers, and children's artistic development theorists in the Western world. Suffice it to say that many important scholars, such as John Ruskin (1819-1900), Herbert Spencer (1820-1903), Henry Cole (1808-1882), and Walter Smith (1836-1886), influenced the early development of national systems of public education that included art education. In the late 19th and early 20th centuries, the fundamental purpose of art education was to train unskilled workers and turn them into skilled artisans capable of creating designs for manufacturing that would surpass foreign-trained artisans and their designs (Kelly, 2004). Therefore, the purpose of art education in schools was to provide a workforce to produce goods that would contribute to economic stability. Thus,

the goal of creating schools of design and imposing national art curricula was pursued in Great Britain and in the United States. It was during this time that a critical focus on art education occurred and rapidly expanded (Kelly, 2004; Savage, 1985; Thistlewood, 1986).

As the field of art education emerged, a number of educational leaders advocated various approaches and theories for the development of instructional models for learning in the visual arts. The following includes summaries of selected theories from educational thought leaders and researchers from this time.

Britain

Ebenezer Cooke (1837-1913)

Ebenezer Cooke was an art education reformer who was heavily influenced by Froebel's teachings (Kelly, 2004). Cooke felt that the concentration of the new industrial art education curriculum based on precise geometrical and ornate design was too rigid (Cooke, 1886). He feared that children would lose interest much earlier in artistic endeavors because of the strict curriculum. He also suggested that due to this lack of interest, the Western industrialized world would be at a loss without a generation of students interested in becoming artists and designers (Kelly, 2004).

The important connection between Cooke and children's artistic development was that through his reform efforts, Cooke elevated the inquiry in children's artistic development to a higher level of interest (Kelly, 2004). In his article published in the *Journal of Education* in 1886, Cooke explained that children's artistic development occurred in a sequence and that each stage in development led directly to the next stage. Even though Rousseau and others had alluded to the same concept of sequential development, Cooke conveyed a similar message during a time which was more open to understanding an investigation of children's artistic stage development.

Furthermore, Cooke contended that art education was not following a natural learning process (Kelly, 2004).

Cooke described children's artistic development in four stages. Table 1 includes a summary of Cooke's children's artistic development stages. The first stage is for children ages two through five years. He describes their first attempts as a muscular effort that resulted in scribbles (Cooke, 1886). During the scribble stage, the children's imaginations were not active, and their hand movements imitated those of others, such as adults and older children. The whole arm freely swings from the shoulder and is involved in making marks while the hand tightly and awkwardly grips the pencil (Cooke, 1886).

Table 1. Cooke's Artistic Stage Theory, 1886

Named Stages	Age	Characteristics
Scribble	2-5 years old	Imagination is not active, hand movements imitated, whole arm moves swinging from the shoulder, cramped hand with a tight grip on the pencil, new conventions mixed with replicating the old design,
Second Stage	2-5 years old	parts of objects and figures assembled with little regard to reality,
Third Stage	2-5 years old	parts in better order, not directly copied,
Fourth Stage	4 to 9 years old	further analysis of parts of the whole, simple line drawings, and can copy or imitate nature.

Note: Sources for this chart include Cooke (1886) and Kelly (2004).

In the second stage, Cooke outlined that the children's minds and imagination become unmistakably present in the drawings. The "mind controls and imagination becomes evident" Cooke wrote about the stage (Cooke, 1886, p. 13). The image is produced from the children's imagination. Shapes are put together without much knowledge of the relationship of how the parts belong to the whole, according to Cooke. Also, within this stage, there is little regard for reality because children are not drawing directly from objects (Cooke, 1886).

Cooke described the third stage as when the children put together parts of drawing in better order. Children did not directly imitate or copy what they were drawing and the drawings from this age are still from children's imagination. The direct drawing of objects begins later in the fourth stage (Cooke, 1886).

In the fourth stage, children show the ability to imitate nature with a further analysis of the relationships of the parts of the form. Parts of the objects are grasped as being created by line, and these lines can be imitated naturally by children in this last stage (Cooke, 1886).

Cooke published an article in which he illustrated his stage theory with drawings from his young daughter's artwork in the *Journal of Education* (1886). This journal was one of the first publications to mass reproduce an article with illustrations about children's artistic development. The article's purpose was to demonstrate the theory of children's artistic development, but it was also a condemnation of the type of restrictive art education curriculum being taught in design schools. Cooke linked the importance of children's artistic development through his extensive observations. He detailed shortcomings of curricula being taught in design schools at that time (Kelly, 2004)

James Sully (1842-1923)

The first psychologist credited with examining child art from the perspective of understanding the child was James Sully. Sully studied children's development through language and art as significant areas of investigation. Sully wrote in *Studies of Childhood* (1896) that for a psychologist, child art was a medium of expression, although he noted that child art is "less instructive than that of early speech" (Sully, 1896, p. 332). Sully was one of the first investigators to observe that children's scribbles and schemas were used to demonstrate a visual relationship to the reality of their environment. Children project their own symbolic meaning into marks, according to Sully, which was similar to the 'symbolism of language' (Sully 1896, p. 56). Sully thought children's artwork was comparable in many ways to language and could be used to help understand children and their development.

Sully defined child art as any activity engaged in by children that resulted in the creation of beauty or pleasing in a visual sense. However, his viewpoint also included the belief that only adults produced art. Although Sully appreciated children's early attempts at making art, to him, only adults were capable of making true art (Sully, 1896). Cooke influenced Sully's investigation by supplying him with children's drawings from Cooke's daughter. These were the same drawings reproduced in the *Journal of Education* (1886) (Kelly, 2004).

Sully's research made a significant contribution to the work of later researchers of children's artistic development. Other developmentalists were influenced by Sully's work. Among them was Viktor Lowenfeld, an art educator who would later become the premier researcher and theorist of children's artistic development (Michael & Morris, 1985).

Sully's investigations of childhood art make references to children's artistic development in three stages (Michael & Morris, 1985; Sully 1896). Table 2 includes a summary of Sully's children's artistic development stages. In several ways, Sully's stages are similar to Cooke's stage

of children's artistic development, but Sully demonstrates his insight and skill of observation which was most likely due to his training as a psychologist. The first stage of Sully's theory, called the Scribble stage, consisted of children aged two to three. He described their scribbles as simplistic motions with little muscle control (Kelly, 2004; Sully, 1896). The marks children made were random, because the child at this stage was incapable of pre-planning. Children were not interested in form, and they are prompted to rely on their imagination when drawing (Kelly, 2004; Sully, 1896).

Table 2. Sully's Artistic Stage Theory, 1896

Stages	Age	Characteristics
Scribble	2 years old	Not interested in form, scribbling is random, no pre-planning, imagination is key to a child's intention,
Schema/Symbolist	3 to 4 years old	abstract schema form, child has technical limitations,
Naturalism	About 5 years old	still follows earlier patterns, not a smooth process, and adds sophisticated shapes.

Note: Sources for this chart include Kelly (2004) and Sully (1896).

In the second stage, called the Schema or Symbolist stage, children show interest in beginning to achieve some realism or representation. However, Sully writes that even the smallest resemblance of the object or person is acceptable. Children's artwork at this stage is far more symbolic than naturalistic (Kelly, 2004; Sully, 1896). The third stage, called Naturalism, begins for children around five years of age and is marked by development that starts and stops. Children still hold on to their previous drawing conventions, but they often pick up new conventions to replace the old ones (Kelly, 2004; Sully, 1896). Sully observed at this point that intellectual

development placed limitations on artistic development. What perplexed Sully about this stage is that children often drew what they could not see. For example, a side view or profile of a face would include two eyes instead of only one visible eye (Kelly, 2004; Sully, 1896).

Italy

Corrado Ricci (1858- 1934)

In other areas of the western world, several theorists began child art investigations. Among them was Corrado Ricci (1858- 1934) from Italy. Ricci, who in 1887 published *L'Arte dei Bambini*, collected children's drawings for what appears to be one of the first collections of child art. Ricci is significant in this investigation for a few different reasons. The first of these is because his research illustrates that collecting large numbers of children's drawings was not that uncommon for children's artistic development theorists in the mid to late 1800s. Ricci's collection included 1,250 drawings from school-aged children in Italy. It is unclear if the drawings were required of subjects or spontaneously generated. Howard Gardner suggested in *Artful Scribbles* (1980) that paper and various types of pencils and pens became widely available and less expensive in the last half of the 19th century. This availability created more opportunities for children to draw and produced more drawings for investigators to collect (Gardner, 1980).

The second point of significance about Ricci's work is that it appears as if he was not familiar with Cooke's work. It is interesting to note that both investigations were examining children's artistic development at the same moment in time but were in different places in the world. This was an era in which descriptive investigations of children's drawings became prominent (Kelly, 2004).

Austria

Franz Cizek (1865 -1946)

Although prominent within the field of investigative research in the late 19th century, the public did not hold much aesthetic appreciation for children's artwork. Only groups of specialists such as art educators and psychologists had any serious regard for children's art at this time. A small, but growing group of art educators, felt that children's art held similar aesthetic qualities found in adult artwork. This understanding emerged simultaneously as psychologists, such as Sully, began examining child artwork for its developmental clues and symbolism (Kelly, 2004).

Similarly, in the late 1800s, the Impressionists artists were greatly influencing young artists to go against accepted practices and procedures embraced by the established art world, especially in rejecting juried exhibitions and elitist galleries. This was a turning point for traditional representational art and the genre gave way to what was a more vibrant style called Art Nouveau (Kelly, 2004). One young artist influenced by the new expressiveness in the style of art was Franz Cizek. Cizek, a Viennese artist trained in a traditional academic style, was caught up in the new and radical ideas of a local group who called themselves the Secessionists. While in Vienna, Cizek became a member of the Secessionists, and their main interest was in creating new forms of expressionism in art (Cizek & Viola, 1936; Kelly, 2004).

Cizek had observed young children when he was an art student at the academy. The truth and visual clarity of child art was its greatest attraction for Cizek (Cizek & Viola, 1936; Kelly, 2004). He discovered that all the children he observed drew in the same manner and portrayed similar subjects and objects in their artwork. Cizek shared his observations of children's art with friends in the Secessionist group and they encouraged him to open an art school for children. Cizek's "Juvenile Art Classes" began in Vienna in 1897 and were comprised of two-hour sessions

on Saturdays and school holidays for children aged two to fourteen years of age (Cizek & Viola, 1936; Kelly, 2004). The main philosophy of the school was that children should be allowed to teach themselves and to draw and paint freely with individualism and personal expression that was free from adult instruction (Cizek & Viola, 1936; Kelly, 2004). Instead of providing criticism of children's artwork, Cizek placed his focus on the children's effort, expression, and creativity (Cizek & Viola, 1936; Kelly, 2004).

Cizek's teaching method was far different than the tedious drawing exercises children were taught in Austrian schools. Students were given workbooks for tasks such as duplicating linear patterns and designs. The typical rigid and restrictive curriculum and methods of the late 19th century never included drawing from nature or one's imagination (Kelly, 2004). Before leaving Vienna to escape Nazism, Viktor Lowenfeld, a young psychologist who had an interest in children's artistic development, was one of many observers who visited the juvenile classes taught by Cizek between 1922 and 1926 (Lowenfeld, 1957; Michael & Morris, 1985). Lowenfeld later wrote Cizek's philosophies influenced him, especially in classroom practice and teaching methods (Lowenfeld, 1957; Michael & Morris, 1985).

Though controversial at the time, Cizek cultivated the progressive concept of children as artists (Cizek & Viola, 1936; Malvern, 1995). The concept of "child art" is thought to have been credited to Cizek, but other artists and educators had expressed the same concept of children's art before his work. It is not clear why Cizek became the art educator whose influence finally changed the appreciation of children's art, but he significantly contributed to establishing children's painting and drawing as artforms (Kelly, 2004; Milbrath, McPherson, & Osborne, 2015).

Several of Cizek's discoveries are compatible with observations Kellogg made about children's development in art (Kellogg, 1969a). Even though both Cizek and Kellogg journeyed

to multiple countries in Europe decades apart, they both noticed all children drew in a similar fashion everywhere. Kellogg noticed this on her international travels in the 1950s and 1960s, while Cizek saw it when he toured Europe in the late 19th century (Kellogg 1969a; Kelly, 2004). In Kellogg and Cizek's experiences, children were observed drawing similar subjects in the same way worldwide (Kellogg, 1969a; Milbrath, McPherson, & Osborne, 2015; Cizek & Viola, 1936).

Furthermore, like Cizek, Kellogg believed that children's art was as aesthetically pleasing as adult art (Kellogg, 1969a; Kelly, 2004). Kellogg became very interested in the aesthetic qualities of the children's art while she was examining it for artistic developmental clues. In *Analyzing Children's Art* (1969a), Kellogg wrote that the most significant way that the aesthetic quality of children's art had been demonstrated in the past was when Cizek sold a large number of prints of young students' artwork throughout Europe in the 1890s and 1900s (Kellogg, 1969a).

Cizek made a significant contribution to the appreciation of child art, but ultimately his success was due to the change in attitudes about art in the last decade of the 19th century. The mood of society had been altered by the fresh styles of the Impressionists, Secessionists, and Expressionists, making the acceptance of child art popular (Kelly, 2004).

Cizek also was one of several theorists who observed that children's artistic development occurred in stages. Table 3 includes a summary of Cizek's children's artistic development stages. According to Cizek, three stages of artistic development existed in children (Cizek & Viola, 1936; Kelly, 2004). The first developmental stage was labeled "smearing and scribbling" and he noted smearing was of extreme importance to children at a young age as they experimented with new textures. He also observed that the scribbling developmental stage was an absolute necessity for children. Cizek determined scribbling began in children who were between the ages of eighteen months and two years of age. In the first stage of development, Cizek felt that drawing was in part

an activity of muscle movements and in part an expression of emotion or an attempt at communication. Cizek also observed that young children produced art entirely from their imagination (Cizek & Viola, 1936; Kelly, 2004).

The second development stage of Cizek’s theory of children’s artistic development was labeled “the rhythmic stage.” It was the period of development where children continued to draw with little purpose other than enjoying the free expressions of their feeling (Cizek & Viola, 1936; Kelly, 2004). As Cizek observed children drawing within the rhythmic stage, he felt there was very little purposeful thinking involved in the repetition of marks. He stated that this developmental stage was “a thing in itself, quite shut off, following its own laws and not the laws of the grownup people” (Cizek & Viola, 1934, p. 5; Kelly, 2004, p. 85).

The third stage of development Cizek was labeled “abstract-symbolic” (Cizek & Viola, 1936; Kelly, 2004). Cizek observed that the symbols children were making in the second stage were being abandoned for the next stage of ‘consistent symbols.’ Children in this stage became aware that not all viewers understood the symbols, so their art gradually became “closer to nature” for more understanding from viewers. Color also was coming closer to nature’s true color (Cizek & Viola, 1936; Kelly, 2004, p. 85).

Table 3. Cizek’s Artistic Development, 1897

Stage	Age	Characteristics
Smearing and Scribbling	18 months-2 years old	Smearing is important, scribbling is fundamental, part activity of muscle, part activity of expression,
The Rhythmic Stage	Not clear in primary source	still enjoy drawing for expression, repetition of marks,
Abstract-Symbolic	Not clear in primary source	and consistent more natural symbolism.

Note: Sources for this chart include Cizek & Viola (1936) and Kelly (2004).

Early 20th Century Artistic Development Theory

Germany

Georg Kerschensteiner (1854-1932)

Georg Kerschensteiner was a pioneering progressive educator who was responsible for setting up the vocational education system in Germany (Kerschensteiner, 1912). Kerschensteiner also organized an art curriculum for Munich from 1903 to 1905 (Kelly, 2004; Kerschensteiner, 1912). As other children's artistic development investigators had accomplished, Kerschensteiner collected 300,000 drawings made by school-aged children (Smith, 1996). He was one of the first children's artistic development investigators to conduct his research using a scientific method (Kelly, 2004). In *Die Entwicklung der Zeichnerschen Begabung* or *The Development of the Talent for Drawing* (1905), Kerschensteiner collected and studied the children's drawings that were created under standardized conditions (Goodenough, 1926; Kelly 2004). Kerschensteiner's study is one of very few children's artistic development investigations at the turn of the 20th century conducted by a method of standardization. Kerschensteiner's research employed the same process for collecting children's artwork, such as making sure the drawings were voluntary even though the children were given specific themes. (Goodenough, 1926; Kelly 2004).

Unfortunately, not all of Kerschensteiner's work has been translated into English, *Die Entwicklung der Zeichnerschen Begabung* is one of his untranslated books (Smith, 1996). Goodenough reports in her book *Measurement of Intelligence by Drawings* (1926) that Kerschensteiner found that the drawings for the study he collected fell into three major categories or stages. Those stages included "1. schematic drawings, 2. drawings based on visual appearance, and 3. drawings that attempted three-dimensional space" (Goodenough, 1926, p. 4; Kelly, 2004, p. 94).

Austria

Karl Bühler (1879-1963)

Karl Bühler taught psychology at the University of Vienna and was interested in children's development, publishing *The Mental Development of the Child* in 1918. Bühler had been influenced by Sully's research on children's development (Kelly, 2004). Similar to Sully, Bühler divided his studies into the investigation of perceptions, memory, and children's imagination while adding an investigation of children's artistic development (Kelly, 2004; McCarthy, Bühler, & Oeser, 1932). Table 4 includes information about Bühler's children's artistic development stages.

Bühler classified children's artistic development into three stages of children's artistic development, including preliminary, schema, and realistic drawing. (Kelly, 2004; McCarthy, Bühler, & Oeser, 1932). The preliminary stage included a description of scribble in which Bühler wrote that this stage was the initial impulse for representational drawing. He felt the preliminary stage was an instinctual stage in which children were inclined to imitate of what they saw (Kelly, 2004; McCarthy, Bühler, & Oeser, 1932). The preliminary stage occurred between two and four years of age for children. Bühler used the term scribble and thought, as Sully earlier described and suggested, that it was similar to language ((Kelly, 2004; McCarthy, Bühler, & Oeser, 1932; Sully, 1896).

Bühler's research and observations were important in children's artistic development theory. A significant aspect of Bühler's theory was that he felt drawing would contribute to four separate lines of children's development, including handwriting, aesthetics, geographical maps, the realism such as that seen in photography (Kelly, 2004; McCarthy, Bühler, & Oeser, 1932).

Table 4. Bühler's Artistic Development Theory, 1918

Stages	Age	Characteristics
Preliminary Scribble Scribble Ornamentation	2 to 4 years	Instinctual, similar to early language development, scribbling with later distinct ornamentation,
Schema	After 4 years	certain objects preferred, humans first, then animals and objects from memory, constant and essential attributes are only drawn,
Realism	Not clearly defined in <i>The Mental Development of the Child</i> (1903).	and linked children's art to primitive art

Note: Sources for this chart include Kelly (2004) and McCarthy, Bühler, & Oeser (1932).

France

Georges Henri Luquet (1876-1965)

Georges Henri Luquet is regarded as having a significant influence on children's artist development theory because he argued that children's drawings develop through stages of realism even if the drawing does not look realistic to adults (Luquet & Costall, 2001). In what was perhaps the first significant longitudinal study of children's artistic development, Luquet studied the drawings of his daughter from when she was three years old to when she was almost nine years old. This method had been used before in the history of children's artistic developmental theory, but Luquet's research was different from other studies. He interviewed his daughter while she was drawing, noting all her explanations and stories in a diary. This gave children's artistic developmental theory a new insight into the reasoning processes of children's minds in several stages of children's artistic developmental theory (Kelly, 2004). Roughly fifteen hundred drawings were made in the six years when Luquet conducted his research. Each of his daughter's drawings

was dated, and comments were written on the back of them (Goodenough, 1926). During his research, Luquet observed five stages (Kelly, 2004).

Table 5 includes information about Luquet's children's artistic development stages. The first stage Luquet named the Dessin Involontaire or the Scribble Stage. This was a period in which children make very little conscious effort to portray naturalism or symbolism. Luquet felt children did not regard their drawings in the scribble stage as a way to create an image, but rather a process with which they can simply make marks on paper. Luquet described the movements of children scribbling as "a spontaneous release of excess neuromuscular energy" (Luquet & Costall, 2001, p. 85). This type of release of energy was pleasant for children, and according to Luquet, children are stimulated to repeat the scribble process (Luquet & Costall, 2001).

The second stage, called Fortuitous Realism, is a point of realization for children. Children realize they have created an imperfect resemblance of an object, according to Luquet. The children are aware of their imperfection in drawing realism and begin to try harder to produce a better resemblance of reality. Luquet emphasizes this was a gradual change as children slowly gain better representational drawing skills (Luquet & Costall, 2001).

The third stage, termed Failed Realism, is the point at which children desire to draw realistically but do not have the drawing skills to do so because of their young age. Luquet felt the children in this stage had physical difficulty in controlling the drawing instrument due to their muscles not being developed to the point of control. Another obstacle at this stage was that the attention span of children could also be limited. Children leave out details even when they know the details are present in an object (Luquet & Costall, 2001).

Luquet's fourth stage of children's artistic development was called Intellectual Realism. The children at this artistic development stage advanced in their drawing skills to represent objects

with more of a likeness, but they feel compelled to add in all the details. These details may not have been visible in the view being drawn, but children know the object possesses certain details and will include them in the drawing. The abstract elements that exist only in the mind of the child are “intellectually” added in the drawing. This type of intellectual addition of details exists in drawings of faces and figures as well as objects in this stage of development.

The last stage, called Graphic Narration, is a stage in which children draw realistically and only include visible detail. The difference in this stage is that children are trying to convey a sense of time or narration to the drawing. Children and adults have various methods of involving a succession of moments. One technique is to only reproduce one scene in a long narration of events. Another technique employed by adults and children is to divide the picture plane into small areas and represent a series of events. This is the standard method used in cartooning. The third method used only by children in this stage is to combine successive events into one image. It is typical for children to draw the scenery or background elements only once and then repeatedly draw the characters or moving elements to narrate the action of the story (Luquet & Costall, 2001).

Table 5. Luquet's Artistic Development Theory, 1913

Stages	Age	Characteristics
Dessin Involontaire/Scribble Stage	Before 3 years of age	A simple means of marking on paper, children are pleased with their creations,
Fortuitous Realism	After the age of 3 years old	vague resemblance of marks to representational life, no sudden shift to representational realism, but the child accepts accidental marks as resembling realistic objects,
Failed Realism	4 to 6 years old	difficulty in organizing, arranging & orienting elements of drawing, the child understands intentional realism and their drawings failings,
Intellectual Realism	Around 7 years old	to capture what a child knows to reality to be, in spontaneous drawings and experimental studies,
Graphic Narration	8 or 9 years old	children can draw reality as they see it, but these events are presented in the drawing as they occur over time.

Note: Sources for this chart include Kelly (2004) and Luquet (1913).

Mid- 20th Century Artistic Development Theories

A Comparison of Children's Artistic Development Theories

Eng, Lowenfeld, and Schaefer-Simmern have been selected for comparison to Kellogg's work based on several criteria. One criterion is that they were contemporaries of Kellogg. The dates in which these researchers conducted their studies were in the mid-20th century, from the 1930s to the 1960s. Their research is presented in the following summaries.

Helga Eng

Eng was a psychologist and only the third woman to receive a doctoral degree in Norway. She also was the first to be granted a doctoral degree in psychology in 1913. Eng chronicled the observations of her niece's drawing development from her earliest scribble beginning from when she was one year, nine months of age until she was eight years of age. Eng's research is significant because it was one of the earliest longitudinal studies conducted on children's artistic development outside of Luquet's research (Kelly, 2004).

Another significant aspect of Eng's research is the level of detail in the descriptions of her niece's drawings in *The Psychology of Children's Drawings* (1931). The longitudinal study includes eight years of daily observations with detailed descriptions that included documentation of thickness, direction, and form of lines, shapes, and design in the drawings. Eng felt her niece's drawings were "unusually elaborate," and she included a collection of images from her niece's drawings in *The Psychology of Children's Drawings* (Eng, 1931, p. viii) to illustrate the evolution of the child's artistic development.

Eng's research has a similarity to Kellogg's children's artistic development research in its method of observation and descriptive detail. Eng describes her research as "exact observations of the first beginnings of drawings" (Eng, 1931, p. viii). The level of attention Eng gives to the nuances of children's drawings is not found in any earlier research about children's artistic development.

Eng discusses the investigations of a significant number of earlier children's artistic developmentalists including psychologists Bühler (1932), Goodenough (1926), and Sully (1896). Eng also references the previous work of educators interested in children's artistic development including Cooke (1886), Kerschensteiner (1905), Lukens (1896), Luquet (1913), Ricci (1887), and Rouma (1913).

It had not been as common for children's developmental psychologists to discuss children's artistic development at the same level of detail of development and specificity as educators interested in mapping artistic development. From their writing, Eng synthesizes both the aspects of children's psychological development and the specific cues of artistic development of children. Eng wrote that art "plays a great part in the development of the normal and healthy child's drawing up to its eight-year" (Eng, 1931, p. viii).

Much more about Eng's research will be discussed in comparison to Kellogg's research in Chapters Four and Five of this investigation. Eng's stages of children's artistic development are Scribbling, Transition from Scribbling to Formalized Drawing, and Formalized Drawing (Eng, 1931; Kelly, 2004; MacDonald, 1970).

Eng wrote that the observations of other researchers are not devoted to the earliest stage of artistic development when children begin to draw (Eng, 1931). Her particularly detailed mapping of early children's scribbles designates Eng as an ideal candidate to conduct a comparative analysis of early developmental stages with Kellogg's children's artistic developmental theory.

Viktor Lowenfeld

After the second world war, Viktor Lowenfeld was identified as the most prominent researcher who focused on children's artistic development in America (Barkan, 1962; Chapman, 1982; Michael & Morris, 1985; Smith, 1983; Youngblood, 1982). Lowenfeld's work had an enduring impact on the field of art education. Children's artistic development is described in his book *Creative and Mental Growth* (1947). *Creative and Mental Growth* (1947) continues to be a publication of significance, as evidenced by its extensive years of publication (Alter-Muri, 2002; Leshnoff, 2013). Today, scholars continue to cite this publication as a foundational text for children's artistic development. Lowenfeld's stages of children's artistic development, as detailed

in this investigation, are recognized currently as the most popular theory for children's artistic development (Hurwitz & Day, 2012).

Lowenfeld's experience as a researcher and art teacher included work with both normally sighted and visually impaired children. This work began in 1933 in Vienna, Austria. As a Jewish descendent, Lowenfeld fled to the United States due to the atrocities of the Nazis shortly before the beginning of WWII. Lowenfeld spent twenty-two years, from 1938 to 1960, as an art educator and chair of the department of art education at The Pennsylvania State University (Smith, 1983).

Lowenfeld came to the United States with significant research experience before he published his first book in English, *Creative and Mental Growth* (1947). His second book, originally in German, was *The Nature of Creative Activity* (1939). This book describes his experimentation, observations, and experiences with teaching art to visually impaired children (Saunders, 1960). Lowenfeld also taught in public schools in Vienna and, through these experiences, was able to make an extensive comparison of artistic development of blind and partially blind children with the normally sighted children he taught (Smith, 1983). Much of the basis for his philosophy of art education solidified when he wrote *The Nature of Creative Activity* (1939) (Saunders, 1960).

In *Creative and Mental Growth* (1947), Lowenfeld first described the concept of the *visual* and *haptic* types of perceptual orientation. He proposed that the choice of orientation happened during the early stages of children's artistic development (Lowenfeld, 1947). The visual type of perceptual orientation focuses on an objective analysis by children using visual detail, including the elements of art and principles of design. The haptic type of perceptual orientation focuses on the subjective, emotional, and creative significance of the work, rather than on the visual character of the work. The haptic type also relies heavily on kinesthesia (Lowenfeld, 1947; Rouse, 1965).

While teaching and researching in Vienna, Lowenfeld studied the earlier children's artistic developmental theory and research of his predecessors, such as Ricci and Kerschensteiner. Lowenfeld writes of the influence from these pioneer investigators among many other contemporary European developmental psychologists, such as Karl Bühler and Eng (Lowenfeld, 1939). In the mid-1920s, a significant amount of research about children's artistic development had been accomplished in German-speaking countries (Smith, 1983). A great deal of Lowenfeld's discussion about the scribble stage in *The Nature of Creative Activity* (1939) is cited from Walther Kröttsch-Leipzig's publication *Rhythm and Form in Free Children's Drawing* (1917) (Lowenfeld, 1939).

Lowenfeld's work on children's artistic development was conducted from 1930 to 1955 in both Vienna and the United States (Leshnoff, 2013). Lowenfeld's stage names for children's artistic development are *scribbling* (2-4 years), *pre-schematic* (4-7 years), *schematic* (7-9 years), *gang age* (9-12 years), *pseudo-naturalistic stage* (12-14 years), and *adolescent art* (14 – 17 years). It is significant to note Lowenfeld's discussion of children's drawing is far more than a description of drawing characteristics in each stage. He believed creative expression “during specific stages in [a child's] mental and emotional growth could only be understood and appreciated if the general causal interdependence between creation and growth is understood” (Lowenfeld, 1947, p. 8).

Henry Schaefer-Simmern

Schaefer-Simmern, a contemporary of Lowenfeld, began as an artist in the German New Objectivity movement along with other notable artists such as Max Ernst, Max Beckman, and Otto Dix (Abrahamson, 1980; Makela, 2002). As an artist, he was known only by the name Schaefer and taught art in the town of Simmern and eventually at a university in Frankfurt. It was at this point his name expanded to Schaefer-Simmern, because art critics were confusing him with

another artist of the same name (Abrahamson, 1980; H. Schaefer-Simmern, G. Schaefer-Simmern, & Abrahamson, 2003). Influenced by Gustaf Britsch (1930) and Franz Cizek, Schaefer-Simmern was prompted to teach by a new child-centered method of art education. His student's artwork was exhibited in Germany as well as the United States before WWII. Schaefer-Simmern, like Lowenfeld, escaped the rise of the Third Reich, not because he was Jewish, but because he knew that any attempts at teaching art by new methods were outlawed and not possible under Hitler's regime (Abrahamson, 1980).

In the United States, Schaefer-Simmern learned English by translating John Dewey's *Art as Experience* (1934) into German. A decade and a half later, when Schaefer-Simmern published *The Unfolding of Artistic Activity* (1948), Dewey, in an act of friendship, wrote the introduction. Eventually, Schaefer-Simmern became a visiting professor at the University of California at Berkeley, founded the Institute of Art Education at Berkeley, and retired from teaching from his last post at St. Mary's College of California (Abrahamson, 1980).

Schaefer-Simmern's research from the text, *Consciousness of Artistic Form: A Comparison of the Visual, Gestalt Art Formations of Children, Adolescents, and Layman Adults with Historical Art Folk Art, and Aboriginal Art* will be analyzed in this investigation (H. Schaefer-Simmern, G. Schaefer-Simmern, & Abrahamson, 2003). This text was in progress when Henry Schaefer-Simmern died in 1978. His wife Gertrude Schaefer-Simmern asked Roy Abrahamson, a former student of Schaefer-Simmern who studied at the Institute of Art Education in Berkeley, California, to help her finish the manuscript. After Mrs. Schaefer-Simmern died in 2000, Abrahamson completed the text, and it was published in 2003. The text includes over forty years of collected drawings and is based on Schaefer-Simmern's writing, lecture notes, and recordings (H. Schaefer-Simmern, G. Schaefer-Simmern, & Abrahamson, 2003). Schaefer-Simmern may

have been best known for the theory of *visual conceiving*. The theory of visual conceiving was partially based on the theory of Gustaf Britsch, an early 20th-century German art theorist who founded his own institute in Starnberg, Germany (Britsch & Kornmann, 1930; Abrahamson, 1987). Schaefer-Simmern's theory hypothesizes that most human beings have an innate talent to recreate their perceptions of the visible world into artistic forms. Schaefer-Simmern considered the process of visual conceiving as a method of unity within the creation of artwork, and he emphasized that the unity of forms, lines, shapes, and space as Gestalt forms. Schaefer-Simmern conducted research for over fifty years to gather evidence of gestalt forms that existed within the artwork of all ages (Abrahamson, 1987; H. Schaefer-Simmern, G. Schaefer-Simmern, & Abrahamson, 2003). Also, Schaefer-Simmern felt if visual conceiving was active in a person, it tended to function as an experience that aided in the unification of the human biological and psychological processes. This type of unification, according to Schaefer-Simmern, may benefit people by creating a feeling of clarification (Abrahamson, 1987; H. Schaefer-Simmern, G. Schaefer-Simmern, & Abrahamson, 2003).

Rhoda Kellogg

Kellogg's Publications

Kellogg's background has been introduced in Chapter One. This section addresses her publications. Table 6 includes a chronological list of Kellogg's books and academic publications. There are numerous magazine and newspaper articles about Kellogg and her research. These publications will not be considered for the comparative analysis portion of this study, but they will be cited for their historical context.

Table 6. Kellogg's Publications

Date	Title
1945	Extended School Services, An Accepted Part of the School Program, <i>Education for Victory</i>
1949	<i>Nursery School Guide</i>
1953	<i>Babies Need Fathers, Too</i>
1955	<i>What Children Scribble and Why</i>
1956	<i>Finger Painting in the Nursery School</i>
1956	<i>Portraits of a Lady</i>
1958	<i>The How of Successful Finger Painting</i>
1959	The Sense of Scribbles, <i>Design of Arts in Education</i>
1965	Form-similarity Between Phosphenes of Adults and Pre-school Children's Scribbles, <i>Nature</i> , co-authors M. Knoll and J. Kugler
1966	Stages of Development in Preschool Art, <i>the Beginnings of Self Affirmation</i> , H. Lewis (Ed.) *
1967	A Developmental Study of Children's Drawings, <i>Pediatrics</i> , co-author H. Baker
1967	<i>Rhoda Kellogg Child Art Collection</i> , from NCR Microcard Editions
1967	<i>The Psychology of Children's Art</i> , co-author Scott O'Dell
1968	What Children Teach Themselves to Draw, <i>Science Digest</i>
1969	<i>Analyzing Children's Art</i>
1969	Biology of Esthetics, <i>Anthology of Impulse, Annual of Contemporary Dance</i> , Van Tuyl (Ed.) *
1970	Understanding Children's Art, <i>Psychology Today</i>
1972	<i>The Crucial Years</i> , D. Plaskow (Ed.) *
1972	Spontaneous Child Art as Reading Readiness, in <i>Language Development: The Key to Learning</i> *
1973	Misunderstanding Children's Art, <i>Art Education</i>
1979	<i>Children's Drawings, Children's Minds</i>

Note: * these publications include one chapter by R. Kellogg.

Preschool Publications

By the time her first two books, *Nursery School Guide: Theory and Practice for Teachers and Parents* (1949) and *Babies Need Father Too* (1953), were published, Kellogg had over twenty years of experience working with children two, three, and four years of age. Rudolph Arnheim, a well-regarded art education theorist, wrote a review giving a reflection of Kellogg's achievement. In the review he writes "her strength lies in a lifetime of practical experience" (Arnheim, 1970, p. 136).

In the preface of *Nursery School Guide* (1949), Kellogg states that this book was written as the result of the knowledge she gained in 1933 as the Head Nursery School Teacher in a Works Project Administration housing project in New York City. She also drew on her experiences from 1941- 1942 during World War II when she was the Director of a Brooklyn nursery school. That school was funded by the Lanham Act, which supported childcare and preschools for women working in the war factories (Kellogg, 1949). An article was written by Kellogg in 1945 for the journal *Education for Victory: Official Biweekly of the United States Office of Education Federal Security Agency*, titled "Extended School Services, An Accepted Part of the School Program," paints a historical image of what life was like for young children and mothers working in the factories during the war effort (Collett, 1972; Kellogg, 1945).

The earliest signs of Kellogg's interest in children's art appear in the *Nursery School Guide* (1949). Her guide was about nursery school formation, but it covers children's art in the latter half of the publication. In the bulk of the narrative, Kellogg explains when and why she began collecting children's art. She writes that preschoolers "seem to get a considerable emotional release from scribbles and random movements on the paper" (Kellogg, 1949, p. 131). In *Nursery School Guide* (1949). Kellogg also encourages adults not to interfere with children's art, "never asking the children what their drawings represent, or comment upon what the drawing looks like. We

[preschool teachers] show only admiration but never try to influence a child's drawing in the direction of adult standards" (Kellogg, 1949, p. 131). These early experiences become the framework of Kellogg's later contributions to children's art development.

Kellogg's second book, *Babies Need Fathers Too* (1953), is distinct from *Nursery School Guide* (1949) in its expected audience. As a book of advice for fathers, Kellogg's experiences and opinions are amplified. With the focus on fatherhood in *Babies Need Fathers Too* (1953), Kellogg's views of feminism are transparent. In the first chapter, she writes, "both sexes have equality of status. What does equality mean? Does it mean women have come upon status or that men have gone down?" (Kellogg, 1953, p. 14). As well as providing advice to fathers about raising their children, Kellogg tells them how to be a supportive husband or male partner in a household built on equality.

Kellogg received similar praise for *Babies Need Fathers Too* (1953) as she did with *Nursery School Guide* (1949). A critic for *The Journal of Pediatrics* wrote a positive review of *Nursery School Guide* (1949) and urged the book to be on every parent's reading list (Warson, 1950). Kellogg demonstrated her talent for writing about her personal experiences with families and preschool children in these early books.

Kellogg wrote *Finger Painting in the Nursery School* in 1956 and *The How of Successful Finger Painting* in 1958. Both books are full of practical advice for preschool teachers and parents who desire to establish a finger painting curriculum. Kellogg covers the best recipes, table coverings, and finger painting techniques. Kellogg encouraged using finger paint as an art medium for children. She writes that finger paint allows for the "coordinated use of all the body muscles and expresses rhythms and movement basic to all artwork" (Kellogg, 1958, p. 4). Finger painting is a good choice for young hands having trouble with holding crayons and brushes.

What is apparent from her finger painting books is that Kellogg had taken an interest in the linear forms of very young children. In *The How of Successful Finger Painting* (1958), the photographs include many mandalas created by little painted fingers. The mandala symbol becomes significant in Kellogg's later scribble classifications as she recognizes that the symbol is a universal marker in children's artistic development. The latter half of *The How of Successful Finger Painting* (Kellogg, 1958) is filled with photographs, illustrations, and theory regarding children's development in scribbling. She also initiated some of her terms such as "combines" and "aggregates" to categorize types of scribbles and marks in this early writing (Kellogg, 1958, p. 24). The finger painting books are the early beginnings of her scribble theory and methodology of scribble and drawing classifications.

What might have been a pivotal point in Kellogg's career was an invitation to lecture at an international conference held on the University of California campus in May of 1965. The conference was a significant boost for her scholarly reputation. Some of the most distinguished art educators and leading artistic development theorists were asked to speak at the three-day conference. The participants included the lectures from Rhoda Kellogg, Herbert Read, Rudolf Arnheim, Schaefer-Simmern, Arno Stern, Frank Barron, Berthold Lowenfeld (Viktor Lowenfeld's brother), Victor D'Amico, and August Heckscher. A publication was released after the conference titled *Child Art: The Beginnings of Self-Affirmation* (1966) due to the high number of people who asked for the lecture notes. The publication includes the lectures from Kellogg, Read, Arnheim, Schaefer-Simmern, Stern, Barron, and B. Lowenfeld (Lewis, 1966).

Kellogg's research publications were reviewed by both advocates and critics. *Analyzing Children's Art* (1969a) was Kellogg's most widely read publication, having thirty-one editions printed from 1969 to 2015 (Kellogg, 2015). Prominent art education scholars who wrote reviews

about Kellogg's research included Herbert Read (1963), Rudolph Arnheim (1970), Ginny Brouch (1969), Richard Coss (1971), Dale Harris (1971), and Elliott Eisner (1970).

Kellogg's research received both positive and negative reviews. Read's review, for example, was one of Kellogg's highest accolades. Read was an art historian, philosopher, scholar, poet, and literary critic who wrote influential books on art education. Read gave a speech to the International Society for Education through Art in 1963 that demonstrates his favorability to Kellogg's research. Read commented in his presentation on education through art:

It has been shown by several investigators, but most effectively by Mrs. Rhoda Kellogg of San Francisco, that the expressive gestures of the infant, from the moment they can be recorded by a crayon or pencil, evolve from certain basic scribbles towards consistent symbols. Over several years of development such basic patterns gradually become the conscious representation of objects perceived: the substitutive sign becomes a visual image (Read, 1963, p. 4).

Even with an acceptance of her work by scholars as well-known in the field of art education as Read, Eisner wrote very differently about Kellogg's research. Eisner was another prominent art education scholar and author who took notice of Kellogg's research. His review of *Analyzing Children's Art* (1970) was critical of her research. Eisner was concerned with Kellogg's methodology. He questioned Kellogg's selection and rating criteria of the drawings she had used for her investigations. Eisner thought possible substandard research methods by Kellogg might have contributed to some bias in her research.

Kellogg's research, whether it met with approval or not, had the attention of scholars in the 1960s and early 1970s. This attention was apparent in the numerous magazine articles written about Kellogg's research. Stories about Kellogg and her investigations appeared in publications such as TIME Magazine (1962). In 1968, anthropologist Patricia McBroom wrote about Kellogg's research as a correspondent for *Science News* (McBroom, 1968). McBroom was best known for her book *The Third Sex: The New Professional Woman* (1986).

The late 1960s was an active time for Kellogg. She wrote *The Psychology of Children's Art* in 1967 with co-author and psychologist Scott O'Dell, and her most popularly read book, *Analyzing Children's Art*, in 1969. Kellogg also authored an article with pediatrician H. Baker entitled "A Developmental Study of Children's Drawings," for the *Journal of Pediatric* (1967).

Kellogg's research also appeared in hundreds of newspaper articles. These articles were published in large newspapers such as the *Chicago Tribune* (Kellogg, 1974) and the *Los Angeles Times* (Lilliston, 1968). Kellogg frequently provided lectures about her research for educational groups and spoke on multiple occasions at the National Art Education Association Conference. Whether positive or negative impressions came from reviews and articles, Kellogg received a significant amount of attention during her lifetime.

In an examination of more modern publications decades after Kellogg's career, her research appears in a significant number of other investigations. These citations have been by researchers in the field of art education, childhood development, and art therapy.

Kellogg's published research has also had a significant influence on art education. An example is the research of Elizabeth Coates and Andrew Coates. Coates and Coates examined the artwork in a six-year longitudinal study from 2003 to 2009 of 400 three to seven-year-old children. The researchers were seeking any indication of significant parallels in children's drawing and idle conversation at the art table in the classroom. The study's intention was to discover how the children's verbal narrative was related to a subject they were told to draw. Coates and Coates were surprised at the large amount of scribbling collected from student subjects during the study. The researchers used Kellogg's Twenty Basic Scribbles to determine the appropriate artistic, social, and cognitive developmental levels of the children by analyzing the scribbles they saw in the children's drawing (E. Coates & A. Coates, 2006).

Another example of the influence of Kellogg's research was its use in studying graphicacy and visual learning. Both Xenia Danos and Susan Sheridan refer to Kellogg's work as an influence on their research. In the publication *Graphicacy and Culture: Refocusing on Visual Learning* (2014), Danos attempts to refocus the attention of early reading pedagogy on visual learning. Danos looks at the natural development of graphicacy in humans shown by Kellogg's research. Danos advocated for connecting literacy tasks to the appropriate level of children's artistic development. Sheridan also refers to Kellogg's research for a fuller understanding of the development of visual learning. Sheridan's most current publication, *Saving Literacy: How Marks Change Minds* (2010), is a guide for professional caregivers, teachers, and therapists to increase graphicacy in young children by understanding their artistic development.

Developmental psychologists have referenced Kellogg's research as well as educational scholars. The most notable authors and their publications discussing Kellogg's research are Howard Gardner, *Art Education and Human Development* (1990); Claire Golomb, *The Child's Creation of a Pictorial World* (2003); Jonathan Fineberg, *When We Were Young, New Perspectives on the Art of the Child* (2006); Maureen Cox, *Children's Drawings of the Human Figure* (2013); and Jill Englebright Fox and Robert Schirrmacher, *Art and Creative Development for Young Children* (2014).

The examples of the influence Kellogg's research had in her time are reflected by the reviews she received from well-known critics. Also, the discovery of the influence Kellogg had on contemporary studies are a positive indication of the likely influence of her research.

Kellogg's Stages of Artistic Development

Through her research, Kellogg developed a unique set of vocabulary and terminology about children's scribbles and emergent drawings. In her article, "The Sense of Scribbles: Understanding Children's Art, without Recourse to Mr. Freud," she wrote that "there is no scientific terminology for children's art, only non-specific words such as scribble, smear, and smudge" (Kellogg, 1959, p. 65).

Kellogg's stages of artistic development included Scribbling, Shape, Design, and Pictorial. The Scribble, Shape and Design stage are further broken down into Twenty Basic Scribbles, Emergent Diagrams, Diagrams, Placement Patterns, Combines, Aggregates, and Aggregate Mandalas. A detailed discussion of these stages and terms will be included in Chapter Four in a comparative analysis of the developmental stages of Eng, Schaefer-Simmern, and Lowenfeld.

Conclusion

In this literature review, a historical framework has been described and it is within this framework that Kellogg's children's artistic development theory can be examined. Kellogg's research is shown through the literature review to be a significant historical component of children's artistic development theory. Her research has also been shown to be conceptually aligned with other children's artistic development and human development theories. An overview of children's artistic development theory has been discussed in both the late 19th century and early 20th century, along with the significance and influence of the Child Study Movement. The important scholars and theorists in the movement have been examined as well as the important human development theorists such as Piaget, Vygotsky, and Erickson.

The next chapter explains the framework of both the methodology and methods in the investigation. The theoretical basis of the investigation will be discussed along with the process of selecting the worded data and the process of its analysis.

CHAPTER 3. METHODOLOGY

Methodology's definition, applicable to qualitative research, is the theory and the analysis of the research process (Carter & Little, 2007; Harding, 1987). This chapter begins with the investigation's methodology consisting of the study's design, an explanation of the theoretical framework, and the methods of the inquiry. The methods of investigation include the collection criteria for the data, the instrumentation, and the data analysis procedures. Further in the chapter, other components include a discussion of techniques that address the trustworthiness of the study.

The research question of "how does Kellogg's children's artistic development theory compare to other children's artistic development theories?" is examined through qualitative comparative analysis. The analysis compares Eng, Schaefer-Simmern, Lowenfeld, and Kellogg's children's artistic development theories to uncover how Kellogg's research may be singular and set apart from other children's artistic development theories.

Research Design

The research design serves as a framework for the operations that take place in an investigation. The research design may also be defined metaphorically as a bridge between the research question and the act of researching (Durrheim, 2006). The following discussion includes the plan for this investigation's research.

Qualitative Methodology

A qualitative research design was chosen as the most appropriate design for this study. Qualitative research is described as using the type of data that represents the acts of individuals or groups. It also seeks to understand a problem or phenomenon within a humanistic context

(Creswell, 2009; Merriam, 2009; Sivesind, 1999). The phenomenon of children's artistic development is an act that is observed in the context of a classroom or a private setting. The data for this phenomenon is derived from humanistic descriptive observations of children drawing and through the examination of children's drawings.

There are several other characteristics of qualitative research that make it practical to this investigation. A common aspect of qualitative research is the meaning or results of the study are derived from multiple sources (Creswell, 2009). This characteristic has been a significant component of this research because numerous sources across art education, education, and psychology were used in the investigation.

Additionally, another essence of qualitative research is that the investigator is the primary instrument for conducting the study (Creswell, 2009). The investigator uses their words and actions to create meaning in qualitative research to discover and comprehend the intentions and values of the phenomena (Sivesind, 1999). My actions as an investigator include searching, collecting, comprehending, and comparing during the process of creating meaningful knowledge.

Furthermore, a characteristic of qualitative research is that it can include an inductive data analysis method (Creswell, 2009). This investigation used an inductive data analysis method to search and recognize patterns to develop criteria and categories for the data. The categorical data were inductively examined through the details of each of the theorist's stage theories.

The multiple characteristics of qualitative research indicated that it was the preferable method of inquiry. Qualitative research applies to the study of humanistic actions sought to comprehend data derived from multiple sources. Following the methodological choice, a theoretical framework was needed to underpin the methodology and its selection came next in the investigation.

Theoretical Framework

A significant element in research is the theoretical framework. A significantly larger diversity of frameworks exist in the social sciences compared to the quantitative genre (Grant & Osanloo, 2014; Willis, Jost & Nilakanta, 2007). The several common paradigms identified in qualitative research include positivism, post-positivism, interpretivism, constructivism, feminism, racialized discourses, and queer theory (Lincoln & Denzin, 2003, p. 32). The framework selection is significant because it contains the “epistemological, ontological and methodological premises” that guide the researchers’ actions (Lincoln & Denzin, 2003, p. 33; Mertz & Anfara, 2006)

While considering each theoretical framework’s epistemological, ontological, and methodological premises, two frameworks worked well for this investigation. These theoretical frameworks chosen were a qualitative descriptive design and an interpretive design.

Qualitative Descriptive & Interpretive Paradigms

Qualitative Descriptive Design

Qualitative descriptive design was a valuable paradigm to employ in this investigation. A qualitative descriptive design is a research design used for descriptive studies and requires a straightforward characterization of a phenomenon (Kim, Sefcik, & Bradway, 2017). Qualitative descriptive design is a research genre common to health care studies, but it has been adapted for other fields (Kim, Sefcik, & Bradway, 2017). A distinction of this type of paradigm is that the data collection and analysis in the research is characteristically straightforward and involves minimal theory to answer the studies’ question. In qualitative descriptive studies, there is not a pre-selection or manipulation of variables included in the study (Neergaard, et al., 2009).

A qualitative descriptive design was chosen because this study is highly pictorial. A considerable portion of the data are children's drawings, and they include a detailed explanation by the children's artistic development theorists and researchers. The nature of the data meant that a qualitative descriptive design was an advantageous choice by providing a framework that would work well for visual data.

A qualitative descriptive design was also chosen, because it explained the phenomena of the study, which failed to meet any highly abstract or complex research concept (Sandelowski, 2000). The choice of framework made this investigation credible and far more authentic than assigning a false or forced paradigm (V. Lambert & C. Lambert, 2012; Sandelowski, 2000).

Interpretivism Paradigm

The second paradigm used in this investigation was interpretivism. On occasion termed anti-positivism, interpretivism in social science opposes positivism's theoretical stance, which is most often found in natural sciences. Interpretivism allows the researcher to approach life with a set of thoughts or a framework focusing on humanity (Macionis & Gerber, 2011). The theory seeks "to explain (ontology) and it specifies a set of questions (epistemology) that they then examine in specific ways (methodology, analysis)" (Lincoln & Denzin, 2003, p. 30).

A relativist ontology is part of an interpretive view (Creswell, 2009). The interpretive paradigm is suitable for this investigation, because it supports the understanding that there are multiple interpretations of children's artistic development. I believe there are multiple ways to comprehend children's artistic development and that many of the children's artistic development theories can be applied to society.

The outcomes in research can be affected by the researcher's interpretation, beliefs, thinking, or cultural preference, and there is a strong possibility of bias (Creswell, 2009). Some

advantages exist with an interpretive framework to reduce bias in investigations. An advantage of interpretivism is that it leads to an understanding that diversified views of phenomena exist. The ability to comprehend those individual experiences concerning social context avoids normalizing or overgeneralizing behaviors (Brady, Fryberg, & Shoda, 2018; Creswell, 2009).

The theoretical frameworks are significant to this investigation, because they may increase the credibility of the qualitative data used to compare theories and historical research. The intent of the theoretical framework also improves the dependability of the findings and possibly enhances the transferability of the investigations' outcomes (Kivunja, 2018).

Methods

The theoretical framework is the structure of the investigation, but the research could not take place without a method for the process of investigation (Carter & Little, 2007; Schwandt, 2001). A method produces evidence for analysis, and the research relies on methods for the process of collecting data to extract insight leading to the findings of the study (Creswell, 2009). Methods consist of the procedures, tools, and techniques for gathering the evidence (Schwandt, 2001). The means of collecting and examining the data in this investigation were document analysis, comparative analysis, and historical research.

Document Analysis

Before any analysis took place in this study, close examination of the documents occurred. Specifically, the primary sources of Eng, Schaefer-Simmern, Lowenfeld, and Kellogg, were systematically evaluated and interpreted to elicit meaning as well as gain understanding and construct empirical knowledge (Bowen, 2009; Corbin & Strauss, 2008). The selection of primary sources is discussed further in this chapter.

Comparative Analysis Method

Comparative analysis is generally understood as the contrast among the phenomena being compared (Esser & Vliegthart, 2017). The phenomena studied in a comparative analysis can be large, but the minimum number is two (Esser & Hanitzsch, 2012). The comparative analysis differs from other forms of research because it attempts to arrive at conclusions beyond an examination of only one phenomenon (Esser & Vliegthart, 2017). It also allows the researcher to investigate and explain the similarities and the differences of the phenomena.

This study compared the four children's artistic development theories of Eng, Schaefer-Simmern, Lowenfeld, and Kellogg to answer the research question of how Kellogg's children's artistic development theory compares to other children's artistic development theories. All four of the children's artistic development theories posited that children's artistic growth happens in stages. Similarly, the theories of Eng, Schaefer-Simmern, Lowenfeld, and Kellogg investigated the similarity of age ranges of children in each stage. Each theorist began describing the drawings of children when children were two years old and continued until the children were beginning to enter pre-adolescence. Lowenfeld's theory goes beyond the age range of pre-adolescence until adolescence. Still, the core ages of approximately two to nine years of age are covered by all four of the children's artistic development theorists.

A key issue in conducting a comparative analysis is to ensure there are valid criteria for the analysis. The comparison criteria needed to be identifiable in each theory. The criteria of the analysis included descriptions, ages, and the number of stages in the theories, but also it included key developmental descriptors. The developmental descriptors will be listed in Chapter Four.

Instrumentation

NVivo was the software instrument used to conduct the comparative analysis and the historical research. The advantage of NVivo is its ability to store digitized sources that remain in their original form. This ability aided in picking up implications and nuances by an iterative close reading of and examination of the data. The original format of multiple writings stored in the NVivo software assured more accuracy in the research, because details of the children's artistic development theories and the historical context of Kellogg's life remained stable for accurate analysis.

One of the strongest points of using NVivo software is the researcher's ability to code the digitized sources. The text of the sources could be highlighted and categorized by nodes. The nodes were set by using the criteria from the document analysis and comparative research.

Data Collection Methods

Primary Sources Used in the Comparative Analysis

The initial process of the comparative analysis was the search for the texts which best identified the children's artistic development stage theories from Eng, Schaefer-Simmer, Lowenfeld, and Kellogg's research. The texts were chosen based on their value as primary sources. The selected texts included the most comprehensive examples and descriptions of each children's artistic developmental theory. The selection of the text was also dependent on the clues a first-person narrative offered. The principal books chosen were Eng's *The Psychology of Children's Drawings* (1931), Schaefer-Simmern's *Unfolding of Artistic Ability: Its Basis, Processes, and Implications* (2003), Lowenfeld's *Creative and Mental Growth* (1947), and Kellogg's *What*

Children Scribble and Why (1955) as well as *Analyzing Children's Art* (1969a). The children's artistic development stage comparison data came from these five texts.

Data Analysis Procedures

The next task of the data analysis procedure was to upload the theorists' texts into the NVivo software. The children's artistic developmental resources were uploaded in their original format. Three of the books were already digitized online and these were uploaded directly from online platforms. The fourth and fifth books had to be digitally scanned before it was possible to upload them. After preparation of the primary sources, sections of relevant texts were coded in two separate cycles.

Comparative Analysis Procedures

Coding the uploaded texts was completed using a list of key points. The key points were the information I was seeking for the comparative analysis and examination of historical context. The list was initially developed from the document analysis which consisted of several close readings of the sources. Some of the key points or codes for the comparative analysis included the stage names, number of stages, and stage descriptions for each theorist. The data for the historical context consisted of personal narrative and historical description.

Trustworthiness

The trustworthiness of qualitative research reflects the credibility of the investigation as well as the reflexivity of the researcher (Dye et al., 2000; Korstjens & Moser, 2018). Trustworthiness also depends on the ethics, effort, and abilities of the researcher. The researcher

must provide “a rich and thick description of the research context and thoroughly describe the structures, assumptions, and processes revealed from the data” (Bowen, 2009, p. 27).

Credibility

Credibility is defined as “the confidence that can be placed in the truth of the research findings” (Korstjens & Moser, 2018, p. 121). Credibility establishes whether the research findings of this investigation represent the “plausible information drawn from the original data and includes the correct interpretation of the data” (Korstjens & Moser, 2018, p. 121).

Key actions were taken to ensure the credibility of the data and its interpretation in this investigation. One action of ensuring credibility was the prolonged engagement of primary and secondary resources (Korstjens & Moser, 2018). I began studying Rhoda Kellogg in 2019 and wrote several graduate papers about her life and research. At this point in my research, a high level of familiarity with the history, context of Kellogg’s life and research, and children’s artistic development theories, have been achieved.

Also, action taken in the investigation included a persistent and iterative study of the numerous children’s artistic development theorists and their history. An area of focus was on the characteristics of children’s artistic development stages. This information was drawn from numerous sources. Another area of focus was gathering information from several art education historians. The data collected on the same phenomenon from multiple sources resulted in studying several points of view.

Demonstrating that the investigation had reached a saturation point was another consideration in determining credibility. The data gathered needed to be enough to support the results claimed (Charmaz, 2006). The document analysis was performed several times during the study and aided in the assurance that all possible documents available in the public domain were

examined. Documents were found repeatedly during the literature search, and this led to the belief that a high level of saturability had been attained.

Summary

The goal of this chapter was to outline the research method employed in this investigation in order to answer the research question. An interpretive and historical research methodology was used to develop theory on the differences and similarities between Kellogg's and other children's artistic theories and how her research has contributed to the field of art education. A discussion of the data collection, analysis procedures, and comparative analysis outlined the specifics of how this investigation was conducted. The aim of Chapter Four is to provide the investigation's results and demonstrate how the methodology was followed.

CHAPTER 4. ANALYSIS AND RESULTS

This chapter provides a comparative analysis of the children's artistic developmental research of Kellogg, Eng, Schaefer-Simmern, and Lowenfeld. The results reported in the chapter examines the response to the research question, "how does Kellogg's children's artistic development theory compare to other children's artistic development theories?"

Comparative Analysis

The criteria established for selecting the children's artistic development theories were meant to ensure equivalency. Equivalency of the phenomena is key to conducting a comparative analysis to avoid biases (Esser & Vliegthart, 2017). The specific criteria applicable to children's artistic development theory included the following:

- The children's artistic development theorists chosen needed to have researched and published mid-twentieth century in the same timeframe as Kellogg's work;
- the children's artistic development theorists' research needed to describe the development stages during toddlerhood (2+ years old), preschool (3 and 4+years old), and school-age children (5+) similar to the children's artistic stages in Kellogg's research;
- the children's artistic development theorists chosen for the comparative analysis needed to have developed their theories based on past children's artistic development theories, because Kellogg had an interest in the research of children's artistic theorists of the past;

- the children's artistic development theorists chosen needed to have access to collections of children's drawings like Kellogg in order to demonstrate similar methods of research;
- similar to Kellogg, the theorists needed to utilize data and descriptions derived from their observations of children with a complete and rich description of their research.

Selection

The criterion related to researching and publishing mid-twentieth century significantly narrowed the possible choices of children's artistic developmentalists. The height of the discovery period of children's artistic development occurred from the 1890s to the 1940s. Kellogg's research took place after this period as she researched and authored books from the 1950s to the 1970s. Several theorists were identified who worked in the same period as Kellogg. The three theorists selected for this investigation researched mid-twentieth century. Eng published about children's artist development beginning in the 1930s and continued for several decades. Lowenfeld began researching before he fled Germany for the United States in the 1930s and published until his premature death in 1960 (Kelly, 2004). Schaefer-Simmern, like Lowenfeld, had also fled Germany and continued his children's artistic development research in the United States in 1937 until he died in 1978 (Abrahamson, 1980). All the theorists chosen met the criteria for the period of research.

The idea that children's artistic development occurs in stages was another criterion of selection. Kellogg's theory included four stages of children's artistic development. Eng, Lowenfeld, and Schaefer-Simmern's research consisted of at least three stages of children's artistic development. All three developmental theories included toddlerhood (2+ years old), preschool age (3 to 5 years old), and school-age children (6+ years old) stage. These theorists' stages are labeled

in detail in the comparative analysis in Tables 7, 8, and 9. Each theorist gave their stages a slightly different name, but they included similar ages of children and were divided into at least three stages generally known as *scribble*, *pre-schematic*, and *schematic*.

Another aspect of criterion selection for children's artistic development theorists was that they had been interested in past children's artistic development theories as a context for their research. Kellogg had been interested in many early theorists such as Cizek (1938), Froebel (1886), Luquet (1913), and Ricci (1913), all of whom had some significant bearing on the direction of her research. Similarly, Eng, Schaefer-Simmern, and Lowenfeld were aware of past children's artistic development theory and drew from these historical viewpoints. Eng was influenced by multiple theorists, including Bühler (1932), Dix (1911), Kerschensteiner (1905), Levinstein (1905), Luquet (1913), Rouma (1913), Scupin and Scupin (1907), and Stern (1910) (Eng, 1931, p. viii). Schaefer-Simmern and Lowenfeld were influenced by German children's artistic development theorists such as Britsch (1930) and Wertheimer (1923).

The criteria of each theorist having access to substantial collections of children's drawings for study was helpful because similar methodologies such as close observation were used among the children's artistic development theories. Kellogg's research involved decades of studying her collection of over a million children's drawings. Schaefer-Simmern collected thousands of drawings through the youth classes he taught (Schaefer-Simmern, 2003). Lowenfeld conducted quantitative research by classifying thousands of drawings he collected in the field from his observations of children (Lowenfeld, 1947). Finally, Eng's collection included at least a drawing a day for the first eight years of her niece's life. Eng estimated her collection of children's drawings numbered close to three thousand (Eng, 1931).

Data and Analysis

Philosophies and Purpose of Theorists' Research

The collected data and its analysis were the primary focus of this chapter. However, the question of why the theorists felt it was significant to investigate children's artistic development was essential to consider. The four theorists spent a significant amount of time dedicated to the study of children's artistic development. Kellogg and Schaefer-Simmern spent their entire careers observing, collecting, and categorizing children's scribbling and drawings. The philosophies of the individual theorists were significant to comprehending the scope of children's artistic developmental theory.

Eng's Research Philosophy

The purpose of Eng's research was "to deepen and widen our knowledge of the psychology of drawing and of the child" (Eng, 1931, p. vii). Eng believed artistic development played a significant part of childhood development and was a part of normal and healthy lives. Although children's artistic development was significant, Eng did not feel the aesthetic quality of children's artwork was significant. Eng thought the production of young children's art was driven by the psychology of the child, not artistic talent. As a psychologist, Eng pursued artistic development to observe the process of children's cognitive development which provided a window for psychologists to observe children's mental growth (Eng, 1931).

Eng thought it was a rare opportunity, as a psychologist, to observe her niece's artistic development daily from birth to eight years of age. She felt it was her duty to undertake the study to advance child psychology. Eng's reasoning was based on the idea that it was uncommon for a psychologist to have a chance to observe a child daily for such a significant length of time (Eng,

1931). She believed that through her observation of her niece's artistic development, she could give new insight into children's cognitive development (Eng, 1931).

Schaefer-Simmern's Research Philosophy

Schaefer-Simmern's interest in studying children's artistic development supported his hypothesis that an inherent consciousness of artistic forms existed naturally in the human mind. Left alone, Schaefer-Simmern thought, children and adults would "produce art born of their inherent consciousness" (Schaefer-Simmern, 2003, p. xx). Schaefer-Simmern adopted the term 'artistic conception' to name this inherent artistic ability. Schaefer-Simmern determined in his observations of children that they had naturally strong artistic conceptions. According to Schaefer-Simmern, to preserve children's artistic conceptual visions, they must not be suppressed or misled by interference from art education pedagogy (Schaefer-Simmern, 2003). Typical activities in art education at the time consisted of crafts, copying famous artwork, and using prescriptive formulated methods. These activities, according to Schaefer-Simmern, were harmful to children's artistic development because they stifled children's artistic conceptual visions. Schaefer-Simmern wanted the restrictive artistic pedagogy to be taken out of the curriculum (Schaefer-Simmern, 2003).

Schaefer-Simmern was also concerned that the world's industrialization was reducing the number of healthy and pleasurable outlets, including art, for individuals. The culture and economic structure of the time were devaluing art education, and this caused a deterioration of the number of creative outlets that children naturally needed (Schaefer-Simmern, 2003). He advocated for a new direction in art education that would increase creative opportunities for children. These artistic opportunities, according to Schaefer-Simmern, would better meet the needs for a healthy society. Schaefer-Simmern concentrated his research on children's artistic development as a catalyst to

encourage better access for creative purposes, and less focus on industrial needs training. (Schaefer-Simmern, 2003).

Lowenfeld's Research Philosophy

Lowenfeld's interest in studying children's artistic development was due to his early experiences with observing children's natural creative abilities in both sighted and non-sighted pupils (Lowenfeld, 1947; Saunders, 1960). Through his observation and research, Lowenfeld made significant contributions to art education especially in the area of children's artistic development. Through his popular books about stage theory, art teachers better understood children's artistic development. Better understanding of development led to an increase in the quality of teaching methods (Kelly, 2004).

In the study of children's artistic development, Lowenfeld had observed the early stage of scribbling as purely an outcome of motor activity. In the later stage of scribbling, he observed the process of children naming and telling stories about their scribbling (Lowenfeld, 1947; Saunders, 1960). According to Lowenfeld, this stage of *the naming stage* was one of the most significant leaps in artistic development a child made because children brought their imagination and their drawing together for the first time. This addition of imagination to kinesthetic motor activity had been missing from earlier children's artistic developmental theories before Lowenfeld published his theory (Lowenfeld, 1947; Saunders, 1960).

Kellogg's Research Philosophy

Kellogg's purpose for studying children's artistic development was to convince parents, educators, and artists that there were 'certain sequential aspects to be found in the artwork of children' (Kellogg, 1955, p. 5). Kellogg wrote in 1955 that she wanted to create proof for adults

that it is “beneficial for a child to be able to proceed through the sequence of development without the interference of adults” (Kellogg, 1955, p. 6). Like Schaefer-Simmern, Kellogg believed artistic forms existed naturally in the human mind and both she and Schaefer-Simmern labeled these forms ‘gestalts’ (1955).

Kellogg wanted to create proof of the natural sequence of forms in children’s artistic development by categorizing types of scribbles and emerging symbols. She studied children’s development for decades as she recognized that children’s drawings were a “potential goldmine of adult understanding of children” (Kellogg, 1955, p. 5). Kellogg believed the correct sequential categorization of incremental steps in children’s artistic development was the key to convincing adults that early scribbling and drawing were necessary for cognition, early reading skills, and healthy psychological development. Her detailed research was intended to change adult attitudes toward scribbling into one of acceptance and understanding. Kellogg recognized far more types and classifications of children’s drawings than any other children’s artistic developmentalist (Kellogg, 1969a).

Even though Eng, Schaefer-Simmern, Lowenfeld, and Kellogg worked within a similar timeframe, they approached children’s artistic development from different perspectives. Each theorist analyzed children’s artistic development through their unique methods and their studies yielded multiple differences. In the next section, their children’s artistic development theories are compared through a detailed and descriptive comparison of stages.

Comparison and Analysis of Children’s Artistic Stages

The research of Eng, Schaefer-Simmern, Lowenfeld, and Kellogg has been described in this investigation by three general stages of children’s artistic development. These stages are scribble, pre-schematic, and schematic. Each theorists’ work was described and compared by these

general stages of children's artistic development. Examples of children's drawings were reprinted from each of the developmentalists' research as needed for better understanding of the analysis. A summary of the stage characteristics for each theorist was also included in Tables 7, 8, and 9, following each comparative discussion for the three children's artistic development stages.

Scribble Stage

Children begin the scribble stage somewhere between two and four years of age (Kindler & Darras, 1997). The scribble stage refers to the beginning of children's artistic development when children begin manipulating drawing tools. Schaefer-Simmern wrote about the scribble stage as "a momentous experience [that] occurs when a child first grasps a pencil or crayon and sees that it makes a mark" (Schaefer-Simmern, 2003, p. xx). Eng, Schaefer-Simmern, Lowenfeld, and Kellogg agreed the first stage was the scribble stage, but they divided it into multiple substages with various names depending on the theorist.

Eng

Eng used the labels *scribbling* and *placement* for the scribble stage. These names were described in Eng's book, *The Psychology of Children's Drawings-From the First Stroke to the Coloured Drawing* (1930). In the book's first half, Eng wrote about her niece's chronological artistic development until eight years of age. In the second half of the book, Eng expanded her thoughts on children's artistic development theory beyond the observation of her niece to include her "general view of the development and psychology of children's drawings" (Eng, 1931, p. 101). Eng studied the artistic development of her niece until she was a young adult. Later, Eng wrote a second book that described the latter half of her niece's artistic development from nine to twenty-

five years of age. This investigation only concentrates on Eng's initial book about her niece's development.

Eng's research was unique because she wrote from the viewpoint of a psychologist. Eng was able to use her training to include the psychological perspective of children's artistic development. Her research included insight into the minds of children that coordinated with her observations of artistic development. Eng also used an extensive bibliography of research from children's artistic development theorists throughout Europe and the United States.

Scribbling Stages

According to Eng, children first attempted scribbling at around one year and two months of age. This young age was when her niece began to scribble. Eng described her niece's initial drawings as uncertain scribbling marks that typically had a wavy characteristic. Eng named the first substage of children's artistic development the *wavy scribbling stage* (Eng, 1931). The example drawing Eng included in *The Psychology of Children's Drawings From the First Stroke to the Coloured Drawing* (1931) for the wavy scribbling stage is reproduced in Figure 1a. (Eng, 1931, p. 4). In this figure, the scribbling shows a repeated side-to-side mark.

Eng named the next substage of scribbling as the *circular scribbling stage*. In the circular scribbling stage, incomplete and complete circles and ovals appeared in her niece's drawings. Eng's niece was one year and six months of age. The example Eng used for the circular scribbling stage may be seen in Figure 1 b. Eng defined these scribbles as well-defined round and oval scribbling in dense masses in the middle of the paper (Eng, 1931).

Eventually, the circular scribbling stage gave way to a substage Eng named the *variegated scribbling stage*. She described this substage as a combination of the wavy scribbling stage and the circular scribbling stage with the addition of lines, angles, crosses, spirals, and zigzags. An

example of a variegated scribble may be seen in Figure 1 c. The variegated scribbles for Eng's niece began at one year and eight months of age (Eng, 1931).

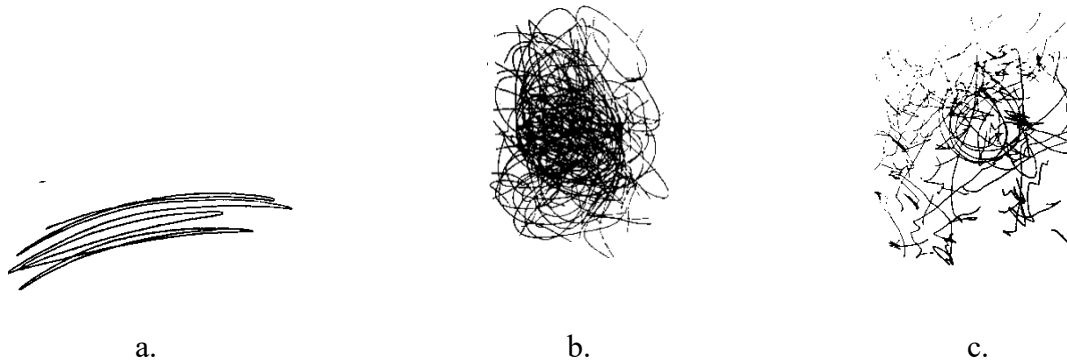


Figure 1. Eng's Examples of Scribbling

Note: Illustrations include a. wavy scribble, b. circular and mass scribbling, and c. variegated and scattered scribbling. (Eng, 1931, p. 4, 6-7).

Placement Stages

Eng identified three placement substages which referred to how the drawings were placed on paper. Eng named the placement substages the *mass scribbling placement stage*, the *scattered scribbling placement stage*, and the *isolated scribbling placement stage* (Eng, 1931). Mass scribbling was constructed of dense masses of round and oval scribbling that was heavily repeated. The mass scribbling was observed simultaneously with the circular scribbling stage. An example of mass scribbling can be seen in Figure 1 b., along with the circular scribbles.

Eng's niece advanced from drawing the circular masses of dense scribbling to the scattered scribbling placement stage. In this placement stage, scribbling was spread over the drawing paper. An example of this type of placement stage is seen in the drawing from Figure 1 c. In a later substage, three months after the scattered placement, Eng's niece changed her scribbling from

scattered to an isolated scribbling stage. Isolated scribbling is described as placed in little groups with some forms more “consciously drawn” (Eng, 1931, p. 5).

Psychology of Scribbling Stage

The description Eng provided of the scribble stage also included a general cognitive assessment of children’s development and how their growth was expressed through drawing. According to Eng, children’s scribbling was a progression toward mastery of the ability to draw (Eng, 1931). Children began to scribble because they wanted to imitate adults. After the imitation period, and as children’s cognition advanced, their interest and persistence in scribbling became self-motivated and was maintained for several years without external stimulation (Eng, 1931).

As well as displaying advanced cognition, the scribbling and placement stages also provided the chance for children to enjoy the movement and play associated with drawing lines. Eng observed her niece enjoying the movements of her hand, watching the lines form, and the sense of texture associated with drawing materials. In Eng’s opinion, children had a natural drive to be engaged in drawing activities and preferred those with “movement and action” such as scribbling (Eng, 1931, p. 103).

Children’s hand and arm movement during artistic development also demonstrated development in muscle coordination. Eng observed the improved muscle coordination occurred simultaneously with improved hand and eye coordination. Eng felt the scribbling stage was a “process of practice” instead of a method to express children’s imaginations (Eng, 1931, p. 105). Eng reported that scribbling occurred until her niece’s eighth year, even when she was drawing representationally. The occurrence of scribbling by older children, according to Eng, was for the purpose of practice alone. She disagreed with other artistic developmental researchers, such as

Bühler (1932) and Major (1906), who implied scribbling completely ceased with the beginning of a pre-schematic stage (Eng, 1931).

Schaefer-Simmern

The organization of Schaefer-Simmern's children's artistic development research used the elements of art to describe children's artistic development. Schaefer-Simmern described the scribble stage in children's artistic development by using substages. The substages consisted of the elements line, circles as shape, and figure-ground as space (Schaefer-Simmern, 2003).

Unorganized and Organized Scribble

Schaefer-Simmern named the first substage of the scribble stage the *unorganized scribble stage*. According to Schaefer-Simmern, the first scribble occurred around two years of age and it had little structure or gestalt unity (Schaefer-Simmern, 2003). The first scribbles were a direct result of children's early attempts at manipulating a drawing tool. The physical development in the movement of arm joints and muscles determined the various line direction in scribbling (Schaefer-Simmern, 2003). The next scribble stage was *organized scribbles*. Schaefer-Simmern observed organized scribbles as line constructions by children who had developed more muscle control and better skill in using drawing tools. Organized scribbles had a repetitive and more consistent mark as illustrated in Figure 2 b. and c. (Schaefer-Simmern, 2003).

Line to Circular Images

Lines and their relationships to other lines were one element of art Schaefer-Simmern used for recognizing growth in developmental stages. This categorization of children's artistic development consisted of horizontal lines, vertical lines, and angled lines that connected

(Schaefer-Simmern, 2003). In an examination of Figure 2 a., Schaefer-Simmern would have been placed the drawing in the unorganized scribble stage because the line resulted from a fundamental ability to hold a drawing instrument (Schaefer-Simmern, 2003). The straighter and more repetitive lines that were “no longer accidental” were considered part of the organized scribble stage, such as the repetitive line direction in Figure 2 b. (Schaefer-Simmern, 2003, p. 2).

Schaefer-Simmern considered the element of shape as another area for the categorization of children’s artistic development. Spirals began to appear at three years of age, but as children developed, the spirals occurred less, and circular or oval shapes occurred more in drawings (Schaefer-Simmern, 2003). In Figure 2 c., Schaefer-Simmern described this type of drawing as an organized scribble consisting of a spiral. The organized scribble drawing illustrated a point in development where, according to Schaefer-Simmern, children were conscious of gestalt unity within their compositions.

Schaefer-Simmern used space, an element of art, to describe a *figure-ground relationship*. Schaefer-Simmern used the term *primary figure-ground relationship* in his descriptions of drawings in which children had at least the ability to contemplate the empty space around a drawing. As children understood the primary figure-ground relationship, they could understand where the drawing began and where the drawing ended (Schaefer-Simmern, 2003). Children of three to four years of age artistically developed to the point of being aware of the paper’s edge and the space around their drawings. Children continued to develop an ability to create more complex figure-ground relationships throughout their entire artistic unfolding (Schaefer-Simmern, 2003).

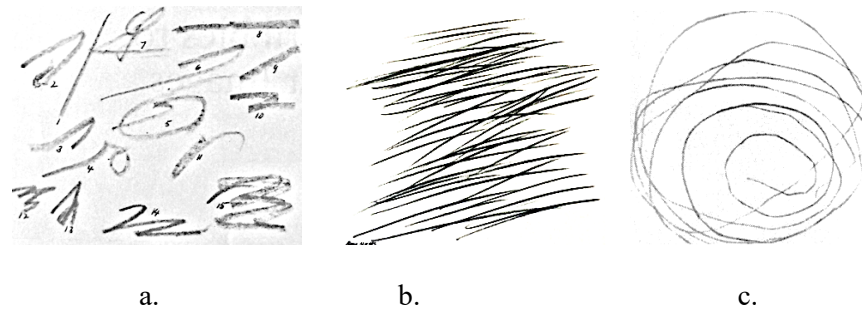


Figure 2. Schaefer-Simmern's Examples of Unorganized and Organized Scribble

Note: The Illustrations are examples of a. Unorganized Scribble, b. Organized Scribble, and c. Organized Circular Scribbling (Schaefer-Simmern, 2003, p. 2-3, 5).

Lowenfeld

Lowenfeld observed that the scribble stage tended to last longer than the other stages of children's artistic development (Lowenfeld, 1947). Lowenfeld referred to this stage as the *scribbling stage*. The scribbling stage applied to children about two years of age and was maintained until about four years of age. Lowenfeld placed emphasis on the significance of motor control to differentiate between scribble stages in children's artistic growth (Lowenfeld, 1947).

Disordered Stage

Lowenfeld named the first stage of scribbling the *disordered stage*. The disordered stage lasted for roughly six months for children from two to two and a half years of age. This stage consisted of an almost complete lack of muscle control. The disordered stage was little more than randomly putting the crayon on the paper to create marks. Lowenfeld noted this stage occurred purely due to children's interest in motor activity. Lowenfeld classified the type of scribble illustrated in Figure 3 a. as disordered. This example of a disordered scribble indicated it was a mark made during the earliest period when children had very little control over the drawing instrument (Lowenfeld, 1947).



Figure 3. Lowenfeld's Examples of Disordered and Longitudinal Scribbling

Note: Illustrations are a. Disordered Scribbling b. Longitudinal Scribbling c. Circular Scribbling. (Lowenfeld, 1947, p. 14-16).

Longitudinal or Controlled Scribbling

According to Lowenfeld's observations, disordered marks developed into continuous or controlled motions when children were two and a half years of age. This stage was labeled *longitudinal* or *controlled scribbling* (Lowenfeld, 1947). At this point in children's artistic development, Lowenfeld observed children had more visual control over the lines they were drawing than in the disordered stage. He wrote that children often enjoyed the repetitiveness of reproducing their motions. The lines produced in this stage were drawn consciously through an up and down or a side-to-side motion. An example of the repetitiveness Lowenfeld discovered may be seen in the lines of the drawing in Figure 3 b. Lowenfeld speculated that the feeling of scribbling was pleasing to children. He felt children often gained a higher level of confidence in their scribbling because of the enjoyment they found by scribbling (Lowenfeld, 1947).

Circular Scribbling

In the second stage of scribbling, *circular scribbling*, Children discovered different variations in movement. Children experimented with more complex motions, and they began using their whole arm for the first time in this stage. The outcome of this developmental advancement

was a repetitive circular formed line. Figure 3 c. illustrates the type of organized repetitive line Lowenfeld observed within the circular scribbling stage.

Naming of Scribbling

Lowenfeld observed a considerable change in artistic development when children were close to four years of age (Lowenfeld, 1947). It was around this age that children began naming their scribbles and telling stories while scribbling. This stage was labeled the *naming of scribble* stage. The children's change in thinking at this stage, according to Lowenfeld, was one of the most significant advancements in their artistic development process. Before this advancement, the motion of scribbling was entirely satisfactory to children. Later in the naming stage, children connected their imagination with their scribbling (Lowenfeld, 1947).

Initially, in the early scribble stage, children were thought not to have visual memories of their experiences. After the naming stage began, children started to remember experiences visually, and their thinking took place in terms of pictures. This change lasted through an entire lifetime (Lowenfeld, 1947).

Kellogg

Pattern Stage

Kellogg considered artistic development stages as fluid markers for children's artistic development meaning children returned to past stages on occasion for short periods (Kellogg, 1955). Even with the concept of fluidity, Kellogg separated children's artistic development stages into four stages. These stages were labeled *Pattern*, *Shape*, *Design*, and *Pictorial*. According to Kellogg, children went through these four main artistic stages. All the stages were eventually

completed by children and none of the stages were skipped. When children advanced to new stages, the earlier developmental stages were incorporated (Kellogg, 1947).

The Pattern stage emerged at two years of age, and at three years of age, the Shape and Design stages became dominant. Children, four years of age, had incorporated all the stages, including Pattern, Shape, and Design, within their artistic development. None of the stages were discarded by children unless, according to Kellogg, an adult discouraged scribbling during the stages (Kellogg, 1955).

Twenty Basic Scribbles

The Pattern Stage included both the *Twenty Basic Scribbles* and *Scribble Mixtures*. Kellogg believed children produced twenty basic scribbles that comprised the basic components of scribbles. The Twenty Basic Scribbles became apparent in the Shape, Design, and Pictorial stages. The Twenty Basic Scribbles are listed in Figure 4. Kellogg felt children at age two years could reproduce all the Twenty Basic Scribbles without any eye-control, because the scribbles were basic parts of their natural movement. Even when children moved their arms and hands outside of the activity of drawing, their arm and hand movements mimicked the basic scribbles, according to Kellogg (Kellogg, 1955). The scribbles in Figure 4 begin with a simple dot and increase in complexity, with the last scribble being an imperfect circle. These scribbles did evolve in not a rigid sequential fashion as children often repeated earlier marks.


















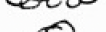


Scribble 1		Dot
Scribble 2		Vertical Line
Scribble 3		Horizontal Line
Scribble 4		Diagonal Line
Scribble 5		Curved Line
Scribble 6		Multiple Vertical Lines
Scribble 7		Multiple Horizontal Lines
Scribble 8		Multiple Diagonal Lines
Scribble 9		Multiple Curved Lines
Scribble 10		Roving Open Line
Scribble 11		Roving Closed Line
Scribble 12		Zigzag or Waving Line
Scribble 13		Single Loop Line
Scribble 14		Multiple Loop Line
Scribble 15		Spiral Line
Scribble 16		Multiple Line Overlaid Circle
Scribble 17		Multiple Line Circumference Circle
Scribble 18		Circular Spread Out
Scribble 19		Single Crossed Circle
Scribble 20		Imperfect Circle

Figure 4. Kellogg's Twenty Basic Scribbles

Note: A reproduction of the twenty basic scribbles by R. Kellogg (1955).

Scribble Mixtures

Scribble Mixtures consisted of two or more of the marks from the Twenty Basic Scribbles (Figure 4). The creation of the Scribble Mixtures did not require eye control to draw them, because they were formed by marks from the Twenty Basic Scribbles. Kellogg observed that in some instances, the scribbles were drawn in juxtaposition on the paper and, in other instances, the scribbles were drawn on top of each other (Kellogg, 1969a). Kellogg understood the difficulty many adults had in recognizing scribble types because scribbles were often multi-layered. In her

research notes, Kellogg wrote it would have been impossible to recognize some scribbles if she had not observed the children drawing them (Kellogg, 1969a).

Scribble Mixtures were significant indicators of development because, according to Kellogg, the scribble combinations illustrated an increase in motor and visual control. Kellogg believed this increase in children's motor and visual control was directly related to the increase in cognitive development (Kellogg, 1969a). Scribble Mixtures could be combined in an infinite number of ways. The Scribble Mixture examples shown in Figure 5 were made from scribbles 1, 2, 3, 4, 5, 12, and 16. These scribble mixtures were created by children five years of age (Kellogg, 1969a).

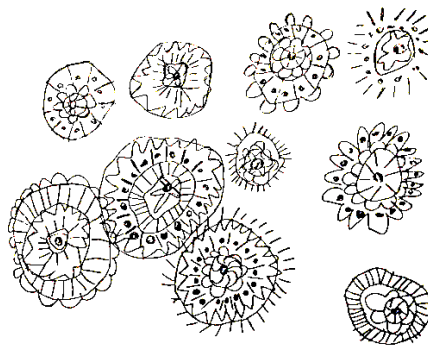


Figure 5. Kellogg's Examples of Scribble Mixtures

*Note: Scribble Mixture Drawing made of Scribbles 1, 2, 3, 4, 5, and 16.
Analyzing Children's Art (Kellogg, 1969a, p. 19).*

Placement Patterns

Placement Patterns began during the Pattern Stage. The Placement Patterns did not disappear from children's artistic development once they appeared. This stage reflected the location of where scribbles were placed on the paper. A Placement Pattern, unlike a scribble, "requires a well-defined perimeter, a frame of some kind" (Kellogg, 1969a, p. 23). The frame may be the edge of the paper, a box drawn as a border, or a physical frame of some form. Kellogg

observed children were aware of the paper's edges, corners, and center of the paper. Placement Patterns were created entirely on the paper and placed in seventeen different ways. These Placement Patterns illustrated by Kellogg are found in Figure 6, and a description of them exists in the figure's notes. The Placement Patterns are also described in Appendix A. (Kellogg, 1955).

Kellogg believed that the identification of the Placement Patterns was one of her most significant discoveries because the deliberate Placement Patterns persisted into adulthood. Kellogg felt adult artists retained this natural aesthetic ability throughout their entire lives (Kellogg, 1969a). Kellogg was confident any scribble pattern children might draw would find a matching Placement Pattern. According to Kellogg, children as early as two years of age had enough hand-eye coordination to control the placement of their scribbles on paper. The Placement Patterns may be seen in the drawings in Figure 6 and a list of Placement Patterns is found in Appendix A.

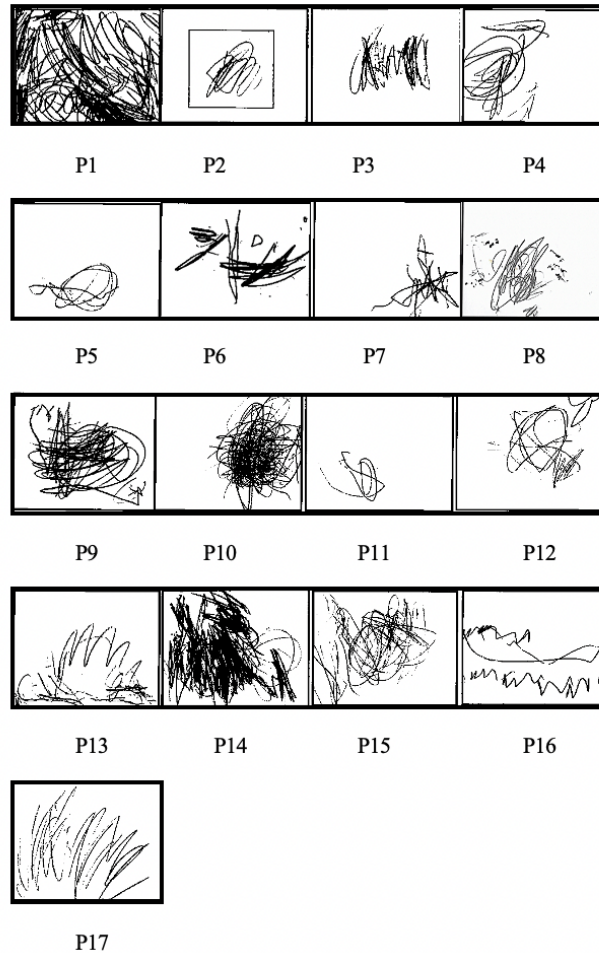


Figure 6. Kellogg's Seventeen Placement Patterns

Note: P1 over-all, P2 centered, P3 spaced border, P4 vertical half, P5 horizontal half, P6 two-sided balance, P7 diagonal half, P8 extended diagonal half, P9 diagonal axis, P10 two-thirds division, P11 quarter page, one-corner fan, P13 two-corner arch, P14 three corner arc, P15 two corner pyramid, P16 across the paper, P17 base-line fan (Kellogg, 1969a, p. 24-25).

Pre-Schematic Stage

The *pre-schematic* stage of children's artistic development succeeds the scribble stage. It is significant to note all four theorists reported that children reverted to the scribble stage for short periods during more advanced artistic development stages (Eng, 1931; Schaefer-Simmern, 2003; Lowenfeld, 1947; Kellogg, 1955). The children in the pre-schematic stage were primarily from three to seven years of age (Gaitskell & Hurwitz, 1975; Hardiman & Zernich, 1980). The pre-

schematic stage may also be described as a *symbolic stage* with children's drawings beginning to exhibit elements of recognizable objects (Eng, 1931; Goodenough, 1926; Hardiman & Zernich, 1980).

In this investigation, the term pre-schematic was used as a general label for the second stage of children's artistic development, because it fits the concept and description of schema emergence. Etymologically, *schema* is from the Greek word *skhēma*, an ancient term defined as a shape or plan. In psychology, a schema refers to a cognitive framework of understanding. There are multiple types of schemas, such as social or personal (Lindon & Brodie, 2016). Schema within children's artistic development can be thought of as knowledge about objects that are often personal systems of representation.

The terms *pre-schematic* and *schematic* have often been attributed to Lowenfeld, because he used these terms as development stage names in his research. In actuality, these terms were used before Lowenfeld adopted them. Alfred Lichtwark used the term *schema* in 1898 when he was first discussing children's artistic development (Eng, 1931). In his publications, Lowenfeld acknowledged his close association with Lichtwark's research as well as the use of Lichtwark's terms when investigating the pre-schematic and schematic stages (Lowenfeld, 1947). After discovering the initial use of schema was not just Lowenfeld's contribution, using the term pre-schematic and schematic appeared to be the most accurate description of these stages for this investigation.

Generalizations about the pre-schematic stage are that the symbols drawn are formed with circles, squares, and lines. In the pre-schematic stage, the symbols may change frequently, and the drawings have a sense of floating as the orientation of the paper is insignificant. (Gaitskell & Hurwitz, 1975). The advancement of artistic development in the pre-schematic stage is due to the

increased physical control of a drawing instrument and the children gaining awareness of the objects around them. The children's desire to represent objects in drawings increased in the pre-schematic stage, according to Eng, Schaefer-Simmern, Lowenfeld, and Kellogg (Eng, 1931; Schaefer-Simmern, 2003; Lowenfeld, 1947; Kellogg, 1955).

Eng

Eng's niece began naming scribbles at one year and nine months of age and attempted a human figure that consisted of a circle and two lines at one year and ten months of age. Eng writes that her niece appeared to be very advanced for this stage of drawing. The average age of children who entered the pre-schematic stage was thought to be two years of age (Gaitskell & Hurwitz, 1975). Eng observed the beginning human figures in the drawings of her niece were easily and frequently repeated with clarity. Eng labeled this pre-schematic figure (Figure 7 b.) drawn by her niece as the *formula man* (Eng, 1931). According to Eng, the children's artistic theorists, Major (1906), Stern (1909), Dix (1911), and Krötzsch (1917), all observed the same formula man in children's drawings somewhere between two years and six months of age to three years and two months of age (Eng, 1931). The formula man was often called "Mama" by Eng's niece. Other formulaic drawings observed drawn by Eng's niece were flags and flowers. An image of her niece's tulip flower can be seen in Figure 7 a. (Eng, 1931). Both drawings in Figure 7 were drawn at one year and eleven months of age. These drawings may be considered pre-schematic, not because of the child's age, but because of the fact that both drawings would be recognizable without their labels. Eng relied heavily on the work of Rouma (1913), Krötzsch-Leizig (1917), Stern (1910), Luquet (1913), Kerschensteiner (1905), Dix (1911), Scupin & Scupin (1907), Barnes (1892), and Rydh (1926) to generalize her nieces' artistic development so that it was applicable to other children with average cognitive levels.

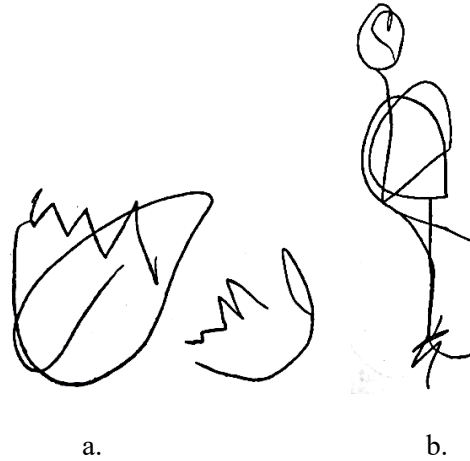


Figure 7. Eng's Pre-schematic Examples of Flowers and "Mama," or Formula Man

Note: Image a. represents two tulips and image b represents formula man. Eng's niece drew both the flowers and the formula man at one year and 11 months of age (Eng, 1931).

Schaefer-Simmern

Schaefer-Simmern divided the pre-schematic stage into the substages of *circular images*, *horizontal-vertical line relationships*, *figure-ground relationships*, and *spacial orientation* (Schaefer-Simmern, 2003, p. ix). These are the same substages Schaefer-Simmern used in the scribble stage, but with the addition of spacial orientation.

Circular Images

Schaefer-Simmern observed children three to four years of age made a rudimentary spiral or coiling system directly after the scribble stage. Schaefer-Simmern described the drawing in Figure 8 a. as a coiling circular form (Schaefer-Simmern, 2003). According to Schaefer-Simmern, children of this age had more muscle control and confidence in their physical abilities. It is at this point Schaefer-Simmern noted children began to make basic artistic judgments and were also beginning to name their drawings with the ideas they represent, such as "mama" or "choo choo" (Schaefer-Simmern, 2003, p. 4).

Spiral lines appeared as the precursor of the *circular images*. The first shape children outlined were circles, which may be seen in Figure 8 b. (Schaefer-Simmern, 2003). The continued developmental progression of the circle images included concentric circles, circles with surrounding and touching circles, circles with crossed lines as in Figure 8 c., and circles with radiating projected lines as in Figure 8 d. According to Schaefer-Simmern, circles with radiating projected lines were the precursors to humans in children's drawings. An example of a circle with projected lines can be seen in Figure 8 e. (Schaefer-Simmern, 2003).

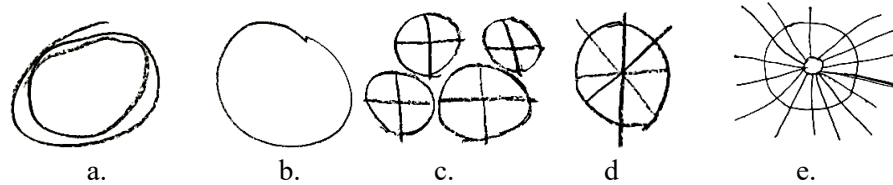


Figure 8. Schaefer-Simmern's Pre-schematic Examples of Circular Images

Note: The circular images examples include the spiral precursor (a.), the complete circle (b.), the circles with crossed lines (c. and d.), and the circle with projected radiating lines (e.). (Schaefer-Simmern, 2003, p 5-6, 19).

Vertical-Horizontal and Horizontal-Vertical Line Relationships

According to Schaefer-Simmern, the beginning of *vertical-horizontal* line relationships was preceded by the progression of lines projected from shapes such as those seen in Figure 8 e. The lines in Figure 8 e. project from the concentric circle's center outward and show a beginning conceptualization of vertical and horizontal lines. An example of an attempted beginning vertical-horizontal line relationship may be seen in Figure 9 a. and b. Schaefer-Simmern observed these vertical-horizontal line relationships as the predecessor of later advanced drawings of trees and humans (Schaefer-Simmern, 2003). A vertical line predominates in Figures 9 a. and 9 b. In Figure 9 a., the vertical could be seen in the trunk of a tree or a body of a human figure. One version of

an early human is seen in Figure 9 b. In this drawing, two vertical lines connect to a circle to form what might be seen as legs. The horizontal-vertical lines relationship can be seen in Figure 9 c. The predominant horizontal line in the drawing represents the body of an animal with four vertical legs attached. The two other vertical lines represent the head or horns of an animal.

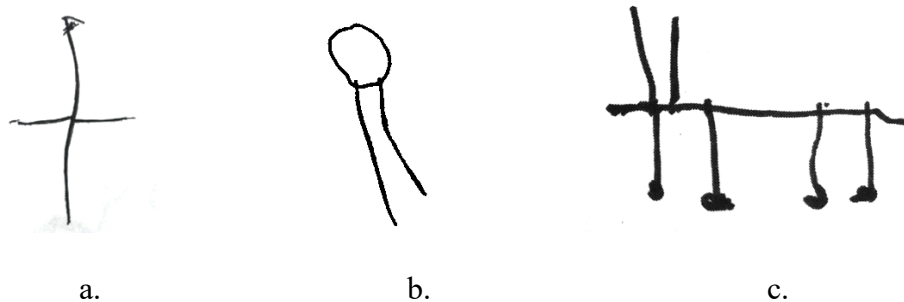


Figure 9. Schaefer-Simmern's Examples of the Beginning of Vertical- Horizontal Line Relationships

Note: In Figure 9, a. and b. are an example of a vertical-horizontal line relationship, c. is an example of a horizontal-vertical line relationship (Schaefer-Simmern, 2003).

Figure-Ground Relationship and Spacial Relationship

The *figure-ground relationship* Schaefer-Simmern observed during the pre-schematic stage of children's artistic development was the side-by-side placement of circles, as seen in Figure 10 a. When children created the circles or sometimes oval shapes, according to Schaefer-Simmern, they did not touch or overlap and were set against a "common empty ground" (Schaefer-Simmern, 2003, p. 58).

Schaefer-Simmern used the term 'spacial' to refer to the relationship of the figures arranged throughout the entire picture plane or ground (Schaefer-Simmern, 2003). Children at the pre-schematic stage arranged their drawings' elements according to the color, size, value, location, and orientation of the shapes for the sake of spacing. Schaefer-Simmern used the illustration in Figure 10 b. in his discussion as an example of the way children were "developing a sense of artistic form"

(Schaefer-Simmern, 2003, p. 78). It was in this manner children developed an aesthetic sense of unity in their compositional arrangements. If children had not developed a sense of artistic form, then Schaefer-Simmern described the result of their artwork as isolated images that lacked unity in color, lines, and values (Schaefer-Simmern, 2003).

Schaefer-Simmern used the term ‘spatial’ to refer to the implied depth or third dimension of two-dimensional artwork. According to Schaefer-Simmern, the beginning spatial orientation at the pre-schematic stage consisted of randomly placed elements on the paper at any angle, without a baseline to indicate depth.



Figure 10. Schaefer-Simmern's Examples of Spatial Relationships

Note: Figure 10 a.is an example of a figure-ground relationship, while 10 b is an example of isolated direction without baselines. Both examples are from the pre-schematic stage (Schaefer-Simmern, 2003).

Lowenfeld

Lowenfeld's scribble stage concluded that the naming of scribbles provided evidence that “the child's thinking has completely changed...from a kinesthetic thinking, in terms of motions, to an imaginative thinking in terms of pictures” (Lowenfeld, 1957, p. 90). The next stage in Lowenfeld's theory of children's artistic development was the *pre-schematic* stage. Lowenfeld's

pre-schematic stage of artistic growth focused on symbols which changed over time due to children becoming self-aware. This stage demonstrated the range of flexibility children had when it came to schemata.

Kellogg

Kellogg did not use the term pre-schematic for the children's artistic development stage. She employed the labels *Shape Stage* and *Design Stage* for the pre-schematic stage (Kellogg, 1955). Kellogg observed that children's early efforts at representationalism could be classified as either a shape or a design.

After the two stages were identified as Shape and Design, the two stages were further subdivided into different types of drawings. These substages were formed from further characterizations in the children's drawings, which became evident to Kellogg during her research. Kellogg's objective was to work out a categorization system that could account for all possible shapes and designs drawn by children.

Shape Stage

Emergent Diagrams and Diagrams

Kellogg divided the Shape Stage into two substages called the *Emergent Diagram Shapes* and the *Diagram Shapes* (Kellogg, 1969a). Emergent Diagrams were composed of early attempts at drawing recognizable shapes by children between two and three years of age. Kellogg observed these loosely formed shapes as the early indicators of the children's intention to form basic shapes.

The Emergent Diagram shapes were the precursors to the Diagrams. They were considered part of the scribble stage. Kellogg classified seventeen Emergent Diagram shapes, which may be

found in Appendix A. The Emergent Diagram shapes built a bridge that illustrated how children's drawings developed from scribble to pre-schematic forms in the next stage.

During the latter half of the Shape Stage, children displayed some of their first schematic drawing abilities by creating recognizable shapes in outlined forms (Kellogg, 1969a). Kellogg named these shapes *Diagrams*. Diagrams consisted of a Greek cross, a square or rectangle, a circle or oval, a triangle, an odd shape of an irregular enclosed space, and a diagonal cross (Kellogg, 1969a). The shapes in Figure 11 were illustrated by Kellogg as examples of the six Diagrams.



Figure 11. Kellogg's Diagram Chart

Note: Kellogg drew the shapes to illustrate the six Diagrams. The Diagrams left to right are a Greek cross, Square/Rectangle, Circle/Oval, Triangle, Odd Shaped Enclosed, and a Diagonal Cross (Kellogg, 1969a, p. 49).

Design Stage

The *Design Stage* followed the Shape Stage in Kellogg's children's artistic development stage theory. The sub-divisions Kellogg observed within the Design Stage included *Attempted Combines*, *Combines*, *Mandalas*, *Radials*, and *Suns*. The Design Stage was self-taught and not a product of art instruction. Kellogg wrote that the Design Stage was a "visually logical system of line formations" (Kellogg, 1969a, p. 51).

Attempted Combines

Attempted Combines consisted of drawings in which children attempted to join two figures. One of the figures was a Diagram and one the other figure was an Attempted Diagram (Kellogg,

1969a). The combination of these two types of forms were the precursors to creating a Combine. Kellogg wrote she did not feel a need to identify all the Attempted Combines, because there were infinite possibilities of them. Another reason was that Attempted Combines already fell into the category of Placement Patterns. The recognition of this step toward forming Combines was significant, according to Kellogg, because they indicated children were experimenting with their drawings (Kellogg, 1969a).

Combines

Combines were described as the combination of two different Diagrams. Multiple types of Combines existed, and to illustrate the possibilities, Kellogg created the chart reproduced in Figure 12. This chart clearly illustrates the 66 possible Combines Kellogg observed which were constructed by Diagram combinations in three different methods. The combination of Diagrams is listed in Kellogg's illustration located in Figure 12 a. The first method of creating Combines from Diagrams was when children drew two separate Diagrams close to each other, but not touching. This type is found in Figure 12 b. The second type of Combine was constructed by the overlapping of two Diagrams, as seen in Figure 12 c. The third method of constructing Combines was when children drew a Diagram inside another Diagram. The third type is found in Figure 12 d. (Kellogg, 1969a).

	a.	b.	c.	d.
Pairs	Separate	Overlapping	Containing	
Rectangle and rectangle				
Rectangle and oval				
Rectangle and triangle				
Rectangle and odd shape				
Rectangle and Greek cross				
Rectangle and diagonal cross				
Oval and oval				
Oval and triangle				
Oval and odd shape				
Oval and Greek cross				
Oval and diagonal cross				
Triangle and triangle				
Triangle and odd shape				
Triangle and Greek cross				
Triangle and diagonal cross				
Odd shape and odd shape				
Odd shape and Greek cross				
Odd shape and diagonal cross				
Greek cross and Greek cross				
Greek cross and diagonal cross				
Diagonal cross and diagonal cross				

Figure 12. Kellogg's Chart of Sixty-Six Possible Combines

Note: The Combine sketches in this chart were drawn by Kellogg (Kellogg, 1969a, p. 49).

Column a. lists the types of Diagrams used in constructing the Combines. Column b. shows the separate Diagram method. Column c. shows the overlapping method. Column d. shows one Diagram containing another Diagram. All Combines are categorized in Appendix A. (Kellogg, 1969a, p. 53).

Aggregates

Aggregates consist of combinations of Diagrams, combinations of Emergent Diagrams, and Aggregates determined by Placement Patterns. Kellogg wrote that during this period of artistic development, “Aggregates show that hand, eye, and mind are working in high gear” (Kellogg, 1967, p. 9).

Although an infinite number of Aggregates were possible, Kellogg noted that children’s memories limited the types of Aggregates drawn. The type of Aggregates children drew was a personal preference and consisted of the types the brain could easily remember (Kellogg, 1967). Kellogg classified twenty-two types of Aggregates, demonstrating how they were constructed. The classification system for Aggregates is listed in Appendix A.

In Figure 13, three examples of Aggregates classified by Kellogg are shown. The first example, Figure 13 a., is an Aggregate consisting of three rectangles. The Aggregates that consisted of squares and rectangles were labeled A. 2 by Kellogg’s classification system located in Appendix A. The Aggregate in Figure 13 b. was made of a multi-crossed line and labeled A. 8. Example Figure 13 c. is an Aggregate made by three Diagrams (two circles and a triangle) and labeled A. 9 (Kellogg, 1969a, p. 53).

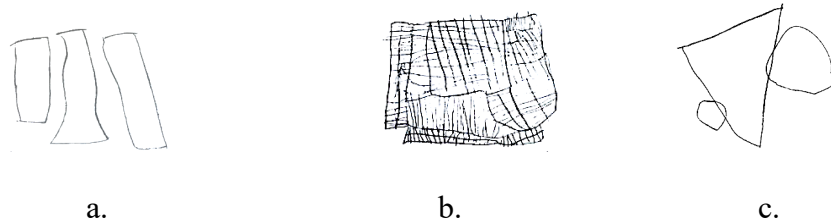


Figure 13. Kellogg's Examples of Aggregates

Note: Example a. is an Aggregate made of three Diagrams/rectangles labeled A 2. Example b is an Aggregate made of multiple rectangles labeled A 8. Example c is an Aggregate made of three Diagrams/circles, and a triangle labeled A 9 in Appendix A. (Kellogg, 1969a, p. 53).

Mandalas

A Mandala was identified as a circle in the ancient language of Sanskrit. Kellogg used the word Mandala as “a descriptive term to indicate compositions of children’s scribblings and drawings which produce the image of an evenly crossed, or divided circle or square, or concentric circles or square” (Kellogg, 1967, p. 7). An example of this line formation may be seen in Figure 8. Kellogg considered *Mandalas* to be a form of a Combine or an Aggregate because the line formation consisted of two or more Diagrams (Kellogg, 1969a).

The line formation of a Mandala was a spontaneous occurrence in children’s artistic development. Kellogg was very interested in Mandalas because she believed they were a critical artistic developmental milestone. She wrote, “if my observations are correct, Mandalas are a key part of the sequence that leads from abstract to pictorials” (Kellogg, 1969a, p. 65). Kellogg believed that the ability to create a Mandala was a highly significant point in children’s artistic development, because it indicated that children were ready to begin drawing pictorially.

Mandalas were classified into thirteen types by Kellogg. She also observed the same types of categorizations with some variations of Mandalas observed in clay modeling and finger paint. The types and descriptions of Mandalas are listed in Appendix A. In Figure 14, three types of Mandalas are represented. Example 14 a. is an “inherent one line center crossing within multiple

circular scribbles” (Kellogg, 1969a, p. 67). This is an example of the earliest type of children produced from the age of two to three years of age. Figure 14 b. is a “cross and oval Mandala, a formation of two Diagrams” drawn by a child of forty months (Kellogg, 1969a, p. 69). Figure 14 c. is a representation of a Mandala modeled in clay. Kellogg was aware of the symbolism associated with Mandalas in ancient religions and Jungian psychology, but did not suggest Mandalas had a symbolic connection to children’s artwork (Kellogg, 1955).

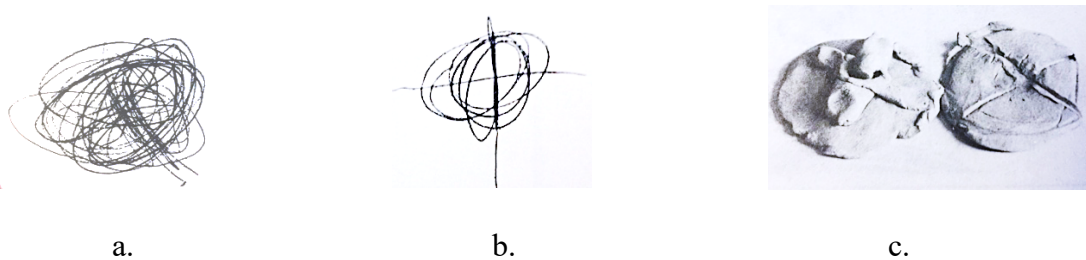


Figure 14. Kellogg’s Examples of Mandalas

Note: Figure 14 a. displays an inherent cross in the center of circular scribbles and is classified as M 1 in Appendix A. Figure 14 b. is a circular structure with a Greek Cross overlay and is classified as M 5 in the categorizing of Mandalas (Appendix A). Figure 14 c. is two three-dimensional clay examples of Mandalas constructed by three-year-old children (Kellogg, 1969a, p. 72).

The Suns

The classification of the *Suns* belong to the Design Stage. Through her observations, Kellogg felt she had seen enough transitions from Mandalas to Suns to believe this was the natural sequence in children’s artistic development. The Sun was used non-pictorially by children during the Design Stage and was based on the visual stimulus of the Mandalas (Kellogg, 1969a, p. 76).

The classifications of Suns include Pre-Sun Scribbles and the Attempted Suns, along with eleven types of Sun formations. The detailed list of the different types of Sun’s formation are

listed in Appendix A. These formations include a Sun with center markings, a Sun Face, and designs based on Aggregates, Diagrams, and Placement Patterns (Kellogg, 1969a).

Radials

Radials are a different type of line formation of the Design Stage and the last abstract or non-pictorial art classification Kellogg recognized seven classifications of Radials. Radials were defined as having lines that “radiate from a point or small area” (Kellogg, 1969a, p. 86). The initial classification of Radials is the inherent Radials. These types of Radials were not of a Combine origin but originated from rhythmic scribbling without eye control. Like the classifications of Mandalas, Radials begin with Inherent Radials, then Attempted Radials, and finally a Complete Radial (Kellogg, 1969a). An example of a Complete Radial would be the Combine consisting of a Greek Cross over a Diagonal Cross.

The significance of the construction of Radials, according to Kellogg, is their relationship to the first representational drawings of children. The first representational drawings in children’s artistic development are the Human or Humanoid (Kellogg, 1955). Radials are part of many types of designs and within the formation of Humans in children’s art, they influence the placement of the arms and the legs on a body.

Schematic Stage

As children continue to develop, the emergence of new representational strategies begins to become part of their skills. It is important to remember, even in artistic stage theory, that the artistic development of children does not strictly follow a progressive linear model, but often fluctuates as they grow (Kindler & Darras, 1997). This fluctuation causes children to develop a range of strategies relating to pictorial images. Beginning roughly in their seventh year, children

begin to demonstrate a growing concern about the pictorial resemblance of their artwork. Children often employ pictorial devices to achieve an acceptable level of representational imagery. The desire of children to create representational drawings is universal. Children who do not acquire additional art instruction or stimulation are unable to develop further than the schematic stage (Kindler & Darras, 1997).

The schematic stage is a period in which representational drawings are referred to as synthetic in nature. The drawings made by children in the seven to nine-year-old age group are stereotypical or similar in subject matter, often depending on the gender of the children. Also, drawings from this age and ability group tended to display the accepted imagery of their peers.

Eng

Formalizing Drawing

Eng gave the stage in which her niece began attempting pictorial representations of objects the label *formalized drawing*. Eng did not use the term *schema*, because she felt it was allied too closely with the field of psychology. The term *formula* was already in “common use in the same sense in connection to drawing and painting generally” (Eng, 1931, p. 109).

Eng observed in her niece’s drawings that the child limited herself to drawing a few selected objects at the beginning of the pictorial phase. The niece’s first attempt at pictorialism in the *formalized drawing* stage was a human figure. Different human formulas appeared in her nieces’ art at various points. Eng writes one type would appear and be practiced several times and then disregarded for a different human formula. Not until the beginning of her fifth year did Eng’s niece reach a firm and consistent representation of a human figure (Eng, 1931).

Eng believed there was a general progression of artistic development in drawings of humans. Eng reported the first drawing of humans by her niece consisted of linear structures with only heads and legs. The head was drawn in an outline followed by lines for the legs. Eventually, the arms appeared as lines. Eng's niece was still drawing arms and legs as lines until she was six and a half years of age. Not until she was almost seven years of age did Eng's niece outline the arms and legs.

In the description of her niece's progress, Eng suggests that the development of details also appeared in a progression similar to the body parts. The eyes appeared first as points, then circles, and finally as circles around points. Later the eyebrows and eyelids appeared as curved lines. The nose of a face was omitted frequently at first, then when it appeared, it took form as a circle followed by straight lines, ovals, triangles, crooked lines, and later in development, it was shown in profile (Eng, 1931). The mouth began as a straight line, often across the entire oval of the face, then as two parallel lines, an oval, and rarely was it drawn as a circle or rectangle. The teeth began as points and progressed to straight and zigzag lines. The ears were not drawn as frequently as other facial features in Eng's observations. Usually, the ears stood out from each side of the head and in profile represented by the shape of an oval. The hair was generally represented as lines, zigzags, and spirals (Eng, 1931). The neck was one of the last features to be drawn and was shown as a vertical straight line or rectangle between the head and body. The body was created as an outline shape and when the arms were attached to it, they appeared joined to the head or far down on the sides of the body. One of the last body parts to be drawn were the feet portrayed in profile as lines or rectangles. The hand was drawn as a crossed line at the end of the arm and eventually a loose grouping of lines to represent fingers (Eng, 1931).

Animals were the next preferred subject for representational drawings after the humans. First, the four-legged domestic animals appeared, according to Eng. Following domestic animals were birds and fish. Many of the animals drawn by Eng's niece were given unaltered human face formulas developed earlier during the human drawing phase. The animals were represented by formulas usually consisting of rectangles.

The last areas of representational interest included trees and flowers. These subjects were also represented by formulated linear construction. Trees consisted of straight-line trunks and branches drawn as bundles or straight lines extending from the trunk. The foliage was shown as a lobate shape. Eng gives examples of each type of tree and flower formulas she observed. These are represented in Figure 15. The drawings in Figure 15 were examples drawn by Eng's niece, but they also include some examples of elementary students' drawings from a school in Oslo Eng visited on occasion. Eng labeled each category she observed of flowers and trees.

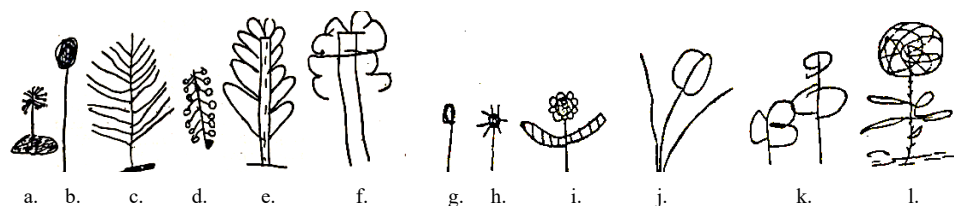


Figure 15. Eng's Examples of Trees and Flowers in Formalized Drawing

Note: Tree formula's a. broom, b. coil, c. feather, d. fruit tree in feather formula, e. and f. lobate. Flower formula's: g. button, h. and i. daisy formula, j. tulip, k. leaf, l. rose formula (Eng, 1931, pp. 120-121).

The last subject Eng presented was a favorite subject of children. This subject was the houses in which children lived. The sequence of house development started with the façade represented by a rectangle or square. This image, Eng felt, was a "well-formed mental image"

familiar common to early drawings of houses. At a more advanced developmental stage, children added windows, doors, and roofs in a trapezoid, triangle, or rectangle shape (Eng, 1931). Chimneys were added with masses of smoke that were long spirals or scribbles. Still further into children's artistic development, houses were seen in greater detail with staircases, roof tiles, curtains, and flower boxes. Eng wrote that she often observed the interior of houses at the same time as the exterior in drawings as in an X-ray presentation. Drawings including two to three sides of the house appeared when children acquired some "elementary knowledge" of perspective representation (Eng, 1931, p. 122).

Schaefer-Simmern

Schaefer-Simmern divided the representational stage in children's drawings into the separate areas of Variable Line Direction and the Human Figure. Other areas of development occurring in the stage were visible in spacial (two-dimensional) orientation and spatial (three-dimensional) orientation (Schaefer-Simmern, 2003). Schaefer-Simmern observed children creating the human figure before they drew trees, but variable line direction was easier to understand in trees, so his explanations began there. According to Schaefer-Simmern, children moved to this stage from six to eight years of age, but the most common age was nine as they tired of repeating lines and angles. Children were also searching for a more naturalistic relationship to nature (Schaefer-Simmern, 2003).

Variable Line Direction: Trees

The transition stage for trees was a simple vertical line drawn as a tree trunk. A new angle of a line, a diagonal line, is used for large branches as seen in Figure 16 a. and for small branches

as seen in Figure 16 b. The branches could be drawn thickly or thinly and upward or downward, such as the example seen in Figure 16 c.

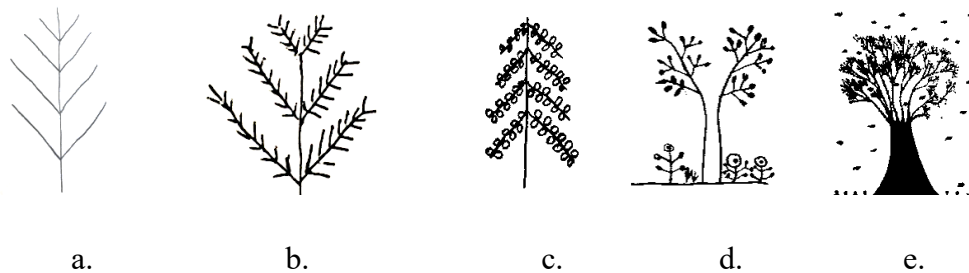


Figure 16. Schaefer-Simmern's Examples of Variable Line Direction of Trees

Note: In Figure a. the parallel diagonal branches represent a new variable line. The branches are attached to the central vertical line representing a trunk. In Figure b., the new variable line occurs smaller for the secondary branches. In Figure c., the branches are pointed downward as artistic development advances (Schaefer-Simmern, 2003).

Figures 16 d. and e. were created from children of the same stage of variable line direction, but significant differences were present in the two drawings. Schaefer-Simmern observed an awareness of the two edges of the tree trunk in Figure 16 d., but the thickness of the tree trunk was not recognized by the child. In Figure 16 e. the thickness of the tree trunk is recognized by filling it in solidly in the drawing. Even though the children were at the same artistic developmental level, Schaefer-Simmern felt each child demonstrated the freedom of expression (Schaefer-Simmern, 2003).

Variable Line Direction: The Human Figure and Animals

According to Schaefer-Simmern, when children were overwhelmed by a complex structure such as a tree or a human figure, they often regressed in their drawings. Schaefer-Simmern called these *reversions* (Schaefer-Simmern, 2003). Children were observed returning to their earlier

memories of linear construction. The stick figure was a good example of a preceding mastered form. Even adults regress to the stick-figure formulation.

The earliest indication of the construction of humans in drawings began in the vertical-line stage, which represented the drawings of three and four-year-old children. An example of the initial vertical-line stage usage is seen in Figures 9 a. and 9 b. In the more advanced variable-line direction stage of artistic development, Schaefer-Simmern observed children had adapted the use of line in the human figure to create new angles for attaching arms and legs (Schaefer-Simmern, 2003). The new angles were a product of the children's need to attain more naturalism, not only in a human's poses, but also to indicate the action of the limbs.

The stage of variable-line direction could also be seen in animals. Initially, drawings of animals by three to five-year of age were a part of the horizontal-vertical line direction stage. Schaefer-Simmern observed the bodies of the animals were drawn from a horizontal line and the legs were represented by vertical lines. Similar to the use of the variable-line direction in human beings, variations of diagonal lines represented motion in the legs of running animals (Schaefer-Simmern, 2003).

Spatial Orientation and Spatial Orientation

The bottom of the page may serve as a baseline during the early phases of spacial orientation in the schematic or representational stage. Children of six or seven years of age begin to draw a single line that appeared all the way across the page and was understood by Schaefer-Simmern to be the border of the earth (Schaefer-Simmern, 2003). Baselines, according to Schaefer-Simmern, were placed in compositions for visual stability. Schaefer-Simmern writes that a visual baseline holds figures in the space on the paper as well as providing an orderly placement of stages. Later in children's artistic development, double and multiple baselines emerge. Schaefer-

Simmern observed multiple baselines used in several intuitive spacial orientations by children. In some instances, he noted that mountains, rooftops, or streets were often used as multiple baselines in compositions (Schaefer-Simmern, 2003).

Also, during this particular stage of children's artistic development, Schaefer-Simmern noted children used parallel baselines to show a street or river unobscured by objects along the baseline. A standard solution to present an unobscured scene along a street or river was for the children to turn the objects on one side of the baseline upside down. An example of a parallel baseline with houses oriented correctly on the upper side of the street and upside down on the lower side of the street is shown in Figure 17. This type of solution, Schaefer-Simmern noted, had been employed by Old World map makers (Schaefer-Simmern, 2003).

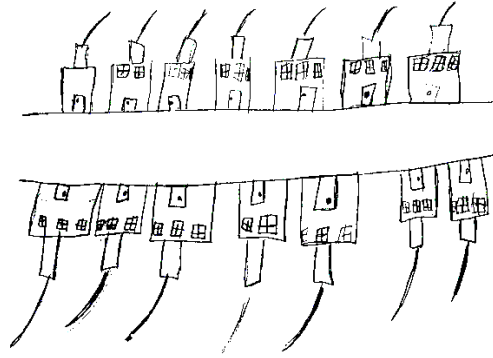


Figure 17. Schaefer-Simmern's Example of Parallel Base Lines & Fold-Over Drawing

Note: This example of a parallel baseline shows the orientation of the houses to be opposite on the lower side of the street. The student drew this spacial orientation in order that the street scene was unobscured by the second row of the houses (Schaefer-Simmern, 2003).

Lowenfeld

Lowenfeld's schematic stage included children from seven to nine years of age. The characteristics of the schematic stage included an ability for children to understand the concept of objects, people, and environment. Pure schematic representation was characteristic of this stage. According to Lowenfeld, pure schema was the representation of an object or person in children's artwork without expression of any other intents or personal experiences. If a student drew a dog, for example, then they meant it to simply be a dog (Lowenfeld, 1947).

All children's schema was individualized and uniquely their own visual concept they had arrived at to represent particular objects, such as humans. Lowenfeld felt children incorporated everything they knew about people into a human schema. Human schema, like other schemas, was repeated over and over by children in their drawings until an experience influenced children enough to change their concept of an object. When children had experiences, the deviations presented in their drawings could be an exaggeration of important parts, omission or neglect of unimportant parts, and a change of symbols (Lowenfeld, 1947, p. 71). Lowenfeld wrote that

“schemata are not arbitrary signs but are intimately related to both the bodily and mental constitution” of children (Lowenfeld, 1947, p. 38).

The first time the concept of space developed during the schematic stage. Children used baselines drawn across the page to represent terrain or surfaces. Any deviation from baselines, according to Lowenfeld, expressed other experiences. These experiences could cause space to be subjectively portrayed as fold-over drawings (see Figure 17), x-ray type pictures (see Figure 18), and mixed forms of plan and elevation (Lowenfeld, 1947, p. 71).

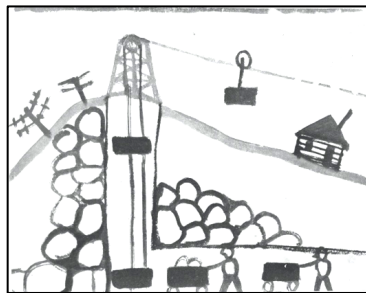


Figure 18. Lowenfeld’s Example of an X-Ray Drawing of a Coal Mine

Note: the workers and coal cars are seen inside the mine. The above-ground features of sky, a house, telephone poles and a coal lift are seen outside the mine. This is an example of an x-ray drawing (Lowenfeld, 1947, p. 59).

Kellogg

The last stage of Kellogg’s theory was called the *Pictorial Stage*. The Pictorial Stage began with children’s earliest attempts at realism and was heavily influenced by previous scribbling stages (Kellogg, 1969a). The Pictorial Stage had subject sub-divisions of Humans, Animals, Buildings, Vegetation, and Transportation (Kellogg, 1969a).

The children’s age of entry into the Pictorial Stage often coincided with entry into kindergarten at five or six years of age. Kellogg felt this was a time of crisis for children because

kindergarten teachers did not have an appreciation for children's spontaneous art, such as the type made in preschool. Kindergarten-age children, Kellogg wrote, were given formulas to copy and exposed to textbooks and flashcards for word recognition. Kellogg felt children exposed to pressure to draw representationally might have felt confusion and feelings of inadequacy (Kellogg, 1969a).

Kellogg identified twenty-eight classifications in the Pictorial Stage. Human figures were created from Implied Diagrams, Diagrams, and Aggregates. Humans could also be placed in Placement Patterns. These Human classifications are listed in Appendix A. Kellogg created eight classifications for animals, six for buildings, four classifications for vegetation, six for transportation, and two more groups titled Jointed Pictorials and Learned from Others. As an example, the Jointed Pictorials consisted of joined drawings such as Humans and Buildings, Humans and Vegetation, and Humans and Transportation. The category, Learned from Others, included drawings with letters and numbers (Kellogg, 1969a).

Comparative Analysis Summary

This summary of the comparative analysis was concerned with the variation and similarities in the stages of children's artistic development from the work of Eng, Schaefer-Simmern, and Lowenfeld to understand how Kellogg's theory may have been singular. The details from the theorists' research about the three stages of *scribble*, *pre-schematic*, and *schematic* are represented in Tables 7, 8, and 9. Table 7 lists the stages, substages, and categorizations for the scribble stage, detailing the theories of the children's artistic developmentalists. In Table 8, a presentation of characteristics of the theories from the pre-schematic is outlined. In Table 9, the schematic stage's outline is presented.

The layout of Tables 7, 8, and 9 are identical. The tables' titles refer to the stage being represented. There is also a brief definition of the stage below the title. Each children's artistic development theorist is listed in a separate box along with the title and date of their work cited. Under each of the theorists' boxes are the *stages*, *substages*, and any further classifications of their children's artistic development research. The *stages* are the general division of the children's artistic development, and they are listed in the tables in bolded italic. The *substages* are indented, listed in plain text, and indicated with uppercase letters. The further categorizations are indented, recorded in plain text, and indicated by numbers.

Research Methods

Differences were found within the research of the four children's artistic development theorists. The differences included:

- The ages of the children whose artwork was examined;
- the number or sample size of the artwork examined;
- the number of children observed;
- the length of the observation.

These criteria are addressed in Eng, Schaefer-Simmern, Lowenfeld, and Kellogg's research methods.

Eng

Eng's observation of her niece Margaret began at her birth up until she was twenty-five years of age. Eng observed her niece drawing daily during the first few years of her life and then a few times a week until she was eight. The remaining years' observations were on occasion. Eng conducted a longitudinal and biographical study of artwork, following one child, her niece

Margaret. Eng was forthright about her niece's advanced cognitive and drawing abilities. Since Margaret was gifted, Eng sought out other children's artwork for examination. She observed other children drawing and collected drawings from an elementary school in Oslo, Norway. Also, Eng referred to the research of many other artistic developmental theorists and included examples of their work in her book.

Eng's description of her niece's development was very detailed and comprehensive in her discussions. Eng considered the descriptions of the drawings of other children as the more typical examples of artistic development (Eng, 1931). Only two stages were recognized by Eng. The first one was scribbling and the second pictorialized drawings.

Schaefer-Simmern

Schaefer-Simmern's research method included a broad cross-section of ages, including children and adults with special needs. Schaefer-Simmern observed thousands of children's drawings as an art teacher and later in the school he founded for research in children's artistic development and visual conceiving. Schaefer-Simmern also collected the drawings of thousands of children at multiple stages of artistic development.

Schaefer-Simmern had a strong interest in comparing children's drawings to that of early humans and ancient artwork which he commented on extensively in *Consciousness of Artistic Form* (2003). There is an equal amount of description of children's artistic development and its relationship to prehistoric and ancient art. The inclusion of ancient drawings and their comparison to children's drawings reduced the descriptions of children's artistic development. It was not as extensively described as the other theorists in the investigation. He did not always include specific detail such as the age of children for particular substages.

Throughout Schaefer-Simmern's research, he was consistent with the use of the same substages of artistic development and those substages were based on the elements of art. The elements he used included circles, line relationships, figure-ground relationships (spacial), and spatial orientation (space and form). Schaefer-Simmern's methodology appeared somewhat disjointed because of his choice of presenting children's artistic development by the elements of art. Schaefer-Simmern fully addressed all development stages within one element of art before he proceeded to the next element. In order to follow a chronological order of Schaefer-Simmern's development stages, each element of art was examined separately. Each element revealed a small section of stage developmental information, and those sections were linked together to construct a complete understanding of the stage.

Lowenfeld

Lowenfeld's research included a general survey of children of all ages and abilities in his observations and description of their drawings. He collected and analyzed thousands of drawings from his son for a biographical study (Smith, 1983). Lowenfeld used his son's early childhood artwork for illustrations in *The Nature of Creative Activity* (1947) (Smith, 1983). While in Vienna, Lowenfeld collected two thousand drawings of the visually impaired and normally sighted children for statistical analysis (Smith, 1983). He had a small number of these children's drawings he brought with him from Vienna (Smith, 1983). Lowenfeld borrowed drawings from Victor D'Amico and The Educational Project of the Museum of Modern Art in New York (Lowenfeld, 1947). In another study, Lowenfeld collected four hundred children's drawings to observe developmental changes (Smith, 1983). Analysis of collections of children's artworks was a consistent feature in Lowenfeld's research.

As Lowenfeld worked with thousands of children, he also studied a broad cross-section of ages and abilities of children, as Schaefer-Simmern did in his research (Smith, 1983). It is known that earlier in his career Lowenfeld spent hundreds of hours teaching normally sighted school-aged children and visually impaired children in Vienna's schools. His publications routinely placed emphasis on the detailed observation of children drawing, rather than the end product (Smith, 1983). A legacy Lowenfeld left the field of art education was "an important shift in emphasis from children's artwork to their conceptual thinking, individual personality developments, and social developments" (Abrahamson, 1980, p. 15; Smith, 1983).

Kellogg

Kellogg's research method was different than that of Eng, Schaefer-Simmern, and Lowenfeld. Kellogg described and organized a more extensive collection of children's drawings than the other artistic development theorists (Kellogg, 1969a). Her collection numbered over a million drawings (Kellogg, 1969a). Kellogg's goal was to create a classification system more detailed than other stage theories constructed in past research. Even with this goal in mind, Kellogg knew that children's art was "so rich and varied that no meaningful classification system can be absolutely precise" (Kellogg, 1969a, p. 86).

The number of preschoolers' drawings Kellogg examined was vast, but her research was not longitudinal in nature, such as Eng's. Kellogg's research was not biographical either. She did not record the social and economic levels of the children. Kellogg stated many of the children she worked with were transitory, leaving the preschool a few days after arriving (Kellogg, 1969a). She wrote that some of her main worries for the children were related to nutrition and hygiene (Kellogg, 1969a). Kellogg's collection of artworks also came from children who spanned a wide variety of

racess, cultures, and income levels. She intentionally collected artwork from children of Chinese, Filipino, Japanese, African, Mexican, and other groups of decedents.

Scribble Stage Comparison

The number of stages, substages, and categorizations varied in the scribble stage. Table 7 illustrates the following analysis. Eng observed two stages, six substages, and seven categorizations. Schaefer-Simmern observed three stages, seven substages, and four categorizations. Lowenfeld observed one stage and four substages. In comparison to the other children's artistic development theorists, Kellogg's classifications were very detailed. Although Kellogg observed one stage and three substages, her categorizations number thirty-eight and she noted the scribbles substage was infinite.

Table 7. Comparison of Scribble Stage

Theorists	Eng <i>The Psychology of Children's Drawings</i> (1931)	Schaefer-Simmern <i>Unfolding of Artistic Experience</i> (1948)	Lowenfeld <i>Creative and Mental Growth</i> (1947)	Kellogg <i>What Children Scribble and Why</i> (1955)
	<p>Stage 1 (1.2 to 3.8 yrs.) <i>Scribbling Stage</i> A. Wavy Scribbling 1. Zig zag B. Circular Scribbling 1. Spirals 2. Circles 3. Ovals C. Variegated Scribbling 1. Crosses 2. Angles 3. Straight lines Placement Stage A. Mass Scribbling B. Scattered Scribbling C. Isolated Scribbling</p>	<p>Stage 1 (2 to 4 yrs.) <i>Scribble to Circular Images</i> A. Unorganized B. Organized 1. Spiraling 2. Circular Images 3. Concentric & Nonconcentric Circular 4. Surrounding & Touching Circular Images Primary Figure Ground Relationship A. Random B. Isolated Spatial Orientation A. Juxtaposed B. Unrelated Direction C. Unified Direction</p>	<p>Stage 1 (2 to 4 yrs.) <i>Scribbling Stage</i> A. Disordered B. Longitudinal C. Circular D. Naming of Scribbling</p>	<p>Stage 1 (2-3 yrs.) <i>Pattern Stage</i> A. 20 Basic Scribbles 1. Dot 2. Vertical Line 3. Horizontal Line 4. Diagonal Line 5. Curved Line 6. Multiple Vertical lines 7. Multiple Horizontal lines 8. Multiple Diagonal lines 9. Multiple Curved lines 10. Roving Open Line 11. Roving Enclosing Line 12. Zigzag or Waving line 13. Single Loop Line 14. Multiple Loop line 15. Spiral Line 16. Multiple Line Overlaid Circle 17. Multiple Line Circumference Circle 18. Circular Spread Out 19. Single Crossed Circle 20. Imperfect Circle B. Scribble Mixtures 1. Two or more scribbles drawn together. C. Placement Patterns P1 over-all, P2 centered, P3 spaced boarder, P4 vertical half, P5 horizontal half, P6 two-sided balance, P7 diagonal half, P8 extended diagonal half, P9 diagonal axis, P10 two-thirds division, P11 quarter page, P12, one-corner fan, P13 two-corner arch, P14 three corner arc, P15 two corner pyramid, P16 across the paper, P17 base-line fan.</p>

Key
Stage=***Italic Bold***
Sub-Stage=Cap. Letters A,B,C...
Categorizations=Numbers 1,2,3...

Pre-Schematic Stage Comparison

This analysis for the pre-schematic stage is illustrated in Table 8. The pre-schematic stage was described by the theorists as the beginning effort of to create realism. This stage of children's artistic development included indications of representation of meaning by the use of symbols.

Eng named one artistic development stage and three substages in this period of growth. Her pre-schematic observations did not include any categorizations. Schaefer-Simmern's artistic development during the pre-schematic stage included five stages and four substages. He did not name any categorizations for this period. Lowenfeld's research consisted of one stage and three substages. Kellogg's details of the pre-schematic stage included two stages, seven substages, and ninety-nine categorizations. In this stage, Kellogg described one substage as having endless possible examples.

Table 8. Comparison of Pre-Schematic Stage

Theorists	Eng	Schaefer-Stimmer	Lowenfeld	Kellogg
	<i>The Psychology of Children's Drawings</i> (1931)	<i>Unfolding of Artistic Experience</i> (1948)	<i>Creative and Mental Growth</i> (1947)	<i>What Children Scribble and Why</i> (1955)
	Stage 2 (1.8 to 4.4 yrs.) <i>Transition from Scribbling to Formalized Drawing</i> 'Formula Man'	Stage 2 (3.5 + yrs.) <i>Beginning to Early Horizontal – Vertical Line Relationships</i> <i>Beginning Variable Line Direction</i> <i>Beginning Figure Ground Relationship</i> A. Juxtaposed B. Overlapped <i>Beginning Spatial Orientation</i> A. Without Baseline <i>Beginning Spatial Depictions</i> A. Figures on Foreground Planes	Stage 2 (4 to 7 yrs.) <i>Pre-schematic Stage</i> A. Discovery of Relationship drawing-thinking-reality B. Search for Concept C. Change of Form-Symbols	Stage 2. (3.5-4 yrs. +) <i>Shape Stage</i> A. 6 Diagrams (Shapes) 1. Greek Cross 13 Classifications 2. Square (or Rectangle) 4 Classifications 3. Circle (or Oval) 4 Classifications 4. Triangle 4 Classifications 5. Odd Shaped Area 4 Classifications 6. Diagonal Cross 4 Classifications Diagram and Scribbles 1. Endless Possible Examples
				Stage 3. (4 yrs. +) <i>Design Stage</i> B. Combines (Two Diagrams) (Roughly 36 Theoretical Combines) 1. Greek Cross Combine 11 Classifications 2. Square (or Rectangle) Combine 8 Classifications 3. Circle (or Oval) Combine 8 Classifications 4. Triangle Combine 7 Classifications 5. Odd Shaped Area Combine 15 Classifications 6. Diagonal Cross Combine 1 Classification (Continued on Next Page)

Table 8. Comparison of Pre-Schematic Stage (Continued)

Theorists

Eng
The Psychology of Children's Drawings

Schaefer-Simmern
Unfolding of Artistic Experience (1948)

Lowenfeld
Creative and Mental Growth (1947)

Kellogg
What Children Scribble and Why (1955)

Stage 3. (3.5 yrs. +) Continued Design Stage

A. Aggregates – 3 or More Diagrams

1. Aggregate w/ Greek Cross
2. Aggregate w/ Squares
3. Aggregate w/ Circles
4. Aggregate w/ Triangle
5. Aggregate w/ Odd Shaped
6. Aggregate w/ Diagonal cross

B. Mandalas – Circle w/ Cross

1. Diagram 6 – (Circle) w/ Greek Cross
2. Diagram 6 – (Circle) w/ Diagonal Cross
3. Diagram 6 – (Circle) w/ Mixed Crosses

C. Radials – Many Lines from Center Point

1. Inherent Radials
2. Attempted Radials
3. Achieved Radials

D. Suns – Circle w/ Lines from Circumference (4 yrs. +)

1. Sun with Center Markings
2. Sun with Face
3. Designs Based on Sun Image
4. Mandaloid Sun

Schematic Stage Comparison

The schematic stage is considered the earliest stage of representation in children's artistic development. The analysis included may be observed in Table 9 for each of the children's artistic developmentalists examined.

This stage for Eng had a greater number of observations than previously in the scribble and pre-schematic stages. Eng observed one stage, eight substages, and ten categorizations in the schematic stage. Schaefer-Simmern observed five stages (the same five stages he used in the pre-schematic stage due to his method of vertical alignment by elements of art). Schaefer-Simmern recognized sixteen substages and no categorizations. Kellogg recognized only one stage, seven substages, and sixty-four categorizations. All the categorizations are listed in full in Appendix A.

Table 9. Comparison of Schematic Stage

Theorists	Eng <i>The Psychology of Children's Drawings</i> (1931)	Schaefer-Simmern <i>Unfolding of Artistic Experience</i> (1948)	Lowenfeld <i>Creative and Mental Growth</i> (1947)	Kellogg <i>What Children Scribble and Why</i> (1955)
	Stage 3 Formalized Drawing A. Automatism B. Orientation C. Perspective D. Proportion E. Movement F. Color G. Orientation	Stage 3 Full-Horizontal – Vertical Line Relationships A. Flowers B. Animals C. People Variable Line Direction A. People Differentiated Figure Ground Relationships A. Shaded Figural B. Ground Meanings Spatial Orientation A. Baseline B. Double Base Lines C. Multiple Base Lines D. Circular Base Lines E. Parallel Base Lines F. Transition to Unified Direction G. Individual & Small Group Base Lines H. Implied Base Lines Spatial Depictions A. Diagonal Lines & Depth B. Transition to Parallel Lines Relationships	Stage 3. (7 to 9 yrs.) Schematic Stage (Characteristics Only) A. Discovery of Definite Concept of Man and Environment. B. Self-assurance through Repetition of Symbols or Schema. C. Pure Schema-Expresses Only Thing. D. Experiences Expressed by Deviations from Schema E. Use of Geometric line	Stage 4. Pictorial Stage A. Humans 1. Infinite B. Early Pictorial 1. Infinite

Conclusion

Each investigator had strengths in their research that have been beneficial to children's artistic development theory. Both Eng and Lowenfeld used their strength in psychology and observation to create a psychological lens. This lens may be used by educators to understand children's artistic development and its relationship to cognitive, emotional, and physical development.

Schaefer-Simmern's strength was in tying children's artistic development to a natural progression of the use of the elements of art, namely line, shape, form, and space. None of the other investigators described their research in this manner, and Schaefer-Simmern created a lens especially for art educators to look through in order to understand children's artistic development by way of the elements of art.

Kellogg observed 201 categorizations within seventeen substages and four stages. Based on this evidence, the significance of Kellogg's children's artistic development theory rests in the high level of detailed descriptions. The attention she gave to examining her enormous collection of drawings led to her categorizations being far broader than any of the other theorists' research. The key to Kellogg's lens was to understand her desire for children to grow artistically by their independent and unique schedule of development. Preschool teachers and parents must leave children happily scribbling in a safe environment in order for natural artistic development to take its course in their lives.

CHAPTER 5. SUMMARY, DISCUSSION, AND CONCLUSIONS

Discussion of the Findings

The previous chapter presented the comparative analysis of findings from the study. Chapter Five consists of a summary, discussion, and conclusion of the findings organized by the research question. A determination of the success of the findings in answering the research question is presented and suggestions are made for furthering the knowledge base of children's artistic development. After the research question section, a discussion ensues, indicating the significance of Kellogg's children's artistic development theory. Expanding on the results is meant to suggest further applications for the study of children's artistic development in several fields.

Research Question

How does Kellogg's children's artistic development theory compare to other children's artistic development theories?

The bulk of the data in this investigation centered on comparing the research of Eng, Schaefer-Simmern, Lowenfeld, and Kellogg. A comparative analysis of each theorist's descriptions and children's drawings sought to answer the research question. The intent was to discover how Kellogg's research was singular, unique, and set apart from the other children's development research.

All four children's artistic development researchers recognized the same three primary artistic development stages. Still, Kellogg's research needed further divisions to organize the significant number of classifications recognized. In the first stage, Eng, Schaefer-Simmern, and Lowenfeld used a form of the term *scribble* as a label. The three theorists used general labels to describe the scribble groups. These labels were organized, vertical-horizontal, and variegated

scribbles. In contrast, Kellogg used the label of *Pattern* for the first stage. Within Kellogg's Pattern stage were the Twenty Basic Scribbles, a description of some of the infinite types of Scribble Mixtures, and seventeen Placement Patterns for scribbles. This comparison reveals Kellogg's results were significantly more precise in identifying scribbles than Eng, Schaefer-Simmern, and Lowenfeld's research. In investigating the research question, it was clear that there would be an advantage in using Kellogg's research to isolate and identify specific scribbles and recognize the endless possibilities of the combination of scribbles.

Kellogg used the label *Design* for the description of the second stage of *pre-schematic* drawings. She identified that children at this level of artistic development could draw seventeen types of Pre-emergent Diagrams, and seven Diagrams. Kellogg recognized, as children developed, they could also make specific types of designs from the shapes. There was such a wide variance of designs within this stage that Kellogg recognized thirty-six two shape Combines, twenty-two three shape Aggregates, thirteen Mandala Aggregates, thirteen Suns categories and seven categories of Radials.

Eng, Schaefer-Simmern, and Lowenfeld have categories in the pre-schematic and schematic stages, with Schaefer-Simmern having more compared to the others. The difference was that the three theorists generalized their categorizations of marks. However, Kellogg was much more descriptive in recognizing individual types of marks. Kellogg recognized significantly more diversity in the types of scribbling and drawing compared to the other three researchers.

A possible correlation may have existed between the larger size of Kellogg's drawing collection, which supplied more data leading to an awareness of the diversity of marks children make. Due to the size and scope of Kellogg's research, her goal of actualizing an extensively

developed classification system provides more data for analysis than Eng, Schaefer-Simmern, and Lowenfeld's research.

Pathway of Development

A similarity of the researchers' investigations was the conclusion that there existed a set pathway for children's artistic development that the direct instruction of adults cannot accelerate. Each theorist recognized the progression of children's artistic stages as occurring naturally (Eng, 1931; Schaefer-Simmern, 2003; Lowenfeld, 1947; Kellogg, 1969a). The four theorists concluded that although all children progressed through artistic development along a set pathway, they did so at different rates.

Eng, Schaefer-Simmern, Lowenfeld, and Kellogg also found that other types of children's development were consequential to the progression of artistic development. Two development areas of significant consequence were cognitive and physical development. Children needed to grow in their cognitive abilities to progress through the artistic development stages. Cognitive development helped children's artistic development progress from unorganized scribbling to personal symbol making and then to drawing representationally. Increasing physical development aided children's artistic growth due to increasing fine motor skills, coordination, increasing strength, and stamina.

Significance of Kellogg's Research

Kellogg's children's artistic development research findings have great significance because they demonstrate a consistently similar pattern of artistic development for at least two generations of children. Kellogg's collection included drawings from four decades which covers approximately two generations. These findings suggest similar pathways of artistic development

for all children, regardless of the generation. The longitudinal nature of Kellogg's drawing collection provides evidence that children's artistic development patterns have changed very little over time.

Kellogg's investigation also includes one of the most significant sources of drawings from children of diverse backgrounds. Kellogg collected examples of children's drawings from local, national, and internationally diverse communities with a great variety of social, economic, and cultural backgrounds. Kellogg's work presents evidence that children's artistic development proceeds in a similar process exclusive of social, cultural, or economic conditions.

Finally, Kellogg's investigation included children's drawings collected from widespread geographical locations. She compared children's drawings collected from many countries to those from the United States. This comparison creates evidence that children's artistic development does not alter by location. Kellogg's research is a significant resource that shows children's artistic development is universal.

Implications for Practice

The findings of this study have implications for children's artistic development. This study identified the extent of the process of children's artistic development according to Kellogg. Kellogg's research has given a near complete categorization of scribbles and early attempts at drawing for the developmental process of children from eighteen months to eight years of age. This investigation may serve as a resource for further investigations of children's artistic development.

Indicator of Growth

The close tie between children's artistic development may aid in studying other child growth processes such as cognitive, emotional, and physical development. Professionals in the field of children's development are provided with a valuable resource to compare and evaluate individual drawings to the average rate of artistic unfolding in children's development. This type of comparison may lead to recognizing greater abilities and delays in children's development. In contrast, a comparison of drawings between individual children and Kellogg's categorization may also alleviate the concern of a delay in developmental growth. It is significant to understand that when using Kellogg's research as an indicator of growth, Kellogg stated that all children develop artistically by a similar mark-making ability process, but the timing of the artistic development stages can vary widely based on the child. The wide variation of timing needs to be fully acknowledged by a clinician using Kellogg's research as an indicator of growth.

Pedagogical Implications

Kellogg's research also illustrates the great variety of scribbles and symbols made by children. The illustrations of drawings provided by Kellogg aids in furthering the understanding of the importance of giving children the opportunity to engage in artistic activities for normal overall development. Her research also reinforces the importance of giving children free time to draw or scribble. Also, these drawing sessions need to be unaided by adult suggestions of subject matter or attempts at improving the realism of the children's artwork. Adult supervision needs to be present in the classroom, but the role of adults is to be one of support, such as providing adequate supplies to the children and maintaining a safe environment.

Art Education

In pre-service programs, educators currently receive information in their training about children's artistic development from more generalized theories such as Lowenfeld. Kellogg's work is rarely discussed in pre-service textbooks. If Kellogg's research is described in current educational literature, it mainly focuses on the significance of the mandala symbol and its indication of the readiness for advancement to the pre-schematic stage. Early childhood educators could benefit significantly by being introduced to Kellogg's research. Her findings would help educators understanding the wide variation of mark-making abilities children possess. Educators could also be more aware when recognizing delays and proficiencies in children's artistic development.

Medical and Arts Connection

Today, the Center for Disease Control researches the conditions that affect healthy child development (Center for Disease Control [CDC], 2021). The center's research intends to increase awareness about children's mental, emotional, behavioral, and physical development. Preventive and intervention programs based on Center for Disease Control research and recommendations have been created for children in many developmental areas.

The CDC's developmental areas currently being researched may benefit from further studies into children's artistic development. The correlation between artistic development and overall children's healthy development appears to be hopeful but needs further exploration. Art interventions, such as art therapy, have been successful for several decades in understanding more about an individual's mental health and have aided in the successful recovery of patients (Jensen & Bonde, 2018). Even with evidence that art-based interventions are effective in reducing the effects of mental and emotional adversities, the research investigating the arts and health has

not been fully explored (Stuckey & Nobel, 2010). In their literature review of arts interventions for mental health, Anita Jensen and Lars Ole Bonde (2018) note that countries in Nordic Europe have recently amplified research efforts, because of an increasing number of patients presenting with mental health conditions. These countries face critical levels of individuals with mental health diagnoses and hope to create non-medical interventions and programs that may include art for treatment (Jensen & Bonde, 2018).

Recommendations for Further Research

Since the 1970s, several investigators have conducted research questioning the validity of various aspects of Kellogg's children's artistic development research. The research presented in this investigation does not investigate the validity of Kellogg's characterizations of children's artistic development. Although this investigation found many descriptive similarities between the research of Eng, Schaefer-Simmern, Lowenfeld, and Kellogg, the validity of Kellogg's research still needs to be fully confirmed by additional research.

Earlier research questioned the findings of Kellogg's work in the 1970s and 1980s. Some examples of these investigations are the research of Marilyn Zurmuehlen and Claire Golomb. Zurmuehlen studied the validity of Kellogg's investigation about teacher preference and its effect on children's artwork. Zurmuehlen's research agreed with Kellogg's findings of that the drawings apt to be preferred by teachers are those with a representational appearance (Zurmuehlen, 1977).

Claire Golomb asked whether children's artistic developmental mark-making was non-pictorial in intent, as claimed by Kellogg, and whether child art was a "special case of conceptual immaturity" (Golomb, 1981)? Golomb's questions revealed "some difficulty with Kellogg's scoring criteria," which led her to different conclusions than those of Kellogg's findings (Golomb, 1981). Kellogg's scoring criteria still need additional research to validate Golomb's claims.

In the field of art therapy, Kellogg's work has been used to analyze children's scribbles and pictorial artwork. One example of the use of Kellogg's children's artistic descriptions in art therapy is Myra F. Levick's art-based evaluation called *The Levick Emotional and Cognitive Art Therapy Assessment* or LECATA (2015). Levick writes that the development of her assessment was influenced by the work of Kellogg (Levick & Siegel, 2015). The assessment functions by examining established norms for childhood development indicators in artwork based on five standardized art tasks. These include "(a) a free art task and a story about it, (b) a drawing of the self, (c) a scribble using one color and a picture created from the scribble, (d) a place where one would like to be (for children 3–5 years old) or a place that is important (for children 6–11 years old and older), and (e) a family, which taken together are intended to provide information about children's cognitive and emotional abilities" (Levick & Siegel, 2015, p. 147). Research of evaluation instruments such as the LECATA need to be undertaken to expand on their purpose and usefulness to art therapists. Also, development of other types of emotional and cognitive assessments need to continue to fully explore the benefits of using Kellogg's research.

Conclusion

Kellogg's highly detailed classification system reflected her methodology as well as her theory about the considerable significance of children's drawings in terms of artistic development and in providing a window onto other domains of childhood development. The significance of Kellogg's research is the inclusion of a far more detailed description of the types and characteristics of scribbles. Her methodology provided a higher number of classifications of scribbles than any children's artistic development researcher in the history of art education (Gardner, 1980; Kelly, 2004).

This study also revealed that Kellogg had a different purpose for investigating children's artistic development besides its pure classification of marks. She intended to educate adults about the diversity and multiple layers of meaning within children's drawing by noting how many types of scribbles existed. This effort of illustrating the intricacies of children's drawing indicated how complex a role of children's artistic development plays in understanding the collective process of children's development.

While Lowenfeld's work appears to be the most well-known of children's artistic development theories, Kellogg provided a unique and substantial body of knowledge about children's artistic development. Those concerned with children's upbringing can better understand children's artistic development because Kellogg provided evidence about the depth of children's mark-making capabilities.

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APPENDIX A

Twenty Basic Scribbles

S1	dot
S2	single vertical lines
S3	single horizontal line
S4	single diagonal line
S5	single curved line
S6	multiple vertical line
S7	multiple horizontal line
S8	multiple diagonal lines
S 9	multiple curved line
S10	roving open line
S11	roving enclosing line
S12	zigzag or waving line
S13	single loop line
S14	multiple loop line
S15	spiral line
S16	multiple line overlaid circle
S17	multiple lines circumference circle
S18	circle line spread out
S19	circle single crossed circle
S20	imperfect circle

Placement Patterns

P1	over-all coverage
P2	centered
P3	spaced border
P4	vertical half

P5	horizontal half
P6	two-sided balance
P7	diagonal half
P8	extended diagonal half
P 9	diagonal axis
P 10	two thirds division
P11	quarter page
P 12	one-corner fan
P 13	two-corner arch
P 14	three-corner arc
P 15	two-corner pyramid
P16	across the paper
P17	base-line-fan

Emergent Diagrams

E1	multi line crossings
E2	multiple line crosses
E3	small crossings
E4	crisscrossing lines
E5	parallel line crosses
E6	multi crossed line and T-cross
E7	added line crossings
E8	squares from crossings line
E9	ladder cross squares
E10	border, base, or sky lines
E 11	implied square shape
E 12	centeredness markings

- E13 implied circular shape
- E14 concentric markings
- E15 implied odd shape
- E16 implied triangular shape
- E17 pre-diagrams

Diagrams

- D1 Greek cross
- D2 square or rectangle
- D3 circle or oval
- D4 triangular shape
- D5 odd shape
- D6 diagonal cross
- D7 diagrams in placement patterns

Combines

- C1 cross with square or circle or odd shape
- C2 Greek cross and diagonal cross
- C3 divided square
- C4 two squares
- C5 square with circle or odd shape
- C6 two circles
- C7 triangular and other diagrams
- C 8 odd shape circles
- C9 two odd shapes
- C10 combines as implied diagrams
- C11 combines in placement patterns

Aggregates

- A1 circles only
- A2 squares only

- A 3 crosses, circles, and squares
- A4 odd shapes only
- A5 squares in odd shapes
- A6 circles in odd shapes
- A7 multilined areas
- A8 multicrossed areas
- A9 three diagrams in combination
- A10 aggregates as implied squares
- A11 aggregates as implied circles
- A12 aggregates as implied triangles
- A13 aggregates as implied odd shapes
- A14 aggregates in placement patterns 1, 2, & 3
- A15 aggregates in the placement patterns 4 & 6
- A16 aggregates in placement patterns 7 & 8
- A17 aggregates in placement pattern 9
- A18 aggregates in placement patterns 10 & 11
- A19 aggregates in placement pattern 12
- A20 aggregates in placement pattern 13
- A21 aggregates in placement pattern 14
- A22 aggregates in placement patterns 15 & 16

Mandela aggregates

- M1 inherent one-line center crossings
- M2 inherent multiline half-crossed circles
- M3 inherit multilined crossed circles
- M4 mandaloid scribblings
- M5 mandaloid structuring
- M6 cross mandaloid
- M7 cross and square mandalas

M8 cross and circle or odd shape mandalas

M9 cross and circle and square mandalas

M10 concentric mandalas

M11 little mandalas

M12 imperfect mandalas

M13 mandalas in placement patterns

Suns

S1 pre-sun scribbling

S2 attempted suns

S3 suns with center markings

S4 clear-center suns

S5 sun faces

S6 sun humans

S7 suns in aggregates

S8 suns with loop rays

S9 suns with other rays

S10 sun designs

S11 enclosed suns

S12 suns is implied diagrams

S13 suns in placement patterns

Radials

R1 inherent radials in circular scribbling

R2 lines crisscrossing at a point

R3 circumference marks on circular scribbling

R4 lines radiating from a point

R5 complete radials

R6 radials in aggregates

R7 radial designs

Humans

H1 face aggregates

H2 areas with few rays

H3 humans with head-top markings

H4 humans without head-top markings

H5 armless humans

H6 legless humans

H7 humanoid aggregates

H8 humans in aggregates

H9 humans with ears

H10 humans with big hands

H11 humans with small hands

H12 humans with wing arms

H13 hands and feet

H14 hair

H15 mandaloid humans

H16 radial humans

H17 humans in pairs

H18 humans in groups

H19 stick men

H20 humans in implied diagrams

H21 humans in placement patterns 1, 2, & 3

H22 humans in placement patterns for 5 & 6

H23 humans in placement pattern 7

H24 humans in placement pattern 8

H25 humans in placement pattern 9

H26 humans in placement patterns 10 & 11

H 27 humans in placement pattern 12

H28 humans in placement pattern 13
H29 humans and placement pattern 14
H30 humans in placement patterns 15 & 16

Animals

K1 animals or human?
K2 top ears and vertical torso
K3 top ears and horizontal torso
K4 head, legs, and tail
K5 species unknown
K6 fish
K7 birds
K8 horses

Buildings

B1 prebuilding aggregates
B2 square roofed buildings
B3 triangular roofed buildings
B4 triangular buildings
B5 other building aggregates
B6 building in placement patterns

Vegetation

V1 humanoid trees
V2 trees
V3 flowers
V4 flowers and trees

Transportation

T1 boats
T2 automobiles

T3 airplanes
T4 rockets
T5 trains
T6 combined transportation items

Joined Pictorials

J1 humans and buildings
J2 humans and vegetation
J3 humans, vegetation, and buildings
J4 for humans and transportation
J5 buildings and vegetation
J6 animals with humans or buildings
J7 other joined pictorials

Pictorials Learn from Others

L1 [a]esthetic use of letters and numbers
L2 non[a]esthetic use of letters and numbers
L3 defective letters and numbers
L4 Halloween
L5 snowmen
L6 Christmas
L7 Easter
L8 Thanksgiving
L9 Native Americans
L10 Valentines
L11 spacemen
L12 animals
L13 rain
L14 other assigned subjects

Formal Designs

- F1 motif repetitions for placement pattern 16
- F2 motif represents repetitions for diagram 2
- F3 other formal designs

Works of Advancing Scribble

- W1 scribble as design
- W2 abstract buildup or fill in
- W 3 sophisticated scribbling
- W4 textured scribbling
- W 5 designs based on suns

Individual Work

- I1 thematic repetitions
- I2 thematic growth