

# Correlations between Aesthetic Literacy, Imagination, and Creativity Performance

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## Abstract

This study investigated the status and relationships between aesthetic literacy, imagination, and creativity performance through different concepts, theories, measurements approaches, and research. This study adopts literature analysis method. Based on the findings, the study proposed suggestions in expectation of providing guidance to educational administrative units. The study findings may also serve as a reference for future researchers during their selection of research variables.

## Keywords

Aesthetic Literacy, Imagination, Creativity Performance

## 1. Introduction

Humanity in the 21st century finds itself in a rapidly changing world, facing an environment filled with uncertainty. Several international organizations, including UNESCO, the OECD, and the EU, have taken concrete actions to instill life-long learning mindsets and capabilities into individuals, particularly through educational reforms focused on literacy, with a goal to respond to and adapt to the ever-changing environment. In Taiwan, the Ministry of Education defines core competencies in its Curriculum Guidelines of 12-Year Basic Education as “encompassing all information, ability, and attitude that a person should possess to equip him or her for daily life and for tackling future challenges”. The concept of “competency-oriented” education is to equip students with abilities relevant to their present life and cultivate their capability to recognize problems at any time, act to address the problems, and strengthen their skills to adapt to society in the future. Unlike conventional education, which prioritizes knowledge-based

learning, competency-oriented education prioritizes skills and attitudes. Students are not merely tasked with memorizing knowledge; instead, they are encouraged to be proactive, empathetic, and capable of transforming the knowledge they acquire in courses into practical abilities that enable them to explore life and solve real-world problems. Of all the objectives, enhancing imagination and creativity is particularly vital for facilitating effective problem-solving.

At the 2022 World Economic Forum, held in Davos, Switzerland, a series of highly influential observation reports were released. The Future of Jobs Report predicted that the top three essential job skills required in the workplace by 2025 will be analytical thinking and innovation, proactive learning, and complex problem-solving. Companies without creativity will lack competitiveness, and countries without creativity will not be capable of facing upcoming global transformations and challenges. Creativity is a key to the future and has become a universally valued quality. In the Curriculum Guidelines of 12-Year Basic Education, the Ministry of Education explicitly states that creativity is an essential component in the core competencies. Under the objectives of the new curriculum set by the Ministry of Education, subject-specific skills are no longer the exclusive focus; fostering creativity has become more crucial. Creativity is not just a life-long skill but a fundamental part of competency. The development of a student's literacy can be initiated by the cultivation of creativity.

Both the Comparative Media Studies Program at Massachusetts Institute of Technology and the Imaginative Education Research Group at Simon Fraser University's Faculty of Education have promoted imagination-enhancing initiatives, indicating that imagination has received great attention. Future generations must be able to examine the interactions between changing factors, use their imagination to visualize the characteristics and requirements of the future world, and create the future they desire through knowledge and action. Albert Einstein once said, "Imagination is more important than knowledge. For knowledge is limited, whereas imagination embraces the entire world, stimulating progress, giving birth to evolution." Nobel laureate George Bernard Shaw stated, "Imagination is the beginning of creation." In other words, creation and innovation require the support of abundant imagination. As Robinson (2011) argued, to advocate for innovative culture, the focus should not be solely on creativity; instead, it should commence with imagination and then transition into creativity. Psychologist Paul Bloom (2010) also believed that when individuals participate in activities they are passionate about without restraint, they delve into a world of future possibilities. Picasso once said, "Everything you can imagine is real", which aligns with Bloom's perspective. Accordingly, imagination is an innate human capability and our greatest asset. Gardner (2007) deemed that cultivating and unleashing imagination facilitates individuals to face and adapt to ever-changing, complex environments. It also inspires human qualities and fosters the ability to engage in independent judgment and action. Barr and Steele (2003) further emphasized that research on imagination should be valued. Therefore, in this study, we explored the characteristics and status of elementary

students in terms of their imagination performance and investigated the relationship between imagination and creativity. “Men are great for the dreams they have”, and dreams arise from imagination. “We cannot change the past, but we can reshape the future”, and the starting point for creation is imagination.

## 2. Literature Review and Discussion

### 2.1. Creativity Performance

#### 2.1.1. Connotation of Creativity

The conceptual definition of creativity has ancient origins. Its roots can be traced to the Latin word *create*, meaning to create, and the Greek word *kaingin*, meaning to produce. In Webster’s Dictionary, creativity is defined as the ability to bring into existence and make something new. Since Guilford introduced the concept of creativity and its importance at the American Psychological Association meeting in 1950, several researchers have conducted studies on creativity (Amabile, 1996). However, the definition of creativity is broad and varies. Different schools of thought have distinct interpretations. Research on creativity has transitioned from a single-dimensional perspective to a multidimensional one, from an individual aspect to a sociocultural one, and from a purely cognitive viewpoint to one that encompasses both cognitive and emotional dimensions. Recently, scholars have leaned towards using a convergent approach to explain the definition of creativity. Within numerous studies on creativity, we discovered that the convergence of multiple dimensions in the study of creativity has become mainstream. In the present study, we explored the connotation of creativity from four distinct perspectives, namely product, individual, process, and pressure or the environment, and defined it as the cultivation of traits and abilities to generate innovative concepts and produce distinctive, useful products through the learning of a cognitive thinking process and interactions with the external environment.

#### 2.1.2. Theoretical Concepts and Research on Creativity

As mentioned previously, a considerable number of theories on creativity have been proposed. These theories differ because of varying perspectives and research orientations. From the viewpoint of psychoanalytic theory, emphasis is placed on the subconscious and the superego. From the perspective of behaviorism, all complex behaviors result from learning, and creativity can be stimulated through environmental stimuli. Humanistic theories, however, accentuate self-actualization. In addition, a historical measurement approach was applied to investigate why historical inventors could become individuals with creativity and uncovered the common factors of their success (Simonton, 1984). In recent years, researchers have been more inclined to study creativity with a convergent approach. Accordingly, in the present study, we explored creativity from an integrated perspective, examining Amabile’s (1983) componential model of creativity, Sternberg and Lubart’s (1995) investment theory of creativity, and Simonton’s environmental influence theory to construct the theoretical founda-

tion of this study.

### **1) Componential model of creativity**

*Amabile (1983)* defined creativity from a product-oriented perspective and further proposed the componential model of creativity, which has become the theoretical foundation of several social psychology studies. The model consists of three fundamental components: domain-relevant skills, creativity-relevant skills, and task motivation.

### **2) Investment theory of creativity**

*Sternberg and Lubart (1995)* considered novelty and appropriateness to be the two necessary conditions for creativity and explained creativity through investment theory. They suggested that creativity is essentially an act of “buy low, sell high”. It involves the combination of six individual resources, which are the six factors that influence creativity: knowledge, intellectual processes, intellectual style, environment, motivation, and personality. To be creative, one must first generate new ideas, analyze them, and then “sell” them to others. In other words, although an individual may possess comprehensive, analytic, or practical skills, these skills may not apply to the creative endeavor they attempt to make. In brief, this theory primarily focuses on an individual’s use of these six resources to generate creative ideas or products.

### **3) Simonton’s environmental influence theory**

*Simonton (1999)* employed a historical measurement method to study creativity, primarily utilizing archival data, such as historical records and biographies. Factor analysis and time series methods were adopted to investigate the influence of eras, cultures, and personal backgrounds on the creativity of outstanding creative individuals. As shown in the figure, individuals interact with the environment, which encompasses both individual developmental factors and the sociocultural factors in which they are situated. Creativity emerges through the interactions between individuals and their surroundings, comprising factors related to developmental psychology and social psychology. After summarizing these creativity-related theories, we discovered that the convergence of multiple dimensions in the study of creativity has become the predominant approach.

## **2.1.3. Research on the Measurement of Creativity**

The fact that creativity can be measured was not realized until a lecture by Guilford, the President of the American Psychological Association, was held in 1950. Based on Guilford’s theory, Torrance further developed a more systematic tool for assessing creative thinking, known as the Torrance Tests of Creative Thinking. After these foundational contributions, various methods for measuring creativity emerged. These methods reflect diverse perspectives and viewpoints emphasized by different researchers in the field of creativity research.

After exploring the conceptual definition and theoretical foundations of creativity, we discovered that the prevailing concept of creativity is based on a multi-dimensional integration model. Measurements of creativity can be categorized into various dimensions, such as divergent thinking, attitudes and interests,

personality traits, biographies, assessments by teachers, peers, or instructors, evaluations of creative work, studies and creative activities of outstanding individuals, and self-reports of creative achievements. This implies that creativity can be measured with a diverse range of methods rather than a single standardized model and that each method is distinct. Nonetheless, creativity is closely linked to an individual's cognitive capabilities and personality traits. Consequently, its measurement dimensions are inextricably related to these two categories. In other words, within a given environment, an individual manifest their creative personality trait through the operation and integration of a series of cognitive thoughts, demonstrating their creative cognitive abilities. Accordingly, the key components of creativity are cognitive fluency, flexibility, originality, advancement, and personal traits. Therefore, measurements exclusively based on the cognitive dimension mostly focus on divergent thinking. We believe that considering both the cognitive and personal trait dimensions is the most comprehensive and rigorous approach to studying creativity.

## 2.2. Imagination

### 2.2.1. Connotation of Imagination

In Webster's Dictionary, imagination is defined as "the power of forming a mental image of something not present to the senses or never before wholly perceived in reality". It is the capacity for mental innovation and the ability to cleverly handle unexpected or unusual problems and situations. Wikipedia defines it as the ability to create new images and sensations without the need for visual, auditory, or other sensory perceptions. It facilitates the application of knowledge to solve problems and serves as the foundation for integrating experiences into the learning process. Guo Yu Ci Hai, a dictionary of contemporary Chinese, defines imagination as the ability to synthesize existing concepts to form new ones. According to the conceptual meanings from these three authoritative sources, imagination is a human mode or process of thinking that involves irregular, self-conscious thinking and image visualization activities to portray the desired thoughts in the mind. Albert Einstein considered imagination to be more crucial than knowledge because knowledge is limited, whereas imagination is limitless. Colello (2007) and Vygotsky (2004) shared similar views. According to the literature and definitions of imagination, it can further be divided into reproductive imagination and creative imagination. Reproductive imagination refers to the reproduction or extended product of an individual's specific experience. According to Egan (2008), imagination is the ability to conceive possibilities beyond the current state, and it promotes deeper understanding of knowledge. It involves restructuring and organizing experiences and making ideas reappear in the mind. Therefore, reproductive imagination is also known as memory imagination. It is a form of mental innovation and an ability to cleverly handle unexpected or unusual problems and situations (Webster, 2012).

### 2.2.2. Theoretical Concepts and Research on Imagination

Vygotsky (2004) introduced the laws of imagination, considering that creative activities rely on the brain's ability to combine elements, which can be described as future imagination or fantasy, and be regarded as creative imagination. His interpretation of the connotation of imagination was based on a cognitive perspective. He indicated that to understand the psychological process in imaginative activities, the relationship between human imagination and reality should first be clarified. He further argued that imagination and reality are not entirely separate ideas but rather closely associated. Eckhoff and Urbach (2008) viewed imagination as a catalyst for creative actions, like Vygotsky's theory of imagination. Vygotsky (2004)'s interpretation of the connotation of imagination was primarily rooted from a cognitive perspective, and he posited that imagination is developed based on the following four principles, namely imagination based on individual experiences, imagination based on social experiences, emotions serving as an intermediary between imagination and reality, and crystallized imagination. According to Vygotsky's four principles, imagination is first built upon an individual's prior experiences. It encompasses various levels, incorporating real elements and then fantastical elements. Second, it is further built upon the experiences of others or society. Individuals expand their experiential elements by imagining experiences they have never encountered based on facts narrated by others. Therefore, imagination and experience are interdependent, implying that imagination derives from experience, and experience also derives from imagination. Third, emotions serve as an intermediary between imagination and reality. Emotions encompass feelings for external expressions and internal expressions that connect thoughts. In other words, feelings are represented not only by external and tangible expressions but also by internal expressions that link thoughts, images, and impressions. This phenomenon is referred to as the dual expression of feelings. Finally, imagination is concretized, which is known as the crystallized imagination stage. In this stage, objects that did not exist in human experience and, can be concretely expressed and have thus become objects that truly exist in the real world. According to Vygotsky's imagination principles, imagination forms the foundation of creativity, and creativity is the ultimate realization of imagination.

### 2.2.3. Research on the Measurement of Imagination

To clearly express and measure imagination, Trotman (2006) observed the emotions, behaviors, reactions, recorded dialogues, and peer interactions of students; collected the essays, journals, and photographs of students; and used images, animations, videos, stories, dances, compositions, improvisational compositions, and improvisational speeches for analysis. With respect to the assessment of creative imagination, the most widely known tool is the Test of Creative Imagination, which consists of three measurement indicators: fluency, flexibility, and originality. The Two-Factor Imagination Scale, developed by Thompson (2011), enables users to understand their imagination through a questionnaire that ex-

plores the process and mechanisms of imagining the future. Liang, Hsu, Chang, and Lin (2012) identified the characteristics of creative imagination and reproduction imagination. According to them, creative imagination exhibits six characteristics: exploration, novelty, production, sensibility, intuition, and concentration, while reproductive imagination has four characteristics: effectiveness, dialectics, crystallization, and transformation.

## 2.3. Aesthetic Literacy

### 2.3.1. Definition of Aesthetic Literacy

According to Mei Xue Ci Dian, a dictionary of aesthetics, aesthetics is the comprehensive perception generated by individuals through their senses and arises from the aesthetic attributes of an objective object. The word “aesthetic” originates from the Greek word *aesthetics*, which means “perceived through the senses”. In modern usage, it is used to mean “beautiful”, “esthetic”, and “artistic”. Philosopher Kant believed that beauty is perceived through the senses and described it as a disinterested pleasure that is subjective and universal. Dewey’s concept of aesthetic experience primarily emphasizes that individuals and the environment form an interactive whole. By combining the senses, emotions, and rationality, individuals achieve comprehensive experiences with aesthetic qualities, from which they derive the meaning of life. Aesthetic ability is a fundamental element for the attainment of aesthetic experience. Varying levels of ability result in different degrees of aesthetic experiences. Such ability is manifested through “aesthetic literacy”. Several studies have applied social science methods to establish indicators for aesthetic literacy that specifically reflect aesthetic ability and competence among individuals. The development of aesthetic literacy is related to an individual’s knowledge, emotions, and ability to perceive aesthetic objects (Csikszentmihalyi, 1990). In this study, aesthetic literacy was defined as basic competence in artistic creation and appreciation. It promotes multisensory development and fosters aesthetic experiences in an individual’s living environment.

### 2.3.2. Theoretical Concepts and Research on Aesthetic Literacy

Several theories related to aesthetic literacy have been proposed. This study did not examine all of them but rather focused on those that are most relevant to the research topic.

#### 1) Psychical distance theory

In 1912, Bullough introduced the psychical distance theory, which uses the concept of distance as a metaphor to explain the relationship between a subject and an object in art appreciation. It aims to show that viewers need to maintain an appropriate psychological distance from an object, encompassing both temporal and spatial aspects, to enter a state of appreciation. Bullough proposed three principles: the principle of concordance, the antinomy of distance, and the variability of distance. He believed that viewers can actively adjust their psychical distance during the appreciation process to enhance their perception of the

connotations expressed by the object.

## 2) Empathy

From the early 19th century and for approximately 50 years, Lotze and Vischer in Germany, Lee in the United Kingdom, and Basch in France dominated the mainstream aesthetic argument. Lipps's theory of empathy posited that viewers project their own emotions onto the image of an object and thus experience aesthetic sensations. After various arguments were synthesized, a theory of empathy in aesthetic appreciation emerged that encompasses five main concepts: 1) empathy and projection, 2) empathy and the merging of self and object, 3) empathy and sympathy, 4) empathy and association, and 5) empathy and imitation.

## 3) Stage theory of aesthetic development

Parsons divided aesthetic development into five stages: a) Favoritism: The main characteristics of this stage are an intuitive liking for most paintings, easy attraction to vibrant colors, and the ability to freely associate with subjects. At this stage, individuals rarely consider others' viewpoints. b) Beauty and realism: This stage is based on the ontology of the object. The likeness and commonness of the object is pursued. In terms of psychological growth, individuals at this stage begin to understand others' viewpoints. c) Expressiveness: Issues related to emotional expression on the canvas are the focus at this stage. Creativity, originality, and the depth of emotional expression begin to be emphasized. In terms of psychological growth, individuals at this stage have a new understanding of the internal elements of others' experiences and develop the ability to capture unique thoughts and emotions. d) Style and form: New insights and more rational observation are involved in this stage. In terms of psychological growth, individuals can now analyze traditional concepts from a holistic perspective. e) Autonomy: At this stage, individuals must assess the concepts and values that constitute the traditional meanings of art. These values change over time and are to be readjusted continually to suit the needs of the contemporary environment.

### **2.3.3. Research on the Measurement of Aesthetic Literacy**

In the early stages of aesthetic measurement, most studies focused on demographic variables and aesthetic preferences (Salkind & Salkind, 1973). Kay (1969) identified and separated the intrinsic attributes of aesthetic preferences, which encompassed emotions, perspective and plane, colors, rhythm, and arrangement. However, the components of aesthetic preferences were not clearly defined, and the variations in the methodological procedures adopted to measure aesthetic preferences led to a lack of consistent findings.

Nevertheless, various measurement tools were developed over time. One of them was implemented by presenting stimuli to participants in a paired comparison approach, where participants were presented with stimuli and choices. Another method required participants to rank aesthetic items in order of preference. Participants' aesthetic preferences for reproductions of paintings were assessed, and they were asked to explain the specific reasons for their choices. These self-reflective surveys were categorized as being related to subject matter,



sensory impressions, form, and texture (Salkind & Salkind, 1973). Aesthetic literacy is measured from an inside-out perspective that extends from internal factors (e.g., knowledge, emotions, and attitudes) to external factors (e.g., behaviors and skills). Assessment items cover various art categories, such as visual, music, and performing arts. Aesthetic literacy, individual literacy performance, the interrelationship between literacy dimensions and the correlation between aesthetic literacy and abilities in other domains can all be measured. In fact, the use of different methods serves as stimulus for further research in the field of aesthetic measurement (Salkind & Salkind, 1973).

## 2.4. Conclusion and Suggestions

### 2.4.1. Conclusion

#### 1) Imagination is related to creativity

As mentioned in the research background, George Bernard Shaw once said, “Imagination is the beginning of creation.” White (1990) believed that imagination is the foundation of creative invention because it determines the scope of creative thinking. Mellou (1995) considered imagination to be closely related to creativity because of its connection with innovation and change. Heath (2008) indicated that through imagination, people construct the world and transform the things they acquired, expanding their perspectives and opportunities to understand new experiences. A survey by Imagine Nation (2008) revealed that 89% of individuals believe that imaginative thinking plays a crucial role in the success of economic innovations in 21st century globalization. Blenkinsop (2009) discovered that imagination is closely associated with creativity and suggested that individuals with excellent creativity must have high-quality imagination. Robinson (2011) argued that organizations should not solely value creativity before promoting a culture of innovation; instead, they should begin with imagination, shape creativity, and then foster innovation. Imagination is an innate human capability. It is the foundation for creative activities and an outcome of cognitive and emotional processes. Forgeard and Kaufman (2016) implied that education should not only provide knowledge but also unleash students’ potential and inspire their unique human qualities. Stimulating students’ imagination is an effective approach. Many historical inventions and creations are in fact the results of radical imagination. Hsu (2019) explored the relationship between students’ personality traits, imagination, and creativity and further confirmed that individuals with different types of imagination tend to exhibit either original or practical creativity.

#### 2) Aesthetic literacy is related to imagination

Greene (1995) advocated for the inclusion of art, dance, music, and literature content in lessons to unleash learners’ imagination and enrich their perspectives. Eisner (2002) demonstrated that promoting aesthetic perception through aesthetic activities can transform individuals’ habitual thinking patterns, expand their imagination, activate their aesthetic literacy, and further inspire their crea-

tive thinking. We discovered that if learners habitually relax their sensory perceptions and are guided to encounter new aesthetic knowledge or experiences in a timely manner, their previously activated imagination can further be released.

### **3) Aesthetic literacy is related to creativity**

During a conference in 1999, UNESCO Director-General Federico Mayor emphasized the importance of aesthetic literacy and introduced a declaration of arts education. He believed that aesthetic literacy promoted cultural diversity and was essential to the physical, emotional, and personality development of children. The purpose of arts education is not to make students into artists but to guide and inspire their creativity. Jung (1973) found that beauty, through the archetype of imagery, reacts to all psychological connections by the subconscious mind, which becomes a part of creativity performance. Jansen, Finger, and Wildemeersch (2000) proposed that aesthetic literacy cultivation contributes to increasing students' positive energy, thereby strengthening many other abilities. Dewey (1981), Richards (2009), and Lussier (2010) suggested that individual creativity is related to aesthetic literacy. Aesthetic experiences have a considerable influence on creativity development because individuals generate conscious and subconscious experiences through the act of appreciation.

#### **2.4.2. Suggestions**

1) Given Taiwan's limited natural resources and densely populated environment, its strength lies in the abundant, high-quality human resources it possesses. Particularly in the face of declining birth rates and an aging society, schools play a crucial role in nurturing the country's future talents. We anticipate that the findings of the present study can serve as a reference for educational policymakers and contribute to talent development in Taiwan.

2) Research in imaginative education has gained increasing attention, and the inclusion of imaginative education as a topic in recent international academic conferences has encouraged innovative developments in this field. Recently, the focus of studies on imaginative education has shifted from philosophical explorations to curriculum design and assessment in imaginative education. Current research directions can be summarized into three main areas: understanding the processes of imagination, curriculum design in imaginative education, and development and application of imagination assessment tools. However, few studies have concentrated on understanding students' imagination performance, highlighting the necessity and importance of further exploration in this area.

3) Aesthetic literacy and creativity are both essential abilities being promoted in various countries, and they are interrelated. If educational authorities integrate the development of these skills into early childhood education, their nation's competitiveness can undoubtedly be enhanced.

### **Conflicts of Interest**

The authors declare no conflicts of interest regarding the publication of this paper.

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