9

How Can Inspiration Be Encouraged in Art Learning?

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Abstract

Inspiration has been regarded as an important phenomenon in research into artistic creation and art learning (Tyler & Likova, 2012; Chemi, Jensen & Hersted, 2015). Active art appreciation inspires people and facilitates the creativity of art-making, as shown by psychological experiments on drawing (Okada & Ishibashi, 2016). Our recent studies on inspiration in artistic activities have shown that the core of inspiration through art appreciation (ITA) is a dual focus on the artwork (and artist) and the viewer's own art-making. In this chapter, we outline our model of the psychological process of ITA. We list factors that promote ITA, in particular, those inducing a dual focus in the context of educational practice. Some factors – instruction, methods of appreciation, and methods of selecting and showing artworks – may contribute to educational interventions in museums and schools. Finally, we described a case of art educational practice for undergraduates, designed to promote inspiration.

9.1 Introduction

Many artists have described receiving inspiration for their creations. In the book, "Behind the Scenes of Artists' Creations", Tatiana Chemi, Julie Borup Jensen and Lone Hersted provided several examples of artists' creative inspiration (Chemi et al., 2015). For example, Julia Varley, an Italian actress, was

deeply inspired by a performance of Odin that she had the opportunity to see when visiting Denmark. Although she encountered many difficulties performing in a foreign country, she was so inspired by Odin's work that it pushed her to become a better artist herself. Such an experience has often been described as a gift from the creative muse, as if inspiration comes from some higher power. In fact, psychological research in past decades has revealed that the creation of artwork requires conscious effort (Weisberg, 2006). More recently, researchers have begun to examine inspiration empirically and have suggested that inspiration plays an important role in creativity "by firing the soul" (for a review, see Oleynick, Thrash, LeFew, Moldovan & Kieffaber, 2014). The increase in the number of psychological studies on inspiration in creation has helped us begin to unravel the mystery of inspiration. In addition, researchers studying art learning have also shown an interest in inspiration and how the inspiration process can be utilized in art learning, a question that still remains unanswered (Tyler & Likova, 2012).

To answer this question, this chapter provides a review of psychological studies on inspiration, especially in artistic activities, and suggests important factors in promoting inspiration in art learning and art education. In addition, we introduce our own practice in art education and report how it was designed to promote inspiration and how learners changed throughout the practice. We aim to offer a new framework for art learning, with a focus on inspiration.

9.2 A Brief Review of Psychological Studies on Inspiration

Inspiration has recently become a topic of empirical investigation in psychological studies. The word "inspiration" has been used in various areas such as social comparison, religion, problem solving, and creativity. The triggers, the results, and the processes of inspiration differ depending on the area of study. Two American psychologists studying motivation, Todd M. Thrash and Andrew J. Elliot, provided a general conceptualization of inspiration by focusing on the psychological experience (Thrash & Elliot, 2003, 2004). Through questionnaire survey studies, they statistically extracted the following three elements as the psychological constructs of inspiration: evocation (e.g., feeling overtaken, uncontrolled); motivation (e.g., activation, energy); and transcendence (e.g., positivity, enhancement and clarity). Further, they defined the process of inspiration as being inspired by, which refers to appreciation of the perceived intrinsic value of a stimulus object, or inspired to, which refers to motivation to actualize or extend the valued qualities to

a new object. Indeed, they enabled the measurement of the psychological experience of inspiration by developing a psychological scale of inspiration called the "Inspiration Scale (Thrash & Elliot, 2003)".

Thrash and his colleagues also conducted empirical research into inspiration during creative activities. In one study, undergraduates participated in various writing tasks, such as scientific writing and fictional writing, and reported their level of inspiration during the writing process. The results showed that how inspired they felt predicted how creative their works were rated to be by readers. In addition, they often felt inspired *after* they came up with a new idea. These findings contributed to the understanding of the psychological mechanism of inspiration in creation.

However, inspiration might not result from an inner process. As described above, Thrash & Elliot believed that inspiration includes the process of being inspired by *something* (Thrash & Elliot, 2004). Recent studies have pointed out that artists are strongly influenced by encounters with the outside world, and they often actively make use of these encounters when creating art (Chemi et al., 2015; Takagi, Kawase, Yokochi & Okada, 2015). We gain stimulation from outside phenomena, such as an apple falling to the ground, traces of our own scribbles, artworks created by amateurs or famous artists, and incidents in our personal or social lives. Especially in art education and art learning, it is important that students learn from artworks created by others and gain inspiration from them. According to the Systems Model of Creativity (Csikszentmihalyi, 1999), learners can participate in the social system of creativity by acquiring knowledge and inspiration from other creators and their works.

Focusing on such theories and episodes, some researchers have claimed that inspiration occurs as a result of encounters with the world outside the self. For example, analogy researchers have examined the relationship between one's creativity and one's encounters with the outside world. They define analogy as transferring meaning or ideas from a particular subject (analogical source) to another (target), and express the similarity or difference based on the distance of the source and target. For the explanation of creativity, they focused on encounters with images, products, and ideas as the analogical source, and proposed that a conceptually distant source, which has a similar structure but a different surface, elicits a creative breakthrough (Conceptual leap hypothesis: Gentner & Markman, 1997; Holyoak Thagard, 1996; Poze, 1983; Ward, 1998). The hypothesis was confirmed in studies on product design in artistic domains (Chan, Schunn, Cagan, Wood, Kotovsky, 2011). However, results of more recent studies implied that the conceptual distance

of sources did not affect the novelty of ideas analogized from the sources (Fu, Chan, Cagan, Kotovsky & Schunn, 2011). In keeping with these studies, Chan et al. suggested that creativity of ideas might be affected by a deep exploration of distant sources (Chan, Dow & Schunn, 2015).

Deep exploration was also examined in an experimental study on drawing (Okada & Ishibashi, 2016). Okada & Ishibashi conducted experiments to study the creative process of drawing. On the first day of Experiment 1, non-art major undergraduates were asked to create a drawing of natural motifs (e.g., pine and pepper). On the second day (the intervention session), one group of participants copied an artist's drawing with a similar motif, while a control group of participants drew motifs in the same manner as on the first day. All participants were asked to create a drawing of natural motifs again on the third day. In Experiment 2, the participants were presented with two types of drawings by artists (e.g., representative and abstract), which were selected according to how familiar they were to the participants (i.e., representative drawing familiar and abstract unfamiliar). In Experiment 3, one group of participants copied an artist's drawing while another group only viewed the artist's drawing for approximately 20 minutes on the second day. The results of these experiments showed that both copying an unfamiliar artwork and viewing it for a long time promoted creativity, while copying familiar artwork did not have that effect. In addition, the participants were also asked to express aloud what they were thinking during the intervention session. The results suggested that they relaxed their constraints (i.e., their preconceptions about art-making) and reconstructed their knowledge through deep exploration of the artwork. These findings provide useful insight into the mechanism of the creative process by stimulation from outside. Recently, Okada (2016) further emphasized the importance of comparison between oneself and others in artistic creation. Through the process of comparison, viewers can detect the differences between their own schemas and others' schemas through profound encounters such as copying others' works or spending a long time appreciating the works of others. In order to examine the importance of the comparison process empirically, we conducted another study, which was a questionnaire survey of non-art major undergraduates. It revealed that appreciation with comparison between one's own art-making and works by others promoted artistic inspiration more strongly than appreciation with evaluation of others' artworks (Ishiguro & Okada, 2015).

Another question is how viewers compare others and themselves while appreciating a work of art. To answer this question, we introduce an outline

of the psychological model of inspiration for art-making through art appreciation (the ITA model), and in the next section, we suggest factors to promote ITA in art learning. Though this model primarily focuses on inspiration for art-making through art appreciation, it can be applied to other types of social encounters with the world beyond the self.

9.2.1 Psychological Model of Inspiration for Art-Making through Art Appreciation (ITA)

Previous studies on art appreciation have assumed the goal of art appreciation to be evaluating and understanding artworks (Pelowski, Markey, Lauring & Leder, 2016). However, such studies did not explain how people drew inspiration from others' artworks while they were appreciating a work of art. As we have mentioned above, drawing inspiration from others' artworks is one of the key processes of artistic creativity and needs to be incorporated into the model of art appreciation. Our previous studies suggested that the process of inspiration is triggered by individuals when they compare others' creative process with one's own (Okada, 2016; Ishiguro & Okada, 2015). Therefore, the ITA model needs to include the process of viewers' own art making. The model should extend the process to include both evaluation of artworks and reflection on the viewer's own art-making as its essential goals. In addition, the model assumes that the process of ITA consists of both emotional and cognitive processes. This is because inspiration has been conceptualized as a motivational state, which consists of emotion, cognition, and need (Tyler & Likova, 2012; Thrash & Elliot, 2003, 2004). As shown in the outline of the ITA model (Figure 9.1), the process consists of four phases: the initial state; Phase 1; Phase 2; and Phase 3. The initial state refers to the motivational state for artistic activities such as art-making and appreciation. Phase 1 refers to

Subject of processing	Type of processing	Phases of appreciation for inspiration			
		Initial state	Phase 1	Phase 2	Phase 3
Viewer's own art-making	Cognitive	Motivational state for art-making		Reflection on viewer's own art-making	Inspiration for viewer's own art-making
	Emotional				
Others' artworks	Cognitive	Motivational state for appreciation	Evaluation of others' artworks	Evaluation of others' artworks	
	Emotional				

Figure 9.1 Outline of the process model of inspiration to make artworks through art appreciation (ITA).

evaluation of others' artworks. Phase 2 includes a comparison between the process employed by others and that employed by the viewer of the artwork, based on an evaluation of others' artworks and reflection on the viewer's own art-making. Phase 3 refers to the state of being inspired in art-making. The ITA model emphasizes the significance of Phase 2 because it connects the activities of art appreciation and art-making.

Phase 2 is characterized by its "dual focus", the state of focusing on both the evaluation of others' artworks and reflection on the viewer's own art-making, simultaneously or alternately. To achieve a dual focus, there are some essential conditions. First, it is important for the viewer to be motivated to make art in the initial state. Second, the viewer has to consider how relevant other artist's artwork is to his/her own art-making in Phase 1. The higher the relevance is considered to be, the easier it is for the viewer to pay attention to his or her own art-making and to have a dual-focus.

This feature of the ITA model is useful in order to understand the difference in the experience of inspiration between professional artists and amateurs. It has been shown that experts in a creative art domain (such as design) gain inspiration more frequently and intensely than amateurs (Thrash & Elliot, 2003). Artists are more easily inspired to make art because they are often motivated to make art in the initial state before they enter the stage of appreciating others' works. In addition, they tend to consider how relevant the works by others to their own art-making because they are strongly motivated to improve their creativity. In contrast, amateurs in artistic activities hardly gain any inspiration because when viewing others' artworks they are motivated to appreciate rather than to make art. As a result, their appreciation is often preoccupied with evaluating others' works. However, as shown in an experiment by Okada & Ishibashi (2016), their creativity can be promoted if they actively interact with works by others for a long period of time. We can assume that such deep interactions with artworks encourage viewers to consider how relevant the works to their own art-making.

9.3 Factors That Promote Inspiration for Art-Making through Art Appreciation in Educational Settings

As mentioned above, recent studies have provided findings demonstrating the psychological mechanism of inspiration in artistic creation. If these findings can be applied to educational practices in museums, schools, and lifelong learning settings, learners may be able to experience inspiration more

frequently and intensely, become motivated to their artistic activities, and be more committed to art culture. Such an experience plays an extremely important role, not only for the creation of experts in an artistic domain, but also for the well-being of amateurs in their creative lives.

Therefore, we will describe what factors affect the emergence of inspiration by referring to our ITA model. According to this model, it is easy for a viewer of artworks to experience inspiration for art-making if (s)he has a high motivation for art-making in the initial state. However, the model also emphasizes the importance of comparison between the artwork of others and the viewer's own art-making in Phase 2, which includes a dual focus state activating both the attention to an artwork or the artist who made the artwork and the attention to the viewers' own art-making. The dual focus in Phase 2 is also crucial for attaining an inspirational state in Phase 3, whether or not viewers are highly motivated to make artwork. Thus, to promote the process of dual focus, it is essential for novice viewers of art to be creative because, in general, they focus only on an artwork or the artist who made the artwork during art appreciation, and hardly focus on their own art-making.

Therefore, to activate the viewers' focus on their own art-making in an art educational setting, teachers need to instruct viewers on how to interact appropriately with an artwork. A teacher also needs to select appropriate artworks for the students. Figure 9.2 shows examples of interventions to activate a viewer's dual focus: the focus on the artwork and artist, and on the viewer's own art-making. The focus on the artwork and the artist refers to interpreting and evaluating the artwork and the artist. The focus on the viewer's own art-making means reflection on the knowledge, abilities and autobiographical memory of the viewer's own art-making. The examples of the intervention are classified into three ways of interacting with an artwork. The following describes examples of these and how they drive viewers to be dual-focused and inspired.

9.3.1 Interventions

The first type of intervention is to activate viewers' attention to their own art-making process. For this purpose, the most direct intervention is to support viewers in developing their goals for art-making during their art appreciation. For example, it is useful to let viewers first make their own artworks before appreciating others' artwork and then to give explicit instructions such as "appreciate an artwork in order to obtain hints for your own art-making". Researchers have applied this practice of having participants make products

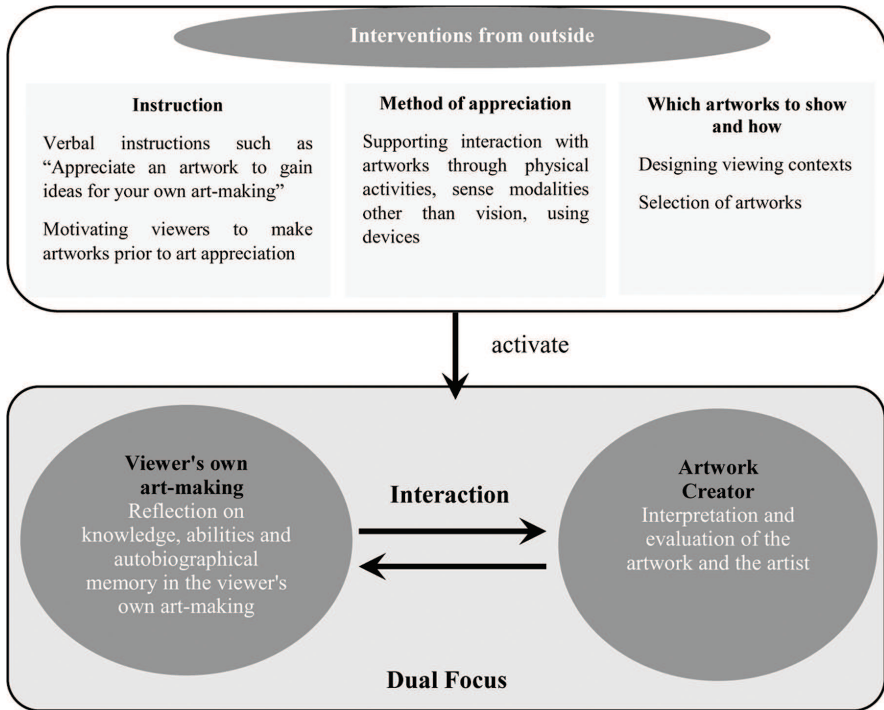

Figure 9.2 Interventions from outside to make viewers dual-focused.

before viewing others' examples in order to investigate creative problem solving, such as product design and artistic drawing (Chan et al., 2011; Langer, Pirson & Delizonna, 2016; Kiyokawa, Izawa & Ueda, 2006). The findings have shown that such interventions promote creative performance and self-evaluation.

The second type of intervention is the method of art appreciation. We describe three methods: appreciation with physical activities; appreciation with sense modalities other than vision; and appreciation using devices. All of these methods of art appreciation are accompanied by actions other than viewing, which is the central activity of art appreciation. These methods make it possible for viewers to experience what they usually do not perceive in everyday life and to question their own preconceptions. If they come to pay attention to themselves during art appreciation, especially to their own art-making process, and they also consider artwork as being relevant to their own art-making, then the comparisons in Phase 2 will be made.

The first method for art appreciation is appreciation with physical activities when viewing artworks. This changes the ways in which viewers' interpret an artwork and helps to direct their attention to themselves. There can be various interventions to promote such appreciation. We present three examples, which have already been applied to learning in practical situations such as in museums and schools. It is suggested that these examples were effective in promoting viewers' dual focus (both interpreting others' artworks and reflecting the viewers' senses, actions and their own feelings). For instance, Nakano & Okada (2016) reported a two-day educational practice in a museum, in which participants appreciated one of the three official replicas of Marcel Duchamp's famous modern art, 'The Bride Stripped Bare by Her Bachelors, Even (often called The Large Glass)', and then they did dance exercises and created their own performance in front of the artwork. They suggested that dancing while appreciating an artwork enabled the participants to fix their attention on both the artwork and their own bodies.

The second method is art appreciation using sense modalities other than vision, such as the sense of touch. This also serves the function of focusing the viewers' attention on their own senses. In general, vision is the dominant sense in aesthetic appreciation of the fine arts. However, art appreciation using other sense modalities provides viewers with new aspects of interpretation and reminds them to pay closer attention to their own senses.

The third method is art appreciation using a device, such as a virtual reality (VR) device. Recently, researchers demonstrated that using VR in museums and galleries enabled viewers to perceive expression in a painting intuitively by interacting with it in a 3D world (Huang & Han, 2014). VR has already been used in art museums; for example, the MoMA in New York has started to utilize VR technology in educational exhibitions. Although there are still few studies about the effect of VR in museums, VR would change our art experience from passively viewing artworks to actively playing with them. Such an experience makes it possible for viewers to go beyond the boundary of their ordinary feelings and thinking and, as a result, to reflect on themselves more actively.

The third type of intervention relates to which artworks to show to viewers and how. Educators and researchers can intervene in how viewers appreciate artworks and what kinds of artworks they consider. The environment and context are thought to be important for art appreciation. Recent studies on art appreciation have suggested that the evaluation and interpretation of an artwork is affected by its environment and context (Leder, Belke, Oeberst & Augustin, 2004; Bullot & Reber, 2013) because the context activates viewers'

specific knowledge and memories and guides their interpretation of artworks. Especially if the activated knowledge and memories are related to their own art-making, such a context should increase their motivation to make art.

In addition, selecting what kind of artworks viewers should appreciate plays an important role. Depending on what kind of artistic characteristics the viewers perceive, their evaluation and interpretation of the artwork during the appreciation phase may differ. For inspiration, it is important whether or not the perceived characteristics of the artwork are related to the viewers' own art-making.

How do viewers then consider how relevant an artwork to their own art-making? They consider the relevance of the artwork to themselves and their own art by applying their own knowledge and experience. This process is thought to be analogical, with related knowledge and experience being mapped onto the artwork. Literature on art appreciation claims that the style and content of artworks are categorized on the basis of viewers' prior knowledge and experience (Leder et al., 2004). Such a process is related to analogical thinking. Therefore, in the next paragraph we will explain the art appreciation process according to theories of analogy.

Accumulated research into analogy reveals that the core of the human thinking process is deeply related to the perception of similarity and difference. One of the main findings is that analogical processing rests on the common structure between source and target (structural mapping theory: (Gentner, 1983), and it is also influenced by pragmatic contexts (Gick & Holyoak, 1980; Holyoak & Koh, 1987). In contrast, everyday thinking, including creative thinking, often has no clear source and target. Gentner & Markman (1997) proposed a theory known as the structural alignment theory, which states that a new structure can be produced by comparing a source and a target. We can assume that the same process occurs in art appreciation, in the early phase in which viewers classify the content and style of an artwork by applying their prior knowledge and experience implicitly and explicitly (Leder et al., 2004). According to the structural alignment theory (Gentner & Markman, 1997), art appreciation can be regarded as a process of interpreting an artwork (target) on the basis of prior knowledge and experience (source), in which the comparison between the target and source will produce a new structure for alignment. If viewers' autobiographical knowledge of art-making is involved as a source in the process of structural alignment, they consider the artwork as relevant to their own art-making. As a result, the viewers will become dual-focused.

According to these findings, educators should take into consideration learners' prior knowledge and experience of art-making when selecting artworks for their appreciation. To facilitate their dual focus process, it would be better to make the relevance between the artworks and learners' knowledge and experience high. However, if educators intend to make students not only inspired to make art but also to be creative, it might be better to select artworks unfamiliar artworks to the learners, as Okada & Ishibashi (2016) suggested. What kinds of artworks should be chosen depends on the goal of the educational practice.

9.4 An Example of Educational Practice for Promoting Inspiration

In the last half of this chapter, we introduce our practice as an example of supporting learners to gain inspiration through art education.

We conducted a fine-art photography course, "Artistic Creation", at the University of Tokyo, in Japan. The course was held for the cultivation of students' creative fluency or creative literacy, which refers to an understanding of creative processes and methods and the acquisition of habits and attitudes to enjoy creative activities (Agata & Okada, 2013). Creative fluency is assumed to play an important role in individuals' well-being, especially in creative life, and their participation in a creative society. For this purpose, the course was aimed at promoting art-novices' commitment to artistic activities in a certain domain. Learning through experiencing inspiration by the artworks of others is one of the significant parts of an experience of artistic creation. Thus, the educational interventions were designed to encourage such inspiration.

All of the students who participated in the course for course credit were non-art majors and had never had any formal education in artistic activities. We chose artistic photography as the target domain, because photography is familiar even to such students. It was thought to be relatively easy for them to create artistic works through photography, rather than through other forms of art, such as drawing or painting, because only a limited number of basic techniques must be mastered to take pictures once the students are able to use an automatic single-lens reflex (SLR) camera.

The course consisted of 14 classes in total (see Tables 9.1, 9.2 and Figure 9.3), and 21 undergraduates at the university (10 males and 11 females; aged from 20 to 27, $M = 21.33$, $SD = 1.58$) followed the course. All of them were beginners in artistic photography. They used a digital SLR camera provided by us for the course (five of them used their own cameras). The whole

Table 9.1 Schedule of the course

Class 1	Guidance
Class 2	Lecture 1
Class 3	Free photography 1
Class 4	Lecture 2
Class 5	Lecture 3
Class 6	Lecture 4
Class 7	Free photography 2
Class 8	Appreciation & Imitation 1
Class 9	Free photography 3
Class 10	Appreciation & Imitation 2
Class 11	Free photography 4
Class 12	Presentation
Class 13	Free photography 5
Class 14	Introduction of the instructors' artworks

N.B. Pale grey cells refer to the 1st intervention designed for inspiration, and grey cells refer to the 2nd intervention designed for inspiration.

Table 9.2 Educational interventions and timetables

	Free Photography (5 Times)	1st Intervention Designed for Inspiration	2nd Intervention Designed for Inspiration	Presentation (Once)
		Lecture (4 times)	Appreciation & Imitation (twice)	
13:00–13:15	Complete a questionnaire Question time with the instructor	Question time with the instructor	Appreciation of an exemplar photograph	Appreciation of photographs by the students
13:15–13:45	Photography	Lecture by the instructor		
13:45–14:20		Photography	Photography (imitation)	Presentation
14:20–14:40	Appreciation of some students' photographs and comments on them by the instructor			
Homework				
Explaining the photographs they had taken in the classes Describing what they had considered and noticed about artistic creation each week				

N.B. The actual timetable was adjusted according to the situation.

course was taught by a professional photographer, Fumimasa Hosokawa, who has an MFA in photography, teaches at a professional school of photography, and has held exhibitions domestically and internationally. The second author

Figure 9.3 Classes.

organized the course with the photographer; the first author collected student data, such as the results of student questionnaires and student homework responses. The first author also conducted interviews with the students one year after the course. The students were informed that the data would be analysed and published as scientific research.

The Course Design

The course was designed on the basis of three factors to promote inspiration, as described in Section 9.3 above (see Figure 9.4). In the course, we included two types of intervention for inspiration, combining each of the following factors: instruction, methods of appreciation, and methods of exhibiting artworks.

First, we held a series of lectures as the initial intervention designed for inspiration, taking into account the fact that the students were beginners in artistic photo expression. With the lectures, the students were able to gain hands-on experience taking photos and acquire knowledge and techniques for artistic photo expression and creation. Specifically, there were 4 lectures: the 1st lecture was an introduction to how to use a digital SLR camera (e.g., basic manipulation of exposure, diaphragm, and shutter speed); the 2nd lecture was on lighting; the 3rd lecture was on approaching models; and the 4th lecture was intended to brush up these skills. Each class included a 20-minute lecture on the topic and a practical photography session using the knowledge and techniques learned in each lecture. The instructor answered students' questions at any time during the lectures, and at the end of the classes, the instructor commented on some of the photographs the students had taken in the practical photography sessions. This intervention was designed to promote the students' motivation for art-making before encountering others' artworks.

The second intervention designed for inspiration, was the 'appreciation and imitation' intervention. We designed the way in which students interact

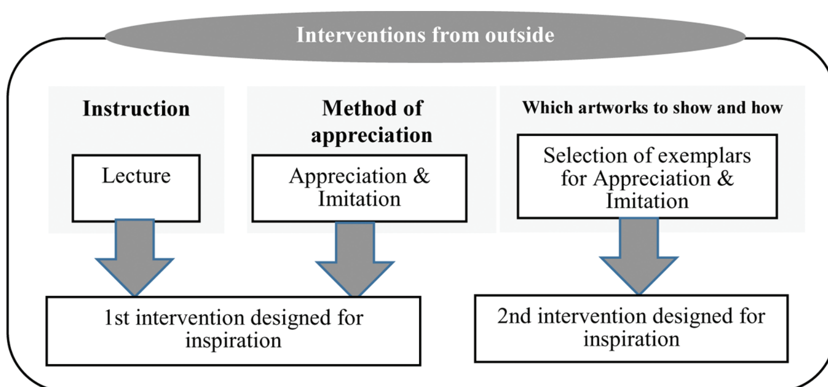

Figure 9.4 Course design according to factors to promote inspiration through others' artworks.

with an artwork, based on factors of the method of appreciating and exhibiting artworks, and determined what kind of artworks they encountered. Specifically, the students appreciated a photograph selected by the instructor of the class and shared their comments with one another. Then the instructor provided them with explanations about the photo, such as the artist's intentions, method of expression, and the historical background. After that, they imitated the method of expression of the photograph when taking their own photos. This intervention is a method of appreciation with physical activities, based on the copying method, which was shown by Okada & Ishibashi (2016) to be useful for promoting inspiration.

Considering the students' prior experience, we selected two photographs as examples to appreciate and imitate. A classic photo was used for the first appreciation and imitation class, and a street photo was used for the second class. The classic photo was 'Farm Girl' in 'People of the 20th Century' by August Sander (1874–1964), which is a collection of portrait photographs of people in the early 20th century. The street photo was 'Los Angeles, California' by Garry Winogrand (1928–1984), which is a photograph of people, on a city street, that demonstrates the social problems hidden in everyday life. 'Farm Girl' is a photograph taken using camera techniques usually used in a studio setting, which were familiar to the students after having taken the lectures. In contrast, 'Los Angeles, California' is a photograph of a natural setting, without using the camera techniques taught in the course, and was assumed to be unfamiliar to the students, even after having taken the lectures.

Besides the lecture and the appreciation and imitation sessions, the course also included free photography classes in which the students freely created their own photo artworks and a presentation in which students showed other students and the instructor five photographs that they selected from those they had taken during the course, and received comments on them. These classes were designed to provide the students with opportunities to apply the knowledge and techniques learned in the lectures and appreciation and imitation sessions and create their own artistic photographs.

Further, we gave the students two kinds of homework in order to encourage reflection on their creative activity after each class. The first homework assignment was to explain the photographs they had taken during the classes. The second assignment was to describe what they had considered and noticed about artistic creation each week, both inside and outside of the classes. These homework assignments were submitted by e-mail and through an online system.

9.4.1 Changes in the Students with Each Educational Intervention

The following sections describe how the students' knowledge of attitudes and art-making developed and how their appreciation of others' artworks changed throughout each educational intervention on the course.

First, we described how the students obtained a basic knowledge of artistic expression through the first intervention, the lecture. The students' knowledge and attitudes towards art-making were measured during the course and analysed quantitatively to examine how they changed throughout the course. Second, we examined whether or not the students' interpretations of artworks changed and became dual-focused. We also examined whether they compared others' and their own art-making through the second intervention, the 'appreciation and imitation' stage. Finally, the students presented their own artistic photos and appreciated the photos by other students in the presentation session. We hoped to discover how the students reflected on their own artistic activities during the course, and whether they continued their photographic activities after the course was over. To do so, we qualitatively analysed the students' comments on their interpretation of others' photographs and students' statements about their own artistic activities from interviews one year after the course ended. Although most of the research studies on art education have relied solely on qualitative analyses, we combined both quantitative and qualitative analyses, which enabled us to better, understand the overall effect of the course as well as the way of thinking within each student more specifically.

9.4.2 The 1st Intervention

First, we measured the students' expressive awareness (Ishiguro & Okada, 2012), which is their knowledge about and their attitude towards creative activities especially for art-making and thought to be a part of creative fluency in art-making. Expressive awareness is thought to be a part of creative fluency in art-making. Expressive awareness means having the intention to search for a match between images and ideas and a method of expression in one's creative activity. We had discovered that beginners acquired this expressive awareness through several months of photography practice (Ishiguro & Okada, 2012). Therefore, we measured the change in the students' expressive awareness during the course by using the psychological scale that we had developed (Ishiguro & Okada 2016). There are 4 items on this scale: 'When taking photos, I consider effective methods to express my images and ideas,' 'When viewing photos, I interpret how the photographers'

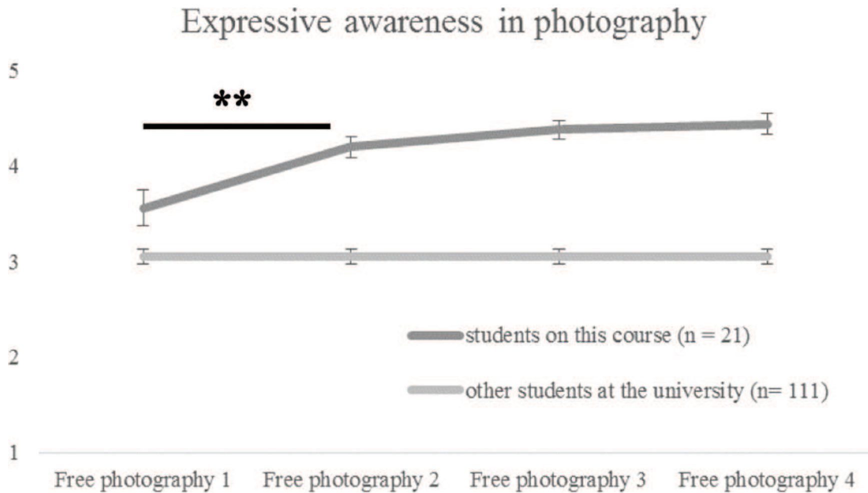

Figure 9.5 Changes in the students' expressive awareness in photography.

N.B. **:$p < .01$.

images and ideas are expressed in them,' 'Photography is a medium to express our ideas and feelings,' and 'I can improve my art-making by viewing photos by other photographers.' The results indicated that the students obtained higher expressive awareness after the lectures and retained it until the end of the course (see Figure 9.5).

9.4.3 The 2nd Intervention

In each of the two appreciation and imitation sessions, the students were provided a copy of an exemplar photograph which they appreciated for a few minutes. Students also filled in a comment sheet in which they rated the 'value' of the photo on a 5-point Likert Scale and described the reasons for their rating and what they felt and noticed about the photograph. After they had shared their comments on the photo with the other students, the instructor provided an explanation of the photo, including information about the photographer and his intentions, the expressive techniques, and the historical background of the photograph. After the explanation, the students left the classroom to take photos on the university campus, with the intention of imitating the exemplar photograph. Finally, they described what they had felt and noticed, and how their ideas about the exemplar photograph had changed after listening to the explanations by the instructor and comments by the other students. We analysed whether the students' comments on each

exemplar photograph changed before and after the interventions, i.e., by sharing comments with the other students, listening to the explanation by the instructor, and imitating the photograph. We considered that the effects of the interventions might be seen not only in the answers on the comment sheets, but also in the students' homework responses after each class. Therefore, we included as data the comments that students made on each exemplar photograph in the homework they completed as part of the appreciation and imitation sessions.

In the analysis, we checked whether each student mentioned the contents in the following categories 'evaluation of the others' artworks,' 'comparison between the others' art-making and the students' own art-making,' and 'improvement in the students' own art-making'. These categories were generated according to the processes in Phase 1 (evaluation of others' artworks), Phase 2 (comparisons of the evaluation of others' artworks and reflection on the viewer's own art-making), and Phase 3 (the state of being inspired in art-making) of the ITA model. Then, we counted the number of students who described the contents in each category.

The results show that after the intervention, more students compared the exemplar photograph with their own art-making and considered the improvement of their own art-making (see Table 9.3). These results demonstrate that the intervention in the appreciation and imitation session promoted the students' dual focus and their motivation to improve their own art-making.

In addition, the changes caused by the interventions were larger in appreciation and imitation session 2 than in appreciation and imitation session 1. This difference in the students' change of interpretation between the two sessions may have been caused by the familiarity of the exemplar photographs. The photograph in appreciation and imitation 1 session was familiar and easy for the students to understand, because they had learned about the expressive technique in the lecture. Some students mentioned a comparison between the work and their own art-making and improvement of their own art-making even before the intervention. In contrast, the photograph in appreciation and imitation session 2 was unfamiliar and difficult for them to connect with their own art-making before the intervention.

9.4.4 Presentation

The students chose 5 photographs for the presentation. During the class, the students commented on each of the other students' photographs displayed on the table. Then, each student explained their own photographs and received

Table 9.3 Changes in the students' interpretations before and after the interventions in the appreciation and imitation classes and after the presentation class

	Appreciation & Imitation 1 ($n = 21$)		Appreciation & Imitation 2 ($n = 19$)		
	Before the Interventions	After the Interventions	Before the Interventions	After the Interventions	Presentation ($n = 21$)
Evaluation of others' artworks	21 (100)	20 (95)	19 (100)	19 (100)	15 (71)
Comparison between others' art-making and the students' own art-making	5 (24)	9 (43)	0 (0)	8 (42)	8 (38)
Development of the students' own art-making	8 (38)	11 (52)	2 (11)	8 (42)	9 (43)

N.B. The numbers in brackets show the percentage of students who described the contents of each category in their comment sheet and diary homework in each class.

comments from the instructor. In addition, (s)he received comments from the other students by e-mail after the class. We also analysed the students' homework responses after the presentation class and examined whether the students became dual-focused and motivated to improve their own artistic expression by appreciating the other students' photographic expressions. Table 9.3 shows that 38% of the students compared others' art-making with their own art-making, and 43% of the students considered the development of their own art-making after the presentation. Considering that the presentation session did not directly guide students carefully to appreciate the artworks of others, we could say that they became dual-focused and motivated for their own art-making by themselves through viewing others' artworks and listening to their comments.

It is important to note that the presentation was effective for the students in order to find their expression and gain motivation to pursue their originality. The following statements are some of the students' descriptions in their diary homework after the presentation class.

"Photography allows us to create artworks in any circumstances, which is different from painting. So I want to make use of the circumstances for my expression. I want to enjoy the present moment more, because I tend to rely on making plans."

"When I viewed a unique photograph by another student, I found that we can make use of our own senses, which are different from those of others. I want to try to take a more unique photo because I am usually captured by a kind of stereotype in photography,"

These statements imply that the presentation provided the students a chance to find a variety of artistic expressions by comparing the art-making of the other students with their own art-making. The comparison was effective even when the students were all beginners in artistic photo expression, were following the same course, and took photos in the same environment. Actually, the fact that there were a variety of photographic expressions among the students even in such uniform conditions may have given the students the chance to notice one another's originality of expression.

9.4.5 Changes in Students' Artistic Activities throughout the Course

The goal of the course was cultivation of creative fluency, by offering the students an authentic experience of artistic creation and by encouraging the students to commit to artistic activities. We have mentioned in the previous section that the students developed their knowledge of and attitude to artistic expression and experienced inspiration by deeply interacting with the photographs by other photographers and the other students. The next question is whether the students enjoyed their artistic activities even after the course was finished. This question is important because it is related to the development of creative fluency. To answer this question, we assessed whether their commitment to artistic activities changed from before the course to one year after the course. At the beginning of the course, we asked the students to fill out questionnaires to determine the amount of the exposure they had to some artistic activities, especially photography, before the course. In addition, we interviewed them about their artistic activities one year after the course. Fourteen of the 21 students participated in the follow-up interview (7 students could not participate in the interview because they had already graduated from the university or were studying abroad). We coded their artistic activities in photography and counted the number of students who were involved in each activity (see Table 9.4). The results show that 13 students continued their photography for purposes of creating a record, and 7 students continued their photography to make their own artworks. Four students began to show their own photos on the Internet or in photo contests. One student who received a prize in a photo contest reflected on this course in the follow-up interview as follows:

Table 9.4 Changes in the students' photographic activities before and one year after the course

		Number of Students Committed to Each Activity			
		Before the Course	One Year After the Course	McNemar's Test	
Appreciation	Encountering photographs in daily life	0	1	1	
	Appreciating photographs as artworks	3	8	3.6	
Photography	Taking photos as a record	3	13	10	*
	Taking photos as artworks	0	7	7	*
Producing their own photos		0	4	4	
Supporting creative experts		0	0		

N.B. The grey part shows the activities that students experienced on the course.
The Bonferroni correction was applied to each statistical test of difference between numbers of students engaged in each activity before and after the course.

"The course provided me with a chance to learn about artistic photo expression. (…) After the course, I bought a digital single reflex camera, started to subscribe to a photography magazine and to study photography, attended talks by photographers, and entered photo contests. Now I can say that photography is my hobby."

In addition, she discussed what she learned in the course:

"There are two parts of the course that I remember vividly. First, in every class, we had time to review other students' photographs. Although we took the photographs in a similar place at a similar time, the photographs were all quite different. This helped me to see that we all had different perspectives; despite being in the same situation, we took entirely different shots. Secondly, in each class, we appreciated artworks by professional photographers. I had not studied professional photographs before, and I found that there were some patterns in photo expression, even in the photos of professional photographers. Also, I had previously thought that most professional photographers took only portraits. But taking the course allowed me to see that there were many other types of photography, such as snapshots and street photography."

Another student commented on the appreciation and imitation sessions as follows:

"The other students and I were able to take a variety of photographs despite being in such similar locations/situations. I learned not only the

importance of being artistically stimulated by something, but also how to interpret such stimulation. The appreciation and imitation sessions were critical in learning this. By imitating the professional photographers, I thought about what the differences between the professional photographs and my photo were and how I could deal with these differences."

Some of the students changed their ideas about artistic expression in general.

"I learned that it is important to think about what I want to photograph, rather than how I want to photograph it. This is not limited to photographic expression. For artistic expression, we should not stick only to techniques and methods, but also consider what we want to do and why."

These results suggest that the course effectively supported students in their creative experience and commitment to artistic activities. Additionally, the interventions designed to promote inspiration were shown to be effective in encouraging novices' learning about art. Further research is needed to generalize these findings in various learning settings.

9.5 Conclusion

Inspiration has been regarded as a mysterious phenomenon and for a long time, there has been no framework for understanding the inner process of inspiration in artistic creation. In this chapter, to answer the question of how we can utilize inspiration process in art learning settings, we provided a brief review of recent psychological studies on inspiration and explained an outline of our model of inspiration for art-making through art appreciation (ITA). On the basis of our model, we have listed factors that promote inspiration by others' artworks in art educational settings. In addition, we have described an undergraduate course on artistic creation as an illustration of our art educational practice, which was designed according to the factors mentioned above. Although in this chapter we have described only one case of an artistic photography course designed to encourage inspiration, future research should lead to an increase in such practices and the assessment of the educational effects in order to offer more practical advice.

It is highly likely that the factors mentioned above would be useful in designing educational programmes in not only the fine arts but also in other creative domains, such as music, drama, literature, or even science. In the domains of science and literature, scientists or writers often read research articles or works by others in order to learn from them and produce new works when inspired by them. Our framework for the use of inspiration in

educational settings would also be useful in facilitating creative activities of this kind. Future studies are needed to examine the possibilities of applying our framework to other creative domains. Through such studies, it should become possible for everyone to experience and make use of inspiration in various creative domains.

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References

Agata, T., and Okada, T. (2013). Souzou no syutaisya tositeno shimin wo hagukumu: Souzouteki kyouyou wo ikuseisuru igi to sonohouhou (The importance of cultivating people's creative literacy). *Jpn. Cogn. Sci. Soc.* 20, 27–45.

Bullot, N. J., and Reber, R. (2013). The artful mind meets art history: Toward a psycho-historical framework for the science of art appreciation. *Behav. Brain Sci.* 36, 123–137.

Chan, J., Dow, S. P., and Schunn, C. D. (2015). Do the best design ideas (really) come from conceptually distant sources of inspiration? *Des. Stud.* 36, 31–58.

Chan, J., Fu, K., Schunn, C. D., Cagan, J., Wood, K., and Kotovsky, K. (2011). On the benefits and pitfalls of analogies for innovative design: Ideation performance based on analogical distance, commonness, and modality of examples. *J. Mech. Des.* 133, 081004-1-11.

Chemi, T., Jensen, J., and Hersted, L. (2015). *Behind the Scenes of Artistic Creativity. Creating, Learning and Organising*. New York, NY: Peter Lange.

Csikszentmihalyi, M. (1999). "Implications of a systems perspective for the study of creativity," in *Handbook of Creativity,* Ed. R. J. Sternberg (New York, NY: Cambridge University Press), 313–335.

Fu, K., Chan, J., Cagan, J., Kotovsky, K., Schunn, C., and Wood, K. (2013). The meaning of "near" and "far": the impact of structuring design databases and the effect of distance of analogy on design output. *J. Mech. Des.* 135, 021007-1-12.

Gentner, D., and Markman, A. B. (1997). Structure mapping in analogy and similarity. *Am. Psychol.* 52, 45–56.

Gentner, D. (1983). Structure-mapping: a theoretical framework for analogy. *Cogn. Sci.* 7, 155–170.

Gick, M. L., and Holyoak, K. J. (1980). Analogical problem solving. *Cogn. Psychol.* 12, 306–355.

Holyoak, K. J., and Koh, K. (1987). Surface and structural similarity in analogical transfer. *Mem. Cogn.* 15, 332–340.

Holyoak, K. J., and Thagard, P. (1996). *Mental Leaps: Analogy in Creative Thought*. Cambridge, MA: MIT Press.

Huang, Y. C., and Han, S. R. (2014). "An immersive virtual reality museum via second life: extending art appreciation from 2D to 3D," in *International Conference on Human-Computer Interaction,* eds Y. C. Huang, and S. R. Han, (Berlin: Springer International Publishing), 579–584.

Ishiguro, C., and Okada, T. (2012). "Emergence of control in artistic expressions and the process of expertise," in *Proceedings of the 34th Annual Conference of the Cognitive Science Society,* Sapporo, 1733–1738.

Ishiguro, C., and Okada, T. (2015). "The effects of art experience, competence in artistic creation, and methods of appreciation on artistic inspiration," in *Poster presented in the 31th International Congress of Psychology,* Yokohama.

Ishiguro, C., and Okada, T. (2016). Souzouteki kyouyou wo hagukumu geizyutu kyouiku zissen: Nichizyou no syashin sousaku katsudou ni oyobosu kouka (Development of creative fluency in an artistic photography course). *Jpn. Cogn. Sci. Soc.* 23, 221–236.

Ishiguro, C., Yokosawa, K., and Okada, T. (2016). Eye movements during art appreciation by students taking a photo creation course. *Front. Psychol.* 7:1074. doi: 10.3389/fpsyg.2016.01074

Kiyokawa, S., Izawa, T., and Ueda, K. (2006). "Effects of role exchange between task-doing and observing others on insight problem solving," in *Proceedings of the 28th Annual Conference of the Cognitive Science Society,* Vancouver, (1617–1622).

Langer, E., Pirson, M., and Delizonna, L. (2010). The mindlessness of social comparisons. *Psychol. Aesthet. Creat. Arts*, 4, 68–74.

Leder, H., Belke, B., Oeberst, A. and Augustin, D. (2004). A model of aesthetic appreciation and aesthetic judgments. *Br. J. Psychol.* 95, 489–508. doi: 10.1348/0007126042369811

Nakano, Y., and Okada, T. (2016). “Shokuhatsu suru communication to museum (Inspiring communication and museums),” in *Shokuhatsu Suru Museum: Bunka Teki Koukyou Kuukan no Aratana Kanousei wo Motomete (Inspiring Museums: an Inquiry into New Possibilities for Cultural Public Space)* eds K. Nakakoji, H. Shindo, Y. Yamamoto, and T. Okada (Kyoto: Airi Shuppan).

Okada, T., and Ishibashi, K. (2016). Imitation, inspiration, and creation: cognitive process of creative drawing by copying others’ artworks. *Cogn. Sci*. 41, 1804–1837. doi: 10.1111/cogs.12442

Okada, T. (2016). “Shokuhatsu suru communication to museum (Inspiring communication and the museum),” in *Shokuhatsu Suru Museum: Bunka Teki Koukyou Kuukan no Aratana Kanousei wo Motomete (Inspiring the Museum: an Inquiry into New Possibilities of Cultural Public Space*), eds K. Nakakoji, H. Shindo, Y., Yamamoto, and T. Okada, Kyoto: Airi Shuppan.

Oleynick, V. C., Thrash, T. M., LeFew, M. C., Moldovan, E. G., and Kieffaber, P. D. (2014). The scientific study of inspiration in the creative process: challenges and opportunities. *Front. Hum. Neurosci.* 8:436. doi: 10.3389/fnhum.2014.00436

Pelowski, M., Markey, P. S., Lauring, J. O., and Leder, H. (2016). Visualizing the impact of art: An update and comparison of current psychological models of art experience. *Front. Hum. Neurosci.* 10:160. doi: 10.3389/fnhum.2016.00160

Poze, T. (1983). Analogical connections: The essence of creativity. *J. Creat. Behav.* 17, 240–258.

Takagi, K., Kawase, A., Yokochi, S., and Okada, T. (2015). “Formation of an art concept: a case study using quantitative analysis of a contemporary artist’s interview data,” in *Proceedings of the 37th Annual Conference of the Cognitive Science Society,* Pasadena, CA, 2332–2337.

Thrash, T. M. and Elliot, A. J. (2003). Inspiration as a psychological construct. *J. Pers. Soc. Psychol.* 84, 871–889.

Thrash, T. M., and Elliot, A. J. (2004). Inspiration: core characteristics, component processes, antecedents, and function. *J. Pers. Soc. Psychol.* 87, 957–973.

Tyler, C. W., and Likova, L. T. (2012). The role of the visual arts in enhancing the learning process. *Front. Hum. Neurosci.* 6:8. doi: 10.3389/fnhum.2012.00008

Ward, T. B. (1998). "Analogical distance and purpose in creative thought: Mental leaps versus mental hops," in *Advances in Analogy Research: Integration of Theory and Data from the Cognitive, Computational, and Neural Sciences* eds K. J. Holyoak, D. Gentner, and B. Kokinov (Sofia: New Bulgarian University), 221–230.

Weisberg, R. W. (2006). *Creativity: Understanding Innovation in Problem Solving, Science, Invention, and the Arts*. Hoboken, NJ: John Wiley & Sons.