

# The Use of a Diagnostic Profile in Assessing the Art Understandings of Taiwanese ESL Students

## 使用「診斷剖析」評量臺灣英文系大學生之藝術認識

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## Abstract

This study uses Stavropoulos' (1992) "A Diagnostic Profile of Art Understandings Based on Verbal Responses to Works of Art (DP)" to evaluate ESL students' understandings of Western and Asian art during a one-semester interdisciplinary course. Stavropoulos' DP uses four dimensions to assess student's verbal and written responses to imagery: descriptive, formal, interpretative, and historical. The findings reveal that the students gave multiple lower-order descriptive art understandings. Within the formal dimension, many students successfully developed their formal art knowledge-base as many analyzed artworks in terms of elements and principles of design. Within the interpretative dimension, many students employed knowledge-seeking strategies in their search for understanding. Most students' responses did not score highly within the historical dimension. There is evidence of students giving incorrect appraisals, illogical findings, immature judgment, and nebulous or unclear statements within each dimension. It is also palpable that there is a scarcity of responses which provide supported judgment or aesthetic reasoning, descriptive questioning, extending or challenging the art historian's or the art critic's description of the work through convincing argument. Several of the students' drawings demonstrate Howard Gardner's (1983) notion of spatial intelligence. Overall, the findings suggest that the interdisciplinary course provided students with a useful knowledge-base for developing their art education.

**Keywords:** art assessment, art education, diagnostic profile, interdisciplinary course

## 摘要

本論文採用 Stavropoulos (1992) 「以口頭回應藝術作品的藝術認識診斷剖析」(DP) 做為評量英文系學生修一學期西方和亞洲藝術的跨領域課程後之藝術認識。運用 DP 評量四向度(描述、形式、詮釋和歷史)分析學生對圖像的書面回應,結果顯示學生多種較低階的藝術認識。形式向度方面,許多學生成功運用藝術知識,以設計元素和原理來分析藝術品;詮釋向度,許多學生使用知識尋找策略尋找藝術認識;大部份學生在歷史向度並未取得高分;每個向度皆發現回應錯誤、不合邏輯或藝術判斷能力幼稚、模糊地描述畫作;亦明顯缺乏支持性判斷、美學推論、描述性訊問、延伸或挑戰藝術歷史家、有力的論調評論藝術等。有幾位學生的圖畫則印證了 Howard Gardner 的空間智能觀念。總之,研究結果建議跨領域課程可提供給學生有用的知識庫來發展藝術教育。

**關鍵字:** 藝術評量、藝術教育、診斷剖析、跨領域課程

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## Introduction

The main purpose of this study is to explore how an interdisciplinary course might improve ESL students' appreciation of art history. The course was designed by this author<sup>1</sup>. Specifically, the teaching objectives of the one-semester interdisciplinary course were (1) to increase students' art history knowledge-bases; (2) to develop students' knowledge-seeking strategies through the analysis of art history imagery, and (3) to teach students how to analyze artworks using artistic concepts such as proportion, perspective, light, color, composition, movement, mood, symbolization, and abstraction through the study of Western and Asian artworks. This study set out to evaluate the ESL students' higher-order and lower-order art understandings. Hence, this study examined the written responses to imagery by 33 Taiwanese university ESL learners during a one-semester interdisciplinary course.

Stavropoulos (1992) study uses four dimensions to assess student's verbal and written responses to imagery: descriptive, formal, interpretative, and historical. Hence, Stavropoulos' DP is used to evaluate the students' understandings of Western and Asian art. Students were provided with special art vocabulary in their textbooks. The images within the textbook offered students the opportunity to analyze artworks by famous Western and Asian artists<sup>2</sup>. Additionally, in order to enhance students' knowledge-bases of Western and Asian art, they participated in art history quizzes in class. Moreover, in order to enhance their aesthetic awareness and knowledge-bases, students were encouraged to attend art exhibitions. For example, they viewed a photographic exhibition entitled *Window to the East: The Journey to Formosa, China and Southeast Asia 1865-1871* at the Kaohsiung Museum of

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1 The present author is a Northern Ireland art educator/artist with thirty years experience of teaching art theory and art practice. In 1975, he gained a BA (Hons) degree in Fine Art (Painting) and was awarded an Art Teaching Diploma in the principles and practice of art education by the University of Ulster in 1977. Moreover, he gained a doctorate related to assessment in art education in 2003 from Queens University in Belfast. His artwork is documented in Irish art journals and an important Irish art history book: *Art in Ulster 2* (1977) by Mike Catto. Additionally, the author has a painting in the permanent collection of an Irish museum. Furthermore, he has taught an "Art and Culture" course in a Taiwanese university for several years and also published multiple papers related to art history and art education in America, England, Japan, and Taiwan. Thus, this author is fully qualified to give students ideas about art appreciation, art practice, and analyses of artworks.

2 The artworks in the textbook reflected Asian and Western culture. Specifically, artworks by Guo Xi, Fan Kuan, Ma Yuan, Emperor Wuzong, Katsushika Hokusai, Ando Hiroshige, Jan Van Eyck, Michelangelo Merisi da Caravaggio, Winslow Homer, Diego Velazquez, Jan Vermeer, Jan Steen, Gustave Caillebotte, Jean-Baptiste Chardin, Meyndert Hobbema, Claude Monet, Alfred Sisley, Edgar Degas, Peter Severin Kroyer, John Singer Sargent, Thomas Eakins, Arthur Dove, Theo Van Doesburg, Ljubov Popova, and Piet Mondrian.

Fine Arts by the renowned Scottish photographer, John Thomson<sup>3</sup>. It is extremely important for students to understand the objectives and intended outcomes of a visit to the Museum<sup>4</sup>. For the purposes of the study, attention is given to investigating (1) the role of the visual arts in cognitive development, and (2) assessment in art education. Let us begin by exploring the role of the visual arts in cognitive development.

## The Role of the Visual Arts in Cognitive Development

Sless (1981) termed the concept of the “thinking eye” and suggests that the eye is not biologically separated from the brain and argues that it is actually part of the same organ; or more accurately, the brain is a part of the eye. The history of visual art practices and mental imagery as an aid to cognitive development is reflective of shifting beliefs as to what is involved in cognitive processing. The discussion throughout history focused on whether the senses play a role in creating meaning. Some believed higher levels of mental activity consist primarily of linguistic and mathematical skills and that information from the senses was not related to real learning and thinking (Ives & Pond, 1980). This ongoing debate arose with early Western philosophers like Plato. Visual data in particular was not believed to provide knowledge of the world and could not logically and rationally explain reality. Accordingly, Greek artisans and craftsmen were considered as being mere laborers, ranked only slightly higher than slaves (Efland, 1990). Due in part to the genius status of artists like Leonardo Da Vinci and Michelangelo, high mental capacity became equated with artistic ability. Michelangelo supported this belief by stating: “One paints with the mind, not the hand” (Efland, 1990, p. 29). During the 15th century, the value of the senses waned while the value of linguistics in cognition was strengthened. The development of the printing press during this time created an increasing reliance on the printed word as the primary vehicle for all worthwhile knowledge (Ives & Pond, 1980). Books containing two-dimensional prints did attempt to connect visual images with their verbal symbols.

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3 John Thomson (1837-1921) was a pioneering Scottish photographer, geographer, and traveller and was one of the first photographers to travel to the Far East documenting the people, landscapes and artefacts of Asian cultures. Thomson took many historical photographs of Taiwan in 1871.

4 Integrating a museum visit with a topic or unit of work provides students with a more effective learning experience because it provides them with a context. Hence, prior to their visit to the museum, students were taught relevant artistic concepts such as proportion, perspective and symbolism, and they were given a brief PowerPoint on the history of John Thomson’s photography. They were also asked to make drawings of some of Thomson’s imagery.

Other educators that believed mental imagery played a valuable role in cognitive development were Rudolf Steiner (1861-1925) and Maria Montessori (1870-1952). In the field of developmental theories, Piaget and Inhelder (1967) gave imagery an important place in cognitive processes. Within art education in America, the Expressionism movement was combined with new theories from child psychology that affected beliefs about the role of art in developing knowledge (Koster, 1981). A laissez-faire attitude and the belief in free expression combined with a new admiration for children's art created a long history of focus on the product. This phase in art education with its lack of emphasis on aesthetics, art history, technique, or the role of art in cognitive development gradually created the perception that art does not require a high level of mental or technical skill, teacher training, or financial support. These opinions may have factored into the rationale for the next wave of scientific research and political influence in the arts from the mid-1960s until today.

The relationship between mental imagery and the arts began to be explored by the mid-1970s. Studies began to support the functional significance of imagery in problem solving (Ives & Pond, 1980). Some in the field of psychology began to support the idea that mental imagery serves two functions: parallel processing of information and the creation of analogous forms. In addition to greatly expanding general cognitive capacities, Ives and Pond (1980) state that these two functions are at the core of arts experiences. According to Ives and Pond (1980), the role and value of images and perception were not factored into the realm of scientific thought during the early to mid-1900s. This was due to the dominance of Behaviorism in American psychology. Behaviorists believed that mental imagery had no functional significance and that memory and thought were primarily verbal (Sadoski & Paivio, 2001). Adding to the lack of importance of images and perception during the dominance of Behaviorist beliefs was the influence of Viktor Lowenfeld (Efland, 1990). Lowenfeld believed individuals inherit, rather than acquire, a disposition to perceive reality through sensory modes like vision and touch. Arnheim (1969, p. 269) stresses that "the work of adult artists was governed by technical, aesthetic, and conceptual concerns that were unknown to children".

The theory of multiple intelligences is a theory of intelligence that differentiates it into specific (primarily sensory) modalities, rather than seeing intelligence as dominated by a single general ability. This model was proposed by Howard Gardner in his 1983 book *Frames of Mind: The Theory of Multiple Intelligences*. Gardner chose eight abilities that he held to meet these criteria: musical-rhythmic, visual-spatial, verbal-linguistic, logical-mathematical, bodily-kinesthetic, interpersonal, intrapersonal, and naturalistic. He later suggested that existential and moral intelligence may also be worthy of

inclusion. Although the distinction between intelligences has been set out in great detail, Gardner opposes the idea of labeling learners to a specific intelligence and argues that each individual possesses a unique blend of all the intelligences. He firmly maintains that his theory of multiple intelligences should “empower learners”, not restrict them to one modality of learning (McKenzie, 2005).

## Assessment in Art Education

In the domain of visual art, concepts cannot be applied with uniformity as visual art is an “ill-structured” domain where concepts vary from one application to another making evaluation difficult (Short, 1995). Without an art assessment instrument, art educators are unable to provide hard evidence of a student’s learning (Davis, 1993; Wilson, 1986). Therefore, assessment of student learning in the arts has become critical for providers of arts instruction. Art educators are concerned about the assessment of students’ learning and their understandings of imagery; art balances the curriculum and broadens students’ social outlook (Winslow, 1939). Textbooks for the teaching of methods to prospective art educators aligned curricular objectives in responding to works of art along formal, descriptive, interpretative and historical dimensions of art understandings (Herberholz & Hanson, 1990). Art education textbook series, teacher-guides and curricula at the primary, elementary and high-school levels incorporated formal, descriptive, interpretative and historical dimensions of art understandings in suggested classroom lessons and topics of study (Chapman, 1985; Hobbs & Salome, 1991; Hubbard & Rouse, 1981).

At the heart of teaching for understanding lies a very basic question: “What do we mean by “understanding”? When a student knows something, the student can bring it forth upon call and tell us the knowledge or demonstrate a skill. But understanding something is a more subtle matter. A student might be able to regurgitate reams of facts and demonstrate routine skills with very little understanding. When a student knows something, the student can bring it forth and tell us his or her knowledge or demonstrate his or her skill. But understanding something is a more subtle matter. A student might be able to regurgitate reams of facts and demonstrate routine skills with very little understanding. Somehow, understanding goes beyond knowing. Hence, quality assessment in art education should focus more than rote recall. It is more important to assess what students “understand” about works of art and how they use knowledge to conduct enquiry (Efland, 1990; Parsons, 1990). Accordingly, knowledge learned through art empowers students’ understanding and reconstructs new knowledge. “Understanding is revealed in how one thinks about art and thinking is

revealed in what students say and write” (Efland, Koroscik, & Parsons, 1991, p. 1). Traditional approaches to assessment, such as multiple-choice tests and most standardized measures, have limited value in art education for at least two reasons: (1) art understandings cannot be defined as being correct or incorrect, and (2) understandings of art are context dependent. However, “multiple interpretations of art are possible, even for a single artwork. However, some interpretations are more compelling than others” (Blair & Morbey, 1993, pp. 5-6). Koroscik (1990) and Parsons (1990) examine novice-expert differences in understanding and misunderstanding art and their implications for student assessment in art education.

Research also shows that there are qualitative differences between novice and advanced learners in any domain. For example, the strategies used by experts to learn new things have been found to be quite unlike the knowledge-seeking strategies novices are inclined to employ (Bransford, Sherwood, Vye, & Reiser, 1986; Chi, Glaser, & Farr, 1988; Perkins & Simmons, 1988). Traditional approaches to assessing learning outcomes do not account for differences in the use of knowledge-seeking strategies, nor are systematic comparisons made between a learner’s knowledge-base and his or her knowledge-seeking strategies. Therefore, a knowledge-base and knowledge-seeking strategies are essential to achieving higher understandings of students’ social worlds within these four dimensions. Cognitive phenomena such as perception, attention, memory, language, problem-solving heuristics and reasoning skills are associated with successful complex thinking (Resnick, 1987). Students often fail to transfer their existing knowledge to new information. Hence, it is vital that students transfer their knowledge. Transfer in learning can be assessed by measuring the learner’s existing knowledge-base and knowledge-seeking strategies (Alvermann, Smith, & Readence, 1985).

Perkins and Salomon (1987) have underpinned the importance of transfer. Research on transfer has implications for evaluating the student’s use of knowledge-seeking strategies. It also has a bearing on the student’s knowledge-base because the student may possess knowledge which is relevant for understanding something but is unable to access that knowledge when needed, especially during testing. The consequence of access failure or “dysfunctional transfer” is that aspects of the student’s existing knowledge-base become essentially useless. Negative findings on transfer from laboratory-based studies appear to show that, even when students do have knowledge of general heuristics, they are unable to activate them when confronted with novel problems, so their knowledge remains inert (Gick & Holyoak, 1983). Thinking of transfer in terms of knowledge-seeking strategies is defined as “the cognitive steps a student takes to construct new understandings, seeks new knowledge, and

applies previously acquired knowledge, skill and experience” (Koroscik, 1992, p. 7). In short, when art students actively search artworks for deeper understandings, they engage knowledge-seeking strategies involving analysis, comparisons, questions, judgment, interpretations, explanations, and extensions or challenges of authority’s ideas. In many cases, these knowledge-seeking strategies lead students to speculate or form hypotheses about works of art. Sometimes knowledge-seeking strategies lead students to higher-order understandings corresponding to the scholarly literature on the artworks.

The process of lower-road transfers involves lower-order knowledge-seeking strategies such as the application of familiar vocabulary, recall of facts, correct description of instances or memorization. These knowledge-seeking strategies occur within the basic learning process: they are familiar operations, performed intuitively and automatically. Higher-road transfers are deliberate mindful efforts to represent principle at a high level of generality so that they subsume a wide range of cases: It is a controlled process which demands greater mental effort. An obvious response might be withheld in favor of a closer examination of the underlying meaning. Looking closer at the problem facilitates alternative strategies, choices and connections which lead to the construction of new structures of understanding (Perkins & Salomon, 1987). The process of higher-road transfer involves the construction of meaning through a meshing of concepts. Understandings vary in degrees of cognitive complexity; however, misunderstandings about works of art can impede meaningful learning. Domain-specific knowledge and general heuristic knowledge are necessary for transfer. Learning needed to be generalized beyond the particular context in which it took part. The extent of transfer varies enormously as a function of the content and context of learning (Holyoak & Spellman, 1993). A knowledge-base consists of knowledge, skill and experience that students bring to learning situations (Hurwitz & Day, 1991, p. 494). Furthermore, knowledge-seeking strategies assist the learner in constructing new understandings from their existing knowledge-base. Koroscik, Short, Stavropoulos, and Fortin (1992) stress that the components of a student’s knowledge-base and knowledge-seeking strategy can be reflected in written statements about works of art. The knowledge-base is the sum total of what an individual already knows, and this is referred to as “prior knowledge” in the learning literature (Alexander, Schallert, & O’ Hare, 1991).

A constructivist approach to education uses student’s prior knowledge and experience to enable genuine learning and teaching (Bruner, 1973). Art educators who embrace constructivist tenets plan and implement curricula with students’ interests, needs, knowledge, and attitudes toward art in mind. The importance of prior knowledge has been examined in art education (Koroscik, 1982; Forker,



2012). New experiences are interpreted from prior knowledge: learners activate and transfer prior knowledge and this influences the degree to which new information and ideas are comprehended (Bransford & Johnson, 1972). Prior knowledge specific to art might encompass viewing and art-making experiences can be gained as a result of formal education. For instance, while students possess informal descriptive knowledge regarding beds, a bed cannot be easily identified in Marc Chagall's *The Birthday* (1915). The bed is cut off at the right-hand side of the composition, slightly tilted in perspective and is covered with scarves which might be a pillow. An evaluative account or characterizations of the outcomes that occur along these learning continua distinguish less successful learners from more successful ones. Art-specific prior knowledge activates and determines understanding. A student accumulates general knowledge that is related to art from everyday experience and informal knowledge (Prawat, 1989). As noted earlier, the knowledge-base and knowledge-seeking strategy has to be engaged to some degree in order for transfer to occur (Koroscik, 1992), the interaction between the knowledge-base and knowledge-seeking strategies explain why learning outcomes differ and provide a foundation for developing a more comprehensive approach for assessing student understandings of artworks (Vosnaidou & Brewer, 1987).

In order to assess misunderstandings, knowledge of the kinds of mistakes students make and their causes are also required (Perkins & Simmons, 1988). Students do not fully understand works of art because prior knowledge or the employment of particular knowledge-seeking strategies prevents learning: when one learning encounter impairs another, “negative transfer” has occurred (Perkins & Salomon, 1987). Other reasons why students do not fully understand works of art is because they do not have an adequate knowledge-base or their knowledge-seeking strategies are limited (Confrey, 1987). Classical approaches to assessment in art education tend to focus on recall of vocabulary, definitions or facts. Form is an artwork's structure, arrangement and organization of the composition, construction, and elements and principles of design. It is important for any art historian to identify media for the reader. Formal qualities include composed space, strong diagonals, multiple points of view, proportion, asymmetrical balance and hues.

Knowledge that Chagall's *The Birthday* is a painting is obvious and it is based on the practice of looking at other paintings; when knowledge is the consequence of the recognition of simple formal qualities; lower-order transfer has occurred. Compton (1985, p. 191) provides further discussion of the formal qualities in Chagall's *The Birthday*; for instance, “the role of the table itself has become less important-instead of being based purely on a triangle, the final composition depends on the

balancing of the diagonals on the left by additions on the right, where the bed and shawl above it have been added. Likewise, the area above the table has been enlivened by a window.” Extension is employed by building on items of information already known: amoeba-like, the student inches his or her way from the known to the unknown. Bridging is making connections among different items: the inquirer begins with several known but apparently disconnected items of information. Categories derive from the qualitative data, and sample statements represent each category facilitating the bridging process (Koroscik, Short, Stavropoulos, & Fortin, 1992). Divergence involves the fleshing out of categories with whatever additional information is required for completeness and thoroughness (Guba, 1978). Guba also points out that surfacing involves proposing and verifying new categories or information that should fit into the evaluation system.

An art-learning model also qualifies as a surfacing directive. Grounded in cognitive learning theory, Koroscik’s (1992) model represents facets that can be assessed in art education, including a knowledge-base and knowledge-seeking strategies. Learning outcomes reflective of this model easily identify data and they mesh with categories previously established through extension and bridging. Lower-order outcomes reflect immature judgments based on formal qualities. For instance, students stated “good use of color” and “visually eye-catching.” These judgments are considered immature because the students do not substantiate them with reasons. “Nebulous responses also occur in the descriptive, interpretative and historical dimensions. Very often students demonstrate a general recognition or recall of formal qualities, subject matter, interpretative qualities or historical information. In the formal dimension, students simply name the elements of design they recognize in the artworks. For example, students identify colors, or list different shapes. Sometimes students recall other formal vocabulary terms such as “perspective used” or “both primary and secondary colors” (Koroscik, 1992, p. 93).

According to a paper entitled “Art as a Tool for Teachers of English Language Learners” (2010, p. 6) published by the New York State Education Department Office of Bilingual Education and Foreign Languages Studies: “Students use observation skills when they are drawing, and this can help to motivate students who might otherwise remain quiet or need more time to process information.” Daniel Graves, painter and founder of the Florence Academy of Art, posits that nothing is more useful for an art student than to copy a great master painting. Copying helps the student to acquire a deeper understanding of both aesthetics and technique. Copying obliges the student to reflect on how the painter went about producing the work, how he or she started to lay in, draw, hit the shadows, block in

the colors and add more layers of paint or glaze over (Graves, 2013).

## Stavropoulos' (1992) A Diagnostic Profile of Art Understandings Based on Verbal Responses to Works of Art (DP)

What is the best assessment instrument for assessing the art understandings and misunderstandings of students? The quality of assessment instruments used in education is critical because art educators, researchers, and evaluators come to conclusions and base important decisions on the results produced by such instruments (Frankel & Wallen, 1990). For example in the present study, we can assess how successful the Taiwanese ESL students are in terms of enhancing their awareness of artistic concepts such as proportion, perspective, light, color, composition, movement, mood, symbolization, and abstraction in their written responses to imagery. Additionally, we can assess how the students apply their art knowledge-bases and their knowledge-seeking strategies.

Furthermore, it has been argued that an assessment instrument should be able to distinguish the misunderstandings that a student brings to potential learning situations (Feltovich, Spiro, & Coulson, 1989). An instrument for assessing learning in the visual arts from students' verbal and written statements about works of art was developed by Stavropoulos (1992). Specifically, Stavropoulos asked students to analyze Marc Chagall's *The Birthday* (1915). There is consistent agreement across art history literature as to the meanings of Chagall's *The Birthday*. "Unquestionably, *The Birthday* strikes a universal chord of emotion with viewers; the forms are beautiful, the shapes are appealing, and the composition is vibrant. In 1915, Chagall painted the first of what was to become a long series of paintings of lovers, each celebrating an anniversary of his marriage with Bella, or her birthday. Love as romantic transcendence is most popularly expressed in Chagall's *The Birthday*. It is "so much in the spirit of our notions of perpetual courtship: the exchange of gifts on anniversaries; the perpetuation of courtesies and gallantries practiced before marriage" (Sweeney, 1946, pp. 36-37). "The charm and popularity of Chagall are in good measure traceable to our belief that the substance of love consists of just such rituals as the one celebrated in *The Birthday*" (Feldman, 1967, p. 24). "*The Birthday* celebrates Chagall's reunion with Bella, whom he married in Vitebsk on 25th July 1915. It is the first of the famous motif of lovers floating in the air to which Chagall would return again and again. This highly improbable stance adopted by the figures illustrates, both literally and metaphorically, the transports of love, but the interior is teeming with realistic detail" (Makarius, 1988,

Based on cognitive conceptions of learning, the parameters of a verbal diagnostic profile are reflective of lower-order understandings, higher-order understandings, and misunderstandings. Stavropoulos' (1992) DP assesses the use of students' knowledge-seeking strategies, and scores them within four dimensions. The descriptive dimension scores objects, and subject matter; the formal dimension scores elements or principles of design, media and technique; the interpretative dimension scores meaning, emotion, feeling, and expression; whilst the historical dimension scores names, dates and information regarding the artist. Based on cognitive conceptions of learning; the parameters of the DP are reflective of lower-order understandings, higher-order understandings, and misunderstandings. The instrument provides a means to analytically and holistically assess written and verbal statements about works of art. It has been well-received by art educators and other professionals<sup>5</sup>. The DP has been implemented in a number of studies (Cason, 1998; Forker, 2002, 2008; Short, 1996; Stavropoulos, 1992, 1994, 1995). A detailed description of how the DP works and an example of a sample scored statement from Stavropoulos' (1992) study are offered to the reader in the next section.

## How the Diagnostic Profile of Art Understandings Works

Using the DP, students' knowledge-bases and use of knowledge-seeking strategies can be scored within four dimensions. Based on the interplay between knowledge-bases and knowledge-seeking strategies, at least four conceivable learning outcomes can be isolated. These outcomes exist along a continuum. For example, (1) the learner does not possess adequate prior knowledge and does not use effective knowledge-seeking strategies; (2) the learner possesses relevant prior knowledge but employs ineffective knowledge-seeking strategies; (3) the learner uses effective knowledge-seeking strategies but does not possess adequate prior knowledge; and (4) the learner possesses relevant prior knowledge and uses effective knowledge-seeking strategies. In the DP, each dimension is given a prefix: Formal (F), Descriptive (D), Interpretative (I), and Historical (H). Understandings are given a

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<sup>5</sup> In Stavropoulos' (1992) study, validity of the DP was estimated by two content validity studies, two criterion-related studies, and a construct validity study. Experts were recruited to serve as independent judges for the two content validity studies. Dr. Andra Johnson, an evaluation specialist in art education and Dr. Jacqueline Chanda, an art historian in art education assessed the content of the DP. Two criterion-related studies were conducted with a 3rd/4th-grade art class and an 8th-grade art class. The focus of these studies was on the relationship between an external criterion and the DP findings. The principal investigator observed 3rd/4th-grade and 8th-grade students and the instruction they received over a period of several weeks. Reliability of the DP was estimated by an inter-rater reliability study and an intra-rater reliability study.

score between zero to 11 and misunderstandings are given a minus score from -1 to -3 (Figure 1).

<sup>F4</sup>  
 ↓  
 Poem that has something to do with a (man and a woman) This is a (woman kissing a man) who is stretched around to her. He is floating in the air – colour. There are animals fighting – black and white only. Romantic dance – 2 people touching – stay very close together. I think that all four of these have a romantic sense about them. I am not sure what the third piece with love or romance, but the others reflect it. He uses lots of curvy lines in his paintings. The other artworks inspired by him also uses curvy lines. The dancers are using curves when they move. The dancers are also in the air a lot, like they are all floating just like the man in Chagall's painting.

<sup>D1</sup>  
<sup>D2</sup> } D5  
<sup>D2</sup> } I5  
<sup>I1</sup> }  
<sup>I9</sup> }  
<sup>D2</sup> }  
<sup>I1</sup> }  
<sup>I1</sup> }  
<sup>I9</sup> }  
<sup>F1</sup> }  
<sup>F4</sup> }  
<sup>F5</sup> }  
<sup>F6</sup> }  
<sup>D3</sup> }  
<sup>D5</sup> }

Figure 1. Example of a Sample Scored Statement (Stavropoulos, 1992).

Lower-order, higher-order understandings, and misunderstandings are scored in relation to the Formal Dimension (Medium, Composition, Arrangement, Elements and Principles of Design); the Descriptive Dimension (Objects, Images, and Scenes); the Interpretative Dimension (Meaning, Emotion, Feelings, and Expression), and the Historical Dimension (Classifications and Shared Understandings).

## Methodology

### Participants

The data were collected after the 33 ESL students completed a one-semester interdisciplinary course from September 2012 to January 2013. Each participant did not have any previous formal art education. All the participants in the study were senior (4th year) ESL learners who majored in the English language. Their ages ranged from 22 to 24 years-old.

### Data Collection

Data were collected from the students' Visual Analysis Books. In preparation for analyzing imagery in class, students were asked to write about three images from the course in their Visual Analysis Books and also to complete special art vocabulary exercises in their textbook as a homework

assignment each week. Students made multiple grammar and spelling errors in their written responses. These mistakes were corrected by the teacher each week. Students' drawings of their analyzed imagery were also included in the data collection. Students' drawings and analyzes of Thomson's imagery were included in the data collection.

### **Instrument**

In order to evaluate the progress of students' art understandings, Stavropoulos' (1992) art assessment instrument, A Diagnostic Profile of Art Understandings Based on Verbal Responses to Works of Art (DP) was used to appraise their art understandings of Western and Asian art. As noted earlier, the parameters of the DP are reflective of lower-order understandings, higher-order understandings, and misunderstandings. The instrument provides a means to analytically and holistically assess written and verbal statements about works of art.

### **Coding System**

Students' written responses were classified within each dimension of the DP: formal, historical, descriptive, and interpretative. Students' understandings were given a score between zero to 11 and their misunderstandings were given a minus score from -1 to -3. For detailed scoring criteria, see Appendix 1. In their final exam, which was strictly controlled, students were given 30 minutes to write their responses to Marc Chagall's *The Birthday* (1915). Students were shown a large image of *The Birthday* in a PowerPoint. They were told to write their "understandings" of the image.

### **Limitations**

The main limitation for the study is the time factor. Clearly, much richer data could have been attained if the data were collected over two semesters. However, this was impossible to do as the Chairperson of the Applied English Department insisted that the course should be a one-semester course. Hopefully, a future study might be conducted when the course becomes a two-semester course.

## **Findings and Discussion**

The teaching objectives of the one-semester interdisciplinary course were (1) to increase students' art history knowledge-bases; (2) to develop students' knowledge-seeking strategies through the analysis of art history imagery, and (3) to teach students how to analyze artworks using artistic concepts such as proportion, perspective, light, color, composition, movement, mood, symbolization, and abstraction through the study of Western and Asian artworks. Hence, this study examined the

written responses to imagery by 33 Taiwanese university ESL learners during a one-semester interdisciplinary course. Table 1-4 list the number of students' scores within each dimension for Marc Chagall's *The Birthday*. The prefixes LOUs, HOUs, and MUs were used to identify lower-order understandings, higher-order understandings and misunderstandings respectively. The numbers in parentheses indicate the number of times a score is given.

Table 1  
Students' Scores within the Formal Dimension (*The Birthday*)

	Formal LOUs	Formal HOUs	Formal MUs
	F0 (3)	F5 (3)	-F1 (2)
	F1 (2)	F6 (30)	-F3 (1)
	F2 (7)	F7 (13)	
	F4 (26)		
Total	38	46	3

Table 2  
Students' Scores within the Historical Dimension (*The Birthday*)

	Historical LOUs	Historical HOUs	Historical MUs
	H0 (1)	H5 (3)	-H1 (1)
	H1 (2)	H6 (2)	-H2 (5)
	H2 (3)	H9 (6)	-H3 (2)
	H3 (10)		
	H4 (1)		
Total	17	11	8

Table 3  
Students' Scores within the Interpretative Dimension (*The Birthday*)

	Interpretative LOUs	Interpretative HOUs	Interpretative MUs
	I0 (10)	I5 (8)	-I1 (5)
	I1 (6)	I6 (7)	-I2 (6)
	I2 (10)	I7 (5)	-I3 (8)
	I3 (2)	I8 (1)	
	I4 (6)	I9 (2)	
Total	34	23	19

Table 4

Students' Scores within the Descriptive Dimension (*The Birthday*)

	Descriptive LOUs	Descriptive HOUs	Descriptive MUs
	D0 (6)	D5 (9)	-D1 (2)
	D1 (35)	D6 (7)	-D2 (2)
	D2 (13)	D7 (1)	-D3 (14)
	D3 (1)		
	D4 (20)		
Total	75	17	18

### Descriptive Dimension Results

In the written responses to Marc Chagall's *The Birthday* (1915), the findings reveal that within the descriptive dimension, students gave 75 LOUs, 17 HOUs, and 18 MUs. Predictably, the ESL students gave multiple lower-order descriptive art understandings as description does not require a strong knowledge-base of art: students merely described objects, images, and scenes.

### Formal Dimension Results

Within the formal dimension, students gave 38 LOUs, 46 HOUs and 3 MUs. This finding shows that many students successfully developed their formal knowledge-base as many analyzed artworks in terms of elements and principles of design.

### Interpretative Dimension Results

Within the interpretative dimension, students gave 34 LOUs, 23 HOUs and 19 MUs. This result shows that many students actively searched for understanding through the use of compound sentences, complex thought-structures, connection making, and speculation.

### Historical Dimension Results

Within the historical dimension, students gave 17 LOUs, 11 HOUs and 8 MUs. This result seems predictable as the ESL students' knowledge-base would have been quite limited as they had not received any previous formal art education; consequently, their art historical knowledge-base was inadequate. However, several students scored very highly within the historical dimension. Thus, these students demonstrated that they developed their art historical knowledge-base through conducting research.



## Other Responses

Some responses reveal art misunderstandings when students give incorrect appraisals and illogical findings, immature judgements, and nebulous or unclear statements. However, many responses reveal that students actively searched for understanding through compound sentences, complex thought-structures, connection making, comparisons, speculation, hypotheses and conclusions. They analyzed artworks in terms of elements of design (line, shape, colour, texture) and in terms of principles of design (repetition, variation, action/movement, balance, unity, dominance, contrast). Moreover, several responses show a formal agreement with the literature review. Nevertheless, it is also palpable that there is a scarcity of responses which provide supported judgment or aesthetic reasoning, descriptive questioning, extending or challenging the art historian's or the art critic's description of the work through convincing argument.

Tables 5-8 list the number of students' scores within each dimension for text-book imagery:

**Table 5**  
Students' Scores for Text-book Imagery within the Formal Dimension

	Formal LOUs	Formal HOUs	Formal MUs
	F1(30)	F5 (45)	-F1 (2)
	F2 (32)	F6 (60)	-F2 (4)
	F3 (12)	F7 (18)	-F3 (2)
	F4 (34)	F8 (12)	
<b>Total</b>	<b>108</b>	<b>135</b>	<b>8</b>

This finding suggests that many students successfully developed their formal art knowledge-base as they analyzed artworks in terms of elements and principles of design.

**Table 6**  
Students' Scores for Text-book Imagery within the Historical Dimension

	Historical LOUs	Historical HOUs	Historical MUs
	H1 (30)	H5 (10)	-H1 (10)
	H2 (12)	H6 (8)	-H3 (20)
	H3 (54)	H8 (5)	
	H4 (36)	H9 (5)	
<b>Total</b>	<b>132</b>	<b>28</b>	<b>30</b>

This finding demonstrates that the students' knowledge-base of art history was quite limited and consequently they were not able to compare or discuss other famous artworks in their analyses. Furthermore, students scored 30 misunderstandings within the historical dimension. It is evident that if we want to improve the students' historical dimension, it is essential to offer a much more detailed account of modern artists and modern art movements such as Impressionism, Cubism, and Surrealism. Doing so would give students an introduction to Chagall's art style, art values and the meaning of Chagall's *The Birthday* within art history. Ideally, the course should be a two-semester course but that it is not possible at present due to the limited number of courses offered by the Department.

Table 7

## Students' Scores for Text-book Imagery within the Descriptive Dimension

	Descriptive LOUs	Descriptive HOUs	Descriptive MUs
	D1 (60)	D5 (40)	-D1 (6)
	D3 (42)	D6 (12)	-D2 (8)
	D4 (44)		-D3 (2)
Total	146	52	16

This finding would have been expected as mere description of an image does not require higher understanding. Hence, the high number of descriptive LOUs (146). Nonetheless, students' responses scored 52 descriptive HOU. 16 responses demonstrated incorrect descriptive appraisals and illogical descriptive findings.

Table 8

## Students' Scores for Text-book Imagery within the Interpretative Dimension

	Interpretative LOUs	Interpretative HOUs	Interpretative MUs
	I0 (6)	I5 (35)	-I1 (3)
	I4 (24)	I6 (40)	-I3 (5)
		I9 (7)	
Total	30	82	8

This finding suggests that many students employed knowledge-seeking strategies in their search for understanding. This is demonstrated by the high number of interpretative higher understandings (82).

## Students' Drawings and Analyses of John Thomson's Imagery

As noted earlier, Graves (2013) argues that copying helps the student to acquire a deeper understanding of both aesthetics and technique. Copying obliges the student to reflect on how the painter went about producing the work, how he or she started to lay in, draw, highlight shadows, block in the colors and add more layers of paint or glaze over. Thus, it seems that by copying imagery, the students' understandings of visual concepts were reinforced as several of their drawings demonstrate awareness of proportion, tone, shading, perspective, and form. This is clearly evident in some of the students' drawings although some drawings are very childlike and simplistic<sup>6</sup>. Nonetheless, several of the students' drawings reflect Howard Gardner (1983) notion of "spatial intelligence". Additionally, there is evidence of students using knowledge-seeking strategies to construct new understandings involving analysis, and comparisons to speculate or form hypotheses of artworks.

For example, in their search for understanding of John Thomson's imagery, they relate motherhood imagery to Renaissance iconography. In their analyzes of a *Taiwanese Aboriginal Woman and Infant* (1871), *Aboriginal Mother and Child, Taiwan* (1871), and *Chinese Woman of the Laboring Class* (1874), a student's analysis of Figure 2 states "This shows the mother has a strong character and she really loves her baby" was scored as (I6) within the interpretative dimension. Two students' responses demonstrate higher-order historical understandings as they discuss the artist's inspiration or mythology about the origin of the form in a supportive explanation of the work. For example, in relation to Figure 3, a student states "A mother and child mean 'Madonna'. This picture shows a mother and child. I think that a mother and child are very important to religious art" (H6). In relation to Figure 3, another student responds "John Thomson depicts a mother holding her baby. It is a symbol of the Holy Bible Madonna. The woman holds her baby just like Mary holds Jesus. Mary's caring eyes gives us the feeling that she is actually an Asian version of Mary" (H6). The student also employs the word 'symbol' indicating that she has demonstrated her awareness of symbolization in art.

In these responses, the students demonstrate their knowledge-base of Renaissance motherhood imagery as presented in the Renaissance PowerPoint given to them during the course. These responses are excellent examples of new experiences being interpreted from prior knowledge when learners activate and transfer prior knowledge and this influences the degree to which new information and ideas are comprehended (Bransford & Johnson, 1972). Additionally, many students employ art terms

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<sup>6</sup> Around 300 drawings were collected in students' visual analysis books. For reasons of limited space, it is not possible to include all the students' drawings in the "Findings and Discussion" section.

such as proportion, perspective, and symbolism when analyzing these images. For example, “In proportion, the mother is much bigger than the child” (Figure 2) and “There is a sense of 3D space and perspective in the photo” (Figure 3). When describing Figure 4, the student demonstrates a lower-order understanding within the descriptive dimension when he merely describes the figure as “she looks like a Chinese woman” (D1). There is a significant disparity between an unexpected imaginative interpretation, and an interpretation which is totally unrelated, or totally incongruous. For instance, the next interpretation below does not agree with the title of Thomson’s *Chinese Woman of the Laboring Class* (Figure 4): “The woman’s arm is very painful”. Hence, it received a -I3 score. One student related the artwork to popular culture: “The woman looks like she is in a Chinese opera” (I3). However, another student demonstrated evidence of an immature judgment, nebulous, or unclear interpretative statement: “I think John Thomson is a happy photographer” (I0).



Figure 2. John Thomson, 1871, *Taiwanese Aboriginal Woman and Infant*.



Figure 3. John Thomson, 1871, *Aboriginal Mother and Child*.



Figure 4. John Thomson, 1874, *Chinese Woman of the Laboring Class*.



Figure 5. Examples of students' drawings of John Thomson's imagery.

In his written response to Fan Kuan's *Traveling amid Mountains and Streams* (Figure 6), the student states "This is a landscape. You can see lots of rocks and trees in the background. You can see mist in the middle ground. The mountains are high in proportion to the trees and land in the foreground" (D4). Here, the student describes the image in terms of proportion using art terms such as landscape, background, middle ground, and foreground. Another student's response is scored as a lower-order formal understanding even though the student demonstrates an awareness of space: "The

ink's depth creates the feeling of 3D" (F4). Another student's response is scored as lower-order historical understanding as he merely identifies the name of nationality of the artist: "The painting is by the Chinese artist Fan Kuan" (H2). However, there is evidence of students using knowledge-seeking strategies to construct new understandings involving analysis, and comparisons to speculate or form hypotheses about works of art. For example, in her search for understanding of Fan Kuan's *Traveling amid Mountains and Streams*, the student states: "There are human figures in this scene and it is easy to imagine them being overpowered by the magnitude and mystery of the Nature" (I9). Here, the student is using her knowledge-base that in traditional Chinese landscapes, Nature is depicted as being much more powerful than human beings and that monumental painting is based on the Taoist principle of becoming one with Nature. In the following response, the student makes an incorrect formal appraisal: "It is a photograph" (-F1).



Figure 6. Examples of students' drawings of Fan Kuan's *Traveling Amid Mountains and Streams*.

Examples of students' written responses to Claude Monet's *Summer* (1874) (Figure 7). The student actively searches for formal understanding (compound sentences, complex thought-structures, connection making, comparisons, speculation, hypotheses and / or conclusions): "The artist uses trees and people to show the proportion and creates a feeling of 3D. The woman in the foreground is five

times bigger than the two people in the background. The trees in the background are bigger than the woman” (F5).

Another student gives a personal interpretation based on description of images, scene, and/or symbols: “Monet’s *Summer* seems to represent a fleeting moment in time” (I6).



Figure 7. Examples of students’ drawings of Claude Monet’s *The Summer*.

Examples of students’ written responses to Alfred Sisley’s *Snow at Louveciennes* (1878) (Figure 8). The student points out style or personal method used by the artist or ethnic group: “Sisley liked to use daubs of paint” (F3). Another student identifies, sorts, or classifies work(s) according to culture, period, movement, societies, and associations; and / or form(s). “Alfred Sisley was a 19th century Impressionist landscape painter and he was a painter whose style was more like figure painting” (H4).





Figure 8. A student's drawing of Alfred Sisley's *Snow at Louveciennes*.

Examples of students' written responses to Meyndert Hobbema's *Avenue at Middelharnis* (Figure 9).

"This is a landscape painting" (D3).

"The artist's design of the avenue of trees receding towards the center of the picture is simple, yet at the same time impressive. The trees quickly fade from the foreground into the background" (D4).

"This is a famous landscape painting by Hobbema" (H1).



Figure 9. A student's drawing of Meyndert Hobbema's *Avenue at Middelharnis*.

An example of a student's written response to Gustave Caillebotte's *Young Man at his Window* (1876) (Figure 10). The student's response agrees with the literature review: "In this painting, our eyes pay attention to looking at the interior and a man standing at the open window. Then, the man's line of vision to the exterior and the buildings. We can see the edge of the balusters and the buildings are not parallel or perpendicular. So, we know that an angled view may convey a less secure feeling.



The painter uses two-point perspective” (F8).



Figure 10. A student's drawing of Gustave Caillebotte's *Young Man at his Window*.

An example of a student's written response to Caravaggio's *Conversion of St. Paul* (Figure 11) agrees with the historical literature review. When art students actively search artworks for deeper understandings, they engage knowledge-seeking strategies. Sometimes knowledge-seeking strategies lead students to higher-order understandings corresponding to scholarly literature on the artworks. For example, there is evidence of the student using knowledge-seeking strategies in her search for understanding when she relates Caravaggio's use of light to the "light of God". "The painting shows a horse and two men and has a mysterious feeling created by the dramatic down-light. This light is the light of God. The artist intensifies the light on the man on the ground. We call this use of light Tenebrism" (H9).



Figure 11. A student's drawing of Caravaggio's *Conversion of St. Paul*.

In her response to *Portrait of the Imperial Bodyguard Zhanyinbao* (Figure 12), the student's response agrees with the historical literature review: "This painting uses a very limited palette. It is almost monochromatic. The painter only uses a small bit of red, white and green. At that time, this type of painting is realistic and very popular but the style is different from more realistic European and American paintings" (H9).



Figure 12. A student's drawing of *Portrait of the Imperial Bodyguard Zhanyinbao*.

As noted earlier, when art students actively search artworks for deeper understandings: They engage knowledge-seeking strategies involving analysis, interpretations, and explanations. For example, it is apparent that several students employed knowledge-seeking strategies when analyzing, interpreting and explaining Vincent van Gogh's *Cradle* (1882) (Figure 13) and Frida Kahlo's *the Broken Column* (1944) (Figure 14).



Figure 13. A student's drawing of Vincent Van Gogh's *Cradle*.

There is evidence of a student using knowledge-seeking strategies in his search for understanding when he attempts to relate the importance of motherhood and childhood symbolism in Christmas van Gogh family celebrations. In his analysis of Vincent van Gogh's *Cradle* (1882) (Figure 13), the student's response demonstrates a higher-order historical understanding. The student's response is in historical agreement with literature review. For example: "Vincent looked around his empty apartment and the image of home life overpowered him. The sight of the empty iron cradle held him in a vision of family feeling. He imagined himself sitting down next to the woman he loved with a baby in a cradle. It was a vision that caused him to remember precious memories of motherhood and the eternal poetry of Christmas. In all of them, he saw hope—a light in the darkness, a brightness in the middle of a dark night" (H9).

Another student's response also demonstrates a higher-order historical understanding as the student's response in historical agreement with literature review: "it focuses on one of the possible causes for Vincent's problematic relationship with his parents; namely, that he was a "replacement child" for his older brother, also named Vincent, who was born one year before Vincent the artist. His parents gave him the same name as his dead brother who died a few weeks after his birth—one year before Vincent was born. It is possible that Vincent felt like a replacement child for his dead brother who was also baptized with the name "Vincent". The replacement of a dead child by another has shown that in some families, the parents, after the death of child, become the victims of important psycho-pathological changes that will profoundly affect and interfere with their relationship to the child whose fate it is to become a substitute for the dead sibling" (H9).

The student demonstrates a higher-order understanding of Frida Kahlo's *the Broken Column* (Figure 14). Yet again, the student's response in historical agreement with literature review. There is evidence of the student using knowledge-seeking strategies to construct new understandings to speculate or form hypotheses about the artwork. For example, she cites the cultural significance of work in reference Greek culture and Renaissance imagery: "The column of her broken spine looks like a Greek column. The painting is full of pain. Her body is split open. The nails are similar to the nails in Renaissance paintings of Jesus dying. She wears a loin cloth like Jesus. Her breasts are isolated and exposed. The cracks in the broken landscape echo her pain and cracked body" (H9).



Figure 14. A student's drawing of Frida Kahlo's *the Broken Column*.

Examples of ESL students' formal understandings of Chagall's *The Birthday* (Figure 15). The student identifies abstract, real or non-objective qualities: "This is an abstract painting" (F2). Another student demonstrates a higher-order formal understanding: "The color vibrates. The man wears green clothing. The woman wears a black and white dress. It is the same color as the man's pants. Other objects surrounding the man and the woman are painted in bright colors to make connection with the happy mood of the main figures" (F6). However, another student demonstrates an illogical formal finding: "When we mention the painting of the big pillow, the color and the line is chaotic. A pillow is a thing which we lay our head on so the color of the pillow represent things inside our brain" (-F3). Likewise, another student gives an incorrect formal appraisal (unsupported): "It is done in pen" (-F2).



Figure 15. A student's drawing of Marc Chagall's *The Birthday*.

Examples of ESL students' descriptive understandings of Chagall's *The Birthday*. Two students give an immature judgments, nebulous or unclear descriptive statements: "The man in the painting is the painter who paints this painting" (D0) and "This is the most unique painting that I have ever seen" (D0). However, a student actively searches work for descriptive understanding (compound sentences complex thought structures, connection-making, comparisons, speculation, hypotheses and / or conclusions): "There are some small chairs near the desk, a plate like a watermelon, a cup, a pen, and a bag. There is an Indian cloth on the bed. Therefore, this room seems like it belongs to the woman. The woman takes a bouquet of flowers from the man" (D5). Another student's descriptive response is in agreement with literature review: "Some of Chagall's painting depicts people and objects defying the earth's gravity. He floats above the woman and contorts his body so that he can give her a kiss" (D6). Yet another student gives an incorrect descriptive appraisal: "Flying devils" (-D2). Five students demonstrate illogical descriptive misunderstandings: "The expression on the man and woman's face seems to be angry—they look as though they are arguing" (-D3), "There is a CD player on the table that plays happy songs" (-D3), "The two people are under the floor" (-D3), "These flying aliens are conquering our world" (-D3), "We can see two figures that look lousy" (-D3) and "This painting is 2D because we can see the chair only has three legs" (-D3).

Examples of ESL students' interpretative understandings of Chagall's *The Birthday*. Two students give an immature judgment, nebulous or unclear interpretative statement: "*The Birthday* looks like the best birthday in the world" (I0) and "This is a crazy painting" (I0). However, several students give illogical interpretative responses: "The man and woman are in a circus (-I3), "They look like two ghosts" (-I3), "If we do not know the meaning behind the painting, we will probably think it just a painting made by an alcoholic or a drug addict (-I3), "The boy was dead "(-I3), "It's something like the Thai style" (-I3), "I think the man's feet are in a different direction from the woman's feet. It may because he wants to make his wife happy so he wants to go out to buy more gifts" (-I3), "It was a chronic time because of war. His neck became a curve to kiss his wife. It means they have had a hard life" (-I3). Two students relate the work to popular culture (names, pop-culture): "The two figures fly like Superman" (I3) and "The figures fly just like Harry Potter" (I3). Another student actively searches the work for interpretative understanding (compound sentences, complex thought structures, connection-making, comparisons, speculations, hypotheses and/or conclusions): "This painting is about love, I think. Love can change many situations. The world needs our love " (I5). Two students demonstrate a higher-order interpretative understandings; "The colorful bouquet is a symbol of love.

It is a gift that the woman specially prepared for the man. We can conjecture it is the way the woman to express her love” (I6) and “What catches viewers’ eyes the most is the movement of the man, who acts in a strange way, bent over backward to please the woman. It symbolizes how much he loves her. The painting is actually composed in a dynamic way. That is to say, the man looks like floating in the sky and the woman is about to leave. I think the style of this painting is unique” (I8). Two students’ interpretations of the work are in agreement with literature review: “Someone being head over heels in love...floating on air” (I9) and “The fantasy kiss expresses how Chagall loves his wife” (I9).

Examples of students’ historical understandings of *The Birthday* (1915). Several students’ responses reflect historical misunderstandings: “The stories reflected in the works are from the past, maybe in the 19th century” (-H1), “It looks like a Renaissance painting” (-H1), “The painting is called Happy Birthday” (-H1), “It’s Abstract Expressionism” (-H1), “Marc Chagall is very happy but Europe is very cold so if you want get some flowers it is not easy” (-H3), “Chagall was living in the French revolution and he did not live a realistic life” (-H3). The student offers an immature judgment, nebulous or unclear historical statement: “This painting is very confusing” (H0). Several students’ responses reflect historical lower-order understandings by identifying the artist’s name and ethnic group; “The work is painted by Marc Chagall” (H1) and “Chagall was born in Russia” (H2). In contrast, another student demonstrates a higher-order historical understanding as his response is in historical agreement with literature review: “In this image we see Chagall portraying a young couple celebrating the female’s special day” (H9). Another student identifies and classifies the work according to art movements: “Chagall was influenced by Expressionism, Cubism and Fauvist color” (H4). The student actively searches for historical understanding (compound sentences, complex thought structures, connection making, comparisons, speculation, and hypotheses and /or conclusions): “The Birthday uses the vivid colors of Fauvism and the flying figures are similar to Surrealist figures. The influence of Cubism is obvious in the angled perspective of the table” (H5). Other students discuss the artist’s inspiration or mythology about the origin of the form in a supportive explanation of the work: “Chagall’s imagery is representative of his early life in a Russian village” (H6), “Marc Chagall is a Russian artist. He is famous for painting from his imagination. His painting comes of some animals, objects and his life, dreams and some Russia’s folk story. Marc Chagall is one of the Surrealist artists” (H6).

## Conclusions

As noted earlier, the main research question of the study was to explore how an interdisciplinary course might improve the ESL students' appreciation of art history. The teaching objectives of the one-semester interdisciplinary course were (1) to increase students' art history knowledge-bases; (2) to develop students' knowledge-seeking strategies through the analysis of art history imagery, and (3) to teach students how to analyze artworks using artistic concepts such as proportion, perspective, light, color, composition, movement, mood, symbolization, and abstraction through the study of Western and Asian artworks.

### Facts of Applying Art Knowledge-Bases

It is evident that in their analyses of art history imagery, the students applied their art knowledge-bases of Asian and Western artists: Fan Kuan, Emperor Wuzong, Caravaggio, Gustave Caillebotte, Meyndert Hobbema, Claude Monet, Alfred Sisley, Vincent van Gogh, Frida Kahlo and Marc Chagall. It is also manifest that many students analyzed artworks using artistic concepts such as proportion, perspective, light, color, composition, movement, mood, symbolization, and abstraction.

### Facts of Applying Knowledge-Seeking Strategies

An important finding is that many students employed knowledge-seeking strategies in their search for understanding. For example, several students used knowledge-seeking strategies to construct new understandings involving analysis, and comparisons to speculate or form hypotheses about works of art. For example, in their search for understanding of Fan Kuan's *Traveling Amid Mountains and Streams*, the student states "There are human figures in this scene and it is easy to imagine them being overpowered by the magnitude and mystery of the Nature" (I9). Also, there is evidence of a student using knowledge-seeking strategies in her search for understanding when she relates Caravaggio's use of light to the "light of God". Several students employed knowledge-seeking strategies when analyzing, interpreting and explaining Vincent van Gogh's *Cradle* (1882) and Frida Kahlo's *The Broken Column* (1944). There is evidence of a student using knowledge-seeking strategies in his search for understanding when he attempts to relate the importance of motherhood and childhood symbolism in Christmas van Gogh family celebrations in his analysis of Vincent van Gogh's *Cradle* (1882).

## The Effects of Copying Imagery

As noted earlier, Graves (2013) argues that copying helps the student to acquire a deeper understanding of both aesthetics and technique. It seems that by copying imagery, the students' understandings of visual concepts were reinforced as several of their drawings demonstrate awareness of proportion, tone, shading, perspective, shape and form. Several of the students' drawings demonstrate Howard Gardner's (1983) notion of an art intelligence in terms of spatial intelligence. Although two students' drawings of John Thomson's *Taiwanese Aboriginal Woman and Infant* (1871) and one student's drawing of John Thomson's *Aboriginal Mother and Child* (1871) were naïve and simplistic, the drawings showed some evidence of an awareness of basic proportion and tonal values. The most successful drawing of John Thomson's imagery was a student's depiction of *Chinese Woman of the Laboring Class* (c. 1874). In this drawing, the student's rendering of the Chinese woman's head shows an excellent awareness of proportion although the proportions of her arms are not accurate. Students' drawings of Fan Kuan's *Traveling amid Mountains and Streams* (c. 1000-1020) not only show a basic awareness of proportion, shape and form but also the use of contrasting lines. Such awareness is also evident in students' drawings of Claude Monet's *The Summer* (1874). One drawing demonstrates drawing skills in terms of cross-hatching. Students' drawings of Alfred Sisley's *Snow at Louveciennes* (1878) and Meindert Hobbema's *The Avenue at Middelharnis* (1689) accurately reproduce the sense of perspective in Sisley's and Hobbema's artworks. A student's drawing of Gustave Caillebotte's *Young Man at his Window* (1876) accurately reproduces the sense of proportion, perspective, light and darkness, and shadow evident in Caillebotte's artwork. A student's drawing of Caravaggio's *Conversion of St. Paul* (1601) does not depict the proportions of the two figures and the horse accurately but it does show the student's drawing ability in creating a dramatic visual composition using contrasting lines and tones. A student's drawing of Vincent van Gogh's *Cradle* (1882) demonstrates an awareness of proportion and dramatic use of line. The student's drawing of Frida Kahlo's *The Broken Column* (1944), although simplistic, does show an awareness of basic proportion. The student's drawing of Marc Chagall's *The Birthday* (1915) demonstrates cognizance of proportion and use of contrasting tones and lines.

### Scores within Each Dimension

In their analyses of Marc Chagall's *The Birthday* (1915), the findings reveal that within the descriptive dimension, students gave 75 LOUs, 17 HOU's, and 18 MUs. Predictably, the ESL students gave multiple lower-order descriptive art understandings as description does not require a strong



knowledge-base of art: students merely described objects, images, and scenes. Within the formal dimension, students gave 38 LOUs, 46 HOU's and 3 MUs. This finding shows that many students successfully developed their formal knowledge-base as many analyzed artworks in terms of elements and principles of design. Within the interpretative dimension, students gave 34 LOUs, 23 HOU's and 19 MUs. This result shows that many students actively searched for understanding through the use of compound sentences, complex thought-structures, connection making, and speculation. Within the historical dimension, students gave 17 LOUs, 11 HOU's, and 8 MUs. This result seems predictable as the ESL students' knowledge-base would have been quite limited as they had not received any previous formal art education; consequently, their art historical knowledge-base was inadequate. However, several students scored very highly within the historical dimension. Thus, these students demonstrated that they developed their art historical knowledge-base through knowledge-seeking strategies by conducting further research. Some responses reveal art misunderstandings when students give incorrect appraisals and illogical findings, immature judgments, and nebulous or unclear statements. However, many responses reveal that students actively searched for understanding through compound sentences, complex thought-structures, connection making, comparisons, speculation, hypotheses and conclusions. They analyzed artworks in terms of elements of design (line, shape, color, texture), and in terms of principles of design (repetition, variation, action/movement, balance, unity, dominance, contrast). Moreover, several responses show a formal agreement with the literature review.

Tables 5-8 list the number of students' scores within each dimension for text-book imagery. Students' scores for text-book imagery within the formal dimension suggest that many students successfully developed their formal art knowledge-base as they analyzed artworks in terms of elements and principles of design. Students' scores for text-book imagery within the historical dimension demonstrate that the students' knowledge-base of art history was quite limited and consequently they were not able to compare or discuss other famous artworks in their analyses. Furthermore, students scored 30 misunderstandings within the historical dimension. The findings related to students' scores for text-book imagery within the descriptive dimension would have been expected as mere description of an image does not require higher-understanding. Hence, the high number of descriptive LOUs (146). Nonetheless, students' responses scored 52 descriptive HOU's. 16 responses demonstrated incorrect descriptive appraisals and illogical descriptive findings. Students' scores for text-book imagery within the interpretative dimension suggest that many students employed

knowledge-seeking strategies in their search for understanding. This is demonstrated by the high number of interpretative higher understandings (82).

Nevertheless, it is also palpable that there is a scarcity of responses which provide supported judgment or aesthetic reasoning, descriptive questioning, extending or challenging the art historian's or the art critic's description of the work through convincing argument. It is evident that the DP provides a means to analytically and holistically assess written and verbal statements about works of art. However, there may be a problem for art educators in the sense that they will need substantial time to become familiar with the complex scoring system of the DP.

Overall, the course provided students with a useful knowledge-base for developing their art education and the role of visual arts can play a significant role in enhancing ESL students' education. Therefore, it is recommended that the ESL students should take other art courses in the future such as "Art Appreciation" or "An Introduction to Art".

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## Appendix 1

### Scoring Criteria for Each Dimension

#### **Formal: Medium, Composition, Arrangement, Elements and Principles of Design:**

##### **Lower-order understandings**

- F0: Immature judgment, nebulous or unclear formal statement
- F1: General recognition/identification/definition of elements, principles, marks, graphic details, grounds and /or perspective
- F2: Identifies abstract, real or non-objective qualities
- F3: Points out style or personal method used by the artist or ethnic group
- F4: Correctly classifies work in terms of technique processes, media and/or materials used

##### **Higher order understandings**

- F5: Student actively searches for formal understanding (compound sentences, complex thought-structures, connection making, comparisons, speculation, hypotheses and/or conclusions)
- F6: Analyzes work in terms of the elements of design (line, shape, color, texture)
- F7: Analyzes work in terms of the principles of design (repetition, variation, action /movement, balance, unity, dominance, contrast)
- F8: Formal agreement with literature review
- F9: Supported judgment and /or aesthetic reasoning
- F10: Formal questioning
- F11: Extends and/or challenges technician's appraisal regarding the technical process/ medium utilized to make the work, through convincing argument which includes supportive examples or evidence. Extends/or challenges historian's or critic's analysis of the work in reference to the elements and principles of design, through convincing argument which includes supportive examples or evidence

##### **Misunderstandings**

- F1: Incorrect formal appraisal (supported)
- F2: Incorrect formal appraisal (unsupported)
- F3: Illogical formal findings

#### **Descriptive: Objects, Images, and Scenes**

##### **Lower-order understandings**

- D0: Immature judgment, nebulous or unclear descriptive statement
- D1: Identifies lists and demonstrates a general recognition of images, scenes and/or symbols
- D2: Student lists and/or explains activities (verb/and at least one noun)
- D3: Identification of art-forms (landscape, portraiture, caricature, still-life, street scene)
- D4: Examines and describes surface details of images

### **Higher-order understandings**

- D5: Student actively searches work for descriptive understanding (compound sentences complex thought structures, connection-making, comparisons, speculation, hypotheses and/or conclusions)
- D6: Descriptive agreement with literature review
- D7: Supported judgment and /or aesthetic reasoning
- D8: Descriptive questioning
- D9: Extends or challenges historian's and/or critic's description of the work through convincing argument which includes supportive examples or evidence

### **Misunderstandings**

- D1: Incorrect descriptive appraisal (supported)
- D2: Incorrect descriptive appraisal (unsupported)
- D3: Illogical descriptive findings

## **Interpretative: Meaning, Emotion, Feelings and Expression**

### **Lower-order understandings**

- I0: Immature judgment, nebulous or unclear interpretative statement
- I1: General interpretative language
- I2: Uncustomary/unexpected impression (personal): murder, hate, killing
- I3: Relates work to popular culture (names, pop-culture)
- I4: Correctly related work to a culture or religious belief system

### **Higher-order understandings**

- I5: Student actively searches work for interpretative understanding (compound sentences, complex thought structures, connection-making, comparisons, speculations, hypotheses and/or conclusions)
- I6: Personal interpretation based on description of images, scene, and/or symbols
- I7: Personal interpretation based on analysis of elements of design (line, shape, color, texture)
- I8: Personal interpretation based on analysis of principles of design (repetition, variation, dominance, balance, transition, unity, contrast, movement, action)
- I9: Interpretation agreement with literature review (cites conventional, feminist, psychoanalytic, Marxist interpretative perspectives)
- I10: Supported judgment and/or aesthetic reasoning
- I11: Interpretative questioning
- I12: Extends and/or challenges historian's and/or critic's interpretation of the work through convincing argument which includes supportive examples or evidence

### **Misunderstandings**

- I1: Incorrect interpretative appraisal (supported)
- I2: Incorrect interpretative appraisal (unsupported)

## **Historical: Classifications and Shared Understandings**

### **Lower-order understandings**

H0: Immature judgment, nebulous or unclear historical statement

H1: Artist's name(s) or ethnic group

H2: Personal data or background about artist (age, sex, race, culture, where artist was born, lived, worked and/or "stories" about the artist's life) or ethnic group

H3: Title or date of work(s), the place or person(s) the work might depict

H4: Identifies, sorts, or classifies work(s) according to culture, period, movement, societies, and associations; and/or form(s)

### **Higher-order understandings**

H5: Student actively searches for historical understanding (compound sentences, complex thought structures, connection making, comparisons, speculation, and hypotheses and /or conclusions)

H6: Discusses the artist's inspiration or mythology about the origin of the form in a supportive explanation of the work

H7: Provides a supportive explanation of the work in reference to its purpose, function or use

H8: Makes comparison(s) of other works by same artist or ethnic group(s) or different artist(s) and/or ethnic group

H9: Historical agreement with literature review (cites cultural significance of work in reference to artist, context, movement, ethnic group and/or society)

H10: Supported judgment and /or aesthetic reasoning (historical)

H11: Extends and / or challenges historian's and/or critic's appraisal, analysis, and/or theories applied to the work of art or artist through convincing argument which includes supportive examples and evidence

### **Misunderstandings**

- H1: Incorrect historical appraisal (supported)

- H2: Incorrect historical appraisal (unsupported)

- H3: Illogical historical findings