ICHIM
PARIS 21-23 SEPT. 05
www.ichim.org

Digital Culture & Heritage
Patrimoine & Culture Numérique

Bibliothèque nationale de France, PARIS
Sept. 21st - 23rd, 2005
21 - 23 septembre 2005

BnF

BECOME ENCAPSULATED! DESIGNING AN INTERACTIVE PEDAGOGICAL SPACE FOR ASIAN VISUAL CULTURE

Yung-Yi Juliet Chou

Visual Media Center
Department of Art History & Archaeology,
Columbia University, USA

Published with the sponsorship of the
French Ministry of Culture and Communication

Actes publiés avec le soutien de la Mission de la Recherche et de la Technologie du Ministère de la Culture et de la Communication, France

Interprétation simultanée du colloque et traduction des actes réalisées avec le soutien de l'Agence Intergouvernementale de la Francophonie

Abstract (EN)

The Teaching of visual literacy in the material culture of Asia with a vast geographical and chronological range in an isolated environment without properly-designed interfaces is daunting to many undergraduate students, as well as entry-level graduate students. This presentation, therefore, will focus on the challenges in teaching and learning Asian Art in the age of global digitization. Various strategic solutions will be examined and proposed to enhance the educational process by establishing a focused learning environment that encompasses heterogeneous media (such as handscroll paintings, film footage, paints, archaeological excavation records, maps), nurtures the development of visual literacy and fosters a framework for students' intellectual progression. The effort will be spent on the issues beyond "digital conversion" and "web archiving" that usually are associated with digital cultural resource projects. A few conceptual ideas in the process of constructing an interactive pedagogical space for Chinese visual culture will be discussed in this presentation based on the case studies at Columbia University with the grant support of the National Endowment for Humanities.

Case Study I : *"**Imperial Southern Inspection Tours"*** is based on a series of long handscrolls of Qing Emperors' in the collection of the Metropolitan Museum of Art unroll "paintings as historical documentaries". Integrated with layers of information including temporal and spatial elements, political, social and economic factors, the program not only allows students to take a glimpse of the grandeur cities in late 17th-century China but also opens up the great opportunities for them to attempt more-in-depth analyses of the techniques of pictorial narration in a three-dimensional world.

Case Study II : *"**Cinematic Space, Dramatic Themes and Material Culture**"* uses film clips to show students the complex architectural space in a traditional Chinese domestic household. The idea of incorporating movie clips from Zhang Yimou's world-renowned film RAISE THE RED LANTERN in a web-based interactive program attracted the students' attention and enhanced their experience in the classroom. By watching the film clips juxtaposed with the interactive ground and roof plans, students are able to explore the rich and accurate narrative of the architectural space in the 18th century Qiao Family Grand Courtyard located in northern China, Shanxi province.

Résumé (FR)

L'enseignement de l'alphabétisation visuelle dans la culture matérielle de l'Asie avec une vaste gamme géographique et chronologique, dans un environnement isolé, sans interfaces appropriées, est intimidant pour beaucoup d'étudiants, diplômés ou non. Cette présentation se concentrera donc sur les défis de l'enseignement et de l'apprentissage de l'art asiatique à l'âge de la numérisation globale. Diverses solutions stratégiques seront examinées et proposées pour augmenter le processus éducatif en établissant un environnement d'étude focalisé qui englobe des médias hétérogènes (tels que les peintures sur manuscrits, des séquences de films, les peintures, les enregistrements d'excavations archéologiques, les cartes), consolide le développement de l'instruction visuelle et stimule un cadre pour la progression intellectuelle des étudiants. L'effort sera réparti sur les questions « de la conversion numérique » et de « l'archivage du Web » qui habituellement sont associées aux projets culturels numériques de ressource. Quelques idées conceptuelles de processus de construction d'un espace pédagogique interactif pour la culture visuelle chinoise seront discutées dans cette présentation basée sur les études de cas à la Columbia University avec le soutien d'une bourse du National Endowment for Humanities.

Etude cas n°1 : « *des excursions impériales d'inspection du Sud* » est basé sur une série de long manuscrits des empereurs Qing de la collection du Metropolitan Museum of Art qui se déroulent comme des « peintures en tant que documentaires historiques ». Intégré avec des couches d'information comprenant les éléments temporels et spatiaux, les facteurs politiques, sociaux et économiques, le programme permet non seulement à des étudiants d'avoir un aperçu de la splendeur des villes au XVIIème siècle en Chine mais de leur fournir également de meilleures possibilités pour essayer d'analyser de plus en profondeur, les techniques du récit imagé dans un monde tridimensionnel.

« *L'espace cinématographique, les thèmes dramatiques et la culture matérielle* » utilise des clips vidéos pour montrer aux étudiants l'espace architectural complexe dans un ménage domestique chinois traditionnel. L'idée d'incorporer des clips vidéo extraits du film mondialement connu RAISE THE RED LANTERN de Zhang Yimou, dans un programme interactif sur le Web, a attiré l'attention des étudiants et a enrichi leur expérience dans la salle de classe. En regardant les clips vidéo associés au sol interactif et aux plans du toit, les étudiants peuvent explorer le récit

riche et précis de l'espace architectural au XVIIIème siècle, dans la grande cour de la famille Qiao, située dans le nord de la Chine, dans la province de Shanxi.

Being trained as an art administrator and a historic preservationist, but became interested in the way information is collected, organized and presented to convey the meaning. For the past five years, Yung-Yi Juliet Chou has served as the Manager for Educational Technology at the Columbia University Visual Media Center. In this capacity, Ms. Chou leverages her technical expertise to direct the production of programs that enhance students' learning experience in the classroom and in a virtual environment. Her current projects include an interactive pedagogical program focused on Asian visual culture supported by the National Endowment for the Humanities. She just starts working on the Ph.D. program in Cognitive Studies in Education at Columbia University.

Prelude

This paper will focus on the challenges in designing an interactive pedagogical space for Asian Visual Culture in the age of global digitization based on my case studies at Columbia University with the grant support of the National Endowment for Humanities. The project is an initiative to create a series of digital modules devoted to the study of seminal Chinese, Japanese and South East Asian paintings intended for undergraduate students. It also serves part of a larger strategy at Columbia University, as well as at other colleges and universities in the United States, to move decisively in the direction of digital teaching. Visual literacy exercises conceptual modes of seeing and thinking, and encourages the development of a student's ability to explore, analyze, critically evaluate and interpret cultural objects. This instructional philosophy is rooted in the Art History Sequence of Columbia University's Core Curriculum and carries through the entire program of art history courses, but these skills and habits are integral to any number of humanistic fields including the study of Asian art and culture. It appears that whoever teaches the subject would be very likely to share the same facilities and digital resources with those teachers in other fields of the humanities such as the Renaissance or Modern art and architecture. Students would be presented with different materials in the same teaching environment. Many of you might wonder if there are any differences in designing a pedagogical digital program for Asian art at all. I don't have to overemphasize it. The study of Asian art, such as Chinese painting alone, with its vast geographical and chronological range and its complexity of religious and secular meanings, in an isolated environment without the proper set-up is daunting to many undergraduate students, as well as entry-level graduate students. Exactly for that reason, I feel it is worthwhile to focus my talk on specific issues. This will not be a one-size-fits all approach, so I chose not to touch so vast an area of discussion. Therefore I'd like to narrow my scope to a few conceptual ideas in the process of constructing a teaching and learning space for Chinese visual culture that is effectively configured and intuitively navigable. This talk is not about an announcement of a novel interface design, rather it is a reflection on my own experience as an educational technologist.

Myth of the Constrained Format

For those who are not familiar with traditional Chinese visual culture, much of it is characterized by a variety of formats that are intellectually demanding as works of art and as objects of material culture. Let's start with the most obvious one. The physical format of painting and calligraphy were presented in a way that qualified artistic style. Among many different formats such as screens, hanging scrolls, albums and wall paintings, the handscroll is the most significant invention. [Fig.1] Therefore, I'd like to spend my best efforts on the issues of the Chinese handscroll painting in this presentation.

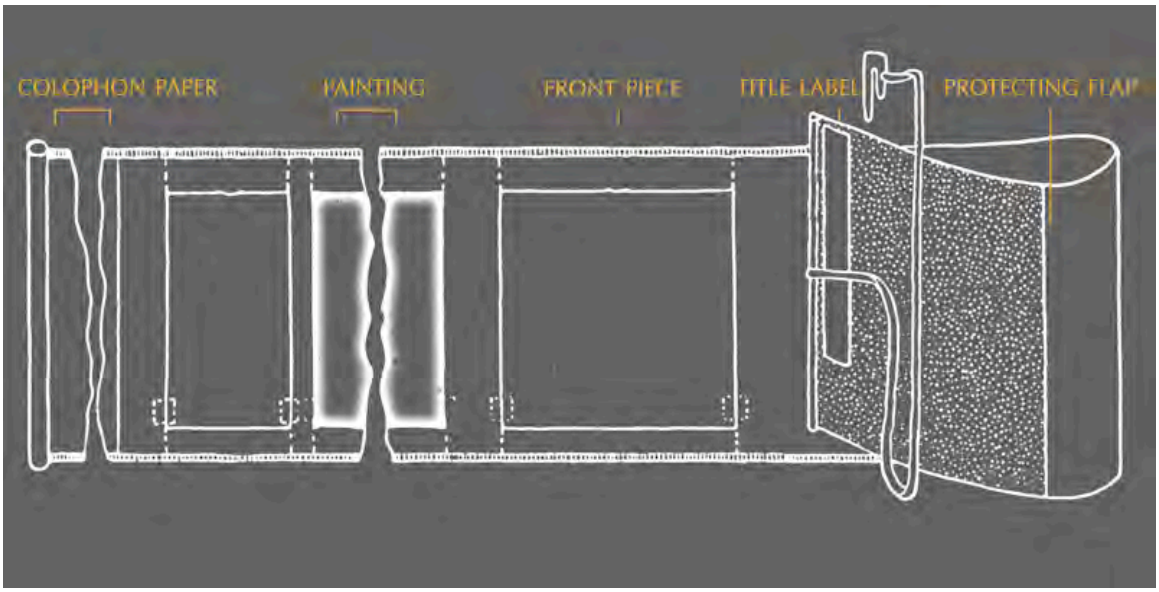

Fig. 1: Schematic Drawing of a Chinese Handscroll Painting
(after Gulik's Chinese Pictorial Art as Viewed by the Connoisseur, p.67)

The unique format of a handscroll seemed to have developed naturally out of the form that the written documents started appearing on thin, vertical bamboo slips in Zhou dynasty and it had to be bound together in right-to-left sequence and rolled up for storage. (Silbergeld, 1982) Many Chinese and Japanese handscrolls are physically long objects ranging from less than 1 meter (3 feet) to more than 21 meters (70 feet) in length and the majorities are between 23 cm (9 inches) and 70 cm (27 inches) high. You can imagine how awkward it has been to represent such objects through slides and books. There is no doubt that the digital technology might provide all kinds of solutions in such situation, but the answer is not straightforward. We all learn that in practice the

sizes of reproduced images almost entirely depend on the convenience of fitting into the grid layout of a page or a computer screen. It happens to every published reproduction. What makes a Chinese painting so conspicuously different? The "aspect ratio" between the width of the picture and the height of the picture might answer the question. For example, if you compare "The Wedding Feast at Cana" by Veronese, a comparatively large-sized painting covering an entire wall at (666 x 990 cm or 262 x 390 inches) in the Louvre Museum and a Chinese handscroll painting, "Spring Morning in the Han Palace" by Qiu Ying of the National Palace Museum Collection with an average size of (30.6 x 574 cm or 12 x 226 inches) on the same screen at the width of 640 pixel. To compare these two images, we don't need the connoisseur's eye to recognize the problem. Both of them are not great images, but in the one on the bottom (Veronese) we still can see the theme of a feast, in the one on the top (Qiu Ying) we barely make out that there are views of palace halls with royal women moving around. "Seeing the forest and the trees" seems to be the issue for displaying a Chinesehandscroll or monumental hanging scroll properly on the web.

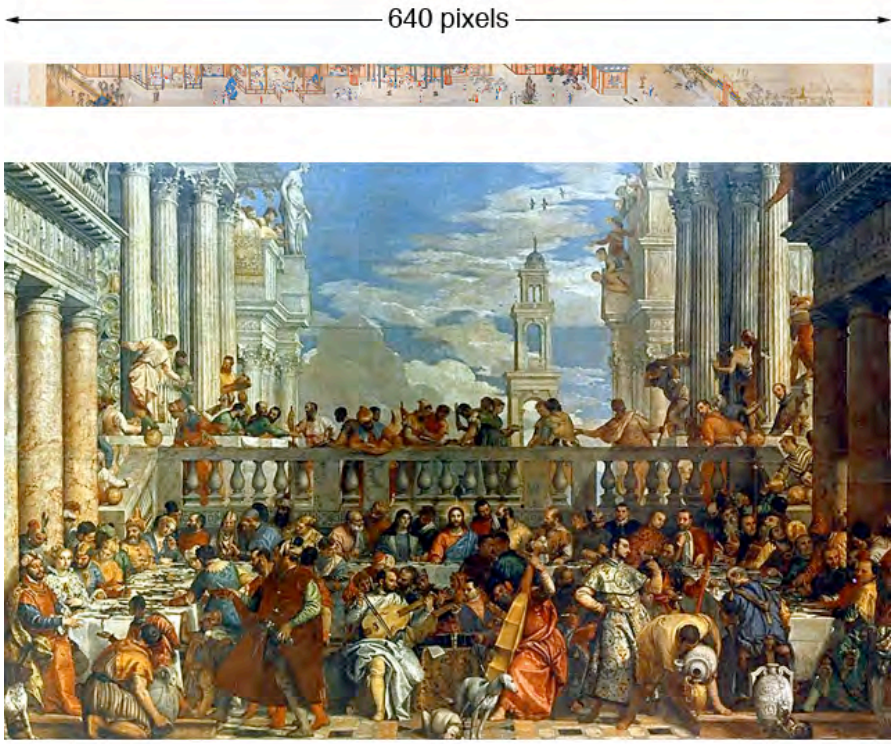

Fig. 2: Comparing the Aspect Ratio. (Top) *Spring Morning in the Han Palace*, Qiu Yin, 30.6 x 574 cm, National Palace Museum, Taipei. (Bottom) *Wedding Feast at Cana*, Veronese, 666 x 990 cm. The Louvre Museum, Paris.

Misled by Modern Visual Experience

How exactly do you handle and view a handscroll properly? The painting would need to be unrolled and viewed gradually, from right to left and section by section. It is also the way a handscroll was painted by an artist. Unfortunately, it is not what we can experience from the museum visit or from the discussion in the classroom. Any Chinese art historian will tell you that most handscrolls are never meant to be opened fully for a single viewing, as they are done in the museums. You often find many enthusiastic spectators crowded in the front of a custom-made glass, trying to get a view of the masterpiece from various angles. In the classroom, an important handscroll is typically discussed with several pairs of slides that fragment the visual narrative and distort the character of the objects. The challenge here is not about designing a screen to display the entire scroll all at one or to be able to see an image in sharp detail, but how to recreate an experience of "private viewing". The essential relationship between a viewer and a handscroll has been escaping from a modern visual experience. Only you, as a single spectator can control the pace of the reading and maneuver the movement of the image. (Wu, 1996)

Missing Art of Cinematic Representation

Perhaps a teacher or a curator can determine which part of the handscroll painting should be shown or not in the course of a classroom presentation and how the roles of individual images are related to the overall composition. This leads us to another of the characteristics that becomes embedded in the Chinese visual culture: the attribute of cinematic representation. "The composition of a Chinese painting is not defined by the four walls of its mount as a European painting by its frame. Rather it is an expanse of space in which there may or may not be things." (Sullivan, 1999) The attitude behind the "multiple perspectives" of Chinese painting is to set up a viewing system that invites you to explore nature, to wander through the mountains, to stroll around the cityscapes. The artist never intends to show you the grand panorama at a glance. As you unroll as much of the panorama as you can by passing from right to left, the journey that you spend on the length of a scroll probably needs days or weeks to complete in real life. However it may seem "primitive" nowadays, it comes as close as any pre-modern device to the effect of the

motion picture. The skill of a Chinese artist that is similar to a modern film-maker lies in carefully adjusting the tempo of his editing to the emotional content of his scene. The artist might "speed the viewer over smooth or rugged passages, create a sudden halt, and alternate close-up, specific views with others far away and dimly seen." (Silbergeld, 1982)

How to design a proper visual guide to enhance students' intimate experience and to evoke the characteristics of cinematic representation in a handscroll painting? So it can preserve the ideological foundations of Chinese visual representation without losing the convenience of the mass-production systems of visual representation.

Designing an Interactive Space: Conventional vs. Improved

Here is the example that I would like to share with you. This collaborative project between The Metropolitan Museum of art and Columbia University is guided by the scholarship of Maxwell Hearn and is one of those digital modules supported by the National Endowment for Humanities. It is based on the series of monumental handscrolls that illustrate the Southern Inspection Tours of the Kangxi and Qianlong Emperors of the Qing dynasty. Each original set has twelve long handscrolls which were dispersed among the major museum collections in Beijing, New York and Paris sometime before 1949. Both of them are immense in scale—the Kangxi set measures over 213 meters (700 feet) in total length, the Qianlong set, over 143 meters (470 feet). The finished painting provided the most important detailed evidence about ceremonial space, social space and architectural space in Chine during the seventeenth and eighteenth centuries. Together they comprise the largest and most extravagant example of handscrolls art known today. (Hearn, 1988) The undertaking of this project gives me a chance to meet the challenges encountered during the design process of creating an interactive learning program for a handscroll painting.

On the screen, you can see how the third scroll of the Kangxi Southern Inspection Tour is presented by a conventional design in a museum website. The scroll (67.8 x 1393.8 cm) is supposed to illustrate the Kangxi Emperor's tour route through the spectacular mountain scenery of Shandong Province, focusing on Mount Tai, the sacred Eastern Peak (Dong Yue), where the

Kangxi Emperor performed a ceremony honoring the deity of the mountain. On a typical 1024 x 768 computer screen, you see a main image on the left side and sixteen thumbnail images clickable to an alternate enlarged view. Despite the generosity of offering images on a web resource, most audiences would not have a clue about the overall work or how to view it as the artist intended it for his original audience. Where is this journey to start and end from right to left, left to right or up to the bottom?

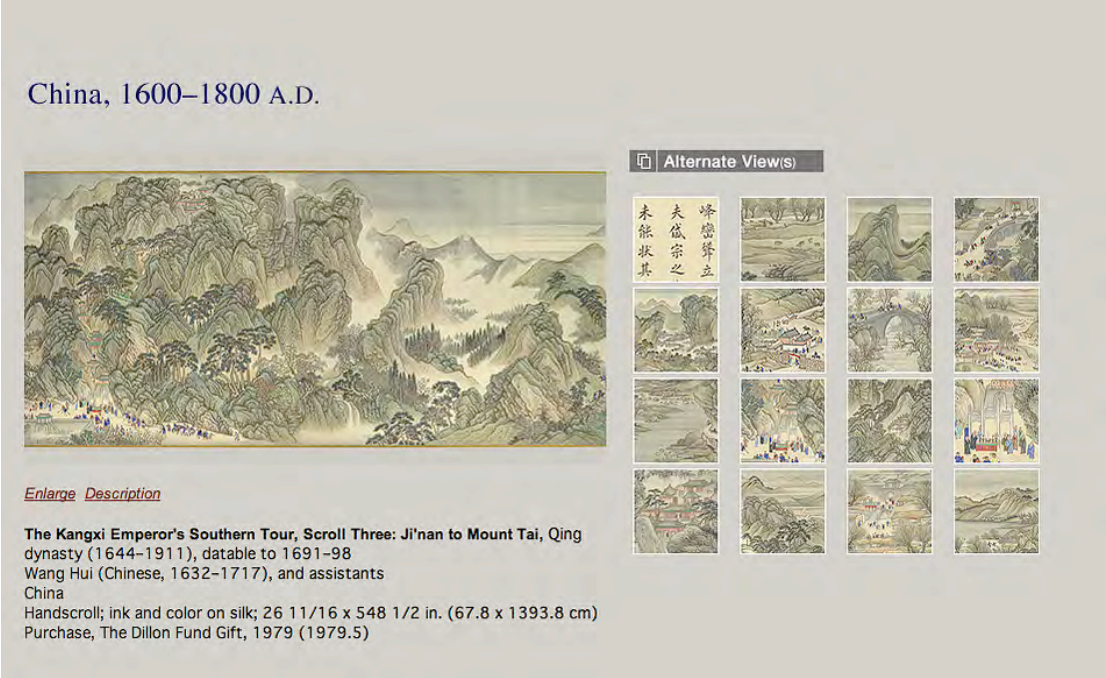

Fig. 3: A Screen shot taken from the web site of Timeline of Art History created by The Metropolitan Museum of Art. http://www.metmuseum.org/toah/ho/09/eac/ho_1979.5.htm

Demo: The Southern Inspection Tour of the Kangxi Emperor: Scroll III

Now we will take a look at the redesigned space for this particular scroll. [Fig. 4] The screen you see here is organized in three horizontal registers. A large viewing window on the top representing the scrollable 'picture frame' is to display the section of the image from the same scroll. The highlighted landmarks or sites for each section appear in the lower part of the map route. Students may follow the journey guided by the circular icons along the dotted line. The navigation bar in the middle measures the exact position of the viewer along the length of the

handscroll to anchor students within the context of the Kangxi Emperor's tour—a sweeping panoramic of landscapes, cityscapes and sacred places. When clicking on the image icon, the default setting will allow students to navigate the corresponding images or animated sequences displayed in the large viewing window. However, students are certainly welcome to explore the journey on their own by using various navigation tools with keyboard commands or a mouse. The design can serve as one of the better cognitive tools that help augment students' minds in how a three-dimensional world was rendered along a north-south axis, the top of the handscroll becomes west, the bottom, east.

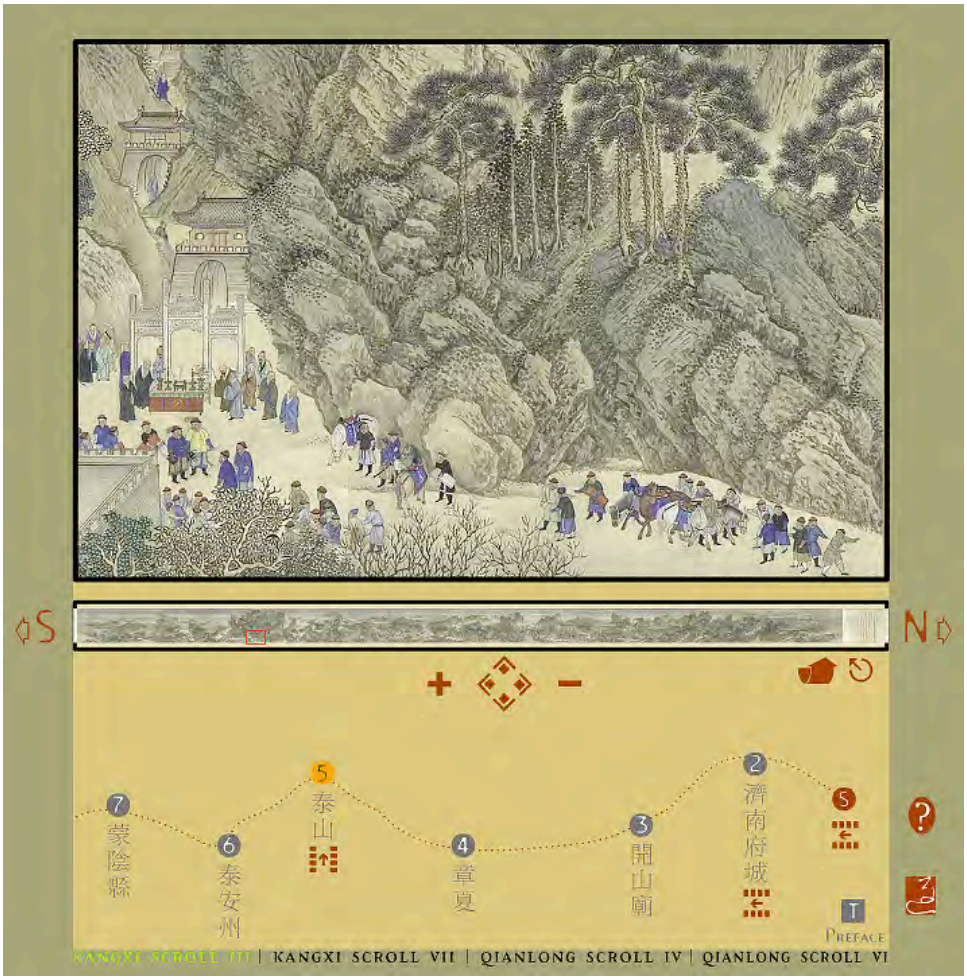

Fig. 4: A screen shot taken from the web site of Recording The Grandeur of the Qing. "Southern Inspection Tour of Kangxi Emperor, Scroll III: Ji'nan to Mount Tai" is one of the interactive components in the program. http://www.learn.columbia.edu/nanxuntu/

Further, students can begin to think about how time and space were manipulated by a great artist to create a dramatic structure. The handscroll encompasses about two hundred kilometers (120

miles) of the tour route, a distance which in real time would be covered in three and one-half days, but the artist tends to build a very slow tempo during the first half-days travel from Jinan to Zhangxia by taking up almost a two-third's length of the scroll. He picks up the pace after leaving the village in Zhangxia and increases the intensity of the monumental form of Mount Tai by reducing the prominence of the retinue; the mountain almost appears in front of viewers suddenly, afterward, he shortened the second half of the journey by compressing it into one-eighth length of the scroll. (Hearn, 1990) All the cinematic representation and meticulous treatment in movement could be preserved within the screen space as a part of the pedagogical strategy to draw the students' attention into the object when compared to a general bulletin-board-styled web program created with a series of fragmented images.

Demo: Urban Life in Suzhou: District II

The Southern Inspection Tour presents several challenges as a subject for a digital teaching program as you have seen from the demonstration. Perhaps the subject matter is unique to this painting and is well understood only within the context of the Qing emperors' political motivation for commissioning such monumental work. However, the handscroll that carries a series of pictorial documentaries of significant Qing cities offers a perfect chance for adding additional layers of information on social and cultural patterns and economic issues that are accessible to students without an art history background and thus reaching a much broader audience in the field of Asian studies. For example, this is to show you one of the bustling market districts in 18th-century Suzhou as depicted in Scroll Six of the Qianlong Emperor's Southern Tour Series. Because the cityscape is focused at very closed range, the lowering of the high vantage point results in a more substantial rendering of architectural space, and the space configuration allows the audience to "participate" in the prosperity of Suzhou. [Chung, 2004] Again the screen you see here is organized in three registers. [Fig. 5] It resembles one of those modern-time walking tour maps. By clicking different color-coded circular icons below, you will be taken on a shopping spree. The information loaded into the small window on the right will tell you more about the meanings of the store signs and inscriptions seen in the painting and their origins. This type of program gives the students an opportunity to see minute details of Chinese

urban life effortlessly.

Fig. 5: A screen shot taken from the web site of Recording The Grandeur of the Qing. "The Urban Life in Suzhou" is one of the interactive components extracted from Scroll Six of the Qianlong Emperor's Southern Tour Series. http://www.learn.columbia.edu/nanxuntu/

Let's not forget the "grand scale" of each digital version of a handscroll that is composed of 10 to 15 individual images. The length of each image is approximately 5,047 pixels. The total length for one completed digital handscroll is between 75,705 and 50,470 pixels after I stitch the individual images together (depending on how much is overlapped between two images). It is a very time-consuming but very rewarding process. Most of the aligning, brightness, contrast, color quality and some times perspective adjustments were done manually to assure the accuracy using Photoshop despite the availability of many commercial programs for automatic stitching operations. The process of "digitizing" a handscroll: capturing images section by section, stitching images together and finally presenting the scroll, in this way, closely replicates the

process of painting, mounting and viewing a handscroll.

When we proposed the idea of developing this new program of interactive handscrolls three years ago, the availability of high-bandwidth network access was not common in many schools and even less so in people's homes. A major breakthrough for this image-heavy high-resolution project is to overcome the limits of download time and image compression by applying advanced image streaming technology with the commercial software—called "Zoomify". We are able to use the cost–effective Zoomify plug-in for Flash to deliver very fast access to high-resolution images with little compromise in quality or usefulness and maintain excellent image quality.

Conclusion

Finally, I'd like to emphasize that a digital program for the handscroll painting is not merely designed to simulate the experience of unrolling the scroll with a fancy effect, but is designed to enhance education process by establishing a focused learning environment that nurtures the development of visual literacy and provides a framework for the student's intellectual progress. The collaboration between a museum and a school could be a perfect match using works of art as subjects of teaching visual literacy, however, I have to admit that the type of digital interactive program such as the one I presented here is still a relatively new and uncharted area of pedagogical resource development in the undergraduate curriculum. While well-trained, dedicated teachers can bring their knowledge, experience and enthusiasm to the classroom, students need more help during the learning process when they are alone. Especially students enrolled in Asian art, history and literature courses as part of their broader humanistic education are most likely to be frustrated by the lack of compelling but accessible study materials. (Fong, 2003; Yienpruksawan, 2001) As an educational technologist, a new class of educational professional, it is my role to help the transition from the traditional teaching and learning environment to the digital world happen smoothly, painlessly and usefully. I would like to create more multi-leveled digital programs to bridge the gap between introductory textbooks and more advanced scholarship. Above all, the goal is to design a better interactive pedagogical space that will foster the type of interdisciplinary environment vital to a rich understanding of Asian art and

culture in other part of the world.

References

Books:

John D. Bransford, Ann L. Brown, and Rodney R. Cocking (Eds.) (2000) How People Learn: Brain, Mind, Experience and School. Committee on Developments in the Science of Learning, Commission on Behavioral and Social Sciences and Education, National Research Council. Washington D.C.: National Academy Press.

Chung, Anita. (2004) The Qing Imperial Domains: Court Representations I. *Drawing Boundaries: Architectural Images in Qing China*. Honolulu: University of Hawai'i Press. 75-100.

Ehrlich, Linda & Desser, David (Eds.) (1994) Cinematic Landscapes: Observations on the Visual Arts and Cinema of China and Japan. Austin: University of Texas Press.

Fong, Wen C. (2003) Why Chinese painting is History. *The Art Bulletin*, Ixxxv:2, 258.

Gulik, Robert Hans van. (1958) Chinese Pictorial Art as Viewed by the Connoisseur. Rome: Instituto Italiano per Il Medio ed Estremo Oriente.

Hearn, Maxwell K. (1988) Document and Portrait: The Southern Inspection Tour Paintings of Kangxi and Qianlong. *Chinese Painting under the Qianlong Emperor: The Symposium Papers in Two Volumes*. Ju-his Chou and Claudia Brown. (Eds.) Phoebus 6, Number 1, Tempe: Arizona State University. 91-189.

_____. (1990) The Kangxi Southern Inspection Tour: A Narrative Program by Wang Hui. Ph.D. diss., Princeton University.

Mitchell, William J. (1992) The Reconfigured Eye: Visual Truth in the Post-Photographic Era. Cambridge, Mass.: MIT Press.

Sullivan, Michael. (1999) The Arts of China. Berkeley and Los Angeles: University of California Press.

Silbergeld, Jerome. (1982) Materials and Format. *Chinese Painting Style: Media, Methods, and Principles of Form*. Seattle: University of Washington Press. 5-15.

Tufte, Edward R. (1990) Envisioning Information. Cheshire: Graphics Press.

Wu, Hung. (1996) The 'Night Entertainment of Han Xizai'. *The Double Screen: Medium and Representation in Chinese Painting*. Chicago: The University of Chicago Press. 29-71.

Yienpruksawan, Mimi Hall. (2001) Japanese Art History 2001: The State and Stakes of Research. *The Art Bulletin*, Ixxxiii:1, 105.

Web Site:

http://www.learn.columbia.edu/nanxuntu/

Recording the Grandeur of the Qing: The Southern Inspection Tour Scrolls of kangxi and Qianlong Emperors is a collaborative project of The Metropolitan Museum of Art, the Asia for Educators Program at Columbia University, and the Visual Media Center at Columbia University, made possible in part by major funding from the National Endowment for the Humanities. Faculty Consultants: Maxwell K. Hearn, Douglas Dillon Curator of Chinese Painting and Calligraphy, The Metropolitan Museum of Art; Madeleine Zelin, Professor of History, Columbia University. Project Directors: Robert Carlucci, Director, Visual Media Center, Columbia University; Roberta Martin, Director, Asia for Educators Program, Columbia University. Designer: Yung-Yi Juliet Chou, Visual Media Center, Columbia University. Producer: Sara Leeun Huong, Asia For Educators Program, Columbia University.