

Digital Preservation and Implementation of an Information Exchange Platform for Folklore Hobbyists

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摘要

近年來各國極力推動博物館文物的數位典藏，然而國家級或地方型博物館的收藏量仍然相當不足，例如台灣民俗文物館之典藏數量僅1400多件。台灣民俗文物館是一個具有多項功能的景點，其中最重要的功能是收藏與展示具有代表性之台灣民俗文物，另外該館也是台灣民俗教育的重要據點。除了民俗文物的數位化之外，該館也進行包括文物製作技藝、使用技巧、民俗儀式等相關民俗活動之數位典藏。為了彌補典藏之不足，將民間之民俗文物愛好者之收藏品數位化，呈現於網際網路上將具有相當的價值。該館除了定期邀請民俗文物收藏家展示他們的收藏品，並遵循Metadata格式將展示品數位化以延伸該館之典藏內容之外，也主動協助民俗文物收藏家，協助將其收藏品數位化以擴展典藏內容。本研究之目的為建構台中民俗文物學會之會員交流平台，該平台除了提供會員收藏品之數位典藏之外，也提供會員間資訊交流之相關功能（例如部落格），作為收藏家之間或收藏家與一般市民間之資訊交流媒介。該平台極具藝術與民俗教育的價值，預期未來該平台內之社群將逐漸形成，後續將發展C2C的商業功能模組，協助會員間從事各項交易活動。

關鍵詞：民俗教育、交流平台、數位典藏

Abstract

Digital preservation of museum artifacts has been widely promoted by governments around the world in recent years. However, the artifacts collected by national or local museums are not very exhaustive. For example, there are only 1400 artifacts collected by Taiwanese Folklore Museum although it is a popular multi-function site with a crucial mission in the exhibition and preservation of representative folklore artifacts and an important site for folklore education. The collected folklore artifacts accompanied with crafts in how to make them and skills and rituals in how to use them have been digitized. In order to supplement insufficiency of artifacts collected by the museum, folklore hobbyists are regularly invited to demonstrate their private collections. At the mean time, the task force of digital preservation team of the museum digitizes the artifacts for extending its contents. Another way to aggressively increase the number of digitized contents is to sign cooperation agreements with members of the folklore associations by giving services to digitize their personal collections. We expect that after having extended the digital contents, the web site of Taiwanese Folklore Museum will become even more popular for teachers and students, especially in the kindergartens and primary schools, to extract and prepare useful materials for folklore education. The platform also supports the folklore hobbyists

and general citizens a cyberspace to exchange their personal experience and professional knowledge. A C2C business model will be implemented to support merchandise of artifacts among registered members in the future.

Keywords: Folklore Education, Platform, Digital Preservation

1 Introduction

The importance of folklore can be manifested by Alan Jabbour's speech in the 100th anniversary of American Folklore Society, which stated that "folklore reflects on the ancestral missions that have shapes us, the inherited values that we reflect and must radiate into the future" [2]. The word "folklore" may refer to unsubstantiated beliefs, legends, and customs, currently existing among the common people [10] or substantiated artifacts, crafts, skills, and rituals, widely governing the living style of the common people [3].

Recently, digital content development with applications to the preservation of artifacts relating to the arts, languages, ecology, living styles, etc. has been studied and implemented worldwide [5,3]. Most of the digital contents emphasized artifacts rather than the craft in making or the skill in using these artifacts. For example, the craft in making puppets concerning wood sculpture, painting, clothing, and decoration, while the skill of using or playing the puppet in religious rituals regarding delicate finger operation, hand control, and arm and body movements. Besides, folklore and religious rituals have their spiritual meaning that step-by-step procedure embeds significant meaning for a people or a religion. Motivated by the investigations which showed that media richness facilitates learning of courses with high uncertainty and equivocality [12] and e-learning with interactive videos gains more learner satisfaction than non-interactive and traditional classroom learning [14], digital contents of crafts, skills, and rituals have been developed for the purpose of both digital preservation and online education [4]. The same concept was applied to digitize childcare standard operation procedures (SOPs) [13]. In contrast to general non-interactive e-learning and traditional classroom learning style, we proposed a metadata-based

method for recording each step as a metadata record in which the title, description, associated digital media, and other related information are all included [4].

The artifacts collected by national or local museums are not very exhaustive. For example, there are only 1400 artifacts collected by Taiwanese Folklore Museum although it is a popular multi-function site with a crucial mission in the exhibition and preservation of representative folklore artifacts and an important site for folklore education. In order to supplement insufficiency of artifacts collected by the museum, folklore hobbyists are regularly invited to demonstrate their private collections. At the mean time, the task force of digital preservation team of the museum digitizes the artifacts for extending its contents. Table 1 shows the exhibitions of the folklore artifacts collected by hobbyists and folk arts created by folklore artists at the Taiwan Folklore Museum from 2005 to 2007. Another way to aggressively increase the number of digitized contents is to sign cooperation agreements with members of the folklore associations by giving services to digitize their personal collections. We expect that after having extended the digital contents, the web site of Taiwanese Folklore Museum will become even more popular for teachers and students, especially in the kindergartens and primary schools, to extract and prepare useful materials for folklore education. Hence, the objective of this study is to develop a platform for supporting the folklore hobbyists and general citizens a cyberspace to exchange their personal experience and professional knowledge.

2 Materials and Methods

An artifact is related to static presentation of the folklore, which is usually an artwork produced by a craftsman, and eventually used as a tool in daily life or a utensil in a ritual. The skill refers to the use of artifacts skillfully in a ritual, daily life, or ceremony. Folklore objects and activities were classified into four types, i.e. artifact, craft, skill, and ritual [4]. The latter three types are referred to folklore activities embedding dynamic characteristics that can be delineated and recorded by step-by-step video clips.

2.1 Digitization of Folklore Artifacts

Pictures of the artifacts were taken by a professional photographer using a professional Hasselblad camera with 120mm positive films. Three infrared-synchronized spotted lamps, one was placed above the artifact and the other two at its left and right sides, were used to eliminate the shadow effect. The pictures were then digitized by a high-quality scanner with resolution as high as 600 dpi and stored in true-color format (TIFF) for further processing and future references. A

commercial software package (Adobe Photoshop) was used to calibrate the color saturation and hue deviation caused by over- or under-exposure caused by differences in exposure characteristics among artifacts with great variety. In addition to the digital contents, paper-based documents were also prepared for supporting on-site demonstration and back-up. Pamphlets for all artifacts were printed out on non-acid paper using high-quality color inject printer for long-term reservation.

Table 1. An overview of culture and art exhibitions at Taiwan Folklore Museum from 2005 to 2007.

Exhibition Name	Dates	Brief Introduction	item	Example
The Bride Wore Red-A Cultural Artifact Exhibition	2005/1/1 -2005/3/8	Early Taiwanese dowry articles, including various types of bamboo plaited baskets	250	
Exhibition of Historical Documents from Old Taichung	2005/3/10 -2005/5/1	Collection of items, including paintings and documents, from Taichung City during the period of Japanese occupation and just after Taiwan Restoration	150	
Special Exhibition-Artifacts from when Grandma and Grandpa Were Young	2005/5/5 -2005/6/12	Artifacts from early Taiwan including bicycles, koji pottery, dudou (diamond-shaped undergarments that protect the torso), and religious artifacts	300	
Special Exhibition of a Collection of Cicada-shaped Jade Pieces	2005/6/15 -2005/7/7	Mr. Lai Cheng-hsiung and Lee Chien-hsiang's collection of cicada-shaped jade	120	
Special Exhibition-Carvings by Hsu Pei-ming	2005/9/4 -2005/10/5	Hsu Pei-ming stone, wood, ivory, and ceramic seal carvings	220	
Special Exhibition of Paintings and Personal Letters by Contemporary Taiwan Artists	2005/10/8 -2005/11/6	Early Taiwanese water and ink paintings, calligraphy, and personal letters	200	
Special Exhibition-Hsiao Ren-neng's Collection and Carved Wooden Puppets	2006/1/1 -2005/1/24	Hsiao Ren-neng's carved wooden Taiwanese puppet theater puppets and his personal collection	150	
Special Exhibition of Jade Auspicious Animals (for thwarting evil)	2006/6/4 -2006/6/28	Auspicious Animals (for deterring evil), including jade pendants, jade paper weights, and circular jade rings	150	
Special Exhibition of Handicrafts Decorated Using Plant Dye and Indigo Blue	2006/10/1 -2006/10/31	A variety of handicraft items decorated with plant dye and indigo blue, such as women's tops, door curtains, and silk scarves	150	
Special Exhibition of Wood-fired Ceramic Creations by Seven Artisans	2007/1/6 -2007/2/7	Wood-fired ceramic creations, such as earthenware jars and flutes, by seven artisans, including Chen Ching and Liao Cheng-an	100	
Special Exhibition of Ancient Taiwanese Religious Books and Paintings	2007/2/10 -2007/3/7	Ancient Taiwanese paintings and religious books, such as paintings by famous religious figures and Taoist books showing Taoist symbols	200	

Special Exhibition of Dream of the Red Chamber-themed Art and Handicrafts	2007/3/31-2007/4/18	Seals, paper sculptures, bamboo carvings, and leaf vein block printing based on the Dream of the Red Chamber	150	
Special Exhibition of Traditional Flower and Bamboo Plaited Articles	2007/5/26-2007/6/14	Various bamboo plaited and flower articles, such as bamboo plaited gratitude baskets and floral art	300	

2.2 Digitization of Folklore Activities and Modification of Metadata

Step-by-step folklore activities were demonstrated practically by the folklore specialists invited to participate in this study and the actions were taken by a professional photographer using a digital camcorder with a resolution of 640x480 pixels. The text and oral description of a folklore activity were done by a folklorist who majors in this specific activity. Video clips of individual steps were obtained by using the video editing software to edit a video sequence and saved as the Microsoft wmv and Apple Quicktime formats. These video clips were then combined with other related information and recorded using metadata format compatible with the Dublin core standard. Metadata designed based on the Taiwanese folklore artifacts [3] were extended to include folklore crafts, skills, and rituals, in which the “Relation” element contains two quantifiers, i.e. “Has Part” and “Is Part Of”, is used to interlink between the main (parent) metadata record and its children metadata of individual steps[4]. An example of step-by-step demonstration of bamboo weaving is described in Table 2. Each step in this table has a corresponding video segment. Additionally, a main (parent) metadata record is used to interlink with its related activity steps (children) by the “Relation” element proposed by the Dublin core, in which, as shown in Fig. 1, the element contains two Quantifiers; i.e., “Has Part” and “Is Part Of” for describing the sequential relation between the parent and children metadata records. Additionally, the Quantifier “Reference source” is applied for expressing its relationship with other artifacts or folklore activities. The “Has Part” Qualifier is used for the parent metadata record to relate to its children steps, while the “Is Part Of” for the child steps to trace back to their parent. With this mechanism, all the child steps can be tightly connected to their parent so that the ASP webpage design program can support flexible interaction between the users and the browsers for easy navigation. The Quantifier

“Sub-Collection Type” was added to the Element “Type” in the metadata proposed in [3].

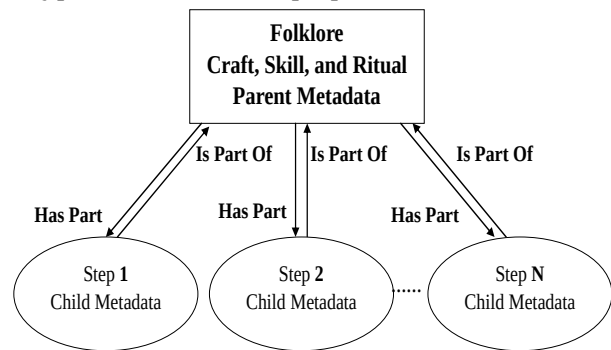


Fig. 1. Relationships between a parent metadata record and its children steps.

2.3 Webpage Implementation

A Microsoft SQL2000 server is built for handling database management and query. The web pages were designed using ASP.net. Figure 2 demonstrates the structure of the web site. As shown in this figure, functions including demonstration of digitized contents, member information, and blog function for information exchange among collectors and general citizens are embedded in the website.

3 Results

Figure 3 shows the homepage of the website supporting the exchange platform for folklore hobbyists with functions to demonstrate digital contents of personal collection and to support blog for information exchange among collectors and general citizens, in which (b) shows the blog for one hobbyist, (c) demonstrates a hobbyist's collection, (d) displays the main metadata records of a collection, and (e) discusses an interesting collection among members. As shown in Fig. 3(d), a user can click on the Blog button to go back to the hobbyist's blog page. The users can click the evaluate button (評比討論) to go to the evaluation and discussion web page, as shown in Fig. 3(e). For some collections, a step-by-step

video demonstration (影音串流) can also be selected, Fig. 4. As shown in this figure, the user can click on the menu items displayed at the left frame or icons related to individual steps to enter into step-by-step video demonstration. The desired step can also be selected and played from

the icons shown at the bottom or by using Previous (上一段) or Next (下一段) button to navigate sequentially.

Table 2. An example of step-by-step descriptions for bamboo weaving.

Step	Description	Photo
Choosing materials	Makino bamboo is the most common type used in bamboo weaving, because it can be split when moist or dry. When choosing bamboo, the longer the distance between joints the more suited the bamboo is to weaving. Three to four year-old Makino bamboo is ideal for weaving.	
Tools	A knife for splitting bamboo, A knife for scraping away the green veneer of the bamboo, A pair of scissors for trimming the length and width of bamboo strips, A saw for cutting and trimming bamboo, A ruler (measuring tape) for measuring width and length, A needle for separating strips of bamboo in the bamboo basket, A v-type bamboo knife for trimming the width and thickness of bamboo strips.	
Scraping	Place the edge of the blade on one of the joints of the bamboo and scrape it away moving the blade in a clockwise direction. Then ensuring that the top end of the bamboo is secure against something, scrape away the green bamboo veneer. Remember to scrape from top to bottom to prevent damaging the bamboo veneer.	
Splitting into strips	When splitting bamboo, place a knife in the middle of the bamboo and push down firmly. Now split the bamboo into strips into equal widths. Just how wide depends on the requirements of the project at hand. Sit when splitting the bamboo. The knife should be perpendicular to the bamboo; otherwise, the strips will be cut at an angle.	
Splitting into thinner strips	First, grasp one end of a strip of bamboo firmly between thumb and forefinger with the short end facing forward. Place blade on tip of bamboo. Make sure that blade is firmly on bamboo; otherwise, it might slip and cause injury. After the blade is firmly on bamboo, press down firmly with thumb. You can pull with your toes to split the bamboo.	
Trimming width of bamboo strips	First, place the blade of a knife on a worktable and set the width for the bamboo strips. Place a bamboo strip on the worktable where the width has been set. Press bamboo strip down as you draw backward to get the width you want.	
Trimming thickness of bamboo strips	First, place a bamboo strip, the width of which has already been trimmed, on the worktable. Press down on the bamboo strip with the splitter knife and draw the bamboo strip backward to get the thickness you want.	
Round mouth weaving technique	We'll use a carry basket as our example (see photo on right). When using the round mouth weaving technique for weaving a flower receptacle, the number of bamboo strips used is important, because if you use an incorrect number of bamboo strips, it will make it impossible to adjust the mouth when drawing it shut.	
Weaving the bottom	See photo on right. Use either seven or nine bamboo strips. Make sure that your weave is symmetrical.	
Drawing in the mouth	See photo on right. You can use four or five bamboo strips to make each bamboo cord when drawing in the edge of the basket's mouth. Be sure to go around in order when drawing the mouth or it won't be symmetrical.	
Making the base	See photo on right. The basket will be more stable when it stands if it is made with a base. First, insert bamboo strips, one at a time, into the bottom of the basket. Weave the bamboo strips one after another while pressing down on the last two.	
Making the handle	See photo on right. When making the basket handle, use upside-down "V" knots, the size of which is determined by the size and height of the	

	basket, and plait the bamboo strips five times and adjust the size and arc of the handle to your liking.	
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4 Discussion and Conclusion

Folklore is believed to be an endangered, marginalized, or misunderstood field. Folk artists are honored to study and inherit the skills building upon earlier generation [1]. In this system, we propose an information exchange platform allowing folk artists and folklore hobbyists to exchange information regarding their own created or collected folklore artifacts and knowledge. The digitized contents contained in the platform complement the insufficiency of folklore artifacts collected in Taiwan Folklore Museum. Additionally, hobbyists and professional folk artists of the folklore association have the potential to serve as folklore educators for preparing introductory materials and answering questions regarding their private areas of creation and collection. It is believed that a folklore learning platform containing digitized contents of artifacts and written information and knowledge folk arts is stimulating and interesting in motivating students to learn.

Each artifact collected in folklore museums and folklore hobbyists has its own story regarding religion, myth, folklore legend, ethnography, or anthropology. These materials and information are embedded in the learning system. After having learned deeply about our own folklore or culture, we can understand more about other cultures [1], which in turn can prevent conflicts among different peoples [10]. Further system development will focus on constructing stories, usages, and backgrounds of the artifacts to enhance learners' impression and to promote their learning effect. Additionally, problem-based learning method will be added to this system. Learners are expected to complete the first-stage learning (as story background learning), and then to follow problem-based sub-

system to build their complete folklore knowledge.

When more senses are involved in the learning process, a greater impression is made and the longer the information stays with the learners [8,9]. An enriched environment with multi-sensory creates a thicker cortex within the brain, more dendrite branching, more growth of spinal nervous, and larger cell bodies that lead to cells that communicate better. Fauth [7] and Jensen [9] indicated that people retain 10% of what they read, 20% of what they hear, 30% of what they see, 50% of what they see and hear at the same time, 70% of what they hear, see, and say, and 90% of what they hear, see, say, and do. Jensen [9] also noted that most people learn many things at the same time due to the abilities of their brains to process concurrently vast amounts of information, emotion, and awareness. Einstein stated that he felt an idea first, and then experienced it through visual and kinesthetic images, before he was able to put the idea into words. Diamond [6] demonstrated that enriching the learning environment changes the structure and ability of the brain's cerebral cortex. All the above psychological and educational theory and studies support interactive learning to be a more effective method for training of practical skills. The Website is believed to be a useful tool in enhancing teaching and learning. Web-based interactive learning has lead to a new learning style, by migrating from teacher-centered to student-centered.

In conclusion, the paper proposes an information exchanged platform among folklore hobbyists, folk artists, and general publics for folklore artefacts and knowledge. It supplements the insufficiency of folklore artefacts collected in the folklore museums. Additionally, it also provides a platform for folklore education.

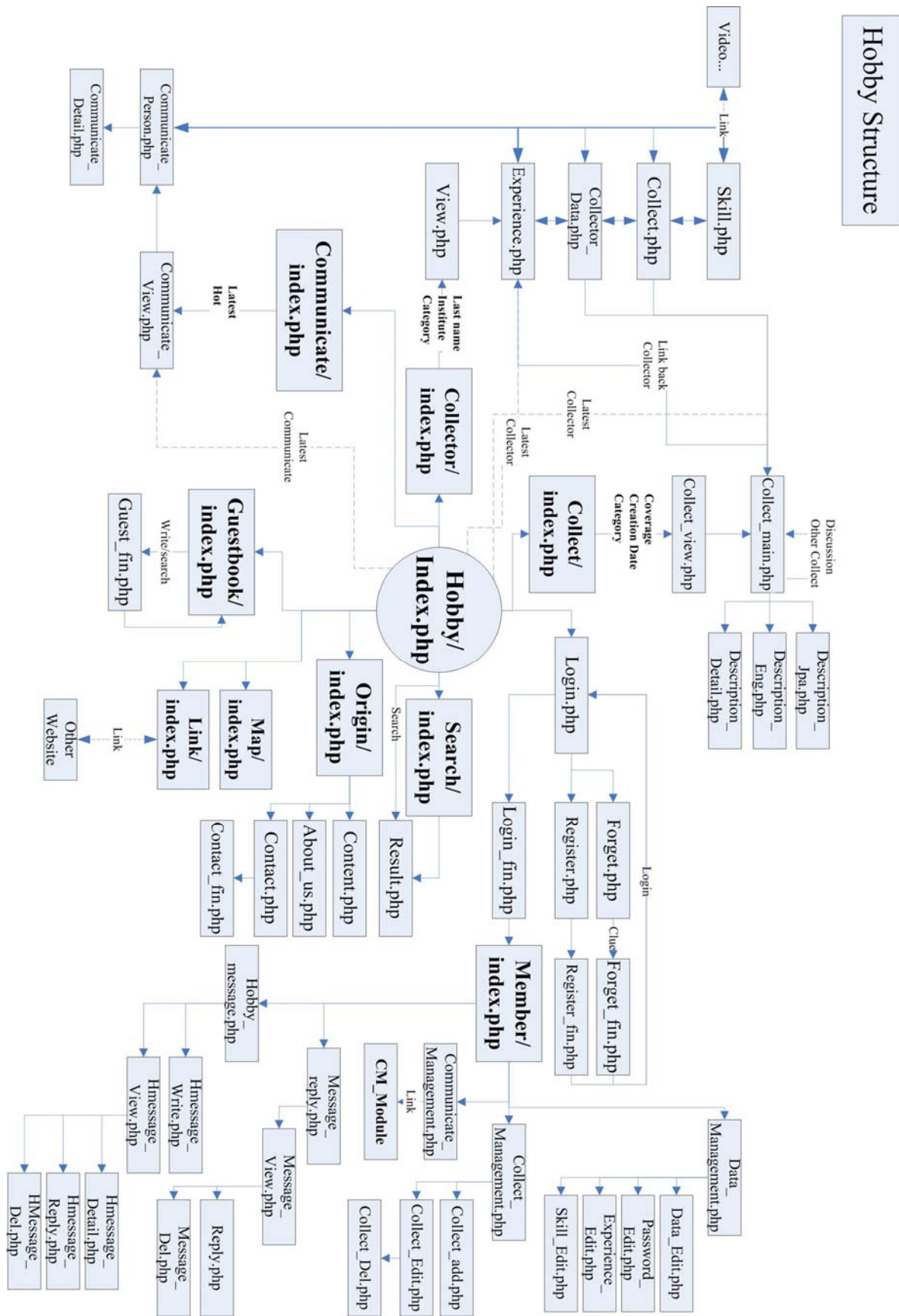


Fig. 2. Structure of the web site



(a)



(b)



(c)



(d)



(e)

Fig. 3.

- (a) Main web page of the website,
- (b) Blog page for one hobbyist,
- (c) Examples of a hobbyist's collection,
- (d) Description of a collected artifact, and
- (e) Discussion regarding the collection by members.



Fig. 4. (a) Web page for displaying main (parent) metadata record of bamboo weaving and the related web pages for showing child metadata records including (a) Step 1, (b) Step 2, and (c) Step 12, respectively.

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