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Project Planning

Introduction

The purpose of this assignment is to determine the feasibility of digitizing a collection of analog materials. A collection of student visual art projects will be analyzed in terms of the various aspects of digital conversion project planning. The library at an International School in Switzerland is currently developing a website as part of a two-year strategic plan to improve and modernize library materials, services, and facilities. A subgroup of Year 12 and 13 International Baccalaureate (IB) students have chosen visual arts as an elective. Students are required to submit a series of artworks to be graded. This project involves digitizing these works and uploading the digital files to the school library website, which utilizes a WordPress platform. The purpose of digitizing this collection is to enhance access to student works, to encourage and acknowledge individual student achievements, to promote strengths of the school to current and potential customers, and to increase the value, appeal and use of the school library's website.

The IB Student Artwork collection is comprised of approximately 48 works of four Year 12 and three Year 13 students at the International School in Switzerland. Two-dimensional artworks range in size from 12" x 12" to 60" x 48". The collection also includes five three-dimensional items of various sizes. There are diverse format types and an assortment of materials used in the works of art. The artworks are all in excellent condition and are now on display in the school lobby for an IB art exhibition. This project will examine the issues related to the digital conversion of these student works of art.

Selection

Selection criteria for digital conversion will be guided by the aims of the project. Digitization of student artworks would "substantially increase resource accessibility" (HATII & NINCH, 2003, p. 43). The student body at the school currently represents 53 different nationalities. Although the immediate families of IB visual arts students may have attended the art exhibition at the school, many other friends and family members would not have had the opportunity to travel to Switzerland for the event. Digital conversion would provide online access to these materials. The collection could be "used remotely, eliminating the need to visit" the school (de Stefano, 2000, p. 13). Materials selected for conversion will therefore strive to serve the wider school community of family and friends in remote locations across the globe.

This digitization project aims to encourage and acknowledge individual student achievements. Digitized materials will represent the best work of each student. The visual arts teacher and the students will be involved in the selection process, and will base their choices on the attainment of personal goals and objectives.

An online display of student artwork aims to promote the strengths of the International School. Artworks of a high standard will assure current families that their children are receiving a quality education. Prospective customers will be attracted to a school whose students produce attractive and skillfully crafted artwork. With this goal as a guiding factor, selection will consider works that show a high level of expertise and appeal. Professional personnel, such as the visual arts teachers, will be consulted.

This digitization project strives to increase the use and value of the new school library website. With this objective in mind, selection of materials for digital conversion should aim for a high number of hits on the website. Displaying digitized versions of student artwork should result in a measurable increase in library website traffic, which would indicate a corresponding

increase in website value. The benefits of digitizing a large quantity of items will be weighed against the costs, as well as considerations of the quality of the materials.

An analysis of the physical properties of the original materials will "influence selection for digitization since they directly affect the digital outcome" (HATII & NINCH, 2003, p. 41). Some physical characteristics that will need to be considered are physical size and dimensions, media type, format, sensitivity to light, tonal range, and production process. Artworks chosen for the digitization project must be able to withstand the digitization process and produce an acceptable result. Materials that could be damaged during scanning will not be selected.

The selection process will also consider issues involved with the characteristics of the user group. In selecting items for digital conversion, it is essential to consider the profile of the users and the ways they access information (HATII & NINCH, 2003, p. 46). The targeted user group consists of the school community, their families, and potential families. This user group will access the digitized materials via the school library website. Maximum image quality is not a substantial concern for this user group, as close inspection and scholarly research are not motivations for users. Selection for digital conversion will take into account the likelihood that users will need to access the digital collection on personal electronic devices. Since the school is an expensive private institution, it will be assumed that its clientele will possess the tools and facilities for accessing this digital collection.

Copyright

Intellectual property issues must be evaluated before digitizing a collection of analog materials. The materials in the IB Student Artwork collection are not published. The copyright term for unpublished works is the life of the author plus 70 years. Since all creators are still alive,

these works are not in the public domain according to US Copyright guidelines (Hirtle, 2017, p. 1).

Digitization of materials that are not in the public domain requires permissions from the copyright holders. The IB visual arts students and their guardians should be provided with a description of the project, its purpose, its intended use, and a request to digitize and provide free Web access to their artwork. The project may proceed with written consent.

If permission cannot be obtained, management could take a calculated risk. The needs of this project may be covered by the fair use doctrine (HATII & NINCH, 2003, p. 47-48). Title 17 of the United States Code, Section 107: Limitations on exclusive rights: Fair use (17 USC § 107) allows *fair use* of copyrighted works, which usually include "not-for-profit educational purposes" (p. 65). Due to the location of the collection, Swiss law should be consulted. Switzerland Federal Law on Copyright and Neighbouring Rights of October 9, 1992, Art. 19(1a,b,c) states that exceptions to copyright include "copies of a work in enterprises...for internal information or documentation" (SURF, n.d.). The rights status should be stated "clearly in the metadata associated with the digital resource" (p. 62). For protection against liability, efforts to obtain permission should be documented, and access to digitized materials should be restricted (p. 48).

Preservation

Preservation of the original materials will constitute a portion of this project. After grading has been completed and the annual art exhibition at the School has concluded, original analog materials are returned to students. Digitization ensures continuing access to the items in this collection of student artwork, which is one of the goals of the project. "The digital surrogate is a form of preservation (although not a substitute for any other form of preservation) and must

itself be preserved to ensure future access and use" (HATII & NINCH, 2003, p. 198). The project will continue on an annual basis, and access to archives of artwork from previous years will give a perspective on the development of the school's visual arts program.

The digital file format chosen is crucial for preservation. "Tagged Image File Format (TIFF) is the format of choice for archival and master images" (BCR, 2008, p. 12). Compressed JPEG files, which "require less storage and are therefore quicker to download into a web page" should be used for delivery (BCR, 2008, p. 13). Correct storage of preservation files "and an environmentally controlled location will help to optimize their stability and protect them from loss (HATII & NINCH, 2003, p. 201).

Technical production

The most important characteristics to capture in the IB Student Artworks collection are their tonal range, color, and details. A scanning system that exceeds the dynamic range of the original item should be used to capture the tonal range (Kenney, 2000, p. 38). "In 24-bit color scanning, the tonal values in the original are reproduced from combinations of red, green, and blue (RGB) with palettes representing up to 16.7 million colors" (HATII & NINCH, 2003, p. 107). Scanning the artworks at 24 bit-depth would ensure that meaningful color information would be conveyed to the user. Capturing details of an original in the scanning process is dependent on "resolution, bit-depth, and scanner performance" (Kenney, 2000, p. 44). According to the Association for Library collections & Technical Services (2013), "works of art on paper should not be imaged below 400-ppi, 24-bit color" and the minimum requirements for three-dimensional objects is 300-ppi, 24-bit color.

For collections that include "oversized materials, original art or a variety of items that must be captured overhead and in color, you will need a digital camera that can be used to

capture any object, two- or three-dimensional, small or large" (BCR, 2008, p. 15). A digital scan back or a scanning attachment would "create high resolution images of oversized, fragile, or unwieldy items," but the cost is quite high (p. 18). For the purposes of this project, a 35mm Digital Single Lens Reflex (DSLR) type camera may be the best choice. This type of camera is capable of making "high-quality images suitable for archiving and publication and is a simple, cost effective solution" (p. 18). A camera stand, tripod, and lights would also be needed.

Master files should be produced in TIFF format, while compressed JPEG files would offer faster delivery. Adobe Photoshop software would be used for post-processing functions.

A quality control plan should be put in place to "ensure the consistency, integrity, and reliability of the digitization process" (HATII & NINCH, 2003, p. 142). Baseline characteristics for judging digital products must be established, along with methods for evaluating digital reproductions and system performance. Quality control must be conducted in a controlled environment (Rieger, 2000, pp. 63-66).

Compressed JPEG files can be imported into the library website's media library. The WordPress platform will allow the school librarian to administer the presentation and display of digital images.

In-house or out-sourcing

Institutions must weigh the benefits and costs of in-house and outsourcing digitization projects. Because this project is very small-scale, it would make more sense to conduct it in-house. Although user needs are not rigorous, this project should strive to produce the highest quality reproduction possible. An in-house project would require a substantial investment of staff time. School personnel would gain experience by designing and controlling the process. A DSLR type camera would need to be purchased, but the camera could be used by the school for other

purposes as well. The costs involved with conducting this digitization project in-house would be balanced by the value added to the school by developing staff skills related to project planning and the digitization process. (BCR, 2008, pp. 5-6)

Searchability

Searchability refers to the use of optical character recognition technologies in text-based documents. Encoded text allows users to search within documents using keywords. None of the objects in this collection are text documents, therefore searchability issues are not a concern.

Metadata

Metadata for these student works of art will organize and describe the collection, facilitate discovery, provide identification, and support archiving and preservation. Record fields will include descriptive metadata, identifying the items and aiding in discovery, and administrative metadata, providing technical information. (Structural metadata, with information about the order of components, will not be required for the purposes of this digitization project, which does not contain items that need structure or ordering.) (Guenther & Radebaugh, 2004, p. 1)

Descriptive metadata will serve the purpose of identification and discovery. "The best tools to locate a resource are those tailored to the user's knowledge and context" (Lagoze & Payette, 2000, p. 88). The users of this collection of student artworks are not art experts. They will most likely either be interested in finding the work of one student or in viewing the general quality and variety of artwork. They may also be interested in general descriptions of the artworks. The Dublin Core Metadata Initiative (2016) has created "a metadata standard that enables simple resource discovery across a wide range of digital resources" (Lagoze & Payette, 2000, p. 86). Of the 15 main Dublin Core elements, nine will be used for this project, including

Title, Creator, Subject, Description, Date, Type, Format, Rights, and Identifier. In addition to Dublin Core elements, metadata fields will also utilize Categories for the Description of Works of Art (Baca & Harpring, 2014). Measurements and Materials and Techniques are fields specific to works art, and will also describe the items in this collection.

Technical and administrative metadata is "associated with the functions of administering digital resources, and ensuring their long-term preservation" (Lagoze & Payette, 2000, p. 95). Technical information will include digitization specifications of the scanning software and hardware used to create the digital image, resolution, bit depth, and file type. Rights management, a main Dublin Core element, is also considered an administrative function. A field containing rights information will be used to describe intellectual property rights and use conditions.

The IB Student Artworks collection will be made available on the school library website, which runs on WordPress. Search and retrieval functionalities allow items to be located by categories and tags. Specified metadata fields will be assigned to categories and tags to allow users to search and locate and view images in the digital collection along with corresponding information.

Below are two examples of metadata records for the St. George's IB Student Artwork collection.

Sample metadata record #1:

Title="Inside Out"

Creator="Mortensen, Annika"

Subject="City," "Street," "Night and Day," "Buildings," "Sky"

Description="This painting is a study of the contrasting aspects of a city street at night and at day."

Date="2016-09-30"

Type="Image"

Format="Painting"

Identifier="0001"

Measurements="152.5 x 121.9 cm (60 x 48 inches)"

Materials and techniques="Oil pastels on canvas"

Rights="IB Student Artworks are made available to the extended community of the International School in Switzerland. Images may not be published for use in the public domain. These works are under copyright protection. It is the user's sole responsibility to secure any necessary copyright permission to publish or reproduce these materials from any holders of rights."

Digitization specifications=="Digitized with 35mm DSLR camera, Adobe Photoshop CC 2017; 400 ppi; 24-bit color."

Sample metadata record #2:

Title="Distance"

Creator=Rollier, Phillipe

Subject="Relationship," "Parent and child," "Authority"

Description="This sculpture is a study of emotional dynamics in a parent and child relationship."

Date="2017-01-26"

Type="PhysicalObject"

Format="Sculpture"

Identifier="0002"

Measurements="86.4 x 55.9 x 30.5 cm (34 x 22 x 12 inches)"

Materials and techniques="Wire and plaster"

Rights="IB Student Artworks are made available to the extended community of the International School in Switzerland. Images may not be published for use in the public domain. These works are under copyright protection. It is the user's sole responsibility to secure any necessary copyright permission to publish or reproduce these materials from any holders of rights."

Digitization specifications="Digitized with 35mm DSLR camera, Adobe Photoshop CC 2017; 400 ppi; 24-bit color."

Conclusion

Based on an analysis of selection, copyright, preservation, technical production, in-house or out-sourcing, searchability, and metadata issues, it would be feasible to digitize the IB Student Artworks collection. The financial costs and time investment required by this small-scale digitization project would be offset by value added to the school. A digitized collection of student artwork that is freely accessible online would increase use of the school library website, acknowledge student achievements, raise the profile of the school, satisfy investors and customers, and attract new clients.

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