Original Article

A digital asset management curriculum: An information science perspective

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ABSTRACT This article will discuss the elements of educational design used in the creation of a curriculum for a graduate level course on Digital Asset Management within the School of Library and Information Science at San José State University, San José, California. It will include a brief background on curriculum theory to frame the discussion on how design choices were made in the original curriculum instituted in 2006. In addition, this article will reveal the limitations commonly found in most instructional programs and provide insight into adaptations made necessary to maintain the integrity of the original design as well as to advance the curriculum design and improve the course experience in perpetuity.

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INTRODUCTION

The central theory (of curriculum) is simple. Human life, however varied, consists in the performance of specific activities. Education that prepares for life is one that prepares definitely and adequately for these specific activities. However numerous and diverse they may be for any social class, they can be discovered. This requires only that one go out into the world of affairs and discover the particulars of which their affairs consist. These will show the abilities, attitudes, habits, appreciations and forms of knowledge that men need. These will be the objectives of the curriculum. They will be numerous, definite and particularized. The curriculum will then be that series of experiences which children and youth must have by way of obtaining those objectives.¹

American writer Franklin Bobbitt posits that a curriculum is the collection of experiences in

our daily life, through education, socialization, practice and profession, which shape our existence and bring it value and meaning. It is a unique combination of several individual and shared events brought together and best understood within the realm of learning. In this digital age where experiences may be found well beyond the traditional media of engagement, curriculum and curriculum design must account for, and make best use of, those experiences for the benefit of students and the goal of learning.

This article will discuss the elements of educational design used in the creation of a curriculum for a graduate level course on Digital Asset Management (DAM) within the School of Library and Information Science (SLIS) at San José State University, San José, California. The course participants are comprised of graduate level students enrolled at SLIS studying to be librarians, archivists, records managers, and for some, digital asset managers. I will include a brief background on curriculum theory to frame

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the discussion on how design choices were made in the original curriculum instituted in 2006. In addition, this article will reveal the limitations commonly found in most instructional programs and provide insight into adaptations made necessary to maintain the integrity of the original design as well as to advance the curriculum design and improve the course experience in perpetuity.

CURRICULUM DESIGN

A useful starting point may well be the definition of curriculum offered by John Kerr, who defined it as 'All the learning which is planned and guided by the school, whether it is carried on in groups or individually, inside or outside the school'.² Curriculum is best understood as something planned and guided and arguably, the fundamental prerequisites for designing a curriculum are to

1. define the goals;
2. define the objectives.

Furthermore, there are many factors to consider when designing a curriculum:

1. The entrance level skills of the students, as their skill level will determine to a large extent the content of the course.
2. The length of time in which the course material is taught, as there needs to be enough time for them to comprehend and master the material. There will be some students with little or no experience and they may need more time for this.
3. Prioritization of the learning topics.
4. Incorporating the learning topics into manageable units for study.
5. Selection of training methods to employ.

Yet, even in a graduate university setting, not all is equal. Students come from a wide variety of cultural and class backgrounds and, more importantly, have different professional experiences related to DAM; curriculum design should not be a one-size-fits-all approach and the unique needs of the students must be considered. Curriculum design must also consider the students' limitations both from a technological point of view as well as the availability of an existing body of knowledge upon which to leverage reading, analysis and discussion. Furthermore, flexibility is an important

aspect of curriculum design as it may be necessary to change the pace of a curriculum to deal with problems as they arise; for example, a class might have more trouble grasping a concept than was expected and the teacher needs to be able to spend more time on it rather than racing on to the next subject and leaving the students confused.

M.K. Smith presents a thesis in which one approaches curriculum theory and practice through four constants³:

1. Curriculum as a body of knowledge to be *transmitted*.
Syllabus, originates from the Greek and means a concise statement or table of the heads of a discourse, the contents of a treatise, the subjects of a series of lectures. It is only really concerned with content; curriculum is a body of knowledge-content and/or subjects.
2. Curriculum as an attempt to achieve certain ends in students – *product*.
Objectives are set, a plan drawn up, then applied, and the outcomes (products) measured. This may be best understood as in training programs in which the content was systemically analyzed into functional elements.
3. Curriculum as *process*.
In this sense curriculum is best understood not as a physical product, but rather the interaction of teachers, students and knowledge. It is the 'experience' of learning in the classroom, before, during and after instruction.
4. Curriculum as *praxis*; the process of translating an idea into action.
The praxis model of curriculum theory is a deliberate attempt to forge action through commitment.

Arguably, effective curriculum design must include a portion of all those; transmission, product, process and praxis. However, the constant of 'praxis' is preferred as it is part of what I like to refer to as the 'active learning' process. I believe good curriculum design should include the following:

1. The opportunity at all times for students to think and act critically.

2. The mechanisms upon which to encourage conversation and dialogue between all of the participants in the class.
3. A clear understanding of the roles and expectations of the instructor and his/her learners.

I believe a curriculum is more dynamic than static by design and an active process from beginning to end; in essence praxis. Informed, and committed, action.

FACILITATING ONLINE DISCUSSIONS

In the DAM course I designed for SLIS, the most critical factor of this design was its method of delivery, online. There would be minimal, if any at all, face-to-face instruction. Therefore the 'experience' of teaching had to be different from the one that would be designed for a curriculum based in a classroom with desks and chairs and chalkboards. Active participation and active learning would have to be emphasized through different means. Rae Wahl Rohfeld and Roger Hiemstra believe:

Teaching through discussion relies on a learner-centered approach, whether the participants meet face to face or on the computer screen. It rests on principles of collaborative learning and egalitarian relationships Effective discussion requires that everyone involved, instructor and students alike, share in both the teaching and the learning. All participants assume responsibility for furthering discussion, although students may require special preparation and clear guidelines to participate effectively.⁴

Their experience shows that variety truly is the spice of life and is an effective means upon which to engage students and maintain interest and participation throughout the duration of the course. Among activities they suggest in order to encourage this style of collaborative interaction with all participants are the following:

- *Polling or brainstorming* – pose open-ended questions about some course issue or topic and asked participants to brainstorm possible answers or solutions. The brainstorming rules

require simple, non-evaluated responses that can be entered quickly. This sets the stage for more involved evaluative discussion later.

- *Using debates* – ask one small group to take one view on a course issue and a second group another. They then use the conference as a means for debating the issue. The facilitator's role becomes one of posing the issue, doing occasional weaving and providing some sort of summary remarks at the conclusion of the debate period.
- *Same time discussion* – the asynchronous nature of most conferencing discussions has both advantages and disadvantages. On occasion, we have established a certain time period, usually 1–2 hours, during which all participants agree to be active in the conferencing environment at the same time. Although such conversations are not totally synchronous, they almost seem so, and often generate considerable discussion and spark new interest.
- *Inviting a guest lecturer or discussant* – introducing a new voice to renew interest in the conference. Have one or more guest lecturers connect into the conferencing system at scheduled times during the course. During a 1- or 2-week period they can present some initial ideas, interact with students as they post their responses and then provide summary remarks at one or more points in the discussion.
- *Arranging for student-moderated discussions* – invite interested students to moderate aspects of the course discussion. Volunteers then take on the role of initiating discussion, interacting with participants and providing weaving or summary remarks. This could be made a requirement of the course if appropriate. In either case, a facilitator should provide appropriate training, support and intervention if needed.
- *Personal journal writing* – provide space within the conferencing environment for each student to write personal reflections or reactions to readings, discussions or other learning experiences. Some students use such personal journal information as bases for final course products.

Alternatively, Rena Palloff and Keith Pratt offer these suggestions for improving course

interactions when collaborative work is involved:

1. Be clear about how much time the course will require of students to eliminate potential misunderstandings about course demands.
2. Be a model of good participation by logging on frequently and contributing to the discussion.
3. Be willing to step in and set limits if participation wanes or if the conversation is headed in the wrong direction.
4. Remember that there are people attached to the words on the screen. Be willing to contact students who are not participating and invite them in.⁵

Quality interaction between the instructor and students must be sticky; a meaningful experience as provided via readings, knowledge transfer, knowledge exchange and general discussion. Especially in an online format, I believe there must be an extra willingness upon the instructor to engage the students via email, online forum or if needed, phone. It must be an active process of interaction.

COURSE DESIGN AND DESCRIPTION

The DAM course I designed and continue to teach at SLIS was designed to introduce students to the fundamental concepts, terminology, practice and application of DAM in the public and private sector through the 'lens' of library and information science. It features discussions on metadata, workflow, taxonomy, data security and preservation of digital assets. The course employs the following *Student Learning Objectives*:

- To have students acquire the knowledge and skills necessary to evaluate a digital collection of assets of different media with the interest in determining the value of the assets in their current role and long-term role within an organization.
- To have students understand how the professional skill sets of librarians and archivists are converging with the practice of DAM; this extends from content classification and organization to records

management and long-term access and preservation of digital assets.

- To have students critically think about how metadata, including descriptive keywords and taxonomies, can be used to organize digital content in a constructive and valuable format for users.
- To have students understand good project management skills from project design through to implementation and training.

In addition, the course supports the following core competencies as similarly outlined from SLIS:

- Articulate the ethics, values and foundational principles of library and information professionals and their role in the promotion of intellectual freedom.
- Compare the environments and organizational settings in which library and information professionals practice.
- Recognize the social, cultural and economic dimensions of information use.
- Apply the fundamental principles of planning, management and marketing/advocacy.
- Design, query and evaluate information retrieval systems.
- Use the basic concepts and principles related to the creation, evaluation, selection, acquisition, preservation and organization of specific items or collections of information.
- Understand the system of standards and methods used to control and create information structures and apply basic principles involved in the organization and representation of knowledge.
- Demonstrate proficiency in the use of current information and communication technologies, and other related technologies, as they affect the resources and uses of libraries and other types of information providing entities.
- Use service concepts, principles and techniques that facilitate information access, relevance and accuracy for individuals or groups of users.
- Describe the fundamental concepts of information-seeking behaviors.
- Understand the nature of research, research methods and research findings; retrieve, evaluate and synthesize scholarly and

professional literature for informed decision making by specific client groups.

- Demonstrate oral and written communication skills necessary for group work, collaborations and professional-level presentations.

COURSE EVALUATION

In addition to participation marks for unit reading briefs as well as for participating in online discussion forms, a collection of three projects are used for evaluation in the course:

Project no. 1

- A metadata analysis of an online digital collection of photographs on Flickr with the intent to identify vocabulary design, retrieval requirements and licensing issues. Brief report detailing your metadata analysis and organization of your digital collection.

Project no. 2

- An analysis of a digital video collection to identify issues related to its access, content, format and eventual repurposing by users as well as a metadata analysis.
- Brief report and metadata fields for the video clips.

Project no. 3

- The third project builds upon the experience of the previous two projects to create a project plan for a DAM implementation. This project plan must include what the DAM system will be comprised of and what its objectives will be. The students need to determine what the assets would be (that is images, videos, graphics and so on), how many they will use and so on for this imaginary DAM system.

Lastly, on a more finite scale, for each unit I developed a set of competencies and outcomes, selected unit readings, chose topics to be covered and selected online readings and links for further research. Based upon those criteria, the course is deliberately broken down into eight units/topics covered in readings and online forum discussions.

UNIT 1: CONCEPTS AND TERMS

There is no better place to start than at the beginning and so a fundamental introduction to what DAM is and how it may be understood introduces the students to the course as a whole. Topics for discussion include the following:

1. So what is DAM anyway? Does DAM really matter within a large company, a museum or a small community archive?
2. Does Return On Investment always justify the need for DAM? What about using DAM to sustain and leverage a unique archival collection that may not be monetized?
3. Would you agree that the practice of DAM exhibits a convergence of librarianship and archival studies?
4. What are your personal experiences with unique digital assets?
5. Who do you think 'owns' DAM within an organization and why?

UNIT 2: IMAGE DATABASES/ COLLECTIONS/DAM SYSTEMS

I purposefully chose some more academic focused readings on digital image collections to ground the students within the LIS discipline as well as to prepare them for the unique attributes of DAM and multimedia. Topics for discussion include the following:

1. How may we gauge if it is useful in the short and/or long term for research and instruction? Are we ever able to identify this, let alone receive a satisfactory understanding of what useful really is?
2. Using your archival frame of reference and the obvious choice of long-term preservation, what are some other possible motivating factors for developing a digital collection. If possible, please include any personal experiences from any libraries or archives that you have worked in.
3. How could we know in advance how users other than ourselves would adapt to this technology? How could we conceptualize use of digitally reborn collections except by extrapolating what we know from the analog realm?
4. The digital environment itself has matured to become a critical and often primary vehicle

for delivering information to the vast majority of people; integration and trust has emerged as critical criteria for digital collection building. As a librarian or archivist, how do and/or how should we convey this sense of trust to our users?

UNIT 3: METADATA

A DAM solution involves both technical and human components, most notably the subjective understanding of the rich media assets being used and the creation and application of metadata for those assets. Making metadata work in DAM means investing in the construction of a metadata model: a container of descriptive elements about the assets, which enables the user to search for and retrieve the assets needed for their work. There is a certain expectation that problems associated with technology must be solved with technology; though this expectation has merit it must be a part of the solution, but not the solution in itself. There must be a human component as well in order to support and complement the relationship between the new media (as applied through technology) and humans using rich media. I strongly believe that the value of a 'real live' digital asset manager cannot go unnoticed and more importantly, must be an integral part of the solution. Knowledge workers spend a great deal of time producing rich information that can be used in one context, at one particular point in time – but then that information becomes lost. DAM users want to find, capture and categorize that information so it can be reused in different contexts. Those users have to understand and be at ease with the technology, otherwise they will resist change. I believe that part of the job of information specialists is to educate the user base, find out what they want the system to achieve, and help them to gain maximum benefit from it.

Again, grounding the students within their LIS discipline, the following discussions are provided:

1. Why is metadata important? Is it really just a cool, new buzzword or does it really make a difference?
2. What do you think about automatic metadata? How well does it really work? Will it replace librarians?

3. What are your thoughts on standards? Do they help or hinder the process in access to information?
4. In your future and/or current careers as librarians, archivists and information professionals, you will encounter situations in which you must evaluate the costs of developing and managing metadata to meet your current needs versus that of creating sufficient metadata that can be capitalized upon for future uses. Which one would you choose and why?

UNIT 4: WORKFLOW

To further the exploration of the specifics of DAM, I now shift gears from a descriptive point of view to process orientation; workflow. A solid understanding of what are the issues involved in identifying, capturing and ingesting assets within a DAM system, and then making them accessible and available for retrieval removes the students from the comfort zones of the LIS discipline and forces them to think critically about information and how it is used. In essence, I challenge them to think of the process involved in getting the digital assets into the database and then getting them out; access at its greatest realization. Topics for discussion here include the following:

1. DAM can help the migration to a wholly digital workflow with many savings. Does DAM optimization of the workflow always have to suggest automation?
2. Some DAM systems provide specific workflow support with varying degrees of flexibility. To determine how DAM will accommodate your project, it is important to think about how data are created and modified in your projects, and then think how these data move through the projects. How does your archival and librarian skill set come to terms with this? If possible, please provide examples from your experience.
3. It is logical to integrate a workflow at the end of production or at asset creation. What may be some of the issues surrounding integrating a creative workflow?
4. What type of experience have you had in workflow management (that is records management, documentation, workflow checklists)?

UNIT 5: TAXONOMY

Despite its popularity within modern vernacular, *search* is simply misunderstood by users and is too often associated with search engines and not so much on the ability of securing the right information. Furthermore, the question is often asked: how much do we really need to know about the ‘man behind the curtain’ as long as we receive the information we are seeking without much hassle or headache? It is far more than the inviting and solicitous search box on the screen made famous by the likes of Google and Yahoo. The question then becomes how does one organize and structure all these digital assets anyway? Does an effective organizational structure assist in access and retrieval? And why are taxonomies all the rage right now ... can librarians and archivists really be that cool? Furthermore, what about the experience of ‘learning’ and embracing knowledge where it did not exist before? It must be stated that search as a practice and as an active component of accessing information is valuable for its inherent knowledge discovery process.

Discovering new information and learning is a valued result. Although that does have value, it must not be noted that too much of a good thing does not always yield the benefits intended by the system. If ‘good’ information does not go in or does not exist within the system then the results are inherently compromised; knowledge discovery will have taken place but not with all the information and content necessary to enact that knowledge. There are many reasons why some content may not be readily available. For instance, unique formats that may not be accessible to search tools; security considerations for specific documents; even the challenges associated with unstructured information assets and their dislocation with structured information in an organization. An effective business case must take this into consideration and establish positive linkages wherever possible within the organization. Sample topics for discussion here include:

1. In terms of taxonomy creation, what type of politics or challenges exists today between groups of owners/subject matter experts? Will they debate and/or argue over

terminology or what should be classified where?

2. Taxonomies must evolve and progress as your business changes if they are to remain relevant. Furthermore, it has been argued that one should validate a taxonomy via user testing. As professional librarians and archivists, are you surprised to see such an emphasis on users and their feedback in order to enact evolution and progress? How common has this been in your professional experiences?

UNIT 6: DATA SECURITY

As the specifics of DAM are explored I continue to move the students between their comfort zones of traditional LIS theory and non-standard or traditional subject matter such as ‘data security’. I challenge the student to consider that with DAM it is not always physical space and books that are the media, but rather digital information and its associated rights management! I ask them to consider how the digital space assumes different problems for libraries and archives in their traditional services of access, reference and so on, and to decide if the digital space is inherently dangerous and risky or not.

1. As a common thread throughout this course, let us again explore the technology-as-king scenario. Should we expect technology alone to solve our security problems? What are we humans able to do to help this?
2. Will digital libraries be able to perform basic library functions like lending, archiving and protecting the confidentiality of users of rights-managed content?

UNIT 7: PRESERVATION OF DIGITAL ASSETS

The theory and application of digital preservation methods resonates well with all the aspiring archivists and digital librarians in the course because those are some of the most grounded tenets of LIS theory and practice. DAM systems are often acquired for the current use and re-use of digital assets as well as for their long-term preservation. In some instances, the DAM becomes the archive itself; if the asset was born digital, then the DAM is its permanent location with no physical location at all. As

stewards of information, whether digital or physical, I invite the students to consider what their responsibility is in terms of its preservation? Do they need to consider anything more, or less, with digital assets ... is it just the same as a physical photograph or book, or are they inherently different? What elements do they need to preserve and who is to do this? To expand this discussion, I include the following topics of discussion:

1. So now even digital preservation is being affected by the bottom line, yet how do we as librarians and archivists prepare ourselves to become advocates of digital preservation and provide the business case to our executives, leaders and so on?
2. What do you think: is there an inherent 'right' to preserve or is it more of an obligation and/or duty to do so? What are the ramifications of your answer?
3. Is there really such a thing as a 'trusted repository'? Is technology really able to get us there?
4. How do we as information scientists, librarians, archivists and digital asset managers transform libraries and archives to become trusted repositories of digital information?

UNIT 8: PROJECT MANAGEMENT

This is the least LIS-related unit within the curriculum though it is one that deserves attention both in its application to DAM as well as to professional skills and training. Quite simply, project management is a collection of the techniques and tools used to describe, control and deliver a series of activities with given deliverables, timeframes and budgets. I made the decision to include this unit within the curriculum in order to expose the students to basic project management fundamentals in order to better prepare them for professional work, DAM-related or not. This unit does not include a series of discussion questions as the other units do, but rather focuses on online discussion sessions regarding project management and its effectiveness in professional discourse and practice.

LIMITATIONS

It is ironic that the biggest limitation for the design and delivery of an online course is the

lack of face-to-face interaction between instructor and student. By its very design an online course removes that level of interactivity replacing it with an assortment of tools and online discussions as presented in this article. Yet, the strongest feedback I have received, and continue to receive, is that the face-to-face instruction is always so much better for learning; nothing to do with DAM, but the delivery of an online course itself. I have been able to overcome much of this limitation by scheduling optional 'field trips' with students to organizations, libraries and archives to explore and witness DAM installations first hand. Through these events, I am able to provide that 'first hand' experience with them as well as provide a 'live' DAM experience; praxis at its best.

Thanks to technology there are many more things to be aware of for inclusion within the curriculum including online blogs, social networking and forums relating to the professional practice and dialogue of DAM. There is much going on beyond the pages of textbooks and articles, and it is good to keep abreast of those media and make them as available as possible to the students. In an online environment, the challenge is to provide an effective structure upon which to offer these digital tools and balance them with more traditional methods of communication.

I also use this opportunity to educate the students on advocacy, a fundamental support system that is needed in all disciplines, especially for information specialists in non-traditional settings. Advocacy here is the opportunity for students to realize that they have the opportunity to educate and teach executives, co-workers and colleagues about DAM and its benefits to their organization. At the core of any business case on DAM should be access to information; it should be easy to discover and not be a burden. Take the time to evaluate your business needs and your user requirements and develop a strong, valid business case. The value and benefits of DAM are there for you to discover within the organization and to shape your search story. If possible, I do encourage students to participate in 'professional experience' or 'internships' within DAM to strengthen their knowledge and begin to put their learning to practice on a visceral level.

CONCLUSION

A curriculum is neither a physical thing, nor a one-time event, but rather the interaction of teachers, students and knowledge intersecting and connecting at different intervals over a predetermined amount of time. There are many ways in which to define what curriculum is and how it should be employed, it is best to take a holistic approach with attention to action and active learning. There needs to be consistent interaction with instructors and learners, even more so in an online environment in which communication becomes paramount. It is the responsibility of the instructor to provide an environment in which good communication may take place and ongoing discourse is encouraged and respected. It is also the responsibility of the instructor to promote critical thinking among the students and challenge them at their varied levels of skills and experience. The challenge is how to make it relevant for them and I have found that sharing stories from student to student and peer to peer to be an effective means upon which to transfer knowledge. Learning must be garnered from multiple sources, beyond those of the instructor, subjects and syllabi. Online is no longer a 'one to many' experience on a PC or laptop; it is very much 'social' and needs to take on the many forms that 'social' incorporates. As an educator and DAM practitioner, I want to be part of an experience in which change takes place; real change in the behavior and practice within the context of learning; that is a good learning experience.

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