



Broad Horizons: The Role of Multimodal Literacy in 21st Century Library Instruction

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Abstract

Success in a world of multimodal information requires fluency in a broad range of competencies; to consume and create texts in visual, audio, and written formats, to evaluate messages in a variety of mediums, and to gain social awareness and the ability to communicate and live in diverse global society. This challenge impacts all, but is most important for students that must meet this test academically, in the job market, and throughout life as they become the workers and citizens of the future. This paper presents a foundation for Multimodal Literacies through a theoretical and applied framework of library instruction that is grounded in the principles of visual, media, information, and multicultural literacy and experience.

Introduction

We stand today at a critical point in the history of information. The means for creating and consuming information are increasing and evolving. The amount of information is rapidly expanding, while processes we used to qualify information truth are shifting from centralization to broader civic participation.

Although reading and writing are still the foundation of knowledge, literacy in this age means more than the ability to read and write; it requires a complex set of skills including: access, analysis, synthesis, evaluation, and use of information in a variety of modes.

These changes raise questions about information use and the impact it has on our lives. One area I find particularly dynamic is the changing idea of Literacy. Specifically the idea of a range of literacies, at times standing alone, but often combined, and how the ability to use these literacies can affect academic and life success.

Regarding the outline of this paper, I will discuss the concept of multimodal literacy in terms of importance for libraries and library patrons, from a theoretical perspective, and from the standpoint of library information service, teaching, and learning. The paper concludes with a call to encourage researchers and practitioners to pursue systematic study in the area.

Paper Outline

- Multimodal Literacy and Library Service
 - Two Perspectives
 - Foucault's Technologies
 - Activity Theory
 - Multimodal Literacy and Learning
 - Multimodal Texts
 - Literacy Application in the Classroom
 - Strategies for building a Multimodal Community
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Literacy Today

The skills required to navigate and perform in today's information invite focus on a range of literacy. Specifically, the term 'multiliteracies' was coined by the New London Group to describe a broadened approach to literacy that included multimodal textual practices, such as linguistic, visual, audio, gestural and spatial modes, as well as the idea literacies that were culturally grounded (Cope & Kalantzis, 2000,7).

Since that time there have been other terms and descriptions to describe this new idea of literacy. Along with and sometimes part of this broad framework are areas of literacy such as: Technology Literacy, Spatial Literacy, Historical Literacy, Political Literacy, Visual Literacy, Media Literacy, Information Literacy, and Multicultural Literacy, among many others (Abilock 2008).

Some Major Literacies

- **Information literacy** is the ability to locate, synthesize, and use information effectively
 - **Visual literacy** is the ability to analyze, create, and use, images and video using technology and media to enable critical thinking
 - **Multicultural literacy** is the ability to acknowledge, compare, contrast, and appreciate commonalities and differences in culture
 - **Media literacy** is the process of accessing, analyzing, evaluating and creating messages in a wide variety of media modes
 - **Multimodal literacy** is the synthesis of multiple modes of communication
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For the purpose of clarity, I will use the latter four literacies (Visual Literacy, Media Literacy, Information Literacy, and Multicultural Literacy) as a group that may be thought of as a competent if not comprehensive description of some characteristics of multimodal literacy in theory and practice.

- **Information literacy** is the ability to evaluate information across a range of media; recognize when information is needed; locate, synthesize, and use information effectively; and accomplish these functions using technology, communication networks, and electronic resources.
- **Visual literacy** is the ability to analyze, create, and use, images and video using technology and media to enable critical thinking, communication, decision making and understanding.
- **Multicultural literacy** is the ability to acknowledge, compare, contrast, and appreciate commonalities and differences in cultural behaviors beliefs and values, within and between cultures.
- **Media literacy** is the process of accessing, analyzing, evaluating and creating messages in a wide variety of media modes, genres and forms. It uses an inquiry-based instructional model that encourages people to ask questions about what they watch, see and read.
- **Multimodal literacy** is the synthesis of multiple modes of communication. This communication can result in a transformation of the singular modes into a form that often contains new or multiple meanings. The multimodal object can require a range of tools, skills, and sensibilities and often reflects collaborative as well as individual effort.

Also, I will use the term multimodal literacy to represent a union of literacies in multiple modes. While these literacies are not novel, the notion of the interaction between them to create an object that is more than the sum of its parts is a divergent perspective from traditional compartmentalized notions of literacy. Finally, I think that technology literacy

permeates each of the four major literacy areas, so I will treat it as a universal component of each area.

Multimodal literacy and the role of the information organization

Multimodal literacy requires in part a new sensibility, one that promotes a self responsibility for the acquisition and use of knowledge that is flexible, exploratory, and ethical. As William Badke notes,

“If any fool can publish on the Net, then we have an amazing resource for freedom of speech and the democratic way of life. The old elitism is gone. But it also means that we, the readers, have to become the gatekeepers. This demands that we must enhance our evaluation skills (2004, 5).”

The Role of the Information Organization

- Multimodal literacy requires in part a new sensibility, one that promotes a self responsibility for the acquisition and use of knowledge that is flexible, exploratory, and ethical.
 - In light of social and technical changes, the ability to meet the challenges of the future rest with our library institutions and ourselves, including the role of the patrons we serve. The struggle to master knowledge is largely self written.
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In light of social and technical changes, the ability to meet the challenges of the future rest with our library institutions and ourselves, including the patrons we serve. As Michel Foucault writes, the struggle to master knowledge is largely self written,

“Continuous history is the indispensable correlative of the founding function of the subject: the guarantee that everything that has eluded him may be restored to him; the certainty that time will disperse nothing without restoring it in a reconstituted unity; the promise that one day the subject - in the form of historical consciousness - will once again be able to appropriate, to bring back under his sway, all those things that are kept at a distance by difference, and find in them what might be called his abode. (1972, 13).”

Why is this important for library patrons?

The evolving relationship between people and information has a number of impacts. First, the ability to use information successfully in a variety of modes is paramount to success in the modern classroom and workplace.

Patrons, Literacy, and the Changing World of Work

- "Globalization, specialization, and new technologies are making interactions far more pervasive in developed economies. Currently, jobs that involve participating in interactions rather than extracting raw materials or making finished goods account for more than 80 percent of all employment in the United States".
- "Jobs involving the most complex type of interactions-those requiring employees to analyze information, grapple with ambiguity, and solve problems-make up the fastest-growing segment"

(Johnson, Manyika, Yee, 2006, 23).

Research published in the McKinsey Quarterly journal found a strong trend toward human computer interaction as the nature of work changes in developed economies.

"Globalization, specialization, and new technologies are making interactions far more pervasive in developed economies. Currently, jobs that involve participating in interactions rather than extracting raw materials or making finished goods account for more than 80 percent of all employment in the United States".

This could be particularly critical for library service which often involves multiple instances, participants, resources, and connections to complete the process cycle. As the authors state,

"Jobs involving the most complex type of interactions-those requiring employees to analyze information, grapple with ambiguity, and solve problems-make up the fastest-growing segment" (Johnson, Manyika, Yee, 2006, 23).

Literacies as Empowerment

Further, the mastery of literacy practice embodies a philosophy of living that reflects "the different ways in our culture that humans develop knowledge about themselves" and which can ultimately affect the development of human potential. The idea can be represented through what Foucault calls "Technologies."

Foucault's Technologies

"The different ways in our culture that humans develop knowledge about themselves."

- (1) technologies of production, produce, transform, or manipulate things
- (2) technologies of sign systems, use signs, meanings, symbols
- (3) technologies of power, determine conduct of individuals, submit them to certain ends and objectivizing of the subject
- (4) technologies of the self permit individuals alone or with others to transform themselves.

Foucault, Michel. (1988) Technologies of the Self. In Martin, L.H. et al *Technologies of the Self: A Seminar with Michel Foucault*. London: Tavistock, p16-49.

"As a context, we must understand that there are four major types of these "technologies," each a matrix of practical reason: **(1) technologies of production**, which permit us to produce, transform, or manipulate things; **(2) technologies of sign systems**, which permit us to use signs, meanings, symbols, or signification; **(3) technologies of power**, which determine the conduct of individuals and submit them to certain ends or domination, an objectivizing of the subject; **(4) technologies of the self**, which permit individuals to effect by their own means or with the help of others a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform I themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality(Foucault, 1988, 18)."

Foucault's Technologies reference the ability to use and create information given certain technical and social factors. This includes the idea that the performance of these activities requires prior knowledge and disposition which is culturally and historically tempered, and is a means to self improvement, or the "caring of oneself." Here are some brief examples of the technologies in terms of library information work activity.

Technologies and the Library Learner

Technology of Power - Ability access to materials and tools, rules of library and institutional conduct

Technology of Production- Ability to create product from information



Technology of Sign Systems- Ability to use symbolism to understand and communicate in the library environment

Technology of Self- Ability to learn alone and with others, ability to change behavior, lead to transformation

1) In the library information products are produced from "raw" information is by librarians and patrons through the manipulation of information using analog (scissors, flip chart) and digital tools (database, presentation software).

2) These information products are highly symbolic, given to represent a mode (or modes) of text (paper, video, chart, report), with specific goals and audiences (student paper, library promotional video, committee chart, library plan), this includes the idea of semiotics and communication required for the activity.

3) There is a type of power or domination that constrains each technology, including individual ability with tools to create information, the ability to communicate information in a variety of modes, power balances between roles in the system, and the influence of cultural and historical forces (including effects of the digital divide).

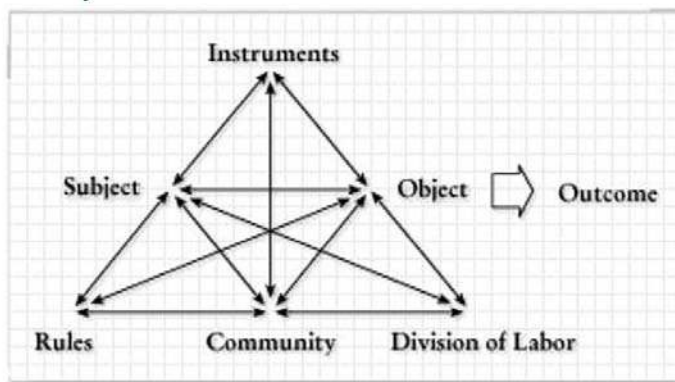
4) Performance of these activities often requires a cognitive, physical, and affective pre-disposition; in turn outcomes of the activity can lead to a transformation in the participants.

Multimodal Literacy in Action

Activity Theory is a cultural-historical theory that emerged from the Moscow Institute of Psychology, most notably Lev Vygotsky who with Alexandar Luria, and Alexei Leon'tev developed a model of behavior built around instrument-mediated and object-oriented action (Vygotsky1978, 41). Leont'ev carried the work of Vygotsky forward, and developed the second generation of activity theory characterized by activity between the individual and the collective.

The theory was later extended by Scandinavian theorists such as Yrjö Engeström who clarified the idea of a collective activity system with the addition of a community component. (1987, 28). Because the theory can be used to design and evaluate a wide variety of information work systems (like those found in libraries), practical application of the theory in western research has been most notable in the field of Human Computer Interaction as found in the works of Bonnie Nardi, Kari Kuuti, and others (1996, 1).

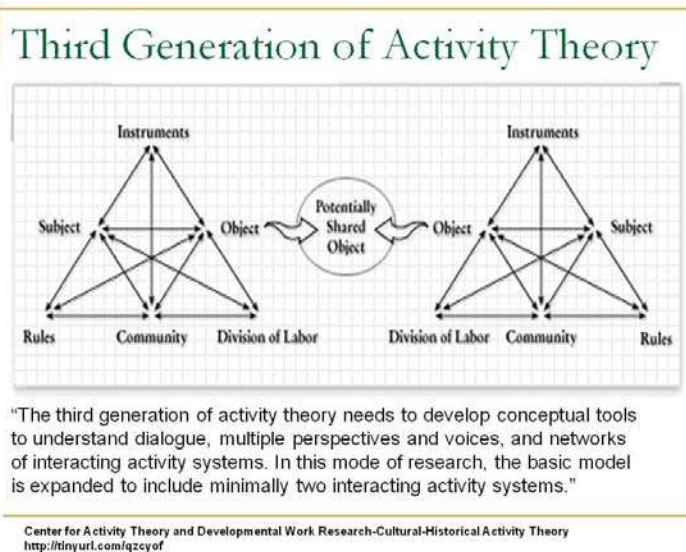
Second Generation Model of Activity Theory



A modern model of Activity Theory includes six elements that lead to an objective outcome, these include: 1) the subject (a person or group that performs an activity), 2) the object (the answer to a question, or a learning object created), 3) Instruments (mental or physical tools that mediate the activity), 4) rules (the guidelines that enable and constrain the activity including physical and process rules as well as social regulations and conventions), 5) the community (one or more external parties that influence the activity, including cultural-historical and environmental elements) , 6) the division of labor (delineations between tasks, power differences).

Further researchers at the University of Helsinki, Center for Activity Theory and Developmental Work Research are now calling for a Third generation of Activity Theory to account for cross cultural interchange.

“The third generation of activity theory needs to develop conceptual tools to understand dialogue, multiple perspectives and voices, and networks of interacting activity systems. In this mode of research, the basic model is expanded to include minimally two interacting activity systems. (2004).”



By weaving Foucault’s Technologies with the theoretical grounding of Activity Theory we can create a lens that allows us to reveal a better description of multimodal literacy in the information process through the interactions between groups, individuals, and the other mediating factors of the activity system.

For example, a student may have an assignment that requires the ability to create a PowerPoint presentation (Subject, Technology of the Self) about the environmental effects of global warming using written text and video (the Object, Technology of Production).

The student might ask the librarian for help choosing appropriate written sources from a database (Community, Technology of Signs, Information Literacy). Access to these items may be mediated by institutional policy (Rules, Technology of Power, Multicultural Literacy). After the written sources are selected, the student must choose a

video source that is legal and persuasive, and insert it into a presentation using PowerPoint software (Instruments, Technology of Production, Visual and Media Literacy).

The student chooses an appropriate National Geographic video that describes the affects of global warming on the fishing practices of indigenous people in the Arctic (Instruments, Rules, Technology of Production, Technology of Power, Technology of the Self, Multicultural Literacy, Information Literacy and Visual Literacy).

If the student has problems at this point he or she may again consult the librarian. But if the librarian does not have the skills to insert the video into a PowerPoint presentation, an instructional technologist or computer support person may be called to assist in the final step (the Object, Instruments, Community, Division of Labor, Technology of Production, Technology of Power, Media Literacy and Visual Literacy).

Why is this important for libraries and librarians?

Fundamental to Foucault's Technologies is the idea that power influences the ability of the self to transform. Libraries and librarians have long been the gatekeepers of knowledge. Conversely, patrons (due in large part to technical and cultural change) have raised increased demands on libraries in terms of facilities, services, and what should be done with both.

The culture of technology has amplified the struggle of both librarians, and patrons to transform towards modern literacy. Library personnel master new literacies and technologies to help enable these skills in users. And patrons work with librarians to empower themselves through access to symbolic information to create objects. In this way the library becomes a community of interaction where users can transform the self into a more literate state of being.

This is true for library professionals who must meet this demand to remain viable in the workplace, and to ensure future generations are able to use information effectively. It is also imperative for patrons, whether completing course work, searching for a first job, or retraining for a new career. As Marshall McLuhan cautioned us:

“If a new technology extends one or more of our senses outside us into the social world, then new ratios among all of our senses will occur in that particular culture. It is comparable to what happens when a new note is added to a melody. And when the sense ratios alter in any culture then what had appeared lucid before may suddenly become opaque, and what had been vague or opaque will become translucent (1962, 41).”

Libraries from Guardian to Guide

- Today's libraries and information centers create information as well as proctor it, and we help others create and distribute it too. In a way, we are moving away from the role of gatekeeper of logos to enabler of techne. As such we begin to understand the responsibility for enabling the information "abode."
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Text in Action

Multimodal literacies emerge within a system of people, instruments, and rule-based practices. This idea extends to interaction within and outside the classroom. One way of visualizing multimodal literacies is the concept of multimodal text. Clancy and Lowrie represent the idea of the multimodal text as a grid of design elements and modes of information that together form patterns of meaning. The method puts flesh on the body of multimodal literacy. In their work, they use the idea of the Pokemon Universe to identify a series of text modes (cards, cartoons, movies), and design elements representing literacy meanings: linguistic, visual, audio, spatial, gestural, and multimodal (more than one design element) that represents the complexity of the multimodal text (2002, 1-4).

Multimodal Text Grid

	Linguistic	Visual	Audio	Gestural	Spatial	Multimodal
Trading Cards	√	√		√		√
Print Cartoons	√	√	√			√
Video Game	√	√	√	√	√	√
Movie/Videos	√	√	√			√
Websites	√	√			√	√
Television Match	√	√	√			√
Fantasy Futbol Game	√	√		√	√	√

Student Text Grid representation of the relationship between forms of text and literacy based design elements for the multimodal text "Union of European Football Associations (UEFA)."

The multimodal text has a variety of forms: cards, books, movies, web sites, and video games, and others. Each form or mode contains areas of meaning that are uncovered through processes of literacy: oral and written communication, audio and visual media, gestural communication, spatial elements, and the combination of these. Multiple design elements of the text are often found together in single mode, and across other modes. The text is often not a single object, but a collection of object “slices” or “units” bound together. The boundaries of the multimodal text can go beyond the sum of the individual modes. One example of this is the cultural discussion about various modes among engaged participants that bring meaning to the text beyond the media itself.

This example of a student developed text grid represents the relationship between modes of text and literacy based design elements for the multimodal text “Union of European Football Associations (UEFA),” displays a number of things about the relationship of modes and literacy design elements in the building of multimodal texts. First, the concept of linguistics implies both oral and written forms. Second, the gestural design element denotes a measure social interaction inherent among participants in the text experience. Third, the idea of the spatial element is broad; it can mean a web space, the framing of an image, or an arena where a futbol match is played. Finally, the table raises questions about the cultural nature surrounding the multimodal text.

For example, while there are many modes of the UEFA text, not everyone will have access to all modes. There will likely be a digital divide regarding access to forms of the text. For example some may have access to television but not the internet. Also, there may be more or less preference for a text across cultures; for instance some may prefer Futbol Sudamerica, while others like American Football.

Multimodal Text in Action

- The boundaries of the multimodal text can go beyond the sum of the individual parts. One example of this is the cultural discussion about various modes among engaged participants that bring meaning to the text beyond the media itself.



Linguistic, Gestural, and Spatial Design Elements can foster culturally driven dialogue about the multimodal text.

Learning and Multimodal literacy

I use the grid exercise in my literacy class to show students the relationships between the media modes that drive the information, and the literacy design strategies that give meaning to the text.

Students must select a topic with a variety of information modes. They analyze the text objects and identify the modes, then synthesize these modes with corresponding literacy design elements into a visual display. Success requires information literacy, as well as visual literacy (data visualization) skills.

The students were engaged and did well on the task. But what I found most exciting was the affect the exercise seemed to have on their personal understanding of literacy in a multimodal world. As one student reflected after completing the assignment and viewing the texts of others:

“Before talking this class I would have said to be literate was to know how to read and write. Something most people learn at an early age and something relatively simple. But after these first few classes my perception has changed not only does literacy involve reading and writing but it also involves literacy of technology, knowing how to use technology. Text is everything it’s who we are and how we shape the world. Also, one has to have an open mind/ be able to change or further educate themselves to keep up with the ever changing definition of literate. Because our definition of literacy isn’t the same as it was for our parents or grandparents.”

Along with the cognitive and physical aspects of the assignment, there is evidence that working with multimodal literacy forms can produce affective change as well. There were other methods of instruction during this time about texts and literacy that may have influenced the student response. Nonetheless, the student was able to reach beyond the cognitive aspects of the subject and describe change relating to personal beliefs about literacy and information. Chief among these is the idea that modern literacy has broadened in scope, is tied to technology and culture, has the potential to shape ourselves and the world, and that the ability to become and remain literate requires a long term commitment.

Modern literacy:

Has broadened in scope

Is tied to technology and culture

Has the potential to transform

Requires long term commitment



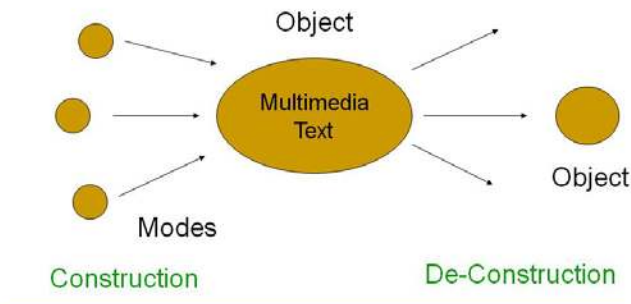
Once students realize the depth, breadth, cultural, and personal nature of the information they experience daily, the instructor can set a stage for teaching literate behaviors for the creation (construction) and consumption (deconstruction) of multimodal information in a wide range of relevant contexts. The multimodal text example shows the literacies in action during the creation of an information object based on the deconstruction of a single

multimodal text. The reverse operation, the construction of a multimodal text from separate modes requires different skills, and presents different constraints, resulting in somewhat different applications of literacy.



In a second assignment, students had to create a video using an image web site, a video creation web site, and the class blog using one of the 4 main class topics, visual, media, information, or media literacy. First, students had to select thirteen images representing the literacy topic, then organize, label, and create a set of images on the online photo web site. Next they had to import them into an online video editing tool, add music, and export the final video to the class blog website for peer review.

Construction and De-Construction of the Multimodal Text Object



In the first example, content and design were pre-established. In the second assignment students designed and distributed an information object using multiple modes, elements, and tools. This required drawing on the literacies in a way that was more immersive; it encompassed visual, audio, video, and print elements, involved more complex design and production skills, and followed a process of social and technical rules. This type of assignment moves students from identification and description of multimodal texts and literacies, to the creation and application of information objects.

Interestingly, student reflections regarding the assignment provide a range of evidentiary commentary that highlight the impact of literacies on the design and evaluation process, as well as reflecting the cultural, cognitive, physical, and affective aspects of literacy engagement during the information design process.

Students Reflections on Multimodal Learning

- **Media literacy and community activity.**

"One difficulty I had was uploading my song to the video. I wasn't sure how to convert the song from iTunes onto the video, but with the help of a friend I was able to add it to my song nicely."

- **Visual Literacy and the cultural environment.**

"I deliberately picked images that are uncomfortable to average American sensibilities. I began to wonder if this reaction is a result of poor literacy in these areas or something else altogether."

Students Reflections on Multimodal Learning

- **Multicultural Literacy and the digital and cultural divide.**

"Some things that didn't work out so well were simply the inconvenience of uploading and what not since I have a slow dial up connection at home."

"I always asked easy questions while everyone else had no problem with them. I felt stupid rather than an "honor" student."

- **Information Literacy and the evaluation of information processes.**

"There were some things that could be improved upon in the videos. For example, I could not tell what some of the images were supposed to represent in the video, so students could work on choosing clearer images to represent the topic."

Students Reflections on Multimodal Learning

- **Multimodal Literacy and critical thinking**

"I struggled quite a bit having all 12 pictures show up in my video. Out of frustration I would try to produce the same video over and over but the same result would happen. I finally realized that how many images show up in a video is related to how fast of a pace the music is going."

- **How multimodal literacy skills can foster quality-of-life-changes.**

"I learned that how to create a video from selected photos and songs. I can utilize this technique to own videos about family, holidays, or a party with appropriate song. I thank this is wonderful."

Thoughts on Multimodal Literacy Instruction

The assignment examples demonstrate a number of things. They show two ways that multimodal literacy can be used in the teaching and learning process. In short, the text grid example shows the consumption and analysis of a multimodal text object. The video project shows the design and construction of a multimodal object.

In some ways they are similar. Both activities work on cognitive, affective, and physical levels. Both activities use higher order tools (the internet, application software). Both work to develop an understanding of literacies through applying higher order thinking skills such as: categorizing and analyzing information, decision making, and drawing conclusions from the information.

But the video assignment has a design component that includes production requirements that the first activity lacks. The activity requires application of a set of digital tools to create a composite information object. This experience is guided by rules, and more mediation by the instructor is needed along the process. Further, it seems likely additional higher-order processes are enabled that is not present in the first activity, such as: monitoring and reflecting on progress, evaluating options, and problem solving.

Further, creating the multimodal video object requires students to engage with variety of novel tools and the community in multiple environments. There were a number of contraindications that required resolution, sometimes with the assistance of the class community or instructor. At the conclusion of the project student videos were evaluated through self reflection and by a community peers.

Towards the Application of Multimodal Practice in Libraries

The development of multimodal skills and concepts in librarians and patrons can foster creativity, leadership, technology skill, and a propensity toward life long literacy. One way is by developing lessons that incorporate literacy learning principles. But there are some general strategies that can help create a library learning environment for multimodal literacy. Here are some ways of the ways this idea can be nurtured in the library and the library classroom.

Through Library Instruction

1. Librarians should try to weave multimodal literacy concepts through consultation, courses, lessons, activities, and assessments.
2. Librarians should work to develop projects that offer individual and group activity that are contextually relevant, and promote transformations of literacy understanding in students.
3. The classroom and reference areas should encourage participatory access, design, and evaluation of text objects, and the tools that create them.

4. The librarian, department instructor, and students should work together to develop meaning in terms of multimodal perspectives.

Throughout the Library

1. Librarians need to prepare for increased development and use of multimodal texts. This includes the ability to assist with video, graphic, presentation, and other information modes and development tools. It also requires the ability to provide access to materials in multiple modes, and address a variety of learning styles.
2. Librarians should strive to develop a cultural-historical perspective and sensitivity to the notion of “Text” that encompasses multimodal literacy, and expresses outcomes through information “objects.”
3. Librarians should encourage a “community” of multimodal literacy through collaboration with department faculty, administrators, and patrons.

Final Thoughts

For librarians multimodal literacy it is a critical dual edged word; we have to be enabled to handle the increasing demands of the information age. Further, our role as information professionals can enable literacy skill in others so they might become self-supporting, civic oriented citizens. I have tried through these pages to show a rationale for meeting this need. I anticipate that coming to a collective understanding of multimodal literacy will be a long course, but a necessary one that better meets the challenges of the information future.

Questions for Further Exploration

- What role do multimodal literacy perspectives play in the cognitive, affective, and inter-personal aspects of learning?
 - What role do multimodal activities play in the development and transfer of student technology skills?
 - What role does multimodal literacy play in the activity system of libraries and library instruction (subjects, the community, rules, tools, division of labor, objects)?
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I feel the breadth and impact of multiple literacies and information modes is expanding. The importance to mastering meanings of multimodal texts will become an increasingly important part of success throughout the information work of our lives (and I would ask what aspect of life is not touched by information work). In addition to their usefulness in

the design and evaluation of instruction services and supports, I find the frameworks show much merit in terms of creating a basis of research into multimodal literacy, and there is much that can be learned by applying them to the classroom and workplace.

Libraries and librarians play a unique role in the processing of multimodal information as they both create and enable the creation of information objects. Further, the information and interpersonal skills of librarian influences the potential for patrons to use information effectively. Because enabling learners touches the root of institutional theory and practice, I end with an encouragement to pursue the understanding of multimodal literacy concepts in library research, practice, and professional development wherever these instances may be found.

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