'New School' Literacy: Concepts, Context, and the Self

By Sean Cordes

Introduction

The idea that the nature of information has changed surrounds us: we live in an 'information society', driven by a global 'knowledge economy', where the 'medium is the message', and many of us suffer from 'information overload'. The ways and means for managing information are increasing daily. As information needs change, the requirements of libraries to meet these needs are moving from traditional services of providing access to materials and assistance in selecting them towards the facilitation of user need in the areas of "multimedia and telecommunications, information literacy and inquiry, learner needs analysis, collaboration and curriculum integration and learner performance diversification" (Harvey, p. 11).

Participation in the processes of information exchange is shifting from centralisation 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. And while the students of today are indeed digital natives, this does not confirm their savvy with the skills and concepts required to thrive in modern information life space filled with visual and symbolic data from a variety of cultural perspectives.

A signpost of these changes is evolving notions of literacy captured through buzzwords like information literacy, information fluency, information competency, and information expertise. One thing is certain, libraries stand on the forefront of managing this change, and they way librarians address student need and the degree to which they are successful in doing so play an important role in the ability of students to thrive academically, personally, and professionally.

To develop a better understanding of the role library instruction plays in this process requires discussion of the concept of literacy in multiple modes. A framework for doing so can be found through the exploration of modern information in terms of the activity of information access, creation, and use, and the impact of these activities for individuals and the surrounding community.

Coming to terms with modern literacy

The information we rely on to guide our lives comes in many forms and requires a number of strategies and techniques to use effectively. The terms educators and researcher use to define these areas are boundless and include areas such as: Technology Literacy, Spatial Literacy, Historical Literacy, Political Literacy, Visual Literacy, Media Literacy, Information Literacy, and Cultural Literacy, among many others (Abilock 2008). The term 'multiliteracies' was coined by the New London Group to reign in these discrete areas of literacy that touch academic fields of study: it describes 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 are culturally grounded (Cope & Kalantzis, 2000, p. 7).

In practice, it can be helpful to group literacies into four broad categories (Visual Literacy, Media Literacy, Information Literacy, and Multicultural Literacy) that may be thought of as encompassing many of the other literacy themes. A description of these broad categories includes:

1. **Information Literacy** – the ability to evaluate information across a range of media; recognise when information is needed; locate, synthesise, and use information effectively; and accomplish these functions using technology, communication networks, and electronic resources;
2. **Visual Literacy** – the ability to analyse, create, and use, images and video using technology and media to enable critical thinking, communication, decision-making and understanding;
3. **Multicultural Literacy** – the ability to acknowledge, compare, contrast, and appreciate commonalities and differences in cultural behaviours beliefs and values, within and between cultures;
4. **Media Literacy** – the process of accessing, analysing, evaluating and creating messages in a wide variety of media modes, genres and forms. It includes the tools and skills used to create media objects, and the concepts used to evaluate what we 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. 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. Today's students consume and create information with a wealth of tools at their disposal for performing these tasks, including wikis, blogs, graphics and presentation software and social networks.

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Given the gamut of multimodal forms, and the tools, skills, and conceptual knowledge required to make sense of them, a lexicon to describe them is useful, but falls short of guiding the educational and informational goals of our students (and ourselves).

Regarding the dynamic nature and purpose of information as it relates to the individual, William Badke offers this insight:

Information is supposed to inform. That means it has to be reliable, relevant, current, and so on. There was a time when people believed that, given the right information, we could solve any problem the human race encountered. They thought that the power of reason could be used in a totally objective way to wade through all the relevant data and come up with all the right answers, even with the truth. Now we're no longer even sure what the questions are (and we can't remember last Tuesday) (Badke, 2004, p. 1).

And despite the Net Generation's digital upbringing, and confidence with self-chosen tools and techniques, questions remain about their effectiveness with information tasks arising 'outside-the-box', such as class work and life skills, and the understanding of concepts that lead to efficiency in these areas (Lorenzon & Dzubian, 2006). While an understanding of multimodal literacy is helpful, it is the fluency to work effectively with these literacies individually and as a whole that will bring academic and personal success for librarians, instructors, and students. Viewing information (and literacies) in isolation undercuts the ability to bring forth knowledge. And the creation and application of knowledge is an active process between information objects and individuals that lead to meaning.

Content, context, and the value of information objects

The ability to consume and create information is not valuable in and of itself. It must be created, accessed and applied in a way that is both useful and usable. Information objects must be organised in a meaningful way in order to transmit useful knowledge, and the objects themselves must take a form that can be communicated and assimilated.

For example, a pile of wood and a set of tools by themselves hold little value; they become useful only through an active process that results in a tangible object. Further, the object is only as valuable as it is both useful and usable in a given context. A boat on land is neither, but a valuable home can be made of it when placed in the water. Such is often the case with the digital experience of the Net Generation student.

They are quite at home using technology for informal purposes, communicating with friends in a social network, or entertaining themselves watching videos or playing online games. But these experiences often lack the critical thinking and problem-solving concepts required to perform information work at school or in work day life, such as building a multimedia web site, sending a professional email, or balancing an online checkbook. Similarly, this is also often the case with librarians when delivering instruction in the Net Generation classroom; trained and ingrained with historically print- based materials in hierarchical culture (and to much extent necessarily so), it can be difficult for many of these professionals to grasp the concepts and techniques required to meet the instruction demands of a growing multimodal, non-linear world of knowledge work.

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One path to understanding the future of the information object is to draw from information past. S. R. Ranganathan's fundamental facets for classifying information objects in the last century, Personality, Matter, Energy, Space, and Time (PMEST), are equally useful in qualifying the aspects of the digital information object as well. Though adapted and modified by a number of organisations, including the United States Library of Congress, the facets remain flexible enough to describe most any information object and the activities that create it in terms of:

- **Personality** –The main idea of the object;
- **Matter** – The media used to make the object;
- **Energy** – The processes or actions required to create it;
- **Space** – Where the object is found;
- **Time** – The point is history where the object occurs.

Arlene Taylor's classic example describes a book about furniture to describe the elements of the facets:

- **Personality** – Furniture;
- **Matter** – Wood;
- **Energy** – Design;
- **Space** – America;
- **Time** – 18th century.

More recently, the facets have been used by information architects, such as web developers, to describe the multimodal facets of online information objects. Such an example might include the facets of a website such as PubMed:

- **Personality** – Health InformationWebsite;
- **Matter** – Text, video file, audio file, bookmarks, rss feed, multiple languages ;
- **Energy** – Design, access, evaluation, connectivity, coding, collaboration;
- **Space** – **http://www.ncbi.nlm.nih.gov/pubmed/** databases;
- **Time** – 20th century, 21st century.

While a complete understanding of the facet system is beyond the grasp of even the most astute information scientist, a basic understanding of the basic concepts serve those in the library instruction process in a number of ways. Beyond the realms of cataloging, the facets can be an effective professional development tool for helping library professionals to understand the complexities of the multimodal text object, and the underlying processes that contribute to its development and ultimate value. In the classroom, the facet concept can be used as an instructional aid to teach students about the relationship between concepts of multimodal objects, the media and techniques used to create them, and the context in which they exist.

Information and the Next Gen student

Today's students use the school library to access tools and information for writing reports, creating presentations, and communicating with classmates. Soon they will apply these and other similar tools and information, and the skills required to use them, to find and perform jobs, to communicate with co-workers, find apartments, negotiate mortgages and plan for retirement.

As library professionals we do the best we can to provide facilities and the capacity to ensure life-long success with information. Nonetheless, the effort to master information skills and technologies is largely self-written. As Michel Foucault notes:

> 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, p. 13).

Further, the mastery of multimodal information tools and concepts embodies a philosophy of living that reflects "impacts the development of human potential. The idea can be represented through what Foucault calls 'Technologies.' These technologies work together to turn information into meaningful knowledge through the active application of tools, an understanding of symbolic systems that permit communication, and within the boundaries of rules of regulations of our systems of power.

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 objectifying 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 so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality.

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' (Foucault, 1988, p. 18). The outline below highlights some applications of the technologies in the school library setting.

| Foucault's Technologies in the school library setting	
Technology of Production	Organising the parts of a paper, creating an audio narration, editing a video, making a web page
Technology of Signs and Symbols	Understanding software icons, designing a table, chart, or presentation to address a specific audience or need, using the OPAC to find a book
Technologies of Power	Applying fair use concepts, choosing school appropriate topics, following library rules of behaviour
Technology of the Self	Applying skills and concepts to perform a task, modifying behaviour to perform in a given cultural situation, understanding why some strategies are more effective than others at achieving success

It should be noted that while the technologies help show some technical requirements for effective information use, they are flexible in their boundaries. For example, the ability to use the online public catalog could be a means towards finding information to create a high quality project, while the ability to use it effectively requires a knowledge of a symbolic system determined by the library (such as the Dewey Decimal System). The subsequent mastery of these related technologies can then result in greater personal success when used to make a meaningful information product, (and a high grade)!

Multimodal literacy in action

In school, on the job, or in daily life, the process of creating knowledge requires structured interaction between people, tools, and information. The process is action oriented and is centered on the idea of the individual moving towards a goal or objective. Activity Theory, a psychological paradigm that emerged from the Moscow Institute of Psychology, highlights this idea. Russian psychologists Lev Vygotsky, Alexandar Luria, and Alexei Leont'ev first developed a model of behaviour built around instrument-mediated and object-oriented action (Vygotsky, 1978, p. 41). Leont'tev carried the work forward, and developed the second generation of activity theory characterised 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, p. 28).

Second Generation Model Of Activity Theory
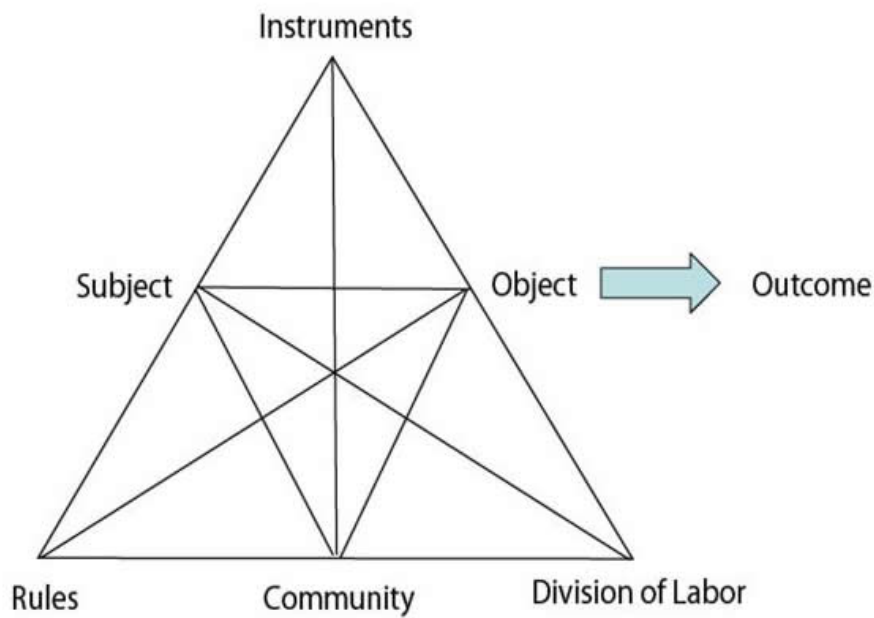
A modern model of Activity Theory includes six elements that lead to an objective outcome. These include: 1) the subject (a person or group that performs an activity); 2) the object (the answer to a question, or a learning object created); 3) Instruments (mental or physical tools that mediate the activity); 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 labour (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 interacting activity systems" (2004).

Third Generation Model Of Activity Theory
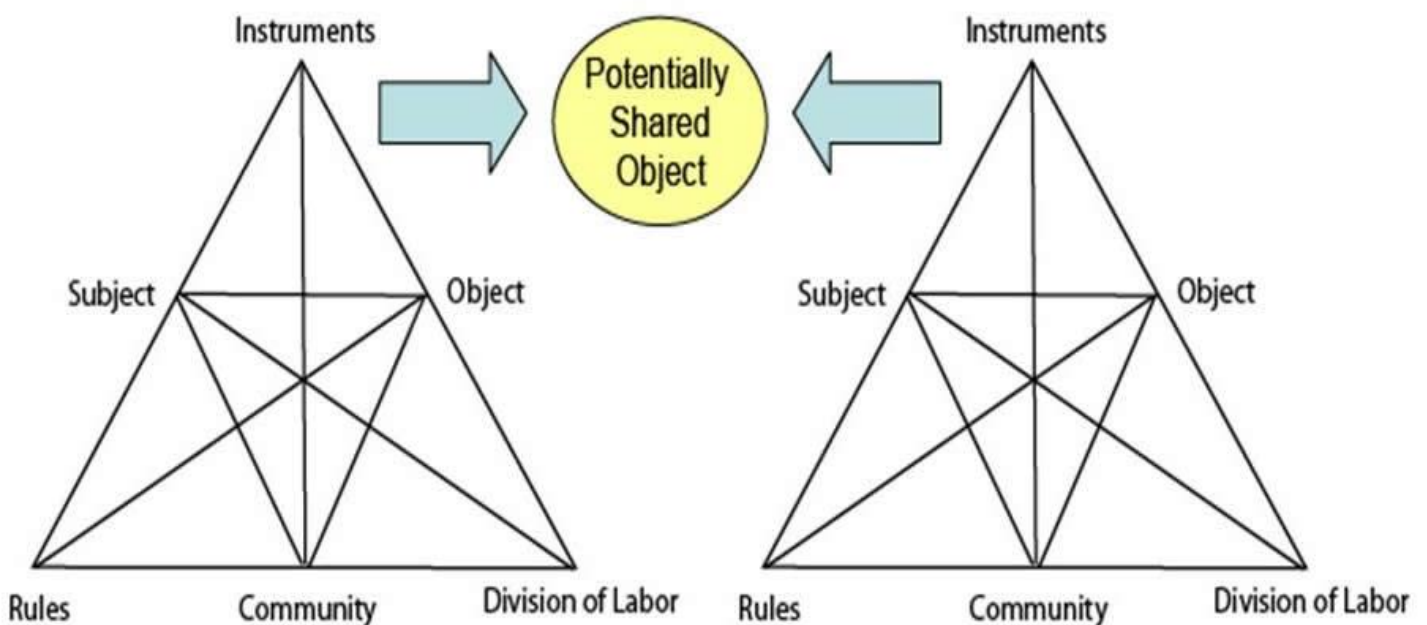
For librarians, Activity Theory can be a helpful tool for planning the Multimodal information environment. It can help steer collection development policies so that students have access to a range of media sources. Regarding the reference process, it can provide a better understanding of the process that students follow when creating multimodal projects, and the obstacles that are likely to occur. And in library instruction it can provide a blueprint for developing context-driven lessons with real life outcomes that account for current and future information needs.

Further, by weaving Ranganathan's Facet concept and 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 information objects, student needs, and the elements that steer the information learning experience.

Bringing the text to life

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 students, whether completing course work, searching for a first job, or performing information tasks critical to personal success. As Marshall McCluhan 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, p. 41).

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 visualising 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, pp. 1-4).

The multimodal Pokemon Universe 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.

One example of a multimodal text in schools is the website, such as the library website found at the Melbourne High School Library, **http://resources.mhs.vic.edu.au/library/about.htm#general**.
The website 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 is implied in both written and oral forms. Although it is heavily text-based, the site provides instruction on developing and delivering information in oral formats, and offers live in-house assistance in the use of information including technology skill development. Second, the library resources include a variety of visual elements including images, full length videos, video clips for project use, and animations. Third, the idea of the spatial element is broad; running across the school library presence of the web space, to the physical facility, and beyond the school and website to external database resources. Finally, the website highlights multicultural values; there is a broad database of Australian newspapers, but the site provides access to the regional Victoria Virtual Library as well.

The final distinction is particularly notable as it highlights the degree that multimodal texts reflect our culture grounding.For example, while there are many modes multimodal library site, not everyone will have access to all modes, such as the rich media website databases. In addition, library websites in Victoria, such as the Melbourne High School site, will offer assistance in prepping for the VCE (Victorian Certificate of Education), while school libraries in other regions, such as New South Wales, offer training for the HSC (Higher School Certificate). Finally, some school libraries may have no website at all, highlighting the digital divide that underscores economic and other resource differences.

The Multimodal Text Grid

	Linguistic	Visual	Audio	Gestural	Spatial	Multimodal
Full-Text Articles	√	√				√
Book Citations	√	√				√
Animations		√	√		√	√
Video Clips	√	√	√	√	√	√
Movies	√	√	√	√	√	√
Web Pages	√	√			√	√
Newspapers	√	√				√
Images		√		√	√	√

Grid representation of the relationship between forms of text and literacy based design elements for the multimodal text "Melbourne High School Library Website."

Libraries, learning and multimodal literacy

Clancy and Lowrie's grid approach can be used to show students the relationship between media modes and design strategies that give meaning to the text. Multimodal texts can be developed from a nearly limitless variety of information objects, from websites, to the artefacts surrounding a particular video game, to the objects and activities of the classroom itself.

Allowing students to choose a multimodal text for analysis creates real world relevance for the learning activity. As students analyse the multimodal text, they begin to think critically about how media modes work together to create meaning that is greater than the sum of individual parts and reaches beyond the classroom. As one student reflected after completing the assignment and viewing the texts of others, focused exercises such as these can change the way we view the world of information in daily life:

"Before taking 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."

In addition to sharpening mental processes related to information processing, working actively with multimodal literacy forms can produce affective change in our students too – it can help change the way we see ourselves, others, and the world. In this case, 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.

Literacy Today….

Is found in many forms and fields

Requires the ability to consume and create

Requires the ability to critique, assess, and evaluate

Has the potential to transform the self and others

The multimodal text exercise demonstrates how critical thinking can be developed as students consume media, a skill that follows us throughout life. Success in today's information society also requires that we create information as well.

An alternative way to explore multimodal literacy in the library classroom is by using a constructivist approach where students create the multimodal text using information objects and development tools. The ability to create multimodal texts from separate modes requires different skill sets, and presents process constraints, that enables a somewhat different understanding of the literacies including the ability to define a problem, choose and evaluate appropriate sources, and perhaps most important, the ability to solve problems related to the use of media development tools.

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Multimodal Text Construction
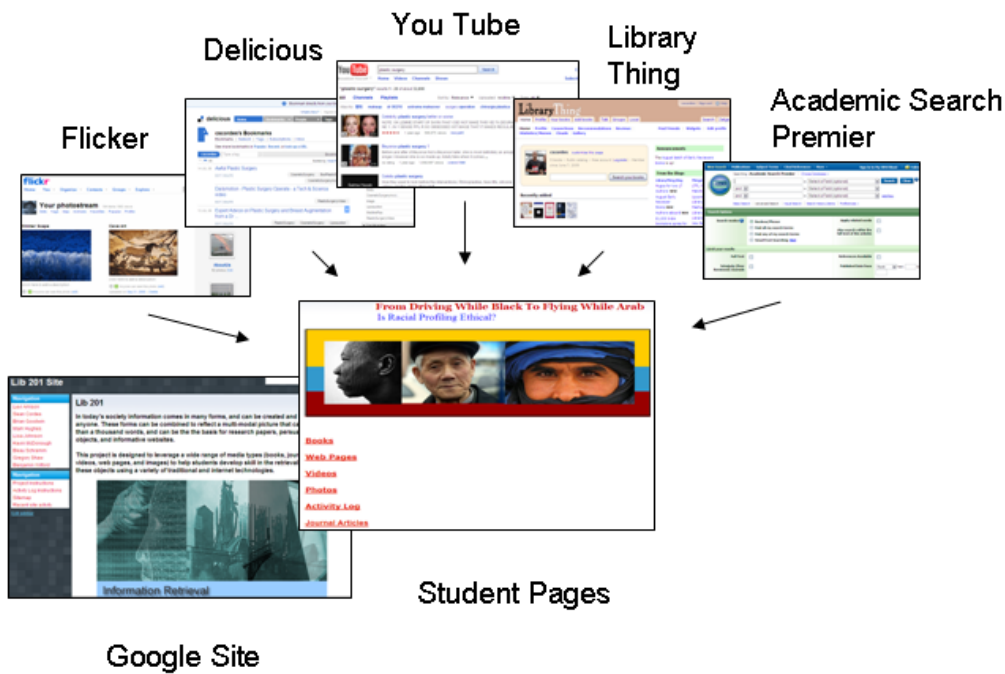
One such activity is the creation of a multimodal text using the open source Google Sites website environment, and other web 2.0 tools and objects such as Flickr (photo sharing), LibraryThing (personal book cataloging tool), You Tube (videos) and Delicious (web page bookmarking tool). In this activity, students choose a topic and define a research question. Then they create pages in a personal section of the main site to display books, videos, photos, journal article citations, and web page bookmarks to build a multimodal text that represents the various aspects surrounding the research topic. The Google tool offers a number of types of pages that can be created to build the site (basic web pages, list pages that include spreadsheet like columns, announcement pages that function like a blog, and dashboard pages that allow content to be accessed from external tools such as Flickr, LibraryThing, and Delicious).

The activity provides an example of the theories and literacies discussed above. Students must classify and select appropriate types of media objects to represent the research topic, they must use technologies of production, symbolic systems, and power to ensure that meaning is generated according to the ethical structures of fair use, library rules concerning appropriate content, and the technical structures of the library. In turn, the students develop technical, conceptual, critical thinking and problem-solving skills that can transfer to other school and life experiences.

The process is an active one that centres on the idea of the student working towards a defined objective, tempered (sometimes enabled and sometimes constrained) by media artefacts and skills, the classroom community (classmates and friends), a division of labour (the instructor), and the rules and regulations surrounding the activity, including rules for ethical media use, and technical rules that enable the successful use of media tools.

A key aspect of the assignment was the activity log each student maintained to document the development process. For each area of the project students provided a reflection of the activity using the site blog tool to reflect on the experiences they encountered. This served to inform the instructor of areas of the activity that required guidance and intervention, and helped students focus on the multiple facets of the activity (the skills and conceptual elements). The reflections also served as a reinforcement tool. Often times when we create a media object, we run into problems during the process. This causes a break in the process until the issue is resolved, then we begin to move forward again towards the objective. Later, when we run into a similar problem, either with the same or a different tool, we forget how we removed the constraint in the previous situation. A log of activity helps students remember what they did to solve a problem, so when they run into a similar problem in the future they are more likely to transfer a previous strategy to the novel situation.

Student activity and the literacies in action

Constructivist learning assignments like the Google Sites project engage students with the literacies in an immersive way that goes beyond readings and lectures. The method provides a contextually relevant experience that grounds pedagogy with practical experience. What's more, when students are directed to reflect on the experience, they begin to think of information work in terms of an active process that reaches beyond the immediate, and forms the beginnings of a meaningful life-long relationship with the many tools and modes of information we encounter daily.

 As one student noted, this is not always the most pleasant task, but ultimately beneficial: "I woke up this morning and dreaded coming to class because of the extreme heat, but today while in class I learned a lot of things that will be beneficial for this project – the most important thing is that they will benefit me for the rest of my life".

The following excerpts from student activity logs during the course of the project highlight the relationship between literacy modes and the aspects of activity theory including the relationship to the community, the technical skills, social rules, and division of labour that impact our efforts, and how these aspects affect the ability to reach an information objective.

Information literacy, community, instruments
The journal article was the hardest thing that I had with my project. For instances, everything I wrote inside the boxes kept getting erased. Then I didn't create the right page for my journals to go under. With the help of Sean and Greg (thanks guys), they helped me to set up my journal article. I found articles that I felt was interesting and at the same time relevant to my topic.

Media literacy, division of labour, rules, instruments
I added some more photos to my Flickr page and one more link to my delicious page. I tried looking for videos on You Tube, but I need a java version on the library computers. It's not possible so I will need to go home and upload the videos myself.

Visual literacy, media literacy, instruments
I found a very detailed and relevant map detailing the drug trafficking routes from Mexico to the U.S. I uploaded it onto the main page by clicking edit page and then insert. From the insert dropdown menu I clicked images and uploaded the image that I had saved to My Pictures. I also realigned it to fit the center of the page.

***Multicultural literacy, information literacy, community***
When I was selecting videos for this section, I wanted to make sure that my videos were relevant; educational, and an attention getters. In the first video it's talking about a man in Texas that was shot and is believed that he was being racially profiled. The second video is about people demonstrating and protesting about Arabs being discriminated against, and I choose this video to also show that African Americans are not alone and to keep supporting my theory that when America is afraid of a group, they become social outcasts and are targeted for racial profiling.

Thoughts on multimodal literacy instruction

The activity examples demonstrate a number of things. They show two ways that multimodal literacy can be used in the teaching and learning process. The text grid example shows the deconstruction – 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 technology tools (the internet, databases, and application software). Both work to develop an understanding of literacies through applying higher order thinking skills such as categorising and analysing information, decision-making, and drawing conclusions from the information.

But the Google Site assignment has learning components that the first activity lacks. The activity requires problem-solving using digital tools, and critical thinking to analyse and organise multimodal information to create a composite information object. This experience is guided by library rules, and rules governing the use of technology and internet information. It involves community participation by classmates and the instructor, and is subject to a division of labour in terms of information technology support within and outside the school. Further, it requires additional higher-order processes that are not present in the first activity such as the ability to reflect and report on project progress, and the ability to adapt strategies to account for differences in a variety of development environments.
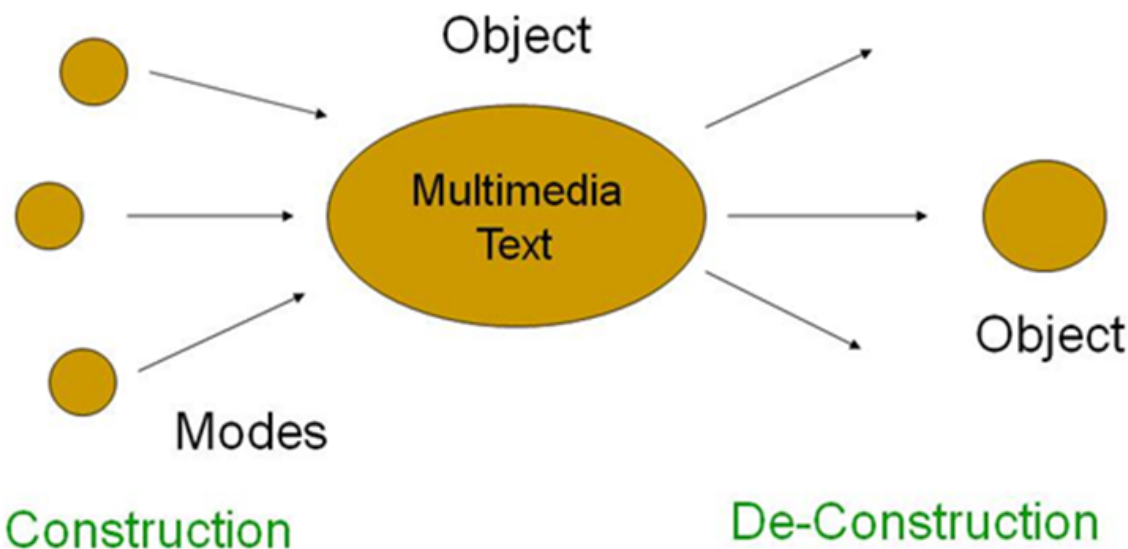
Towards the application of multimodal practice in libraries

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 of the ways this idea can be nurtured in the library and the library classroom.

Through library instruction

- Librarians should try to weave multimodal literacy concepts through consultation, courses, lessons, activities, and assessments.

- Librarians should work to develop projects that offer individual and group activity that are contextually relevant, and promote transformations of literacy understanding in students.

- The classroom and reference areas should encourage participatory access, design, and evaluation of text objects, and the tools that create them.

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

Throughout the library

- 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.

- 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'.

- Librarians should actively pursue professional development opportunities that will allow them to stay aware, if not apace, with advancing tools, techniques, and practices for meeting modern information service needs.

Beyond the library

- Librarians should encourage a 'community' of multimodal literacy through collaboration with department faculty, administrators, and patrons.

- Librarians should actively pursue support and participation of the administration and school information technology units to create library learning environments and support systems that encourage, creativity, collaboration, and innovation, including an assessment of the current environment, and realistic plans with clear objectives and outcomes.

- Librarians should develop tight partnerships with available technology support systems, including those of the school district and community, to create a technology environment that provides infrastructure and support to meet the needs of student multimodal information learning and development.

Some resources that can help us keep up

Because times are tight, and changes in the field are moving at the speed of bytes, it can be hard to keep up with changes in the field of modern literacy. The following resources can help school libraries and librarians keep apace and move forward with changes in modern literacy:

- **Project New Media Literacies,** *www.newmedialiteracies.org*. A research initiative that is a part of MIT's Comparative Media Studies program, the project is designed to determine best practices for enabling young people with the social and cultural skills competencies to fully participant in the New Media world and understand what it means to be an informed citizen in a multicultural world.

- **New Media Literacy.Org,** *www.newmedialiteracy.org*. A community of activists, technologists, designers, educators, scholars, and business people that work together to develop new media projects with an emphasis on developing a deep literacy of the Internet environment, including technical skills and the critical sensibilities needed to evaluate and learn from digital resources in general.

- **Center for Media Literacy,** *www.medialit.org*. An organisation dedicated to improving the understanding of modern media concepts and practices. The site offers research papers, educational materials, and other resources designed to help construct and deconstruct media in a global world.

- **The Partnership or 21st Century skills,** *www.21stcenturyskills.org*. Formed in 2002 as a joint venture between the United States Department of Education and media corporations such as Aol Time-Warner, Apple, Microsoft, and Cisco, the Partnership functions as a think tank for developing frameworks for educating learners to becomes skilled information workers and functioning participants in the global knowledge economy.

Final thoughts

For librarians, multimodal literacy it is a dual-edged word; we have to be enabled to handle the increasing workaday demands of the information age. Further, our role as information professionals we have charged with the mission of improving literacy skills in students so they can become self-supporting, civic-oriented citizens. As Michele Lonsdale reported in a 2003 report on the impact of school libraries on student achievement: "Perhaps the most significant factor affecting the role of school libraries and school librarians in relation to student achievement is the explosion of information, particularly in relation to digital resources, that has taken place in recent years".

This significance remains, is growing, and given the current climate of rapidly evolving work practices for modern workers, and decreasing budgets for libraries, the challenge to meet student needs will be ever more difficult. I have tried through these pages to show a rationale for meeting this need based on concepts and practice surrounding information objects, the activities we use to create and consume them, and the benefits that a solid understanding of these areas can bring to our libraries and our students. 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.

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