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A Global Imperative

The Report of the 21st Century Literacy Summit

The New Media Consortium

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A Global Imperative

A Global Imperative



Executive Summary

A profound shift is taking place in the way people communicate and express themselves. Fueled by media that increasingly are crafted for a global audience, pervasive access to goods and services from ever more distant locales, access to networks and communication services that span the planet, and generational ties between youth that transcend borders, a new concept of language — and what it means to be literate — is evolving.

Unlike the traditional notions of language and literacy, which are primarily unimodal and textual, this new form of communication and self-expression occurs multimodally, incorporating visual and aural elements with textual elements, and an immediacy which itself is a dimension of the new language. Technology, which has done much to make the creation and dissemination of written communication a familiar everyday occurrence for most people, plays an especially important role in these new forms as well. Tools that allow sophisticated manipulation and creation of images, video, and sound are more and more commonplace, and they are especially well known among those most fluent in these new language forms.

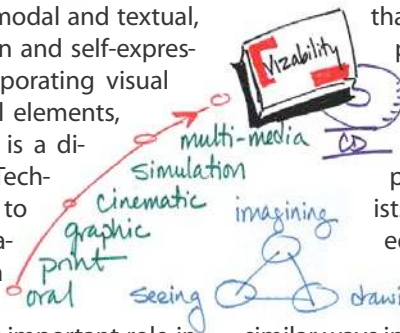
Adobe Systems, the George Lucas Educational Foundation, and the New Media Consortium, three organizations deeply interested in this phenomenon and its potential impact on communication and creative expression, began conversations in the fall of 2004 about how they might collectively stimulate work in the areas of visual, aural, and digital literacy, and bring attention to the efforts already taking place. On April 26-28, 2005, a group of leading authors, researchers, policy makers, educators, and artists from around the

world accepted their invitation to come together in San Jose, California to explore this phenomenon and the challenges it represents. Their goals were to exchange information and points of view, and to come up with strategies and action ideas that would both raise awareness of and begin to address what all agreed was a global imperative to embrace this emerging language and maximize its potential.

The leaders that gathered in San Jose recognized that something unusual was taking place — a new language, rich in ways that extend traditional forms of communication with visual imagery and sound, was being born. A province once only occupied by artists and filmmakers was now populated by an entire generation of digital natives — and this phenomenon was emerging in amazingly similar ways in countries across the globe.

That meeting, called the 21st Century Literacy Summit, generated considerable interest among researchers, policymakers, and others that had begun to focus on the topic, and attracted a veritable “who’s who” of thought leaders, authors, researchers, artists, and others who came together for the two days of dialog and deliberations that took place.

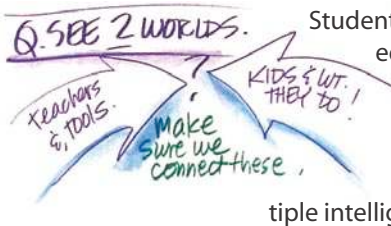
The work that took place during the summit is the focus of this monograph, and the strategic priorities and recommendations developed by the participants are the summit’s key outcomes. These five priorities, their implications, and what it will take to achieve them, are discussed in detail in the pages that follow.



A Global Imperative

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The world around us is changing, and becoming smaller. Communication and media are changing, and becoming more global. Our youth are at the vanguard of these changes, and in countries around the world, researchers and educators are realizing that the current models of education are failing us. In countries as diverse as the United States, Australia, Japan, the United Kingdom, and all across Europe, attention is slowly beginning to turn to how to take advantage of the new skills and abilities common to today's youth, and how to maximize their potential.



Q. SEE 2 WORLDS.

Teachers & TOOLS.

KIDS & WT. THEY DO!

Make sure we connect these.

Students come to school equipped to learn on many levels, using multiple pathways and drawing on multiple intelligences, but today's

curricula do not meet their needs, and too often school is the least engaging part of a student's day. Schools do their students a disservice when they fail to teach literacy in the expressive new language that their students have already begun to use before they even arrive (Prensky, 2005).

Today's young people, a group often described as digital natives, have grown up with computers, video games, the Internet, and cell phones. Such devices have always been a part of their lives, and these sorts of tools are as natural and familiar to them as radio was to previous generations. The ease with which they use and apply them is fundamentally different from the way their older counterparts approach using the same tools.

The Internet has been a powerful leveler for this generation, providing immediate and broad access to opinions, ideas, music, video, and more.

Mass media is increasingly controlled by huge multinational companies, who leverage their content across the globe. The result is that cultural values are being homogenized, especially in the developed countries, and transcend language barriers.

The group that gathered in San Jose, California in April 2005 was eager to explore this phenomenon and the challenges it represents, but a sublime irony quickly surfaced.

There was no common language with which to begin to talk about the new concepts of language that brought the group together, no conceptual framework upon which to form a consensus around its impact on notions of literacy. The dialog was informed by work in media literacy, semiotics, iconography, visual cognition, and the arts, but the concepts that were the focus of the gathering had emerged so recently that there was not a body of literature or theory that could provide adequate definitions, taxonomies, or ontologies. In their place, the following working definition was applied and given the name of 21st century literacy:

21st century literacy is the set of abilities and skills where aural, visual and digital literacy overlap. These include the ability to understand the power of images and sounds, to recognize and use that power, to manipulate and transform digital media, to distribute them pervasively, and to easily adapt them to new forms.

Many other definitions could have been used as well, and many were discussed, but the group felt the task of formally naming and defining these new forms of language and communication was best left to others. Nonetheless, certain characteristics of 21st century literacy seemed clear:

21st century literacy is multimodal. As opposed to textual and verbal forms of communication, which engage one or at most two communication pathways, these new forms of communication appear to include layers of meaning which are not accessible by traditional language skills alone. Young people adept at interpreting meaning in sound, music, still and moving images, and interactive components not only seem quite able to cope with messages that engage several of these pathways at once, but in many cases prefer them (Kress, 2003).

21st century literacy includes creative fluency as well as interpretive facility. Just as traditional forms of literacy imply the ability to speak and write as well as to read, 21st century literacy implies the ability to articulate and create ideas in these new forms, as well as to understand the layers of meanings they may convey (Jenkins, 2004; Flood, 2004).

21st century literacy means learning a new grammar with its own rules of construction. Tools that make multimedia easily accessible are contributing to the spread of, and need for education in, 21st century literacy. The underlying concepts must be teased out. While the grammar of this new language is not yet fully understood, it seems to be, at least to some degree, intuitive to young people. Digital natives easily grasp how visual and other multimedia components can enhance communication, even if their use of it is largely informal. As young people create casual multimedia, they are also creating the opportunity to experiment, learn, take risks, and become fluent (Woolsey, 2005).

The language of 21st century literacy lends itself to interactive communication. While verbal communication — speech — is very interactive, when written language is employed, real-time interaction is rarely a component. Print-based

authoring is largely a one-way communication. The language of 21st century literacy encourages interaction, even in its more formal forms, and real-time immediacy is an important dimension.

21st century literacy implies the ability to use media to evoke emotional responses. All of us understand, almost on a visceral level, the power and immediacy of imagery and of sound. Art, music, film, photography, drawing — all have the potential to transcend traditional language and evoke an emotional response. These media, and images and sounds in general, can be used as powerful communication tools. The ability to understand this power as it relates to imagery, to recognize it, and to manipulate it is at the heart of this new literacy.



21st century literacy has the potential to transform the way we learn. Humans are wired to learn. When learning is pleasurable, it can happen even more rapidly. The vocabulary and tools of 21st century literacy are appealing to young people, connected to their world outside school, and related to their interests.

What was clear to all who participated in the summit was that whatever these new forms of language may ultimately be called, when they are artfully applied, the effect on communication is immediate and palpable. If we can understand how to use them effectively, we will have the capacity to engage learners in powerful new ways, and to engage their brains in ways that take advantage of exciting new pathways to learning.

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Given the challenges faced by school systems across the globe as they struggle to keep pace with the ever-increasing complexity of the world today and the incredible advance of science and technology, it is vital that we quickly master this new language and put it to use in the service of education. An entire generation of digital natives across the globe appears to have receptive facility for this language, a phenomenon which offers us an unprecedented opportunity.

The leaders that gathered in San Jose recognized that we must seize that opportunity, first by understanding this new literacy, then by encouraging, stimulating, modeling, and using 21st century literacy skills and methods. We must find ways to more fully engage young people in schools and universities worldwide, and use their natural talents to help them to be better and more effective communicators. That is our imperative, and it is global in its implications.

The 21st Century Literacy Summit

The San Jose meeting was the culmination of nearly six months of preparations. The invitees were carefully selected using a three-step process. First, a team of graduate students was assembled to conduct a comprehensive review of the literature on the topics of digital, visual, and new media literacy. A meta-analysis of the citations produced a list of seminal authors whose works were cited over and over; these authors' names formed the initial list of invitees.

That list was expanded by adding the names of representatives of key organizations linked to or doing work in visual and digital literacy, as well as those recognized for their work or influence in the policy arena. From the earliest phases of the planning effort, there were five sectors that the planners wanted to have represented: policy, research, media and the arts, K-12 education, and higher education. Members of the planning committee were selected to ensure each of these sectors was represented, and they reviewed the list to ensure balance in terms of both perspective and geography.

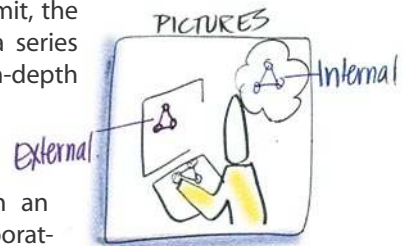
The result was a list of 62 leading authors, policymakers, researchers, educators, and artists from the United States, Australia, Europe, Japan, and the United Kingdom. Of these, 35 were able to accept the invitation and attend the meeting. Given the reputation and caliber of the attendees, the meeting came to be known as the 21st Century Literacy Summit.

The planning committee recognized that the demands on attendees' time, both in terms of travel and attending the summit itself, would be significant. With that in mind, the summit was designed to maximize active participation while minimizing the need for extensive pre- or post-work.

One of these approaches was to invite participants to contribute to a collection of previously published articles that was assembled expressly for the attendees and distributed to all ahead of the meeting. The *Advance Readings* provided the attendees an in-depth introduction to each others' thinking. This comprehensive collection of essays and research can be downloaded at www.nmc.org/summit/readings.pdf.

The planning committee adopted the technique of "Deep Dives" that had been employed successfully in IBM's 2004 *Global Innovation Outlook* process (IBM, 2004). In that effort, and also for the 21st Century Literacy Summit, the deep dives were a series of small-group, in-depth discussions with thought leaders and influencers designed to reach an outcome incorporating the best thinking of the group from multiple perspectives. For the summit, each small group was formed around the concept of "lenses." These lenses were the five sectors chosen as foci for the dialog — policy, research, media and the arts, K-12 education, and higher education. In each of the deep dives, each of the five groups considered the same question, but from the vantage point of their particular "lens" or sector.

In between each of the deep dive sessions, the participants were brought "back to ground" with a series of multimedia "sorbits" prepared in advance by several of the participants. Just as the metaphor suggests, these real-world stories illustrating how 21st century literacy is actually emerging provided a way to "cleanse the palates" of the participants,



Designing for Multimedia Literacy Across the Curriculum

Stephanie Barish

"What is literacy in the 21st century?" A 1999 multi-million-dollar Atlantic Philanthropies grant provided the opportunity to thoroughly examine this question, to encourage new explorations of teaching and learning with media, and to work toward an ethos of critical thinking and strategic design that sought to build languages and a comprehensive sense of literacy.

Over the next five years, this grant enabled more than 100 leading faculty members, dozens of teacher educators, and thousands of students to expand the academic dialogue through sound, image, moving image, interactivity, and immersive environments. Their discoveries and transformations in, for instance, the concept of audience, the nature of a student's relationship with their work, or the way students and professors interact, confirmed the potential for the expressive possibilities of media to revitalize teaching, learning, and research. Their results demanded an effort to create larger institutional structures and weave the 21st century into the academic system itself.

Thus, the grant created the opportunity to design and establish several standout programs, such as the Honors in Multimedia Scholarship, USC's first university-wide honors program. This four-year trajectory integrates into any major. Students start by learning the foundational contexts, concepts, and competencies embodied in the languages of new media. In the years that follow, they appropriately apply these principles and methods to classes within their majors. As seniors they build a capstone multimedia thesis project in which they integrate their disciplinary knowledge with their critical understanding of multimedia expression. (www.usc.edu/)

Given the reach and extent of the K-12 system, the single most effective milieu for engendering expanded literacy into mainstream education was clearly teacher training. A 14-month Master's of Arts in Teaching program was designed with and integrated into the USC Rossier School of Education. This program prepares educators not only to become fully multimedia literate, but also to integrate these abilities with their instructional visions, objectives, strategies, and classroom practices. (www.usc.edu/dept/education/)

Programs like these, which both preserve long-standing intellectual practices and take advantage of contemporary possibilities, are early precedents. For more information and lessons learned, contact Stephanie Barish (sbarish@cmcollaborative.com).

and prepare them for the next dive. Several of these stories, such as the one to the left, have been reprised here. These "vignettes" are intended to provide the reader a sense of the scope of activities in which summit participants are engaged.

Since the topic focused on visual, aural, and other forms of literacy, the meeting was documented using a variety of media, including print-based and visual records, as well as photographically and on video. As the meeting progressed and discussions were captured graphically on large 8' x 16' charts, the results filled the room with a real-time visual representation of the dialog as it progressed. The illustrations accompanying this text were selected from this visual record. An Adobe Acrobat form of this record can be downloaded at www.nmc.org/summit/summit.pdf.



The Deep Dives: Moving from Vision to Reality

As their name suggests, the deep dives allowed attendees to delve into the questions under consideration in a profound way. In these intensive dialogs, participants worked to tease out the vital requirements, questions, issues, and assumptions surrounding 21st century literacy. What new ways of thinking, learning, and assessing are possible or implied by this concept of 21st century literacy — and what new kinds of technologies, organizations, structures, and infrastructures? These were key questions for the attendees. Over the course of the first day, as they grappled with them, the group gradually developed a shared vision of what a world that values 21st century literacy would look like and what it would take to get there.

What does a world that values 21st century literacy look like?

Each of the sector focus groups considered the implications of this question from its unique perspective. The scenario drawn from the groups' reports, detailed in the paragraphs that follow, describes a world that may seem Pollyannish to some readers — to be sure the challenges involved in realizing this vision are great — but the picture is one that reflects the deep potential of 21st century literacy.

The essential characteristic of this world is that it embraces 21st century literacy broadly. Communication is multi-dimensional, engaging, and increasingly unbound to text. Creativity is valued broadly, and success is associated with the ability to articulate ideas using not only words, but also images and sounds.

Education is optimized for multi-tasking and tailored to each learner. Schools incorporate the new literacies across the curriculum, and use them

to more fully engage students, articulate ideas, and demonstrate concepts. New tools, easy-to-use and widely available, allow the skills imbedded in 21st century literacy to be refined throughout a child's educational experience.

Media and the arts are the vanguard in this world, out in front, breaking new ground. Creative people are inventing new forms of expression, experimenting with them, and disseminating them. Not all new forms are adopted, of course, but the drive to explore and create is fueled by artists, musicians, and popular culture. Researchers have begun to think about these new forms of expression in the same way they might a new language. Using the very language forms they are studying, researchers work collaboratively to discover and describe the nature of 21st century literacy.

Teachers entering the workforce have grown up with easy access to computers, powerful creative tools, and the Internet. They epitomize the concept of the "digital native" and are comfortable both with the new forms of expression that are emerging and with the tools that make them accessible. These new teachers model the new language forms for the next generation simply because that is how they already communicate.

The students who are following those teachers into college are themselves digital natives, part of a remix culture in which traditional norms around copyright and intellectual property have become impediments to creativity. Students' desire to get information the way they want it, when they want it, drives some professors to learn new ways of communicating their material. Recognizing the benefit of collaborative forms of expression embodied in blogs, wikis, and other social software, faculty encourage their use.



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The CORAL Initiative

Kristina Hooper Woolsey

The Communities Organizing Resources to Advance Learning (CORAL) Initiative, launched by the James Irvine Foundation in 1999, encourages the development of out-of-school programs for underserved youth in five California cities that enhance their academic performance. The primary focus areas for CORAL are the development of local community capacity and the delivery of high-quality learning experiences.

One very key element of this initiative in its early years was the “Summer Institute,” an approximately six-week experience for high school students in the summer where they explored technology and media and team organization as infrastructures for their own learning. In this context they went on hikes in wilderness areas, learned to use media-rich technologies, and created some very compelling movies (Examples can be found at www.lbcoral.yi.org/news.html.)

These movies provided an excellent context for youth to express their ideas and to work with collaborative teams. They also provided a very engaging activity that gave them all experience with cameras and computers. Interestingly, in the fall these students brought their technical and design capabilities into their high schools, borrowing the CORAL equipment to give PowerPoint presentations to their high school classes and to show their movie projects which they completed for class assignments. The out-of-school context provided a training ground for the mastery of these digital tools; students enhanced their performance in their school contexts using what they had learned in the summers, using imagery and sound to express ideas that they had kept to themselves before.

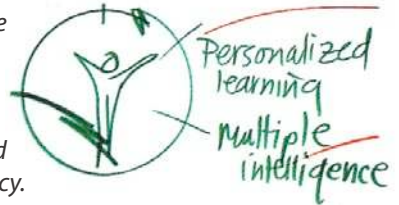
This relationship between out-of-school and school contexts is a promising general approach to the incorporation of digital media into school environments — one which does not rely on the schools to change their cultures too drastically, while at the same time encouraging youth to use developing technologies for their own learning and expression.

To learn more about the CORAL Initiative, visit the web site at www.irvine.org/grants_program/youth/coral.shtml.

Informed by solid research that has systematically examined these new forms of expression as they have emerged, curricula, standards, and certification programs recognize that fluency with these new forms of communication is as important as basic literacy in the 21st century. Standards reflect the importance of those skills, and exemplars and models for integrating 21st century literacy skills in teaching and learning are readily available.

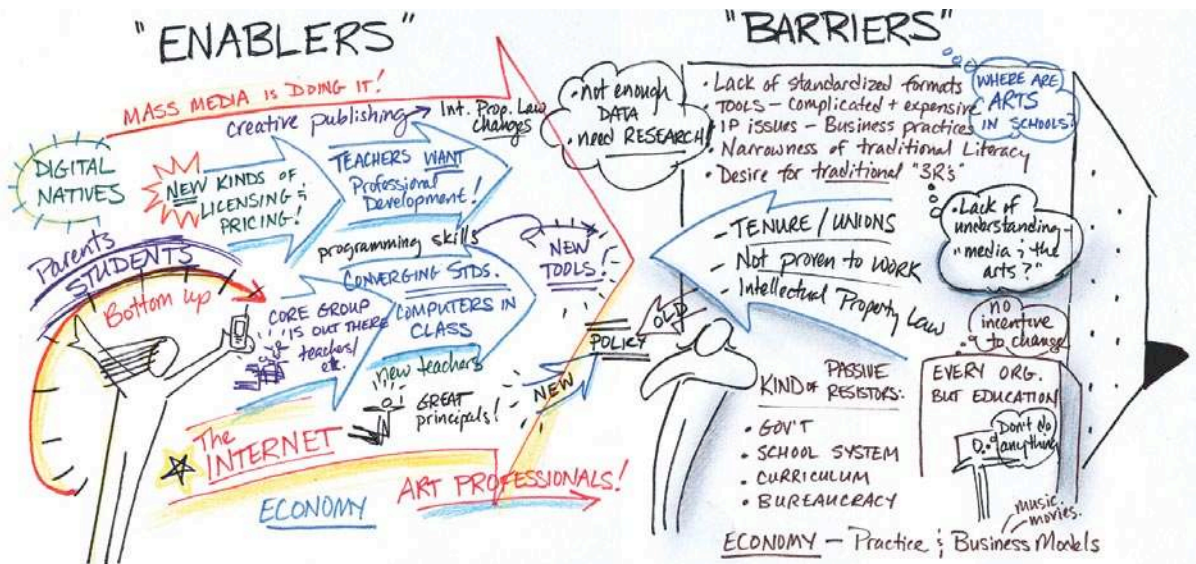
In the classroom, as students find themselves engaged on multiple levels, it is easier for teachers to focus on critical thinking and problem-based learning. Communication skills are highly valued by students and teachers alike — both in traditional forms like print and public speaking, and also in forms like multimedia, the visual arts, music, and cinema. Assessment methods focus on

performance and use blended modes that take into account the various facets of the skills imbedded in 21st century literacy.



Media and arts professionals work alongside teachers in museums, schools, and other institutions to forge a clear link between learning activities and the world outside the classroom. Funding for schools to acquire the necessary tools is available through government grants and partnerships with industry, and students around the world have access to the materials they need to explore, experiment and learn with the new language.

This scenario, while admittedly a rosy picture, is actually not so far out of reach. It is based on three essential components, all of which are very possible. The first is to stimulate the research community to turn their focus to the ways in which our digital natives learn, and how they express themselves. The learning and communications styles they employ



draw on multiple intelligences simultaneously, and are increasingly of interest to cognitive scientists.

The second is to encourage youth to use these new skills, which are most often developed informally, outside the school system. Because of this, many students miss out on the opportunity to learn more advanced techniques that would enable them to convey complex ideas and express themselves more fully.

The third is to help teachers find ways to understand how to use and model these skills. One distinct advantage in meeting that challenge is that many new teachers already know how to do that. We just need to make it possible for them to do so.

On the surface, each of these three seems straightforward, but change is rarely simple. In its next deep dive, the summit participants turned their attention to identifying critical external factors that could help or hinder the understanding and utility of 21st century literacy, with an eye to understanding how these factors might be addressed.

What are the enablers and barriers on the way to this world?

What are the forces or “enablers” supporting movement in this direction? What is constraining or resisting it? Where are the leverage points? These questions framed the last deep dive, and again, groups were formed based on the five focus sectors. Early in the discussions, it became clear that the forces at play were complex. In several cases, the same factors could fuel progress or inhibit it, or even both, depending on how they were actualized.

A great many potential enablers and barriers were considered in the discussions. An affinity process was used to refine the list, and in the end, seven external factors emerged as critical. Two of these, *Intellectual Property & Business Practices* and *Tools, Standards, Licensing & Pricing*, were viewed as continua that could act as either an enabler or a barrier, depending on how they unfolded. Three other factors were identified as enablers, and two as barriers. Each is discussed in turn.

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Otaku Literacy

Mizuko (Mimi) Ito

I believe otaku are a new breed born in the 20th century visual culture era. In other words, otaku are people with a viewpoint based on an extremely evolved sensitivity toward images.

— Toshio Okada, Introduction to Otakuology

In the 1993 premier issue of *Wired*, a feature article introduced English-speaking geekdom to Japanese otaku, “the incredibly strange mutant creatures who rule the universe of alienated Japanese zombie computer nerds.” Since then, the term has taken on a life of its own in the United States, shedding many of the negative and antisocial associations attached to the term in Japan. Web sites such as otakuworld.com or theotaku.com use the term as a stand-in for anime fandom.

Overseas, anime otaku — fans of Japanese anime — practice an emergent form of media literacy that, though still marginal, is becoming increasingly pervasive among a rising generation. Anime otaku are media connoisseurs who seek out esoteric content and organize their social lives around viewing, interpreting, and remixing these media works. Otaku translate and subtitle all major anime works, create web sites with hundreds and thousands of members, stay in touch 24/7 on hundreds of IRC channels, and create fan fiction, fan art, and anime music videos that rework the original works into sometimes brilliantly creative and often subversive alternative frames of reference. Curious? Check out sites such as animemusicvideos.com, cosplay.com, or animesuki.com to get a sense of this burgeoning subculture.

Although fan cultural production is denigrated by media professionals as “merely” derivative and lacking in originality, it is worth considering what forms of knowledge, literacy, and social organization are being fed by these activities. To support their media obsessions otaku acquire challenging language skills and media production crafts of scripting, editing, animating, drawing, and writing. They mobilize socially to create their own communities of interest and working groups to engage in collaborative media production and distribution.

The activities of otaku may seem extreme and marginal, but otaku culture may represent one prototype for emergent forms of literacy. Much as the growing strength of digital technology was tied to the rise of geek chic, the growing visibility of otaku culture worldwide seems symbiotic with the ascendancy of visual culture and communication in the 21st century.

Intellectual Property & Business Practices.

Creative people in media and the arts, long considered the vanguard of popular culture, are also at the forefront of 21st century literacy, illustrating how new forms of language can be used and even invented. Their efforts open new doorways to expression and inspire young people to experiment and build on what they see, but it is important to their livelihood that their work be protected under copyright. Copyright helps ensure that they are able to garner whatever value the marketplace places on their craft. Ironically, however, since it is more difficult to protect their intellectual property in digital media, artists face a disincentive to create works in these media.

New laws, policies, or business practices that would make it easier to use and share works, while preserving attribution and rights would



be a great help to those wanting to expand awareness of 21st century literacy skills. The Creative Commons has developed an exceptional licensing model that provides a way for artists to allow their work to be shared, but the approach is not well known. (This monograph is published under a Creative Commons license.) Devising a way to “quote” visual and aural media in the same way that a book or article can be cited would be another great benefit, while further narrowing of the definitions of fair use would have an opposite effect.

Similarly, to the extent that business practices result in licensing and pricing models that make tools for creating multimedia more widely available, those tools and licensing models would be considered an enabler. To the extent that that pricing and licensing policies exclude potential users, those factors would be inhibitors or barriers to change.

Tools, Standards, Licensing & Pricing. Media tools themselves are clearly enablers: image, sound, and video editing tools; desktop publishing and web design tools; hardware to print, record, burn, copy and distribute created media; and of course the Internet — all of these enable people to learn, create, experiment, and become fluent in new language forms by experiencing what others have done and by doing it themselves. As creativity tools have become more accessible and far easier to use, they have become more widely used, allowing more voices to be heard.

At the opposite end of this continuum, though, the same tools serve as resisters. The current state of software tools is such that it is not easy to integrate different forms of media. Tools are often expensive and can be difficult to learn to use; there is a bewildering array of formats for any given media type; tools do not help an author choose which format to use, and are not very forgiving if the author makes a poor choice. There is not yet enough standardization in file formats or in media tools themselves for multimedia to be easily applied in schools.

Licensing and pricing of software tools has presented another barrier to getting tools into people's hands. Notably, leading software companies like summit sponsor Adobe Systems have taken strides in the past several years to make it easy for educational institutions to make media tools widely available, offering scalable solutions and substantial discounts, but in the case of hardware, the cost of sophisticated tools too often is still out of reach of schools. The effect is to limit the opportunities students have to experiment and learn to express themselves in the modes of 21st century literacy. Media tools are not part of the basic productivity set that most people associate with a computer. There is some movement here and increasingly, image, video, and audio processing software and related hardware are seen as part of the basic tool kit — but

the fact remains that the majority of computer users do not currently have these sorts of tools.

Policy Changes. Policy revisions could have a substantial impact on several likely barriers. For example, teacher training and certification are areas that are significantly influenced by national, state, and local-level education policy. Incorporating 21st century literacy in the requirements for these programs is a strategy policymakers can use that would have rapid and pervasive impact. Business and industry policy changes in the way software is priced and licensed could greatly encourage system-wide adoptions. Policies that make it simpler for artists to create derivative works or to use copyrighted materials while ensuring that intellectual property rights are protected would have a profound effect on the quantity and quality of source material available to young or amateur media-makers.



Systemic Barriers to Change.

There are many levels of systemic barriers that permeate government, school systems, curriculum, and bureaucracy of all kinds. Barriers affecting 21st century literacy are the typical resisters to change: 21st century literacy is not well understood; there is insufficient research to demonstrate that it is of value; for most institutions, there is no clear incentive to change. Certain aspects of the system of higher education in particular make change difficult. The current tenure process does not reward the kinds of activities that would help faculty become fluent. One of the biggest resisters is the same for virtually every kind of educational innovation that might come under consideration: institutionalized resistance to change. Adding to this, the research that has been done has not been widely read, even within the research community, and has not yet reached a mainstream audience.

A Global Imperative

Digital Natives. Young people who have grown up surrounded by the rapid development and expanding availability of personal technology are bringing their interest and experience in 21st century literacy skills with them wherever they go. These digital natives expect to be able to speak the language of 21st century literacy, and to be understood when they do, not only among their peers but also at home, at school, and at work. Digital natives are pushing change by using and modeling skills in 21st century literacy, and by expecting their teachers and role models to use and model those skills as well.

Erosion of Arts in Schools. Within the realm of education, the narrow definition of traditional literacy inhibits change. Emphasis on math and science and the traditional “three R’s” (reading, writing, and arithmetic) coupled with concern over student performance leave little room for “extras,” as visual and media arts are often perceived to be. A failure on the part of policymakers to understand media and the arts compounds the problem.



The lack of critical process around teaching and evaluating new forms of literacy, like visual and media literacy, and the erosion of arts education programs also contribute as resistors. Just as these skills are becoming most important, they are vanishing from schools. Research in the area is not widely available nor supported with funding, making it difficult to establish a case for including 21st century literacy skills in curriculum design.

The Internet. The Internet is a strong enabler, not only as a source of information and training, but also as a means for connecting people and enabling communication. Peer support for teachers and students is available in online communities. Re-

search can be disseminated, models and examples can be made available, and tools can be distributed over the Internet. In its capacity as an inexpensive delivery system that allows self-publishing and easy distribution of created work, the Internet has begun to call into question established business practices that have traditionally governed the media.

For example, the music industry has traditionally operated with a model of artists and studios, where the production and distribution of albums was a carefully controlled process. However, iTunes and other music-on-demand services now allow for the purchase of a single song, in digital format, quickly and easily over the Internet. Artists can produce and distribute their own work using digital audio equipment and a website. These changes are not limited to music; similar trends can be seen with print media — books, comics, magazines and newsletters — and with videos and movies. The line between media consumer and media producer has blurred considerably.

As noted earlier, these seven enablers and barriers do not constitute an exhaustive list, but rather illustrate the complexity of the environment surrounding any discussion of 21st century literacy. Through this deep dive, participants gained a solid perspective on a range of drivers and challenges that will likely affect moving the dialog about 21st century literacy and its associated skills to the mainstream.

The obvious next step in the discussions was to zero in on those aspects of the environment that could be influenced, those that could be maximized, and those that could be constrained. What must be accomplished at the strategic level to bring 21st century literacy into mainstream thinking? To answer this question, using the work of the Deep Dives as context, participants gathered at the end of the first day as a committee of the whole to generate a list of potential strategic priorities.

Creating Change: The Strategic Priorities

The group recognized that realizing the vision that brought them together would require coordinated action, and that prioritizing what needed to be done would be of utmost importance. All agreed that the call to action that was being created needed to be high-level and strategic in nature. Two criteria were developed to ensure that the priorities identified were indeed strategic. The first was that a strategic priority speak to an issue or need that was so critical it must be addressed if the notion of 21st century literacy was to move into mainstream thinking. The second was that it must be of a high enough level that it would involve three or more of the sectors focused on in the deep dives — Policy, Research, Media and the Arts, K-12 Education, and Higher Education.

As the initial list was generated, it became clear that many of the suggested priorities were strongly related. These relationships were captured visually. To ensure that all perspectives were captured, the group did this work collectively. As the closing activity of the first day, these draft priorities were rank-ordered using a dot-voting process. The list was revisited as the first activity on the closing day, and nuances and additional interrelationships among the priorities were voiced and noted.

Following the summit, this extensive list of priorities was further analyzed and refined. Using an affinity process and the criteria established that defined what we meant by a strategic priority as tools, that list became the five strategic priorities that constitute the primary outcome of the 21st Century Literacy Summit.

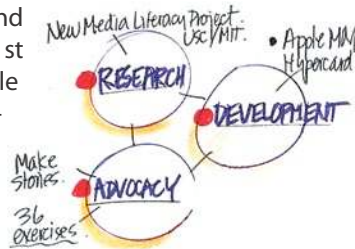
Together, these priorities serve as a road map that will help us meet the imperative that is the focus of this monograph — to seize this emerging opportunity, understand this new literacy, and do

all we can to encourage, stimulate, model, and use 21st century literacy skills and methods.

Develop a strategic research agenda. Critical to advancement is a research plan that maps the current state of the field, captures and disseminates best practices and effective models, and provides for ongoing research into emergent practice. The results of such research will feed into the other four strategic priorities, both now and in the future, providing a solid foundation for continuing work in the field.

Raise awareness and visibility of the field. The ideas that brought the participants at the summit together are so new, a significant challenge is to help people understand what is meant by 21st century literacy. While the concepts underlying 21st century literacy are informed by work in media literacy, semiotics, iconography, visual cognition, the arts, and other well-established fields, they emerged so recently that there is not a body of literature or theory in place yet that can provide adequate definitions, taxonomies, or ontologies. It is critical that professional organizations and educational associations be involved, to help disseminate models and ideas and to encourage the development of communities of practice. Journals and clearing houses are needed to help disseminate research, and conferences to bring together people working in this arena.

Empower teachers with 21st century literacy skills. The first step in this direction is to design new forms of assessment that can be used to measure and evaluate these skills. Standards must



Voices of Children

Exploring Childhood and Culture through Visual Literacy

Ian Brown

Voices of Children serves as a foundation for initiating and sustaining on-going research into cross-cultural visual literacy and narrative studies. Children from five different countries — Australia, Thailand, Malaysia, Hong Kong and USA — will document their experiences by creating images of their everyday lives through the photographs they take and through the words they attach to them.

This project involves the development of a traveling photographic exhibition by drawing on the images that children from the five countries have constructed. Five different cultural perspectives will be depicted through the use of photographic images and words generated by children from 8 to 14 years of age. The children will use disposable cameras to capture images of their everyday experiences; selected photographs will then be manipulated with Photoshop and converted to displays suitable for public exhibition. These images and the words that the children have used to describe them will combine to provide narrative accounts that allow an exploration of personal cultural representations.

Voices of Children encompasses the notion of the importance of the multi-literate learner in the 21st Century. This innovative project will provide a showcase for cross-cultural visual studies as well as a platform for collaborative research among the five institutions involved (they are the University of Wollongong, Australia; City University, Hong Kong; Assumption University, Thailand; Northern Illinois University, USA; and the Universiti Sains, Malaysia). It will also encourage the development of industry-linked partnerships and lay the foundation for future research.

To learn more about the Voices of Children project, contact Ian Brown (Ian_Brown@uow.edu.au).

include literacy in this new language, and special credentials or certification offered to teachers interested in specializing in it. Professional development across the board is critical if teachers are to teach with, evaluate the products of, and understand the possibilities opened by 21st century literacy.

Make tools for creating and experiencing new media broadly available. Access to tools that empower expression in these new forms must be as ubiquitous as word processing software or spreadsheets. In schools, tools for creating new media should be available as early as possible, even in primary grades, and more advanced tools provided as students progress and gain facility using them. Affordability and scalability will be of utmost importance to school systems, and users will want standard digital formats so that their work can be portable.

Work as a community. The clear message throughout the summit was that the simple act of bringing players together from all the critical sectors was a powerful impetus for change. The chance to develop a common language with which to talk about 21st century literacy, to articulate a shared vision, and to examine challenges from multiple perspectives allowed the participants to see the landscape in its entirety. Effecting change will take an equally diverse effort, and cross-sector collaboration will be key. If the knowledge and skills of those who are already involved in 21st century literacy in every sector can be focused and brought to bear on implementing this change, all will benefit from the collective body of work. Bringing policymakers together with researchers, leading-edge educators together with professional media-makers will yield many benefits, not the least of which will be new opportunities for research, experimentation, learning, and professional development.

Strategic Priorities

Strategic Priority	Enablers/Barriers Addressed		Sectors Involved*				
			P	R	M/A	K12	HE
I. Develop a Strategic Research Agenda	Policy	Systemic Barriers to Change					
	Digital Natives Internet	Erosion of Arts in Schools					
II. Raise Awareness & Visibility of the Field	Digital Natives	Systemic Barriers to Change					
	Internet	Erosion of Arts in Schools					
III. Make Tools for Creating & Experiencing New Media Broadly Available	Tools, Standards, Licensing & Pricing	Intellectual Property & Business Practices					
IV. Empower Teachers with 21st Century Literacy Skills	Policy	Systemic Barriers to Change					
	Digital Natives Internet	Erosion of Arts in Schools					
V. Work as a Community	Digital Natives	Systemic Barriers to Change					
	Internet	Erosion of Arts in Schools					

* P= Policymakers; R= Researchers; M/A=Media & Artists; K12=K-12 Educators; HE=Higher Educators

A Global Imperative

None of these strategic priorities is sufficient on its own. All must be pursued in concert, across multiple sectors, if change is to be effected and 21st century literacy brought into the mainstream. Strong relationships between the priorities mean that activities can easily be interwoven among them; changing teacher certification programs to include 21st century literacy skills, for example, would fuel progress toward empowering teachers with these skills. Providing broad access to high-quality tools would further that effort.

As important as strategic priorities were considered by the group, real action steps were seen as even more critical, as they could provide a growing set of milestones to mark progress. After a day and a night of dialog, the participants turned their attention to their final task, and the ultimate outcome of the summit — laying out a set of actionable recommendations that pursued within sectors, could begin to significantly address these strategic priorities.

A Call to Action

The Recommendations of the 21st Century Literacy Summit

Early in its deliberations, the summit participants recognized and articulated an urgent need to encourage and use 21st century literacy skills and methods as a key strategy to help young people in schools and universities worldwide be better and more effective communicators in an increasingly global environment. This call to action, and the specific recommendations it contains, were crafted as critical first steps toward addressing that need.



Surrounded by the visual records of all their work — the deep dives, the discussions of strategic priorities, and all that accompanied them — the participants again

broke into sector-focused groups to think about how the strategic priorities might be addressed within their own sector, with specific consideration given to each sector's unique challenges.

Each of the five groups generated a list of recommendations — action steps — which were then shared with all the summit participants and captured visually as before. After the summit, these recommendations, a list of some 64 sector-specific suggestions, were further analyzed, refined, and compiled into the list presented here.

Strategic Priority: Develop a Strategic Research Agenda

Recommendations for Action:

- Enact policies to encourage and support research
- Map the field/understand emerging practice
- Understand emerging forms of communication and related behaviors

- Craft new definitions and taxonomies
- Establish clearinghouses for new models and research

It is critical to understand the new forms of communication embedded in 21st century literacy in order to design effective curricula to teach it. Researchers must map the field, identify new research questions, and promote understanding of emerging practice. To enable this, policymakers in government, education, and certification agencies must work to pass legislation that supports research into 21st century literacy. Professionals in media and the arts can contribute to the expanding body of knowledge by continuing to experiment, explore, and create using new forms.

Strategic Priority: Raise Awareness & Visibility of the Field

Recommendations for Action:

- Enlist professional organizations and educational associations
- Disseminate models and ideas broadly
- Stimulate and draw on communities of practice
- Incorporate 21st century literacy skills into teacher certification programs
- Build recognition programs that will surface innovation and replicable models

The concepts behind 21st century literacy are new and will require the support of professional associations in all sectors to effectively disseminate them. These organizations can convene conversations and dialogs of all sorts, encourage the publication of papers and research, sponsor professional journals, and convene conferences on the topic. Existing communities of practice should be encouraged to share work and developments in the field, and to highlight successful models and practices.

Inside Plato's Cave

A Course for Elementary and Secondary Media Education Teachers

Carolyn Wilson

Media education is a mandated part of the curriculum across Canada at both the elementary and secondary levels. Media Literacy programs offer students the opportunity to analyze and produce a variety of print and electronic media texts and develop a critical understanding of the roles that media and technology play in their lives.

Increasingly, educators and administrators are becoming aware that students who do not possess media literacy skills are significantly disadvantaged in contemporary society. While this increased level of awareness is important, one of the greatest challenges currently faced in Canada is in teacher education. "Inside Plato's Cave," an online course for teachers, is being produced by the Jesuit Communication Project and Face to Face Media, in collaboration with educators from across Canada, in an effort to address the need for teacher training.

The goals of the Inside Plato's Cave curriculum are twofold: to prepare teachers to teach media education in the elementary and secondary classroom by providing both a solid theoretical basis and direct and practical strategies for working with students in the classroom; and to identify those teachers taking the course who have the ability to become "multipliers" — that is, to teach other teachers within their own school district/board — and to give them some direction in this area.

Inside Plato's Cave is to be delivered in three stages. First, a five-day institute taught in a number of cities across Canada during the summer of 2006 will serve as a general introduction to media education and to the online course. The course itself will be offered twice — once in the fall of 2006 and once in the winter/spring of 2007. Finally, a five-day wrap-up institute will be offered during the summer of 2007.

The curriculum will be designed so as to meet the prescribed learning outcomes, development competencies and core knowledge statements of the various provincial documents on media literacy. It will take into account both national and regional requirements and provide opportunities to adapt to local circumstances. While the course has been designed to meet the needs of Canadian teachers, the developers strongly believe that the content and methodology will be useful for any educator interested in media education.

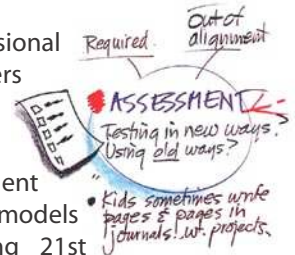
To learn more about *Inside Plato's Cave*, contact Carolyn Wilson (carolyn_wilson@hpcdsb.edu.on.ca).

As these models develop, recognition and award programs will provide validity to the work for practitioners and help communicate the value of these skills to educators, policymakers, parents, and other stakeholders. Professionals in media and the arts can stress the importance of 21st century literacy skills and encourage participation by offering high-profile awards for student and amateur digital works.

Strategic Priority: Empower Teachers with 21st Century Literacy Skills

Recommendations for Action:

- Design new forms of assessing these skills
- Change standards to reflect the value of 21st century literacy
- Design and offer professional development for teachers
- Develop new teacher certification programs



As research into emergent practice uncovers effective models for applying and teaching 21st century literacy, new forms of assessment for these skills must be developed, and then incorporated into teacher certification. Curriculum standards should reflect the importance of fluency in 21st century literacy wherever appropriate. All of these are precursors for continuing professional development to support understanding of 21st century literacy among teachers.

Strategic Priority: Make Tools for Creating and Experiencing New Media Broadly Available

Recommendations for Action:

- Make solutions scalable
- Make the broad use of sophisticated tools affordable for educational institutions
- Provide professionally designed curricula, professional development, and training
- Ensure tools and file formats work across platforms and are interoperable

A Call to Action

The Recommendations of the 21st Century Literacy Summit

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- Ensure tools and file formats work across platforms and are interoperable

Strategic Priority: Work as a Community

Recommendations for Action:

- Leverage the interest and skills of those already involved in 21st century literacy
- Build linkages among experts in the field
- Encourage the involvement of professional organizations
- Forge creative new partnerships

Jacob Burns Film Center

Steve Apkon

Located in Pleasantville, NY, the Jacob Burns Film Center is dedicated to presenting the best of independent, documentary, and world cinema; promoting visual literacy; and making film a vibrant part of the community. The Burns Film Center's education programs aim to provide students with the skills necessary to thrive in a world increasingly dominated by the visual image.

The Burns Film Center's education programs emphasize the power of story and encourage students to examine their own lives, helping them grow into active, empathetic world citizens. Conceptually, the curricula of the programs focus on using film to teach visual literacy and improve students' traditional literacy skills of reading, writing, speaking, and listening. Practically, they are grounded in the underlying belief that students learn most effectively through engaging in activities that use as many senses as possible. In four years, 16,000 students ages 8 to 18 have participated these programs:

See Hear Feel Film is a writing-based visual literacy program that teaches third grade students critical viewing skills and the techniques of telling a story through film. Participants view short movies from around the world and participate in writing exercises based on creative collaboration and deep listening. This program provides a strong foundation for *Animation: Minds in Motion!*, an animator-in-residence program giving fourth grade students the opportunity to explore the world of animation by collaboratively writing, storyboarding, directing, and filming their own original short animated films. The 12-week program culminates in a red-carpet premiere of the films at the JBFC for the students and their friends and family that is a profound experience for the young filmmakers.

In *Cinemanía*, middle school students explore through film the experience of childhood in all corners of the globe. This thirty-week after-school program includes movie screenings, interactive discussions, and opportunities to read and write film reviews. *Classroom to Screening Room* is an opportunity for middle and high school students to watch films that enhance their study of literature, social studies, science, foreign languages, and the visual and performing arts. In the transformative, intergenerational program *Unscripted*, high school students learn about the craft of documentary and visual storytelling as they each create an original film about a senior citizen living in their community. The process includes writing a treatment, interviewing, filming and editing and studying the art of the documentary genre.

To learn more about the Jacob Burns Film Center, visit www.burnsfilmcenter.org.

One of the keys to the broad scale embracement of 21st century literacy is that the tools needed to create graphics, images, video and other rich media be as widely available as possible — ideally part of the standard toolset on computers. These tools must interoperate and be scalable, so that not only adults and high schoolers have easy access, but even very young children can begin to use them. File formats should make it easy for work to be portable. For colleges, universities and schools, affordable site licensing will be critical, as will access to professionally designed curricula, professional development, and training.

Strategic Priority: Work as a Community

Recommendations for Action:

- Leverage the interest and skills of those already involved in 21st century literacy
- Build linkages among experts in the field
- Encourage the involvement of professional organizations
- Forge new partnerships (e.g., business/schools — university/parents — university/youth)

The key to success in this effort will be the degree to which work can be coordinated across sectors. The greatest progress will be made by leveraging the knowledge and skills of those who are already working in 21st century literacy and unifying the efforts of all stakeholders. New connections formed between parties who have traditionally not worked extensively together — students with professionals in media and the arts, for instance — will build bridges that will serve to open new paths for learning and self-expression. Professional organizations have an especially valuable role to play in the development of a sense of community, and in providing structure for sharing knowledge and ideas.

Reflections and Conclusions

Even with the extensive visual record, the video, and all the notes captured during the 21st Century Literacy Summit, it has proven very difficult to convey the energy and enthusiasm of the participants in this short monograph. Throughout the day and a half of discussions, the sense that we were engaged in something of great consequence was palpable, and the attendees embraced the opportunity fully. The discussions were rich and animated, and ideas flowed back and forth easily. Many new partnerships and projects were born in the sidebar discussions, and some of these are sure to produce profound impacts. In the closing moments of the meeting, we took time to talk about next steps, and seeing the depth and range of projects that were planned or already underway created considerable excitement among an already energized group.

The work is just beginning, to be sure, and the challenges are great. Some of the barriers that must be faced, particularly the lack of understanding around this emerging language, and the resistance endemic to any large scale change will require sustained and concerted effort before significant progress can be realized. The wheels of policy change turn slowly, and discussions of standards and certification more often revolve around political rather than research questions. There are many conversations yet to take place, and many questions that will need to be answered.

At the same time, the promise is great, and the effort worthwhile. If we can understand this new literacy, encourage, stimulate and model it, we can put its expressive power to use for learning. The leaders that gathered in San Jose recognized that we are on the cusp of a great opportunity, one that is unfolding in countries around the globe. The stories they told of digital natives from Japan, the United States, Europe, Australia, and the United Kingdom were remarkably similar. These young people already are speaking this new language.

They are already communicating in ways that extend and even transcend text.

Our imperative is to quickly

understand this new literacy, encourage, stimulate and model it, and bring 21st century literacy skills and methods to the forefront — and there is much to be done. The Call to Action and strategic priorities that emerged from the summit represent a solid roadmap, realistic and achievable — and the best thinking of researchers, educators, policy makers, and artists from around the world on how to do meet this imperative. The challenge now is to put these ideas in front of leaders and policy makers in countries around the globe, use them to generate further discussion and dialog, and as an impetus for creative ideas and approaches.



A Global Imperative



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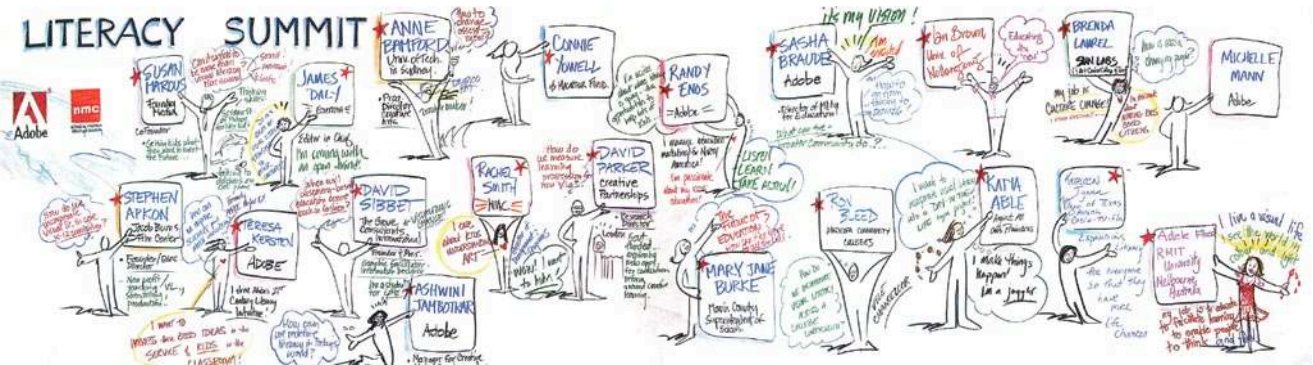
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