

Understanding Digital Literacies

A practical introduction

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Mediated Me

It's hard to think of anything we do nowadays, from working on projects for work or school to socializing with friends, that is not somehow mediated through digital technologies. It's not just that we're doing 'old things' in 'new ways'. Digital technologies are actually introducing new things for us to do like **blogging, mashing, modding** and **memeing**. Many of the practices that we will be discussing in this book simply didn't exist just a few years ago.

These new practices require from people new abilities and skills, new ways of thinking, and new methods of managing their relationships with others. Some examples of these include:

- The ability to quickly search through and evaluate great masses of information.
- The ability to create coherent reading pathways through complex collections of linked texts.
- The ability to quickly make connections between widely disparate ideas and domains of experience.
- The ability to shoot and edit digital photos and video.
- The ability to create multimodal documents that combine words, graphics, video and audio.
- The ability to create and maintain dynamic online profiles and manage large and complex online social networks.
- The ability to explore and navigate online worlds and to interact in virtual environments.
- The ability to protect one's personal data from being misused by others.

Many people just pick up these abilities along the way by surfing the web, playing online games and posting to **blogs** and **social networking sites**. But people are not always very conscious of how these practices change not just the way they communicate but also 'who they can be' and the kinds of relationships they can have with others.

The purpose of this book is not just to help you become 'better' at mastering these and other 'literacies' associated with digital technology, but also to help you understand how they are affecting the way you make meanings, the way you relate to others, the kinds of social identities you can enact, and even the way you think. We believe that the best way to become more competent users of technologies is to become more critical and reflective about how we use them in our everyday lives, the kinds of things that they allow us to do, and the kinds of things they don't allow us to do.

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This book is not just about computers, mobile phones, the internet and other technologies people associate with the 'new **media**' (many of which are not so 'new' anymore). It's about the process of **mediation** itself, the age-old human practice of using tools to take action in the world. In this introductory chapter we will explain the concept of mediation and how it relates to the definition of 'digital literacies', which we will be developing throughout this book. We will also give a brief outline of the structure of the book and the special features we've included for students and teachers.

MEDIATION

A **medium** is something that stands in between two things or people and facilitates interaction between them. Usually when we think of 'mediated interaction' we think of things like 'computer-mediated communication' or messages delivered via 'mass *media*' like television, radio or newspapers. But the fact is, all interaction – and indeed all human action – is in some way *mediated*.

This was the insight of the Russian psychologist Lev Vygotsky, who spent his life observing how children learn. All learning, he realized, involves learning how to use some kind of tool that facilitates interaction between the child and the thing or person he or she is interacting with. To learn to eat, you have to learn to use a spoon or a fork or chopsticks, which come between you and the food and facilitate the action of eating. To learn to read, you have to learn to use language and objects like books that come between you and other people and facilitate the action of communication.

These **cultural tools** that mediate our actions are of many types. Some are physical objects like spoons, and books and television sets. Some are more abstract 'codes' or 'systems of meaning' such as languages, counting systems and algorithms. The ability to use such tools, according to Vygotsky, is the hallmark of human consciousness. All higher mental processes, he said, depend upon mediation. You cannot act alone. In order to do anything or mean anything or have any kind of relationship with anyone else, you need to use tools. In a sense, the definition of a person is a human being *plus* the tools that are available for that human being to interact with the world.

These tools that we use to mediate between ourselves and the world can be thought of as *extensions* of ourselves. In fact, the famous Canadian media scholar Marshall McLuhan called media 'the extensions of man'. He didn't just mean things that we traditionally think of as media like television and newspapers, but also things like light bulbs, cars, and human language, in short all **mediational means** which facilitate action. The spoon we use to eat with is an extension of our hand. Microscopes and telescopes are extensions of our eyes. Microphones are extensions of our voices. Cars and trains and busses might be considered extensions of our feet, and computers might be considered extensions of our brains (though, as we will show in the rest of this book, the ways computers and the internet extend our capabilities goes far beyond things like memory and cognition).

The point that both Vygotsky and McLuhan were trying to make was not just that cultural tools allow us to do new things, but that they come to define us in some very basic ways. They usually don't just affect our ability to do a particular task. They also affect the way we relate to others, the way we communicate and the way we think. As McLuhan puts it: 'Any extension, whether of skin, hand, or foot, affects the whole psychic and social complex'. Cars, trains and busses, for example, don't just allow us to move around faster; they fundamentally

change the way we experience and think about space and time, fundamentally change the kinds of relationships we can have with people who live far away from us, and fundamentally change the kinds of societies we can build. A light bulb does not just allow us to see at night. It fundamentally changes our experience of circadian rhythms and creates whole new environments for social interaction that did not exist before. A microphone doesn't just make my voice louder. It gives me the ability to communicate to a large number of people at one time, thus changing the kind relationship I can have with those other people and the kinds of messages I can communicate to them.

On one hand, these tools *enable* us to do new things, think in new ways, express new kinds of meanings, establish new kinds of relationships and *be* new kinds of people. On the other hand, they also *prevent* us from doing other things, of thinking in other ways, of having other kinds of relationships and of being other kinds of people. In other words, all tools bring with them different kinds of **affordances** and **constraints**. The way McLuhan puts it, while new technologies *extend* certain parts of us, they *amputate* other parts. For example, while a microphone allows me to talk to a large number of people at one time, it makes it more difficult for me to talk to just one of those people privately. While a train makes it easier for me to quickly go from one place to another, it makes it more difficult for me to stop along the way and chat with the people I pass.

Case study 1: The wristwatch

Before mobile telephones with built-in digital timekeepers became so pervasive, few technologies seemed more like 'extensions' of our bodies than wristwatches. For most people, having a watch on their wrist and referring to it throughout the day was and still is totally natural. In some ways, we even think of watches as part of our minds. Consider the following conversation:

A: "Excuse me, do you know what time it is?"

B: "Sure".

(looks at his watch)

"It's 4:15".

In his book *Natural Born Cyborgs*, Andy Clark points to conversations like this as evidence that we consider tools like watches not as separate objects, but as part of ourselves. When B in this conversation says 'sure' in response to the question about whether or not he knows the time, he does so *before* he looks at his watch. In other words, just having the watch on his wrist makes him feel like he 'knows' the time, and looking at the watch to retrieve the time is not very different from retrieving a fact from his mind.

Before the sixteenth century, timepieces were much too large to carry around because they depended on pendulums and other heavy mechanical workings. Even domestic clocks were rare at that time. Most people depended on the church tower and other public clocks in order to know the time.

This all changed with the invention of the *mainspring*, a coiled piece of metal which, after being wound tightly, unwinds, moving the hands of the timepiece. This small invention made it possible for the first time for 'time' to be 'portable'. In the seventeenth century pocket watches became popular among the rich. Most people, though, continued to rely on public clocks, mostly because there was no need for them to be constantly aware of the time.

It wasn't until the beginning of the twentieth century that watches became popular accessories for normal people to wear on their wrists. In the beginning, wristwatches were fashion accessories worn only by women. There are a number of stories about how wristwatches came to be more commonly used. One involves Brazilian aviator Alberto Santos-Dumont, who in 1904 complained that it was difficult to fly his plane while looking at his pocket watch. So his friend, Louis Cartier, developed a watch that he could wear on his wrist, which eventually became the first commercially produced men's wristwatch. According to another account, during World War One (WWI) soldiers strapped their watches to their wrists in order to enable them to coordinate their actions in battle while leaving their hands free to carry their weapons and engage in combat. These early wristwatches were known as 'trench-watches' after the trenches of WWI.

These two examples demonstrate the new affordances introduced by the simple technology of strapping a watch to one's wrist. It allowed soldiers and aviators to do things they were unable to do before, that is, to keep track of time while fighting or flying their planes. Some might even argue that these new affordances contributed to changes in the nature of battle as well as the development of modern aviation.

This ability to 'carry the time around' also introduced new possibilities in the business and commercial worlds. The development of railroads as well as the 'scientific management' of the assembly line factories of the early twentieth century both depended on people's ability to keep close track of the time.

Of course, these developments also changed people's relationships with one another. Human interaction became more and more a matter of scheduled meetings rather than chance encounters. People were expected to be in a certain place at a certain time. The notions of being 'on time' and 'running late' became much more important.

Along with these changes in relationships came changes in the way people thought about time. Time became something abstract, less a function of nature (the rising and setting of the sun) and more a function of what people's watches said. When people wanted to know when to eat, they didn't consult their stomachs, they consulted their wrists. Time became something that could be divided up and parcelled out. Part of managing the self was being able to manage time. Time became like money. Finally, time became something that one was meant to be constantly aware of. One of the worst things that could happen to someone was to 'lose track of time'.

With the development of electronic watches, portable timepieces became accurate to the tenth or even the hundredth of a second. This new accuracy further changed how people thought about how time could be divided up. Before the 1960s, the second was the smallest measurement of time most normal people could even conceive of.

Ever since the development of pocket watches, timepieces have always had a role in communicating social identity and status. After wristwatches became popular, however, this role became even more pronounced. Many people regard watches as symbols of wealth, status, taste or personality. It makes a big difference to us whether or not someone is wearing a Rolex or a Casio. In fact, with the ubiquity of time on computer screens, mobile phones and other devices, the timekeeping function of wristwatches is becoming less important than their function as markers of social identity and status.

Of course, the obvious question is whether it was the development of the wristwatch that brought on all of these social and psychological changes, or the social and psychological changes that brought on the development of the wristwatch. Our answer is: both. Human beings are continually creating and adapting cultural tools to meet the needs of new material or social circumstances or new psychological needs. These tools, in turn, end up changing the material and social circumstances in which they are used as well as the psychological needs of those who use them.

AFFORDANCES AND CONSTRAINTS

As you can see from Case study 1, the cultural tools that we use in our daily lives often involve complicated combinations of affordances and constraints, and understanding how people learn to manage these affordances and constraints is one of the main themes of this book. Throughout we will be examining the ways different kinds of mediational means make different kinds of actions, meanings, social relationships, ways of thinking and social identities either easier or more difficult.

We can divide the different affordances and constraints media introduce into five different kinds: affordances and constraints on what we can *do*, what we can *mean*, how we can *relate* to others, how or what we can *think*, and, finally, who we can *be*.

Doing

Perhaps the most obvious thing we can say about cultural tools is that they allow us to *do* things in the physical world that we would not be able to do without them. Hammers allow us to drive in nails. Telephones allow us to talk to people who are far away. Just as importantly, they allow us to *not* do certain things. Text messages, for example, allow us to get a message across to someone immediately without having to call them (see Chapter 5).

Some of the things that people do with technology are of earth shattering importance, things like landing on the moon or mapping the human genome. However, most of the

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things these tools allow us to do are pretty mundane like sharing photos with friends, using a search engine to find a place to eat, or acquiring the 'magical power' that we need to reach the next level in an online game. It is these small, everyday actions that we will be most concerned with in this book. These are the actions that are at the heart of everyday literacy practices and ultimately it is these everyday practices that form the foundation for greater achievements like moon landings and genome mappings.

Sometimes when individuals are given new abilities to perform small, everyday actions, this can have an unexpectedly large effect on whole societies and cultures. As we saw above, for example, the ability to keep track of time using a wristwatch was an important factor in the development of other kinds of technologies like airplanes, train schedules, and assembly lines. Similarly, your ability to share random thoughts with your friends on Facebook is having an enormous effect on life beyond your social network in realms like politics and economics.

Meaning

Not only do media allow us to do different kinds of things, they also allow us to make different kinds of meanings that we would not be able to make without them. The classic example is the way television has changed how people are able to communicate about what is happening in the world. Reporting on a news event in print allows the writer to tell us what happened, but reporting on it through a television news broadcast allows the reporter to *show* us what happened and to make us feel like we are there.

The lines of print in a book allow us to make meaning in a linear way based on time – first we say one thing, then we add something else to that. Multimodal web pages and hypertext, on the other hand, allow us to make meaning in a more spatial way, inviting people to explore different parts of the screen and different linked web pages in any order they wish (see Chapters 3 and 4).

Media also affect meaning by changing the vocabulary we use to talk about everyday actions. A few years ago, for example, 'friend' was a noun meaning a person that you are close with. Now, however, 'friend' is also a verb meaning to add someone on a social networking site. In fact, about 25,000 new words are added to the *Oxford English Dictionary* every year, most of them the result of new meanings related to new technologies.

Relating

Different media also allow us to create different kinds of relationships with the people with whom we are interacting. One way is by making possible different kinds of arrangements for participation in the interaction. Does the interaction involve just two people or many people? What roles and rights do different kinds of people have in the interaction? What kinds of channels of communication are made possible: one-to-one, one-to-many, or many-to-many?

A book, for example, usually allows a single author to communicate with many readers, but he or she can usually only communicate to them in relative isolation. In other words, most people read books alone. They may talk with other people who have read or are reading the

same book, but usually not as they are reading. Also, they normally cannot talk back to the writer as they are reading, though, if the writer is still alive, they might write a letter telling him or her what they thought of the book. The chances of readers actually having a conversation with the author of a book are slim.

A blog, on the other hand, creates very different patterns of participation. First, it allows readers to talk back to writers, to ask for clarification or dispute what the writer has said or contribute their own ideas. Writers can also update what they have said in response to readers' comments. Readers of blogs can also comment on the comments of other readers, that is, readers can talk to one another as they are reading.

The internet, with its chat rooms, forums, social networking sites, social bookmarking sites and other interactive features has introduced all sorts of new ways for people to participate in social life, and people can experience all sorts of new kinds of relationships. They can '**lurk**' in various **online communities** or become active members. They can 'friend' people, 'poke' people, 'spam' people and create many kinds of different 'social gatherings' that did not exist before the development of digital media.

In his famous essay, 'The Relationship Revolution', Michael Schrage (2001) claims that to say the internet 'is about "information" is a bit like saying that "cooking" is about oven temperatures – it's technically accurate but fundamentally untrue'. The real revolution that the internet has brought, he says, is not an 'information revolution' but rather a 'relationship revolution'.

Other than making possible different kinds of social arrangements for participants, media also have an effect on two very important aspects of relationships: power and distance. Technologies can make some people more powerful than others or they can erase power differences between people. For example, if I have a microphone and you don't, then I have greater power to make my voice heard than you do. Similarly, if I have the ability to publish my views and you don't, then I have greater power to get my opinions noticed than you do. One way the internet has changed the power relations among people is to give everyone the power to publish their ideas and disseminate them to millions of people. This is not to say that the internet has made everyone's ideas equal. It's just that more people have the opportunity to get their ideas noticed.

Finally, when our relationships are mediated through technology sometimes they can make us feel closer, and sometimes they can make us feel more distant from each other. When text-based computer chat and email were first developed, lots of people thought that it would be harder for people to develop close relationships through these media since people couldn't see each other's faces. As it turned out, chat rooms and **instant messaging** programs like MSN messenger seemed to facilitate interpersonal communication, self-disclosure and intimacy rather than hinder it. These programs are now used much more for maintaining interpersonal relationships than they are for instrumental purposes (see Chapter 5).

Thinking

Perhaps the most compelling and, for many people, the most worrying thing about technologies is that they have the capacity to change the way we experience and think about reality. If our experience of the world is always mediated through tools, what we experience will also be affected by the affordances and constraints of these tools. Certain things about the

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world will be amplified or magnified, and other things will be diminished or hidden from us altogether.

One of the first to express this very important insight was the communications scholar Harold Innis (1951/1964). Innis said that each medium has a built-in **bias**, which transforms information and organizes knowledge in a particular way. The two most important ways media affect our experience of reality is the way they organize time and space. Some media make information more portable, making it easier to transport or broadcast over long distances. Some media also make information more durable, that is, they make it easier to preserve information over long stretches of time.

Others have taken this idea even further. The philosopher and literary critic Walter Ong (1982/1996), for example, says that the medium of written language didn't just make it easier for us to preserve our ideas and transport them over long distances to a large number of people, but also changed the way human beings could think. In oral cultures, he argues, because so much had to be committed to memory, human thought tended to focus more on concrete and immediate concerns and to package ideas in rather fixed and formulaic ways. The invention of writing, partly because it freed up people's memories, allowed them to develop more abstract and analytical ways of thinking and, according to Ong, made possible the development of things like history, philosophy and science.

Some people think that digital technologies are having similar dramatic effects on the way we think. The optimists among them see computers and the internet taking over routine mental tasks like calculations and acting as repositories for easily retrievable knowledge, freeing up the brain for more sophisticated tasks like forming creative new connections between different kinds of knowledge. Pessimists, on the other hand, see digital technology taking away our ability to concentrate and to think deeply, weakening our ability to remember things for ourselves and to evaluate knowledge critically (see Chapter 7).

Being

Finally, different technologies have affordances and constraints in terms of the kinds of people that we can be – that is, the kinds of social identities we can adopt – when we are using them. Certain kinds of social identities, of course, require that we have available to us certain kinds of technologies and that we know how to use them. If we want to convince others that we are carpenters, then we'd better have access to tools like hammers, saws, screwdrivers and the like and be able to demonstrate some skill in using them. Similarly, if we want to be doctors, we need to know how to use tools like stethoscopes and medical charts. In fact, some people would argue that nearly all social identities are a matter of having certain tools *available* to us and having *mastered* how to use these tools. We could also put this the other way around, that when we use certain kinds of tools we are implicitly *claiming* certain kinds of identities for ourselves. So when we walk into a lecture theatre and start speaking through the microphone at the podium, we are claiming for ourselves the identity of a professor, and imputing on those listening the identities of students.

Some tools, however, are not necessarily part of such specialized identities. Using a mobile phone, for example, is not something that is reserved for certain professions or social groups. Nevertheless, when you use your mobile phone you are still showing that you are a certain kind of person. For one thing, you are a person who can afford a mobile phone

(which not everybody can). *How* you use your mobile phone also communicates something about who you are. A boss, for example, might be able to answer his or her mobile phone during an important meeting, whereas a lower ranking employee might not be able to get away with this. Finally, you might be enacting a certain kind of social identity just by the kind of mobile phone you use. Are you carrying an iPhone or a Blackberry? Is it the latest model or one from two years ago?

Finally, different kinds of technologies can also help you to reveal certain parts of yourself and conceal other parts. The privacy settings on Facebook, for example, allow you to share information with some people in your social network while keeping it a secret from others. The sociologist Erving Goffman uses the metaphor of a play to talk about how we present ourselves to other people. Like actors, he says, we have different kinds of expressive equipment – costumes, props, and various staging technologies – which allow us to create a kind of illusion for our audience. This equipment allows us to reveal certain things to our audience and keep other things hidden. Sometimes we can even reveal some things to some members of the audience while keeping them hidden from others (see Chapter 10).

Activity 1.1: Affordances, constraints and social practices

A. AFFORDANCES AND CONSTRAINTS

Consider the different kinds of technologies listed below and discuss how they have affected:

1. The kinds of physical things people can *do* in particular situations;
2. The kinds of *meanings* people can express in particular situations;
3. The kinds of *relationships* that people can have in particular situations;
4. The kinds of thoughts people can *think* in particular situations;
5. The kinds of *social identities* people can assume in particular situations.

Traffic signals 'Smartcards' Digital cameras Cash registers PowerPoint

B. SOCIAL PRACTICES

Now consider these technologies as parts of wider social practices. What other technologies are they usually used together with and in what kinds of social situations? How do these other technologies and social situations affect what we do with these technologies?