

# Principles and Meta-Principles for Digital Media as an Academic Discipline

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### Abstract

Digital media, as an emerging academic discipline, has thus far been primarily focused on the “*how*” of making media – the principles of design and techniques of construction of interactive media systems and artifacts. The purpose of this paper is to present some concepts to frame our understanding of the impact of interactive media on individuals and communities. These propositions are intended to provide guidance and insight to Digital Media students, as they collect and create their personal collection of principles enroute to becoming media professionals.

### Introduction

**What is *Digital Media*, as an academic discipline?** The community of educators who say that they are working in digital media is diverse, and strongly overlaps with pre-existing academic disciplines such as art, animation, communications, computer science, film, television and music. Somewhere close to the center of mass of this group is a shared concern with interaction. So, for purposes of this paper, we decree that

***Digital Media is an academic discipline concerned with the development of new interactive media, and with the production of content for them.***

The archetype interactive medium is sometimes taken to be the Internet, though its role is perhaps better viewed as being a *substrate and generator* of new media such as the WorldWideWeb, e-mail, instant messaging, blogging, IP telephony, online role playing games, etc.

There are also those who would quibble about the word “interactive”, since people interact with every medium from oral storytelling through television. For the purposes of this paper, we define an *interactive medium* as one in which the user’s actions have some immediate and nontrivial effect on the content of the medium.

- Changing the channel on a TV set is a trivial degree of interaction.
- Calling into a talk-radio show is substantially interactive.

- Making a phone call, updating one's own website, participating in instant messaging, playing a game are highly interactive activities.

Ivan Illitch (1975) introduced the concept of *convivial media*. We interpret convivial media as denoting those media whose shared contents are produced by the users. The telephone is the classic example. The opposite concept is that of *centrist media*, wherein a small and remote group of people decide what everyone sees, reads or hears.

Not all interactive media are convivial; some systems such as single player computer games may be highly interactive; but the content created by the player is not shared. Digital Media needs principles and meta-principles that are relevant to both convivial and private forms of interactive media.

**Principles** are of several kinds. Three main kinds of principles are these:

- 1) A principle is a succinct explanation of how something works; (CONCEPT)  
as in: "Principles of the internal combustion engine."  
*compression, ignition, heat, power, etc.*
- 2) A principle is a moral statement about how an honorable life is lived.(VALUE)  
as in: "She was a person of principle."  
*honesty, compassion, self-discipline, craftsmanship, etc.*
- 3) A principle is a guideline or rule of thumb for successful action. (TOOL)  
e. g. "Quench the steel when it has cooled to the color of straw."  
or "A website's purpose is to provide information the user needs."

A large part of a professional education consists of teaching (by both exposition and example) a substantial collection of such principles, of all three kinds (and individual principles may fall into more than one of the above categories.) See, for example, the Principles of Journalism listed below, in this paper.

There exists as yet no equivalent canonical set of principles for Digital Media. The author believes that various collections of such principles are already being taught, and that consensus will begin to emerge during the current decade. These principles are embedded in a larger pool of general guidelines for success in academia and the world. For instance, I always teach new Digital Media students about Steven Covey's *Seven Habits of Highly Effective People* (Covey 1989), exemplifying them with media-related examples.

Some of these principles can only emerge (or even be formulated) when new media begin to be used. (Consider, for instance, e-mail etiquette.) This paper will not attempt to set forth a collection of such principles, except as examples. We're after bigger game.

**Principles and Communities.** A community is defined in part by the principles its members share. A community of thieves, for instance, has mutually agreed on a set of concepts, moral values and rules of thumb (a "skill-set", perhaps) that enable them to successfully steal and re-sell the property of others. As new media emerge, new

communities are created at all scales- from the small group of people playing a particular game together, to the worldwide users of eBay.

It is essential that our students understand how to identify and to shape the principles of the groups that they create or join, as they make new media. This leads us to the Key Idea of this paper.

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**KEY IDEA:**

**Everyone involved in the use and creation of new media should**

- **be consciously aware of the principles underling each medium**
- **actively nourish their own personal set of principles, and**
- **contribute to the growth of the community’s shared principles**

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And what kinds of tools shall we give our students, to pursue these lofty goals? This paper is about one kind of tool: the *meta-principle*.

**Meta-Principles** are the higher level principles available for use by those who are formulating basic principles (concepts, values and rules of thumb.) For instance, the Constitution of the United States contains a set of meta-principles that are used to generate the actual principles embedded in our laws.

What are the ‘constitutional issues’ for interactive media? We propose two groups of meta-principles to address this question.

**GROUP 1: About Individuals**

Meta-Principle 1: **Learning.** Everyone is learning, all the time. *How do I shape media to support learning?*

Meta-Principle 2: **Meta-Learning.** Each person should be aware of what they are learning, how they are learning it, and who is trying to teach them or influence their behavior. *How do I shape media to support meta-learning?*

Meta-Principle 3: **Teaching and Selling.** Each person should be conscious of what they are teaching others, and of what they are trying to convince others to believe or do. *As I design media, what do they teach and how do they convince?*

**GROUP 2: About Communities and Organizations**

Meta-Principle 4: **Commonality.** Communities originate around a common interest shared by the members. *How does this medium convene a community?*

Meta-Principle 5: **Sustainability**. A viable community or organization must be based on appropriate feedback loops. *How does this medium sustain its community of users?*

Meta-Principle 6: **Diversity**. A community benefits from activities that promote diverse, rich, long-term trusting relationships among its members. *How does this medium promote participation by people with a broad spectrum of styles, skills and interests?*

## Exploring the Meta-Principles

**Meta-Principle 1: Learning.** *Everyone is learning, all the time. How do I shape media to support learning?*

A user sits in front of a computer (or uses a cell phone, or any other media system) and does something... *and is changed by the experience*. That change is called *learning*.

What do we teach our students about learning? Not much. They need to know at least a few central concepts. Here are some samples.

- Learning is not primarily an intellectual activity; it is an emotional experience, sometimes supported by our intellect. How a user feels during an interaction is crucial to the significance the user imputes to the interaction, and to whether the user will repeat it.
- To build a skill, a user must move through and beyond cognitive understanding, and form habits. Much is known about how to make systems understandable, and how to provide affordances that create good habits.

**The Macintosh Example:** The Macintosh user interface, which was created by Jeff Raskin and others with inspiration from work at Xerox, and emulated by Microsoft Windows (Levy 1994) is built on a deep understanding of learning and habit formation. What are we doing to equip our students with the right skills, knowledge and understanding of learning to invent whatever comes after this 30-year old “desktop metaphor” for user interfaces?

For instance, many of today’s most popular media relate to stories. Do we teach our students anything like the following story-based learning principle?

- Everyone is building the “story of my life”, all the time. Everyone wants to be the hero in their own story. What does your medium provide that augments the user’s repertoire of ideas, self-image, role-models and problem-solving tools, so that their own story is richer, stronger and more interesting to others?

The reader can doubtless produce or identify other principles that tie learning to the making of better media.

**Meta-Principle 2: Meta-Learning.** *Each person should be aware of what they are learning, how they are learning it, and who is trying to teach them or influence their behavior. How do I shape media to support meta-learning?*

This meta-principle has two key outcomes. First, we want our students themselves to be conscious, lifelong learners. This is essential to the avoidance of obsolescence in the fast-moving world of new media. Second, we want our students to have in their “mental tool-kit” the concept of meta-learning. We want them to help their users, downstream, to understand and control where their information comes from.

**The eBay Example.** Consider the ‘reputation’ feature on eBay. This system allows buyers to post feedback about the seller’s quality of merchandise and service. Now, anyone who buys anything from a merchant, is always forming opinions about the quality of the service and merchandise; but it is seldom made into an explicit process by the supporting medium. The annoying little cardboard feedback forms we often are given at a sales counter, are expressly for the benefit of the merchant – not for the benefit of the next customer coming in the door.

eBay’s feedback system makes it totally clear to the buyer that he has a reliable source of meta-information. The primary information items in the auction transaction are product identity and quality, cost, payment method, and expected arrival date. The meta-information is *about* this first information. It tells how trustworthy it is. But the provision of this meta-information also affords the user with an opportunity for meta-learning! It makes explicit the fact that you, the user, have a new way to learn about people who want to sell you something.

eBay has, in effect, raised the bar for e-commerce. They have changed the way a medium works, by providing their users with an opportunity to *upgrade their ability to learn useful information*. We need to send our students (and ourselves) on a quest to find other blue-ribbon examples of media that support meta-learning.

**Meta-Principle 3: Teaching and Selling.** *Each person should be conscious of what they are teaching others, and of what they are trying to convince others to believe or do. As I design media, what do they teach and how do they convince?*

Young people often have two paradoxical attributes. They want to make a mark on the world, and simultaneously believe that they make no difference to the world. The point of this meta-principle is to help our students understand how every encounter with an interactive medium ultimately contributes to some other human’s repertoire of experiences. The individual’s impact on others can be viewed as some combination of (deliberate or accidental) *teaching* and *selling*; of informing or of convincing others.

**The Journalism Example.** For inspiration, let us consider a set of principles from the mature discipline of journalism. At the website *journalism.org*, we find these principles:

1. Journalism's first obligation is to the truth.

2. Its first loyalty is to citizens.
3. Its essence is a discipline of verification.
4. Its practitioners must maintain a distance from those they cover.
5. It must serve as an independent monitor of power.
6. It must provide a forum for public criticism and compromise.
7. It must strive to make the significant interesting and relevant.
8. It must keep the news comprehensive and proportional.
9. Its practitioners must be allowed to exercise their personal conscience.

Of these, # 7 is of most interest for present purposes. It says that a journalist is obliged to **“make the significant interesting and relevant”**. In other words, journalists should bring the public’s attention to “significant” events, people and ideas, and they should present them in ways that make them appear “interesting and relevant”. The journalist should work to evoke an active desire on the part of the reader (or television viewer, or radio listener) to learn about this significant event.

Now consider this sequence of actions on the part of an imaginary Digital Media student, as she moves through her academic career.

1. Selecting a DVD movie to rent.
2. Choosing a topic and writing a term paper.
3. Voluntarily writing an article and posting it on an Internet forum.
4. Carrying out a team project in a Digital Media class.
5. Joining a campus environmental activism group
6. Starting a small business with two friends.

In selecting the movie, students are almost entirely *receiving* the “sell job”; but even here, they are also providing information to the film’s distributors about which topics, actors, genres and styles interest them. Their actions produce data for others to use.

When selecting topics and writing term papers, the students’ task is to hone their skills at finding something significant to write about, and making it interesting and relevant to the hypothetical reader. Posting an online article represents the next step toward self-motivated creation-of-meaning. Now the student specifically wants to be heard, not just graded.

Working on team projects is perhaps the steepest part of most students’ learning curve, as they move toward a professional level of creative output. The student wants and needs to “sell” their ideas, to teach their colleagues what they know, and to make a significant contribution to the group’s work and product.

When the student joins an advocacy group or undertakes to start a small business, they have fully committed themselves to acquiring and using the twin skill-sets of selling and teaching. Not all go that far (I wish they did!), However, these skills and concepts should be made explicit in the curriculum, and taught to every aspiring media professional.

## **GROUP 2: Communities and Organizations**

This group of meta-principles grew out of a statement by environmental pioneer Aldo Leopold:

“A thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise.”

Aldo Leopold, *The Land Ethic* (1949)

### **Meta-Principle 4: Commonality. *Communities originate around a common interest shared by the members. How does this medium convene a community?***

Some media are built to support an existing community, but many communities emerge specifically because a medium makes it possible. This makes it worthwhile to ask questions, when inventing a new medium, about the corresponding community that you will create. Perhaps you didn't realize that you were creating a community at all.

To use this meta-principle, ask this question: “What is the principal attribute of the people who will use this media system?” If the answer is clear and simple, your system is more likely to succeed. eBay's simple community concept was that of a virtual garage sale: many people wanted to sell things but they needed advertising, an effective pricing and payment systems, and a way of establishing trust that the merchandise would be delivered. eBay's solutions all grew out of a clear understanding of who the community was.

**The Amazon Example.** Amazon.com was part of the first Internet boom, and lost large amounts of money in its early years. However, its owners paid careful attention to the community of book-lovers that gathered. They steadily added features to make it possible for this community to support one another, and to meet their own needs. This constantly growing constellation of community-based features helped make Amazon profitable as it grew beyond books, extending the community-supporting feature-set into a variety of online merchandising categories.

These features include

- user-contributed book and product reviews, with a five-star evaluation system
- a book recommendation system, based on other users' “clusters” of purchases
- a user-contributed “*So, You'd like to...*” guides
- a “tell a friend about this item” service
- a wedding registry
- a “submit a manual” service (you provide a link to a PDF of a product manual)
- the Amazon Friend program, where you can contact other reviewers

Unlike eBay, people don't come to Amazon with money on their mind. They come for knowledge and entertainment, and they encounter a worldwide community, a well-constructed and always-changing bazaar of the mind.

**Meta-Principle 5: Sustainability.** *A viable community or organization must be based on appropriate feedback loops. How does this medium sustain its community of users?*

Stability and sustainability are very broad issues. Media play key roles, and also depend on stable organizations. Consider journalism's principles 5 and 6:

5. It [journalism] must serve as an independent monitor of power.
6. It must provide a forum for public criticism and compromise.

Organizations must nurture a culture in which the management listens to and learns from employees, customers, competition – the entire community of practice. Students need to see this behavior modeled in our own professional lives, as we work to build and sustain academic organizations.

A media professional who is working to sustain a business or organization also needs to understand and support more mundane systems and practices such as:

- data backup and plans for disaster recovery
- security management
- creation and storage of media assets in indexable, reusable fashion
- careful maintenance of customer relationships, to assure repeat business

A key aspect of organizational sustainability is the health and well-being of the workers. Covey's seventh principle states: "Sharpen the saw". By this he means two things: avoid burnout by balancing work and life; and plan for your own continuous education in new methods and concepts.

**The Academic Example.** Do we practice what we preach? Do we have systems in place to gather ideas from students, other than the end-of-semester teaching evaluation forms? In what ways do students influence the evolution of our online academic presence; our Departmental websites, our web-based courses? Do we have effective backup systems? Do we use any kind of version control and asset management systems in tracking the pieces of projects that we lead?

If we're not operating as sustainable academic organizations, then what are we teaching the students about the distance between words and deeds?

**Meta-Principle 6: Diversity.** *A community benefits from activities that promote diverse, rich, long-term trusting relationships among its members.*

This meta-principle is strongly influenced by Aldo's ecological ethos; in his writing, he frequently equates diversity and beauty. A diverse ecosystem has hundreds or thousands of species. When a threat damages some part of the habitat, the species-mix will shift to take advantage of the new circumstances. A monoculture (like a field of wheat) is critically vulnerable to a single disease.

The media questions to ask are these:

“In what ways might your media system generate a monoculture?”

“What opportunities might you miss, if your users are all of the same xxx”

In the previous sentence, replace xxx with age, gender, economic status, nationality, language group, political party, operating system preference, etc.

**The Computer Game Example.** During its first twenty years, the computer game industry was overwhelmingly oriented toward young male game players. A few hit products like Pac-Man were popular with girls, but most games sold over 90% to boys.

*The Sims* (Maxis 2000), the largest selling computer game franchise to date, was referred to during development as "Home Tactics: The Experimental Domestic Simulator." It was sometimes called the 'dollhouse game'. It took seven years for Will Wright to convince skeptics that a game with no weapons, cars, levels or a defined objective would sell. Apparently due in part to these very attributes, women and girls represent a large share of the purchasers and players of *The Sims* family of games.

**The next blind spot.** What other kinds of monocultures are being generated by our media tools? Well, one set of “cultural blinders” to which Americans are particularly prone, is the idea that everything worthwhile on the Internet is available in English. There are automatic translation systems that can, for instance, render a Japanese or Chinese website into very broken English; but have you ever used one?

More importantly, the search engines are by and large partitioned by language. So there exist few ways for a good idea in, say, the Hindi-language online community, to make its way into the mind of an American or British teenager – except when a young Indian entrepreneur decides to put it there.

It is not likely that American students will rush out to learn the world's languages (though many Digital Media students are making earnest attempts at Japanese). It is far more feasible to steer these students toward the creation of, and participation in, social experiences on-line with people from around the world, who are learning or already fluent in English.

The key point is that our students need to be equipped with a willingness (and experience) at identifying the advantages of working heterogenous groups; and of mastering media tools such as language translation systems that bridge gaps of understanding.

**The key message:** It's not specifically about gender, age, race, or language – it's about *diversity*. Who do you know, that's not like you? How do they factor into your plans for learning, working and living? You're running blind if you aren't asking these questions.

### **Summary**

This paper has set forth six meta-principles for the organization of Digital Media curricula. The author welcomes comments, feedback, suggestions for other meta-principles, pointers to interesting articles, and invitations to lunch.

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