

# Vocabularies for Describing Digital Media

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## Abstract

Creating Web sites requires the aggregation and synthesis of multiple content forms, including moving and still images, text, audio, and interactive structures. This process requires that authors apply the aesthetics for an individual content form, and reflect upon the finished Web sites. While the aesthetics of these individual forms are well established, this paper re-applies them to the context of Web site development. We present a useable set of terms for each content form, along with their definitions, i.e., a vocabulary for describing interactive content forms. We suggest an initial working vocabulary comprised of terms that have already been used by students in an undergraduate class to describe, deconstruct and make decisions about various content. Having a vocabulary that appropriately describes specific content forms allows students to structure the aesthetics of each part of a digital media offering. This vocabulary was used in curricula offered to students from many disciplines studying how to create for the Interactive Web. The vocabulary is generic, and therefore can be transferred to any other Web sites the students may create in their course work and professional careers. Anecdotal evidence indicates that the students profit from using these term sets to describe, discuss and deconstruct their media compositions. This is not empirical research; rather, it is a way for students to understand the different content forms that make up Web sites.

**Keywords:** Digital design, digital media, design pedagogy, Web 2.0, interdisciplinary curriculum design and development.

## 1. INTRODUCTION

Websites today are highly interactive and typically include moving images, still images, text and audio. The set of abilities offered by the Interactive Web is often referred to as Web 2.0. Students learning to create content for the Interactive Web are faced with composing content in all sorts of media formats, often with multiple media occurring together on the same page or site. How can an author easily see whether or not the content might be effective? How can the content be decomposed into

elements? How can a piece of work be described? We have found it useful to have students learn a set of terms to discuss each content form.

If some guidance isn't provided to authors about how to describe a media composition, they often find themselves making random changes if they are unhappy. They also may not make simple adjustments that would drastically improve the impact, focus and effectiveness of their creations. It is as though simple color theory

was withheld from a beginning artist. What a messy palette might result!

Each content form fits into an established tradition, and each of these traditions has a sometimes lengthy and complex vocabulary used to talk about the form. It is neither practical nor useful to include complete descriptive grammars and vocabularies in an introductory course that covers so many content forms, and where analysis and evaluations of design elements of a particular form is not the focus of the course. Therefore, we have found that using a narrower set of terms excised from complex grammars allows students to deconstruct their content so they may discover more exactly how to structure an aesthetic.

In the relevant literatures the term sets used to describe media are variously named. For example, some names are vocabularies, grammars, sets of terms, and design elements.

## 2. VOCABULARIES

For our purposes a vocabulary is the body of terms used to describe a particular content form used in digital design. Vocabularies are used to describe and assess various elements of these online compositions. Vocabularies and associated grammars for sound, text, still and moving images and interactivity are disciplines in themselves and cannot be deeply studied and appreciated within the confines of a more general course. Nevertheless, authors of content for the interactive web require some elementary vocabularies that apply specifically to online media so they may understand, deconstruct and describe the aesthetics of their compositions (see McLuhan, 1964).

At our University we have developed curricula for teaching authorship of interactive content, including the upper level undergraduate course *Creating with the Interactive Web*. This course is designed to meet the needs of students from many disciplines who have completed at least one course in Computing and wish to learn more about creating content in different forms. The course also includes more theoretical information regarding general abilities required to effectively operate in an online environment. Some of these are harvesting attention, collaborating and cooperating online, determining warranties for online content, and understanding networks. During this course students create multimedia content using free

tools available on the Web. Each student creates blogs, WIKIs, podcasts, narrated slide presentations, text essays and videos. These assignments are designed so that each student chooses the subject matter that will elucidate the theoretical information as well as the individual's discipline.

Several of the content forms have commonly used vocabularies and grammars, especially in the non-interactive world, while others do not. Images, for example, have an extensive vocabulary used to describe drawings, paintings, graphics and photos. For each content form, we selected a subset of terms that represent the important elements in the online environment. We composed vocabularies from various sources where necessary. Students in the course describe their creations using these vocabularies.

In the next sections we set out the vocabulary terms or term sets, with brief definitions, for audio clips, still images, moving images, some text forms, and interactive structures.

### Vocabulary for Audio Podcasts

The first vocabulary (see Table 1) assesses audio podcasts using these dimensions of sound: pitch, loudness, timbre, clarity of the sound, and rhythm. Pitch and loudness are related to laboratory measures of frequency (pitch) and amplitude (loudness). Timbre is related to waveform (Forinas, 2014). Clarity and rhythm are longitudinal measures we added.

Students created a script for a 60 second audio podcast. Using the script as a guide, each student created an audio podcast. Students comment on these by describing their impressions of the podcast. Group feedback was especially useful, since class members perceive the podcasts differently: usually as good as or better than do the creators. Having a way to deconstruct a podcast clarified the strengths and weaknesses, and allowed individuals to correct individual characteristics such as volume, clarity and rhythm. Monotonic pitch for example, is easily fixed once identified.

Before introducing these terms to the podcasters, they had no formal way to discuss their podcasts. This term set provided students with a way to describe their own podcasts, to communicate and discuss their observations with classmates, and to improve.

<b>Pitch:</b> The pitch of the sound depends on the frequency of the sound. The faster the frequency, the higher the pitch. The audio components of podcasts are evaluated as to whether or not the pitch is perceived as high or low, and what variation exists throughout the podcast
<b>Loudness or volume:</b> The loudness and softness of the sound is related to the measurable amplitude of the sound. The volume of sound varies from soft to loud, and is primarily a subjective measure.
<b>Tone, Timbre:</b> The pitch of a sound is the fundamental frequency. An oboe and a cello may play the same pitch, but each sounds different from the other, because the tone or timbre of a sound results from all of the frequencies that make up a sound. The tone and the timbre of a sound is a usually described in subjective terms, such as <i>shrill, warm, harsh, silky</i> . Tone variation is a subjective measure.
<b>Clarity:</b> The clarity of sound is the relationships of noise and signal, similar to the design element of figure and ground. Noise refers to the undesirable elements in the sound, such as unpleasant background noise or static.
<b>Rhythm:</b> The rhythm of a podcast refers to the regular recurrence of patterns in time. These may be variations in speed of speech over the time of the podcast, or regular recurrence of patterns in other elements such as pitch variations, loudness, or tone and timbre.

**Table 1:** *Vocabulary for Audio Podcast*

Here are three excerpts from a formal assignment to apply the terms to the podcast. The excerpts show that the vocabulary term set is useful; they also show that more instruction would be helpful.

The bottom line on all these vocabularies is that students alone do not have the means to describe, discuss and improve their content compositions.

Hernandez:

*As far as the description of my podcast, I added some emotion of how I felt while I was reading this. I wrote this a long time ago, and I am not in that place at the time, so I basically just narrated it in a very standard voice. The clarity is good and there is a bit of tone variation but nothing too major.*

Jon:

*--The clarity on this podcast is very good. This is because the room was quiet and thus there was very little interfering noise.  
--The volume could be improved just a little. There is a difference between the volume of the speech and the song, but I was unable to change that so I left it as is...  
--There is very little tone variation in my speech but it works well because I am talking in a very calm voice.  
--The pitch of my speech is deep, but the song's pitch changes throughout the entirety of the piece.  
--The rhythm of the song is impeccable...*

Daniella:

*My podcast is fairly descent. The volume of my voice is medium. The words are pronounce clearly. However, there is background noise throughout the recording. I think the background noise maybe the wind from my open window. I think my pitch lacks energy and is a bit monotone. Some thing I can do to avoid a dull voice is smile. The rhythm throughout the video is constant. My tone is inviting.*

Notice the students are using the vocabulary in their comments and also extended the discussion to include emotional content.

### Vocabulary for Still Images

In this class, we use a basic set of concepts to describe the visual elements of an image: point, line, shape, form, space, texture, color, and value. The definitions are typical, and are taken from Kshetrapal (2012) and KQED's Visual Arts Vocabulary. For a set of accessible examples about how these elements work, see <https://speakerdeck.com/siddharthkp>.

Several assignments depend on strong, relevant images, including WIKI posts, blog posts, narrated slide shows and videos (all videos were required to include stills). The course used informal methods to examine and describe the first images. Then, after introducing the image vocabulary (see Table 2), specific assignments involved selecting a strong image, describing the image using the image vocabulary, and analyzing the image according the grammar found in "Visual Grammar & Elements of Design" by Siddharth Kshetrapal (2012).

As a typical example, one student enlarged the focus on a central rose in one of her stills. She

commented on the value of strong diagonal lines in her photo that reflected the thorns.

<b>Point:</b> Serves as a focus of a visual. Points may appear in groups indicating shape or form.
<b>Line:</b> The path of a point that moves through space. A line can be described in terms of width, direction, movement, length, curvature, and color. For example, vertical lines are usually related to power and strength, horizontal lines symbolize rest and relaxation, diagonal lines are dynamic and action-oriented. Curved lines tend to be comforting, while jagged lines tend to create turbulence and confusion.
<b>Form:</b> A form is set apart by definite contour and takes up space, used to refer to a shape that is depicted in three rather than two dimensions.
<b>Shape:</b> A distinct spatial form depicted in two dimensions and created by lines or a change in color, shading, or materials. Shapes can, for example, be mechanical or organic.
<b>Space:</b> The visual or actual area within and around shapes and forms. Positive space defines the contents of a shape or form, and is bound by edges or surfaces. Negative space refers to the "empty" area surrounding a shape or form, and also helps to define the boundaries of a shape or form.
<b>Texture:</b> The look and feel of a surface, which may be described in such terms as rough, smooth, hard, soft, scratchy, silky, fine, coarse, and so on.

**Table 2:** *Vocabulary for Still Images*

**Vocabulary for Moving Images**

We evaluated moving images combining a visual vocabulary described by Martin Scorsese in his interview *On the Importance of Visual Literacy*, (2012), with material from David T. Johnson’s *A Short List of Film Terms* (see Table 3). Among these terms are: pan, tilt, tracking, miking, intercutting, short-medium-long shot, lens angle (wide, zoom), rhythm, pace, transitions, video effects, lighting, point of view, take duration.

Students in *Creating with the Interactive Web* create two videos of 2-4 minutes each. Each video must have eight elements: a subject doing something or being interviewed, titles/credits, narration, music, stills, transitions, video effects and “B”-roll (often canned background footage).

<b>Pan:</b> Moving a stationary camera right and left on the horizontal axis.
<b>Tilt:</b> Shooting up or down. Up-shots imply strength and authority while down-shots imply subservience or weakness.
<b>Tracking:</b> Following a subject with the camera which is no longer stationary.
<b>Miking:</b> There are three basic setups for microphones. These are booming—using a microphone on a boom to gather sound, planting—or using a stationary microphone, or using a lavalier that moves with the wearer.
<b>Shot:</b> Distance from the camera to the subject. A shot can be short, medium or long.
<b>Take:</b> The time a shot is begun to the time it stops.
<b>Lens Angle:</b> Wide, narrow: A wide angle lens flattens the space and lessens the depth of focus of the scene. A narrow angle creates clear focus for both foreground and background objects.
<b>Intercutting:</b> To cut from one type of shot to another, as from a long shot to a close-up.
<b>Transition:</b> Method used to move from one cut to another. These include fade, blur, blackout, wipe, dissolve, and any number of other ways to change shots.
<b>Video Effects:</b> Ways to modulate the shot; for example, slow motion, aging the shot using sepia, black and white or color.
<b>Lighting:</b> The students are encouraged to use a standard three point lighting scheme. The main light is the <i>Key Light</i> , placed in front of the subject and off to the side. It is usually the strongest and has the most influence on the look of the scene. The Second light is the <i>Fill Light</i> placed in front of the subject on the opposite side from the key light. The third light is the <i>Back Light</i> placed behind the subject, usually at an angle. It adds depth and definition to the subject (MediaCollege.com).
<b>Point of View:</b> The point of view can be third person, from one of the characters, even from the camera itself.

**Table 3:** *Vocabulary for Moving Images*

Video, the method for integrating moving images into a digital creation, is the most complex media in the course. The first video was an interview. Students were required to produce a brief research paper on their video including background, location information, possible issues with lighting and sound. They also created a storyboard detailing the composition of the take, suggested interview questions, shot, transitions, lighting, video effects, “B” roll, and other information the student thought useful.

Without this guidance, there would be no common ground for discussing the videos, and the students would have no guidelines about how to plan and shoot their video.

**Vocabulary for Text**

Writing for the Interactive Web requires versatility. Items will vary in length, style, tone and word choices. We evaluated text content according to elements of structure, grammar, language usage and information content. Because of the extensive variation in text, we selected a simple rubric (see Table 4).

<b>Structure:</b> Organization of ideas, logical flow of thoughts, effective transitions
<b>Grammar:</b> Sentence structure is correct, uses proper punctuation, rules of syntax are respected.
<b>Language:</b> Uses vocabulary and tone appropriate to the objective and context of the post or short essay.
<b>Content/Information:</b> Clarity of purpose, original thought, contains concrete information an examples. Content addresses the requirements of the assignment.

**Table 4:** *Vocabulary for text*

Most of the assignments require some text, including blogging, WIKIs, storyboards for videos, scripts for podcasts, titles and headings. The first assignment involved writing a blogpost caption for an image and creating a title for the post. A good post title includes relevant keywords, and it is punchy. A good caption adds to the image and yet will stand alone. It also must include keywords. News-worthy captions describe the image exactly, including names and places; for example, "New York City Police Officers check subway cars at Columbus Circle on Friday, Oct. 7, 2005". In informal writing for the Interactive web, captions such as "An unhappy voter..." or "A fortunate survivor..." are acceptable (Smock, 2008). In the first situation, the content includes verifiable information. The grammar is accepted usage, the structure is clear and the tone is formal. The other examples use different vocabularies and tones; for example, the use of descriptive adjectives to lead the reader to specific conclusions.

**Vocabulary for Interactivity**

Interactive media normally refers to products and services on digital computer-based systems that respond to the user's actions by presenting content such as text, graphics, animation, video, audio, and games. The vocabulary we used (see

Table 5) is adapted from Nathan Shedroff (1994). He identified several dimensions of interactivity; among these are feedback, control, communications, creativity and adaptivity.

<b>Feedback:</b> The ability acknowledge actions by the user. These actions may be as simple as providing a jump to the next needed entry box on a form.
<b>Control:</b> Allowing the user to determine where to go next and what to do next.
<b>Communications:</b> Anything you can do to allow your audience to talk to others, listen, identify themselves, share things, and tell their own stories will make your site more successful and may begin to build a community.
<b>Creativity:</b> The ability to add to a site or to modify a site offering.
<b>Adaptivity:</b> the ability to tailor the interactive experience to each member of your audience; for example, different content may be displayed according to previous online behaviors. Google displays search results depending on its customer profile; yahoo news tailors stories depending on the users' past clicking behaviors.

**Table 5:** *Vocabulary for Interactivity*

**3. DISCUSSION AND CONCLUSIONS**

As interactive media becomes more prominent as a form of professional communication, the ability to create Web content is an essential educational and professional skill. However, it is insufficient to just learn the mechanics of a content creation tool.

When evaluating a Web site, one approach is to look at the site as a single entity. Our work has been to create a more tangible method for describing, evaluating, and deconstructing Web content. We have found that for beginning digital media authors, an initial working vocabulary is particularly helpful. Our approach is to consider a Web offering's multiple elements separately, namely audio, video, images, text, and interactivity. It anchors the content forms within an intellectual, artistic, and aesthetic tradition. It also allows you to move elements from one context to another. Students can take these vocabularies with them to other endeavors.

These vocabularies can also be used to describe and evaluate interactive content for multiple applications, for example social media and e-commerce sites.

The insight we want to emphasize is that

students alone do not have the means to describe, discuss and improve their content compositions.

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