



FLUX: Design Education in a Changing World

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The Latest New Media Pedagogy: The Medium or The Message?

Abstract

This paper attempts to look at digital media and design education at a university level exploring the question of teaching software and medium specific technical skills over broader theoretical and conceptual ideas of contemporary technologies. In the past, the focus of digital media programs has been conceptual experimentation and innovation, it seems pedagogy is now being driven purely by technical concern. The university system demands the technical aspect of "digital media" to be taught, but the field demands the creative and conceptual. Additionally, on a global level – how do varied economic conditions influence digital media education? Rather than choose to teach software vs. theory, it is important to remain open and constantly question how new technology interacts with the larger social, cultural, and artistic world.

Key Words: *Software vs. Concept, Digital Media Education, Global Resources*

Introduction

Marshall McLuhan famously argued, "The Medium is the Message". The tendency, it seems, in today's digital media and design pedagogy is to teach the medium, but not necessarily the message. Modern technology has sped up the pace at which we live and work. However we are not taking the time to understand and adapt to these new technologies, both students and society alike focus on what's newer, next, faster, and better. Students are coming into university education with a different relationship to technology having grown up surrounded in digital environments. They know how to use digital technologies as part of their life more than ever before. The new technical and software specific skills that students will learn in university education will most likely be out of date by the time they graduate. However teaching concept over specific software tools allows for students to enhance their problem solving skills and adapt to other programs, applications, and evolutions. Taking the focus off of equipment and software alleviates some of the need to spend costs on such things in communities that cannot afford it. At the same time professors and universities are faced with the demands to produce results and teach only the latest and newest technologies. Increasingly design and new media education is focusing on teaching software and technical skills over conceptual, theoretical, historical and cultural understanding. It is our responsibility as educators in the field not just to teach technical skills, but also create a critical dialog for understanding media, making broader connections, and enhancing the creativity of the field. In artistic and creative fields it is crucial for students to have a holistic, sophisticated understanding of media beyond the surface of basic tools; to be able to question, analyze, and articulate the role of digital technologies in their own work and the culture surrounding them.

Pacing the Medium

Technology has increased the pace of our lives. From the first railroad systems and the Industrial Revolution of the 1800s, to the contemporary Internet Era of mobile phones and instant messaging, as technology evolves to faster and faster processes, the pace of every day life, business, and communication has also increased. Arguably, in the past ten years, the speed at which new technologies develop, software upgrades roll out, and high tech gadgets are produced, has exponentially increased. Looking back through history there has been more time in-between major changes and newer updates, giving people the opportunity to reflect on the technology and its impact. Today as the speed of development increases, the time for reflection and understanding decreases. Instead of understanding media and it's implications, we instead look forward to what will be faster, what will be smaller, what will be newer.

U.S. copyright lawyer and professor Lawrence Lessig argues strongly about taking the time to understand technology in his article *Who Owns Culture*. His article focuses on a brief history of copyright law, tracing the time taken to understand new technologies and giving the market time to adapt to the new opportunities, seeing its' full potential both for technological innovation and it's legal parameters. For instance, understanding the player pianos effect on sheet music, the radio to record sales, network television to the Beta-Max (VCR), and Napster (or other MP3 file sharing networks to recording industries). In each of the cases he argues the law took the time to understand the full potential and the impact of the technology before shaping laws and restrictions; except, of course, in the case of Napster where it is now illegal (in the United States and beyond) to download music without paying for it.

I am not arguing either for or against file sharing networks, nor is Lessig. He is of course is arguing in favor of taking time to understand the potential of technology (in relationship to copyright law and legal issues), It is not a far stretch to also say that we must take the time to understand the full capacity of new technology we are using, and it's effects on not only digital art and design but also the greater culture and global society.

While it is easy to get caught up in our techo-fetishized culture and crave the next best thing, it is important to understand contemporary digital media not just technically, but also historically and conceptually. As the pace of our culture's lives speed up it becomes the responsibility of digital media and design educators to encourage students to slow down, learn, reflect, and understand the impact of the technology they are using.

Teaching the historical background of technology gives students a better understanding of the tools they are using. When teaching Photoshop for instance, reviewing the history of photography grounds image manipulation in the history of image capturing. It is important to examine how our conception of images has changed over time from seeing oneself for the first time in print to images of war, from globalization of information to contemporary advertising.

It is also important to look at the context of media and the context of what students produce. An image that has been Photoshopped and appears in a news paper as fact is far different than the same image being shown in an art gallery. Likewise, a digital video shown on the Internet is in a much different context than in a private museum that charges admission. An important part of teaching and understanding digital media and design is to understand the history of where it came from and the context in which it is placed in and how those things affect it's meaning. These are important steps that take time. They take time to both study and learn, as well as to understand. What becomes important when looking at both history and context is not "how to" Photoshop something, but "when and why" to Photoshop something.

Increasing Understanding, Not just more stuff

Given the rate at which technology has evolved and the globalization of information media it is no surprise that the amount of information students come into the university system with continues to grow. Many students entering the university system today do not remember a world with out cell phones, text messaging, digital cameras, Photoshop, Internet connections, or laptop computers. In many instances the students have been using these things just as long as the professors who are teaching them have. Given that today's students have grown up surrounded by these technologies there is an inherent adaptation to using them. Which raises the question of how do you teach contemporary media and digital design when the amount of information students are coming in with is increasing faster than some faculty are learning it?

Today's standard computers come preloaded with more software than ever before. The iLife suite, for example, makes it possible for anyone purchasing a Mac to create their very own feature length film, website, and digital photo albums using iMoive, iWeb, iPhoto, and others. While this package does make an amazing amount of techniques and skills possible at the push of a button with little to no instruction, it should not replace the need for digital design education. What does not come in these easy to use programs is the conceptual, historical, or contextual understanding of what and how they are being used. Many students come into my introductory classes already having their own social networking website, having posted their own videos on YouTube, and have Photoshopped pictures of

themselves with celebrities, without ex boyfriends, or enhanced features. In today's digital world anyone can make a web page, anyone can take pictures, as educators we need to go beyond the pre-loaded software and cookie cutter templates to teach a deeper understanding of media and digital design.

So, how then, or perhaps what, do we teach the students who know more than our incoming students knew the year before? My answer is two-part: 1. To teach a basic skill set which includes design principals and artistic creativity. 2. Encourage students to think about and question technology and how we interact with it in order further advance what and how we as culture producers create.

Anyone can make a webpage, but to be a successful web designer lies in creativity and experimentation. When the focus of teaching shifts solely to the technical aspects, often times students over look basic artistic principals such as color, composition, page/ screen, depth, scale, etc. Along with teaching a basic skill set of how to maneuver through software, students should be encouraged to experiment with media to produce strong and effective works of art and design both aesthetically and theoretically.

Given the speed at which technology is evolving and the eagerness just to learn the newest thing, students rarely question what it is they are using or producing in digital media. Students should be encouraged to question technology and how we interact with it in order to further advance how and what we create. What does it mean to Photoshop an image? Are the images we take with digital cameras real? How does a piece of Digital Art exist if it is not tangible in its digital nature? What images do you portray when you wear your iPod in public? How do you create identity online? Are the people you find online real? When chatting online, where do you stop and your avatar begins? These are all questions that should be addressed in conjunction with creating digital media and design projects. These same issues, both conceptual and aesthetical, are the ones which are necessarily not inherent to students growing up surrounded by technology, or taught in pre-loaded software packages.

Varied Global Resources

When discussing the debate over digital media education focusing on theory vs. software, we can not overlook the global and economic factors of working with new technology, mainly that not everyone or every university in the world can afford to upgrade their computer labs every year with the latest computers, software upgrades, and technologies.

Students with strong theoretical and conceptual skills should be able to adapt to different learning environments. Skill sets that are too narrow and focus only on how to maneuver through a specific piece of software do not allow give students the knowledge to adapt and broaden to programs and machines used in environments different from their own. Global standards of digital media and design education should not be based on specific software programs covered, but rather the quality of the artistic and creative design work produced. It is less important for students to know how to use the latest version of Macromedia Flash, for example, and more important that they understand broader conceptual skills of movement, linearity, composition, time, interaction, and basic programming so that what is learned can also apply not only to other software programs but also other situations. Conceptual thinking is not software, medium, or location specific.

Open source software applications are often favored as a solution to situations that cannot afford the larger big name programs such as Adobe or Macromedia. Open source programs being free to download and use obviously create an economical way of teaching and learning. The other aspect that open source software can bring is open thinking. In many cases, programs that are created for open source were created because the designer did not want to be bound by the limitations pre-set in software, ownership, costs or usage. Open source creators have already begun to think outside the box, problem solve, and think critically about what software is and what it can do. Using open source software as a teaching tool promotes the same problem solving skills. Given that the vast majority of open source programs do not come with books, manuals or extensive tutorials, learning them automatically brings a richer understanding of how programs work and alternate ways of thinking about and interacting with technology.

One of my favorite examples of not only open source software, but also a tool which encourages creative exploration of digital media is the program *Processing*.

Processing is an open source programming language and environment for people who want to program images, animation, and interactions. It is used by students, artists, designers, researchers, and hobbyists for learning, prototyping, and production. It is created to teach fundamentals of computer programming within a visual context and to serve as a software sketchbook and professional production tool. Processing is developed by artists and designers as an alternative to proprietary software tools in the same domain.
(www.processing.org)

Processing was built in part by Casey Reas, a painter turned digital artist whose purpose was to recreate the process of painting in code. His work often relates conceptual painting and computer programming. In his essay *(Software) Structures* Reas highlights the similarity between works such as Sol LeWitt's "Wall Drawing" series and computer programming, as both being simple sets of instructions. The results of both LeWitt's drawings and paintings and the work Reas has produced in Processing not only share this same concept but also end up looking visually very much alike. Processing becomes an effective tool for teaching computer programming and digital design because it teaches you the concepts behind object oriented programming in an approachable and visual method. For example, you do not learn how to make an animated ball bounce by clicking a button, but rather how to actually make the ball and control it's movements while learning what each bit of code does. The popularity of Processing has developed a community of users who share tutorials, examples, projects, and tips for using the program.

I have used Processing several times to teach computer programming for artists and other digital design courses. Each time I use it in the classroom there is a small number of students who are reluctant to use it because they've never heard of it, they want to learn Flash instead like the rest of their friends, or other superficial reasons. The majority of the times these are the same students who a semester later will be so happy that they learned Processing because now they have an understanding of code, programming, and process which allows them to easily adapt and pick up other programs and languages such as Flash, Director, Open GL, and others.

While using and teaching open source programs is not a catch all fix for promoting global design education, it can promote conceptual thinking and a deeper understanding of media which does create bridges between cultures.

Demands and Pressures

Of course it would be idealistic to have classrooms filled with attentive students eager to learn media history and investigate the cultural and artistic possibilities of digital media and design with supportive university systems giving time and money for such environments, however often times that is not the case. At many large universities where digital media programs are inside art departments, inside humanities departments, inside liberal arts programs, the focus shifts off of a deeper understanding of media and more to producing immediate results. (Or perhaps just simply moving greater numbers of students through programs and more money in the universities at faster rates.)

Additionally many students and parents of students only see the immediate future, the now. They are not taking the time, not able to develop new ideas, not able to make connections to a larger dialogue. They expect to learn things immediately, to have Photoshop filters do work for them, and produce immediate results. Arguably this pressure comes again from the increased speed at which we live our lives and technology evolves mixed in with the pressure to have a job in a "creative field" after getting a university degree.

Some of the demands also come from larger issues in education systems. The United States Department of Education instated the "No Child Left Behind Act" in 2001 that requires all public schools, kindergarten through senior high school, to abide by rigorous standardized tests and produce "passable" results or risk loose funding, jobs, and schools. Many teachers and others appose the bill arguing that there is now an overwhelming focus on standardized testing as a means of assessment and encourages students only to memorize facts for multiple choice tests. The pressures of these

tests often encourages “teaching to the test”, or teaching a narrow subset of skills, rather than focus on a deeper understanding of learning which could be more readily be transferred to similar problem solving situations. As a result many students coming out of this system into universities with the same mentality of only wanting to learn the quick answer, not wanting to think creatively, make unique connections, or problem solve.

I have outlined the importance of taking the time to understand rapidly changing technology and it's effects of culture, the importance of a global understanding of media, and encouraging learning a deeper historical and conceptual context for digital media; however one of the most obvious (but overlooked) reasons for teaching theory over software is of course that the software we teach to incoming students will more than likely be outdated by the time they graduate. When you teach students not just *how* to use software but *how to learn* and *understand* software they are able to continue to their practice long after they leave the classroom. Should we as educators cave into the demands of those wanting immediate results or multiple choice answers, we will fail at truly getting our students to learn as they will not be able to continue their skills beyond the classroom. On a technical level students need to be able to know why and how software works, so that when things change, they know how to change with the upgrades and teach themselves. On a conceptual level students should be able to have an effective understanding of what they are producing and how it relates to the culture surrounding them. Teaching concept over software encourages learning beyond the classroom, when students are able to keep evolving with the technology learning new technical skills and creating successful and creative projects.

Messages Beyond Medium

When the focus of digital media or digital art remains solely on the technology itself or specific software applications it runs the risk of isolating itself as a medium. Art work caught up in the techno-fetishization of the latest innovations and that is made with technology, about technology, for technology, does not go beyond the medium specificity and puts itself into a type of “new media ghetto”. While this is equally important for artists working with technology, it also becomes increasingly important for educators to teach their students how to branch out and make connections beyond digital media. Students, artists, designers, and professors alike must be able to talk about their work and relate it to a broader scope.

Support for holistic design education that goes beyond the basic technical skills and into interdisciplinary and conceptual skills can be seen in the recent trends. Richard Florida's best selling book the *Rise of the Creative Class* was followed up by a second book the *Flight of the Creative Class*. Other New York Times best sellers, articles in business magazines, and hiring trends indicate that in growing economies the one thing you cannot out source is creativity. In 2005, Steve Lohr published an article in the New York Times titled *A Techie, Absolutely, and More...* As the title implies, students today need not only the technical skills, but something more. Lohr outlines example after example of students taking technology education and making connections with a broader realm – computer science and psychology, engineering and culinary skills, DNA coding and computer coding into art work. The need for educators to teach their students how to branch out and make connections beyond digital media is crucial not only in terms of enhancing art, design, and creativity but also in securing jobs and supporting innovation of all fields in the future.

I see the demand for professors who can teach software to be continually increasing. The laundry list of software proficiency on job descriptions continues to grow. Personally, I don't like to teach software, but rather teach students how to teach themselves software; by the time they graduate there will be a newer version/ program/ system and there won't always be a teacher there to show them. Likewise I encourage students to question every tool they use and what impact that has on the message of their work. I look at ways that our inter-connected society blurs the line between art, design and culture, and encourage students to actively engage in the world around them questioning how these technologies impact them and their art. The university demands the technical aspect of "digital media", and the field demands the conceptual, rather than choose to teach one over the other, it is important to remain open and constantly question how this technology interacts with the larger social, cultural, and artistic world.

References

- Florida, Richard. 2002. *The Rise of the Creative Class*. Perseus Books Group.
- Lessig, Lawrence. 2005. *Who Owns Culture*.
http://lessig.org/blog/2006/04/who_owns_culture_at_one.html [20 May 2007]
- Lohr, Steve. August 23, 2005. *A Techie, Absolutely, and More*. New York: New York Times.
- McLuhan, Marshall. 1994. *Understanding Media: The Extensions of Man*. Boston: MIT Press.
- Processing.org. 2001. *Processing*
<http://processing.org/> [01 May 2007].
- Reas, Casey. 2004. *(Software) Structures*.
<http://artport.whitney.org/commissions/softwarestructures/text.html> [01 May 2007].
- Wikipedia. 2001-07. *No Child Left Behind*
http://en.wikipedia.org/wiki/No_Child_Left_Behind [11 July 2007].

End Notes

The presentation of this paper includes examples of assignments given to students in an *Introduction to Digital Media* course that illustrate the principals of this paper. Some of these may include:

Digital Cake

Using the techniques & tools learned in PhotoShop thus far, use the software to produce a collaged image addressing the prompt: "Digital Cake". Project goals are: to get familiar with PhotoShop, creative thinking and problem solving to answer a conceptual prompt, questioning what is "digital" and how we understand "digital objects".

Reveling a Hidden Truth

Using the techniques learned in PhotoShop, use the software to produce a series of images that are comprised of multiple other images. Projects can either be morphed images or montages of multiple images. Students should demonstrate sophisticated use of the tools provided in PhotoShop. The final image should address the prompt: "Reveling a Hidden Truth". Project Goals include: advanced PhotoShop skills, questioning what is "an image", questioning "reality", "truth", "are images real?", what is the role of an image in contemporary society and art?, continue thinking about digital imaging as digital art.

Net Identity

Create a digital Identity using MySpace. Each student will create an identity that is NOT themselves. Over the course of a few class periods surf and interact with other MySpace users; consider your time a science experiment as if you have never used My Space before – why is this so fascinating? You should actively interact with the MySpace community. Students are encouraged to actively play with in the space – post blogs, have discussions with others, make groups, add friends, have fun, but be safe and courteous. Things to consider: What defines you? Is this really how you are defined in real life? What types of images are you using to represent you? Who are these people? Are you altering your page? What does this say about you if you alter your page? Why are you writing a blog? What is the ratio of time you spend reading other peoples blogs to writing your own? Will you accept anyone as your friend or only people you are interested in? What is your basis for accepting and denying friends? Is your goal to have the most friends? When do "comments" become public conversation?

Rachel Beth Egenhoefer
CURRICULUM VITAE



Education

Master of Fine Arts (MFA), University of California, San Diego (UCSD), San Diego, CA, 2004
Graduate Researcher, Center for Research in Computing and the Arts (CRCA), University of California, San Diego (UCSD), San Diego, CA, 2002-04
Bachelor of Fine Arts (BFA), Maryland Institute College of Art, Baltimore, MD, 2002

Selected Professional Experience

CADRE Laboratory for New Media, San Jose State University, San Jose, CA <http://cadre.sjsu.edu>
Interim BFA Advisor, 2005 – 2007 / Lecturer, 2004 – 2007
Yerba Buena Arts & Events, San Francisco, CA, <http://www.ybgf.org>
Web and Program Manager, 2006 – present
ISEA/ zeroone 2006 Festival & Symposium, San Jose, CA, <http://www.01sj.org>
Program Event Coordinator, Pacific Rim New Media Summit, 2005 – 2006
UCSD Department of Undergraduate Fine Arts, San Diego, CA, <http://visarts.ucsd.edu>
Instructor of Record, 2002 – 2004
Research Assistant to Dr. Lev Manovich, San Diego, CA
Research and Production Assistant for *Soft Cinema*, 2002
Arbyte Magazine, New York, NY Associate Editor and Web Contributor, 2000 – 2001 / Mid-Atlantic Correspondent, 2001 – close

Selected Artist Exhibitions

Slap, Rx Gallery, San Francisco, CA, 2007
Notion Nanny, Berkeley Museum of Art, Berkeley, CA, 2007
Delicious, Studio Gallery, San Francisco, CA, 2006
Video Series New York, Goliath Visual Space, New York, NY, 2005
Triply, Overtones Gallery, Los Angeles, CA, 2005
Lollipops & Polka-Dots, Marcuse Gallery, San Diego, CA, 2004
ISEA 2004 (Inter Society for Electronic Art), Tallinn, Estonia, 2004
New California Masters, Works Gallery, San Jose, CA, 2004
Parts of a Whole, Russell Space Gallery, San Diego, CA, 2003
The 9th Floor, 8601 Wilshire Gallery, Los Angeles, CA, 2003
Byte and Taste, Other Gallery, Banff Center for the Arts, Banff, Canada, 2003
info@blah, Mills Gallery, Boston Center for the Arts, Boston, MA, 2003
Hello World: People vs. Programming, Artsway, South Hampton, UK, 2003
'whatdoyouwanttodowithit?', ICA Digital Showcase, Institute of Contemporary Art, London, UK, 2003
Film and Video Bake Off Media Festival, Baltimore Creative Alliance, Baltimore, MD, 2002
WPA/C Media Series, Corcoran Gallery of Art, Washington DC, 2002
Options, Millennium Art Center, Washington DC, 2002
Daidalosdreams, AKI, *Enschede*, The Netherlands, 2001
Snapshot, Contemporary Museum of Baltimore, Baltimore, MD, 2001

Selected Visiting Artist Lectures & Artist Residencies

Wearable Futures Residency, SCAN, London, UK, 2007 – 2008
Visiting Artist, University of Colorado, Boulder, ATLAS, Boulder, CO, October 16, 2006
Techno-Cultures in Art Workshop Residency, Maryland Institute College of Art, Baltimore, MD, 2005
Visiting Artist, University of Maryland, Baltimore, Baltimore, MD, 2004
Visiting Artist, St. John's College of Queens, New York, NY, 2003
Big Rock Candy Mountain Artist Residency, Banff Centre for the Arts, Banff, Canada, 2003
Artist Talk, Corcoran Gallery of Art, Washington DC, 2002
Daidalosdreams, International Emerging Artist Residency, *AKI, Enschede, The Netherlands*, 2001

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The Latest New Media Pedagogy: The Medium or The Message?



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Abstract



This paper attempts to look at digital media and design education at a university level exploring the question of teaching software and medium specific technical skills over broader theoretical and conceptual ideas of contemporary technologies. In the past, the focus of digital media programs has been conceptual experimentation and innovation, it seems pedagogy is now being driven purely by technical concern. The university system demands the technical aspect of "digital media" to be taught, but the field demands the creative and conceptual. Additionally, on a global level – how do varied economic conditions influence digital media education? Rather than choose to teach software vs. theory, it is important to remain open and constantly question how new technology interacts with the larger social, cultural, and artistic world.

Pacing the Medium



- ✓ Arguably, in the past ten years - the speed at which new technologies have developed, software upgraded, and high tech gadgets produced, has increased exponentially.
- ✓ Looking back through history there has been more time in-between major changes and newer updates, giving people the opportunity to reflect on the technology and its impact.
- ✓ Today as the speed of development increases, the time for reflection and understanding decreases. Instead of understanding media and it's implications, we instead look forward to what will be faster, what will be smaller, what will be newer.

Pacing the Medium

Lawrence Lessig, *Who Owns Culture?*



Taking Time

- ✓ I am not arguing either for or against file sharing networks, nor is Lessig. He is of course is arguing in favor of *taking time* to understand the potential of technology.
- ✓ We must take the time to understand the full capacity of new technology we are using, and it's effects on not only digital art and design but also the greater culture and global society.

History & Context



- ✓ They take time to both study and learn, as well as to understand. What becomes important when looking at both history and context is not “how to” Photoshop something, but “when and why” to Photoshop something.

Increasing Understanding, Not just more stuff



- ✓ Given the rate at which technology has evolved and the globalization of information media it is no surprise that the amount of information students come into the university system with continues to grow.

Increasing Understanding, Not just more stuff

Increasing Factors


- ✓ Speed and evolution of technology
- ✓ Age of students (don't remember a time without "digital media")
- ✓ Pre-loaded Software
 - ✓ iLife Suite
- ✓ Social Networking/ Web Spaces
 - ✓ You Tube
 - ✓ My Space

The Questions...

- ✓ How do you teach contemporary media and digital design when the amount of information students are coming in with is increasing faster than some faculty are learning it?
- ✓ How do you teach when new technical and software specific skills that students will learn in university education will most likely be out of date by the time they graduate?

Increasing Understanding, Not just more stuff


A Potential 2-part Answer

- 
- ✓ Teach a basic skill set which includes design principals and artistic creativity.
 - ✓ Encourage students to think about and question technology and how we interact with it in order further advance what and how we as culture producers create.

Varied Global Resources

- ✓ When discussing the debate over digital media education focusing on theory vs. software, we can not overlook the global and economic factors of working with new technology, mainly that not everyone or every university in the world can afford to upgrade their computer labs every year with the latest computers, software upgrades, and technologies.

Teaching Concept

- 
- ✓ Conceptual thinking is not software, medium, or location specific.
 - ✓ Skill sets that are too narrow and focus only on how to maneuver through a specific piece of software do not allow give students the knowledge to adapt and broaden to programs and machines used in environments different from their own.
 - ✓ It is less important for students to know how to use the latest version of Macromedia Flash, for example, and more important that they understand broader conceptual skills of movement, linearity, composition, time, interaction, and basic programming so that what is learned can also apply not only to other software programs but also other situations.

A Case for Open Source

- ✓ Free to download and use obviously creates an economical way of teaching and learning.
- ✓ Open source software can bring open thinking.
 - ✓ Open source creators have already begun to think outside the box, problem solve, and think critically about what software is and what it can do.
- ✓ Using open source software as a teaching tool promotes problem solving skills and brings a richer understanding of how programs work and alternate ways of thinking about and interacting with technology.

Processing



Processing is an open source programming language and environment for people who want to program images, animation, and interactions. It is used by students, artists, designers, researchers, and hobbyists for learning, prototyping, and production. It is created to teach fundamentals of computer programming within a visual context and to serve as a software sketchbook and professional production tool. Processing is developed by artists and designers as an alternative to proprietary software tools in the same domain.

www.processing.org

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by HeHe

Books



[Processing: A Programming Handbook for Visual Designers and Artists](#)
By Casey Reas and Ben Fry



» Download Processing

Processing is an open source programming language and environment for people who want to program images, animation, and interactions. It is used by students, artists, designers, researchers, and hobbyists for learning, prototyping, and production. It is created to teach fundamentals of computer programming within a visual context and to serve as a software sketchbook and professional production tool. Processing is developed by artists and designers as an alternative to proprietary software tools in the same domain.

Processing is free to [download](#) and available for GNU/Linux, Mac OS X, and Windows. [Please help to release the next version!](#)

Processing is an open project initiated by [Ben Fry](#) and [Casey Reas](#). It evolved from ideas explored in the [Aesthetics and Computation Group](#) at the MIT Media Lab.

Please visit our subdomains and sister projects:

<http://dev.processing.org/>
Information about contributing code and expertise to the Processing software. Includes bug tracking and instructions for building the code, downloading the source, and creating libraries.

<http://hardware.processing.org/>
Wiring and Arduino are physical computing initiatives related to Processing.

<http://mobile.processing.org>
Mobile Processing is a programming environment and library for writing mobile phone software.

Updates

16 Sep 2007
New software from HeHe added to the [exhibition](#).

9 Sep 2007

Open Source (not the only source)



- ✓ While using and teaching open source programs is not a catch all fix for promoting global design education, it can promote conceptual thinking and a deeper understanding of media which can create bridges between cultures, locations, and platforms.

Demands and Pressures



- ✓ Universities

- ✓ Move more students through quicker - \$\$\$

- ✓ Parents and Students

- ✓ Only seeing the immediate future - not taking the time

- ✓ Standardized Testing

- ✓ Often encourage “teaching to the test”, or teaching a narrow subset of skills, rather than focus on a deeper understanding of learning which could be more readily be transferred to similar problem solving situations.

Messages Beyond Medium



- ✓ Art work caught up in the techno-fetishization of the latest innovations and that is made with technology, about technology, for technology, does not go beyond the medium specificity and runs the risk of becoming a type of “new media ghetto”.
- ✓ While this is equally important for artists working with technology, it also becomes increasingly important for educators to teach their students how to branch out and make connections beyond digital media.
- ✓ Students, artists, designers, and professors alike must be able to talk about their work and relate it to a broader scope.

Holistic Design Education



✓ *Rise of the Creative Class, 2002*


Flight of the Creative Class, 2005

✓ Richard Florida

✓ *A Techie, Absolutely, and More*

✓ Steve Lohr, New York Times, 2005

Balanced Interdisciplinary

- 
- ✓ Encourage students to question every tool they use and what impact that has on the message of their work.
 - ✓ Look at ways that our inter-connected society blurs the line between art, design and culture.
 - ✓ Encourage students to actively engage in the world around them questioning how these technologies impact them and their art.

Sample Assignments



Sample Assignments

Digital Cake



- ✓ What is “digital” and how do we understand “digital objects”?
- ✓ Getting familiar with PhotoShop
- ✓ Creative thinking and problem solving to answer a conceptual prompt



iCake





Sample Assignments

Revealing a Hidden Truth



- ✓ Advanced PhotoShop skills
- ✓ Continue thinking about digital imaging as digital art
- ✓ Questions
 - ✓ What is “an image”?
 - ✓ What is “reality”?
 - ✓ What is “truth”?
 - ✓ Are images real?,
 - ✓ What is the role of an image in contemporary society & art?

Sample Assignments

Revealing a Hidden Truth



Sample Assignments

Revealing a Hidden Truth



The Actual Photos



The Altered Photo





"There's Our Man"

You can always find the jolly Green Giant ready to welcome you from the label!



The biggest thing about the Green Giant is not his size. It's the feeling of confidence you get when you see his picture on the label.

That picture talks! It tells you what it takes to be a real man. Stressful dietary supplements GREEN GIANT for adult men and NIBLETS for boys are guaranteed to make any male into a MAN.

Not just for baseball players anymore. No more need to eat your veggies. Make your life happier. Any wonder he's smiling?



Do you wish you had a day off?

Let Ritalin do the work so you don't have to.



Now in 5 flavors.



Still only 5¢



Water weight have you down?.

Have the body of yesterday... **today!**

DYSON

CALL NOW FOR A CONSULTATION!
Affordable liposuction for today's women.





Net Identity

- ✓ What defines you? Is how you are defined online also how you are defined in real life?
- ✓ What is the purpose of writing a blog, posting comments, having public conversation?
- ✓ Looking at tools we sometimes overlook

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

Tom



Bill



Dale



Gunther



california



Adam



ICON MUSIC



b mulvey



cocolicious



Company Car



Mischa St..



Samantha ..



The origi..



Frank the..



Motion Co..



The Stove..



Monte Moir



jonathan



catking



Soccer Lover



Don Kariokie



Hermione



Carlos



[M O N K S]



Billy



Hercules



DuWop Cos..



Julia



fOb



Alicia



sally



original ..





The Stovepipes Fan Club!



"Welcome!"
Male
59 years old
OHIO
United States

Last Login:
26/09/2007

View My: [Pics](#) | [Videos](#)

Contacting The Stovepipes Fan Club!

- Send Message
- Forward to Friend
- Add to Friends
- Add to Favorites
- Instant Message
- Block User
- Add to Group
- Rank User

MySpace URL:
<http://www.myspace.com/thestovepipesfanclub>

The Stovepipes Fan Club!'s Interests

Heroes	James Ergontz, Sylvia Leynor, Kyle Smith
Groups:	Rickenbacker Guitars, Rock and Roll, 60s Garage and trashed out rock n roll

The Stovepipes Fan Club! is in your extended network

The Stovepipes Fan Club!'s Latest Blog Entry [[Subscribe to this Blog](#)]

[[View All Blog Entries](#)]

The Stovepipes Fan Club!'s Blurbs

About me:

The Stovepipes were a folk-rock/garage band that hailed from Chillicothe, Ohio. James Ergontz, Sylvia Leynor and Kyle Smith formed together as the Serviettes in late 1964. By 1965, they had changed their name to the Stovepipes and recorded a single, "Don't Come Around" for the small local label Dial-Tone Records, founded by radio station disk jockey Bill "Bang" Busey, who was popular during that time on WBEX in Chillicothe. "Don't Come Around" was a regional hit for them, and they recorded a rare album of original material, called (of course!) "Don't Come Around" which came out in early 1966.

The Stovepipes were known for their Beatles-esque harmonies and songwriting, and for being one of the few small bands at that time to write all of their own material, rather than relying on other songs to cover. Largely influenced by the "jangly" California folk-rock sound, they are often compared to the We Five, Byrds or Beau Brummels. Take a listen to "Don't Come Around." Our goal as the Stovepipes fan club is to gather together anybody who has memories of the band, enjoys the band, and to try to petition to find the master tapes for their single and album and get this stuff released on CD! Unfortunately, the mp3 I made of "Don't Come Around" is from my scratched up 45, and I haven't seen another nicer copy since. James from Cleaveland, OH was gracious enough to send the pictures from his STEREO(!) copy of the "Don't Come Around" LP. I'm hoping he'll be able to convert them to mp3 (please? :) when he gets some spare time!

Conclusion

Balanced Interdisciplinary



- ✓ The university demands the technical aspect of "digital media", and the field demands the conceptual, rather than choose to teach one over the other, it is important to remain open and constantly question how this technology interacts with the larger social, cultural, and artistic world.

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October : Copenhagen, Denmark

Nov - Dec : Artist in Residence, Tsinghua University
Beijing, China

Jan - May : Wearable Futures Commissioned Residency
London/ Brighton, UK