

**MASTERS INSTITUTE
MULTIMEDIA DEPARTMENT**

A Plan for Change

**Clovice A. Lewis, Jr.
Multimedia Chair**

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"Generally, he who occupies the field of battle first and awaits his enemy is at ease, and he who comes later to the scene and rushes into the fight is weary. And, therefore, those skilled in war bring the enemy to the field of battle and are not brought there by him."

Sun Tzu, "The Art of War"

Abstract

Presentations, Web Development, and 3-D Modeling and Animation are three dominant areas of expertise in Multimedia that have emerged from the field in recent years. Training for all is necessary, but specialization is crucial for a chance at success. Central to all of these areas is the need to have a firm grasp of design. Some changes in the Multimedia field have not been adequately reflected in the curriculum that Masters Institute offers. On the other hand, Masters Institute has over-responded to other changes.

Although viable, the Multimedia Department at Masters Institute is in need of significant modifications in order to meet the challenges of the future, retain its prominence in the vocational education market, and to remain as a profitable enterprise. This can be accomplished by clearly defining a position in the field and recognizing that an adherence to a fundamental philosophy towards multimedia must guide our planning.

This paper presents a view of where we are, how we got here, and a proposed plan for getting to where we need to be.

What Is Multimedia?

The Presentation end of multimedia has typically been defined as "high bandwidth", while Web development has been called "low bandwidth". I prefer not to dwell on these terms because they simply refer to the present state of technology. I believe a more accurate definition of Multimedia Presentations is as follows: the use of a wide variety of multimedia applications to produce substantive and *physical* material to convey information in support of business activities. Web development is defined as: the use of a wide variety of multimedia applications to produce telephony/computer-based, and *non-physical* material to convey information in support of business activities.

As for the non-physical end of things, companies use web sites in two ways: as electronic brochures advertising their products and capabilities, and/or as electronic business conduits. Industry use of the web to produce electronic brochures requires a "flat", almost single-development means of production... well within the skill sets of our multimedia students. Use of the web to create and maintain databases linked to products, sophisticated updated on-line documentation and technical information, and the ordering/distribution of products and services (what could be argued as a more "dynamic" utilization of the web), requires programming capabilities... decidedly *not* well within the skill sets of our multimedia students.

Masters Institute recognizes this "flat" vs. "dynamic" distinction, as evidenced by its plans to offer only a "Web Designer" certification program backed by Novell in the Associates Program. Still, in spite of the fact that the "Web Designer" certification program does not emphasize Java programming, it is so structured, and embodies enough programming requirements that 80% of our present multimedia student body would be incapable of completing the course successfully. Those that will complete this course of study are who I would categorize as "analytical".

How The Multimedia Field Has Changed

Software for web development will soon be like DTP software. Most companies will be able to design and implement web sites, in much the same manner that they now use DTP software to create in-house technical and marketing materials. Web site development will be merged into the marketing/technical writing departments of large firms. Our graduates will find jobs working with large firms in these capacities. Any requirement for a deeper level of interaction or database integration will be managed by an MIS department, who will find even our Novell-certified graduates less capable of providing more than what Novell describes as "... the skills they need to design and create Web pages that meet an organization's corporate and marketing objectives". If we are successful, mid-sized firms may hire our graduates as consultants to create the advertising and promotional level websites they need. Small firms and individuals will simply invest in the software and wing it with albeit poorly designed, but effective-enough web sites.

Over the past few years hardware distinctions between high-end workstations such as SGI and desktop-based systems has become blurred. Software that used to exclusively drive high-end hardware has migrated to the desktop. The result is that capabilities in 3-D modeling and animation have been vastly increased, and the learning curve for these applications has risen proportionately.

It is significant that on Thursday, October 30, SGI announced that it is laying off up to 1000 employees and that the CEO would be stepping down to become the chairman of the board. The reasons sited in the media for this drastic move is because of the onslaught of Windows NT hardware and software against the not-too-long-ago dominance of SGI in the movie industry. It is also significant that the company is transitioning its innovative technologies towards providing internet solutions for the computer industry. In light of such developments, I believe that 3-D Modeling has gone in the same direction that CAD has... an important, but highly specialized and competitive market segment that requires a lot of training for relatively few jobs.

Some would argue that the recent announcements from companies such as SGI and Apple signal the flattening of the multimedia industry and an indication that it is a dead end as far as jobs are concerned. People who hold this view simply do not understand the field, why so many will always be attracted to it, or how to convert that attraction into dollars.

The Role Masters Institute Can Play

So what do we do with all the types of students that are likely to walk through our doors? How can we ensure our desire for academic excellence while accommodating the educational needs of the "artistic" and "analytical" students? How can we do this all this while continuing to turn a profit and ensuring future growth in what is still a growth industry? I believe the answer to these questions lies in what is at the heart of design, and the first axiom we tell our multimedia students... *form follows function*.

Multimedia is not a thing — it is a field of study that encompasses a constellation of skills and talents. The multimedia field is, by definition, something that demands a multidisciplined approach to learning about it. For a person to become a multidisciplined master of many medias they must possess (or somehow acquire) the brain of a scientist and the heart of an artist. Above all, a person who will be a master of multiple medias must fuel that mastery with the fire of creativity. A good school can teach skills, but creativity and talent cannot be taught anywhere.

Put simply, the function of Masters Institute should be to provide an education to students that will prepare them for careers in the computer business. Masters Institute is certified as a vocational school, and that is what it does best. Masters Institute can continue to play a significant role in the multimedia field, make a profit, and ensure its future standing as long as it resists the temptation to respond to every change in the multimedia field and discards those areas of the field that do not lie within its areas of strength.

The Present State of the Multimedia Department

At present the Multimedia Department extends from the Associate through the Bachelor level of instruction. I believe that the entire program lacks cohesion and focus. The vocational emphasis of the AS program was to be enhanced by the BS degree. Our multimedia BS students were originally intended to advance to one of two tracks that were inadequately covered in our AS degree: 1) internet/web instruction, and 2) more advanced 3-D Modeling and Animation instruction.

The intended introduction of a strong Web development component in the AS program has negated its role in the BS program. The changes in the 3-D Modeling and Animation segment of the field require that Masters Institute steps dangerously out of its capabilities to meet the demands of the field. Unless Masters Institute is willing to commit to a robust 3-D program that teaches all the top-end animation packages, invests in a professional-quality studio devoted to the production of film and video to service those rapidly changing applications and hardware, and develops a core of very experienced (and expensive) professionals who are willing to work here, we should probably get out of the 3-D game ASAP. The question that begs an answer is... "why do we have a BS Multimedia program if the AS degree covers the web more extensively and we can't keep up on the 3-D end?" The simple, short, brutal answer is that we shouldn't have one given the present circumstances.

By introducing Lightwave into our AS curriculum we've raised the 3-D modeling ante. Unfortunately we have not been able to deliver a strong enough curriculum, devote enough module time to the application (we need 12 weeks to cover Director/Lingo), or recruit qualified instructors to cover the expectations of students. Now we have a situation where forcing a Web-based curriculum into the current one will result in a dramatic loss of student population in the AS program. Importantly, we will also find ourselves over-dependent on one segment of the multimedia field. The present AS program does not adequately address the web/internet area, but it also contains very valuable courses that must be included in a well-rounded education. The present thinking is thus to add a Novell certification program, extend the AS degree by a module or two, and restructure/cut a few classes to accommodate the changes. What we have now is an AS program that needs work. It is floundering, but it is fairly well-balanced. Simply adding the Novell courses to the program will cause it to be out of balance.

An Overall Guiding Philosophy

The philosophy we should adopt, and which should become the guiding force in all of our activities concerning Multimedia studies at Masters Institute can be thus stated:

Multimedia is not a thing. It is a means of using technology in a multidisciplinary manner to achieve a harmonious blend of process and function towards the design and creation of a unique form of communication.

The benefits in adopting such a philosophy are as follows:

- We can achieve a balanced program
- We can weigh the urge to respond to the latest innovation in the field against the requirement to teach the fundamental skills necessary for success
- We can evaluate new technologies and processes as they become available within an overall framework
- We will minimize the mistake of over-emphasizing any particular technology over another
- We can counter student's demands for the latest software and hardware with a clear and easily understood plan to develop their skills
- We will be able develop curriculum that fits within a larger context, where each part compliments the whole and reflects the central philosophy
- We will occupy the "field of battle" first

What Needs To Be Done

We must "raise the bar" by embarking on a total restructuring of the way we recruit students, the way we qualify our instructors, and the way the multimedia program is organized.

Multimedia students should be evaluated for their artistic and design abilities before entering our program. We should also be more proactive about guiding them by having a committee of our staff work with them to develop individual portfolios for each student as they progress through the program. We should emphasize a "portfolio" at the end of the program instead of a "job".

We may be able to guarantee systems students jobs, but that is not necessarily applicable to multimedia students. Trust me... a person who is really good at multimedia is the last person to want a "job". Instead, we should emphasize that Masters Institute can provide them with the skills they need for a "career" in the multimedia field.

Multimedia instructors should be certified to teach the majority of applications we teach. Novell requires certification of our instructors to teach the Web-oriented curriculum it offers. Softimage requires certification as well. Adobe and Macromedia now offer certification programs for instructors. I propose that we mandate that all of our instructors who teach classes for which a certification is available be, in fact, certified to do so whenever possible.

Of the three multimedia areas discussed, Presentations and Web development are more oriented towards the "business" end of the field. 3-D Modeling and Animation, though important in Multimedia, has evolved as a segment of the field that is more appropriate for people interested in the game and movie industries. We must de-emphasize 3-D Modeling and Animation in our program. We should position ourselves as a school which prepares students for a career in the business of multimedia. This means that we should not advertise

or encourage potential students to imagine themselves working for ELM any time soon. The truth is that in order to do so they will be competing with people who have a thorough background in design, exceptional capabilities to begin with, and usually advanced college degrees.

We need to recognize the fact that the edict to make the Resident Multimedia Program conform to the requirements of Distance Learning is actually harming the Multimedia program. Lightwave was not our idea. It was mandated by Distance Learning because they somehow concluded that it would fit into their curriculum, and would therefore be best for us. Further examples can be cited, but suffice it to say that many decisions have been made in the interest of "applying more discipline and structure" and cramming multimedia instruction into a screen-sized window that have frankly been disastrous to us. In my recent conversations with the department head of Distance Learning he has intimated his opinion that the Multimedia program should be entirely discarded. I therefore have no confidence in his ability or desire to lead the Multimedia program into a healthy posture. His attentions are elsewhere, as mine would be in his position.

The multimedia staff must be included in more of the decision-making process about the direction of the program. There are many qualified and experienced multimedia professionals at Masters Institute who are capable of thinking "out of their box" and assisting in the creation and maintenance of an exceptional program.

The entire multimedia program must be re-evaluated in light of the philosophy proposed in this paper. Because of the imbalance that has been created, I believe that a complete overhaul of the program must be done with one simple goal in mind: designing an integrated, educationally and philosophically sound multimedia program that clearly specifies our intended goals for students from the moment they enter as AS candidates to the time they leave our BS program. Put simply, we should train AS students for entry-level positions in the industry and train BS students for supervisory-level positions.

A statement describing our philosophy concerning Multimedia should be posted in each classroom where it is taught.

A Plan

I propose to make changes necessary in the Multimedia Program in the following phases:

- 1) Create balance in the present Multimedia program
- 2) Redesign the Multimedia Bachelors Program to match expectations with our ability to deliver, and which reflects an integrated, consistent philosophy of providing education in the "soft" skills needed for success in the field, as well as a thorough grounding in a *wide* variety of technical skills. A proposed guideline is found in Figure 1. This was written by Gary Olsen in his book entitled "Getting Started in Multimedia Design". It describes what he feels is an ideal multimedia curriculum.
- 3) Create a plan to accommodate change, and integrate new technologies in the future

Phase 1

The reasons for imbalance in the present program have been detailed above: 1) the need for more internet/web instruction, and 2) introduction of too much 3-D Modeling and Animation instruction. Physical (Presentation) and non-physical (Web) modalities of multimedia expression must be accommodated within the same course of instruction, which will require a lengthening of the overall program by a module.

In order to accomplish this desire a two tracked system is proposed. Central to this proposed Phase 1 Plan is the fact that students must specialize, as they do in the field. The following are the overall elements of the Phase 1 Plan:

- 1) Students will follow a Monday-Thursday schedule, as they do now, starting at "Business Strategies" up to, and including the first "Director". These are referred to as the "Core" classes.
- 2) After "Director" students will go into one of two categories of specialization: "Presentations" or "Web Certification". See Figure 2 for an illustration of the proposed class schedule and structure of the plan.
- 3) The "Presentations" track will concentrate on "Physical" outcomes. Courses will be designed to offer extensive instruction in all forms of multimedia (including HTML/Web), but the emphasis will be placed on forms of communication that are expressed as print, videotape, CD-ROMs, and other manners of "high bandwidth" presentation.
- 4) The "Web Certification" track will concentrate on "Non-Physical" outcomes. Courses will be designed to offer extensive instruction in all forms of multimedia (including print, video, and multimedia authoring), but the emphasis will be placed on forms of communication that are expressed on the World Wide Web, and other manners of "low bandwidth" presentation.
- 5) Students will then follow a staggered schedule. Presentation students will have lectures on Mondays and Wednesdays, while Web Certification students will have lectures on Tuesdays and Thursdays.
- 6) Each category of student will have "Super Labs" available to them at all times. The labs will have all software and hardware available through all classes in each category. The labs will be staffed by full-time instructors.
- 7) The staggering of classes will allow for use of the same number of classes, facilities, and (in some cases) faculty that are presently available.
- 8) Details of the Phase 1 Plan implementation will be worked out and made available by November 18, 1997

Phases 2 and 3

I propose to work with a select committee of multimedia staff over the next few months to implement detailed plans for all phases.



The Multimedia University Curriculum

Any school could embark on a "Multimedia University" curriculum. From the aspiring multimedia student's point of view, my list of courses could also serve as a path with which to establish learning goals. Some of the courses I've listed below don't really exist, but I believe they should. So all curriculum directors reading this should feel free to take these suggestions and run with them. Career people in need of extra training should ask their schools if they couldn't put together courses on these subjects—not in twelve-week semesters, but one- to two-day workshops.

COURSE REQUIREMENTS FOR A DEGREE IN MULTIMEDIA

Technical/Computer Skills

- Programming (C, C+, C++, Visual Basic, Lingo, SQL, HTML, Java, PowerBuilder)
- System Integration, Networks, Intranets (Unix, Linux, Windows NT, MAC/OS)
- Client/Server Computing
- Internet Server Building and Maintenance
- Computer Security (System Firewalls, Encryption, Secure Internet Commerce)
- E-Mail System Development and Management

Software Engineering Skills

- Program Authoring (Macromedia Director, Macromedia Authorware, IconAuthor, Apple HyperCard, SuperCard, Multimedia PowerBook, Oracle Media Objects, etc.)
- Relational Databases: Applying relational databases to interactive multimedia and the World Wide Web
- Programming on the Internet (Java, HTML, SQL, Macromedia Shockwave)

Graphic Design Skills

- Composition
- Lighting Technique
- Color (Theory, Digital Applications and Color Physics)
- Digital Platform Graphic Design and Applied Art
- Photo Image Manipulation Programs (Adobe Photoshop)
- Vector-Based Drawing Programs (Macromedia FreeHand, Adobe Illustrator)
- Three-Dimensional Modeling and Rendering Programs (3-D Studio, Electric Image)
- Animation: 3-D and 2-D
- Preparing and Optimizing Graphics for the World Wide Web

Communication Skills

- Creative Writing
- Technical Writing
- Journalism
- Interactive Instructional Design
- Writing Author-Ready Narratives for Multimedia Production
- Website Management
- Designing Visual Presentations

Video/Film/Sound

- Video and Film Production
- Nonlinear Video Editing
- Videography (Cinematography, Lighting Theory and Technique)
- Script Writing (writing dialogue/ adapting a story to a screenplay)
- Sound Design, Sound and Audio Effects and Music (digital non-linear sound editing and synchronization)
- Audio Engineering in the Studio Environment

New Media Business

Administration

- Multimedia Project Cost Analysis and Estimating
- Project Design and Proposal Writing
- Project Management
- Creative Skills Integration, Team Building
- Intellectual Property Law (Copyright Law)
- Internet Commerce Issues: Entrepreneurship on the Web

Sociology and Psychology of the New Media

- The Sociology of the Internet
- Social Responsibility and the New Media
- The New Campfire: Seeking Tribal Community on the Internet
- Adapting to the Digital Workplace
- Education and the Internet: Adapting all we know about education and making it relevant to the Information Generation. ■

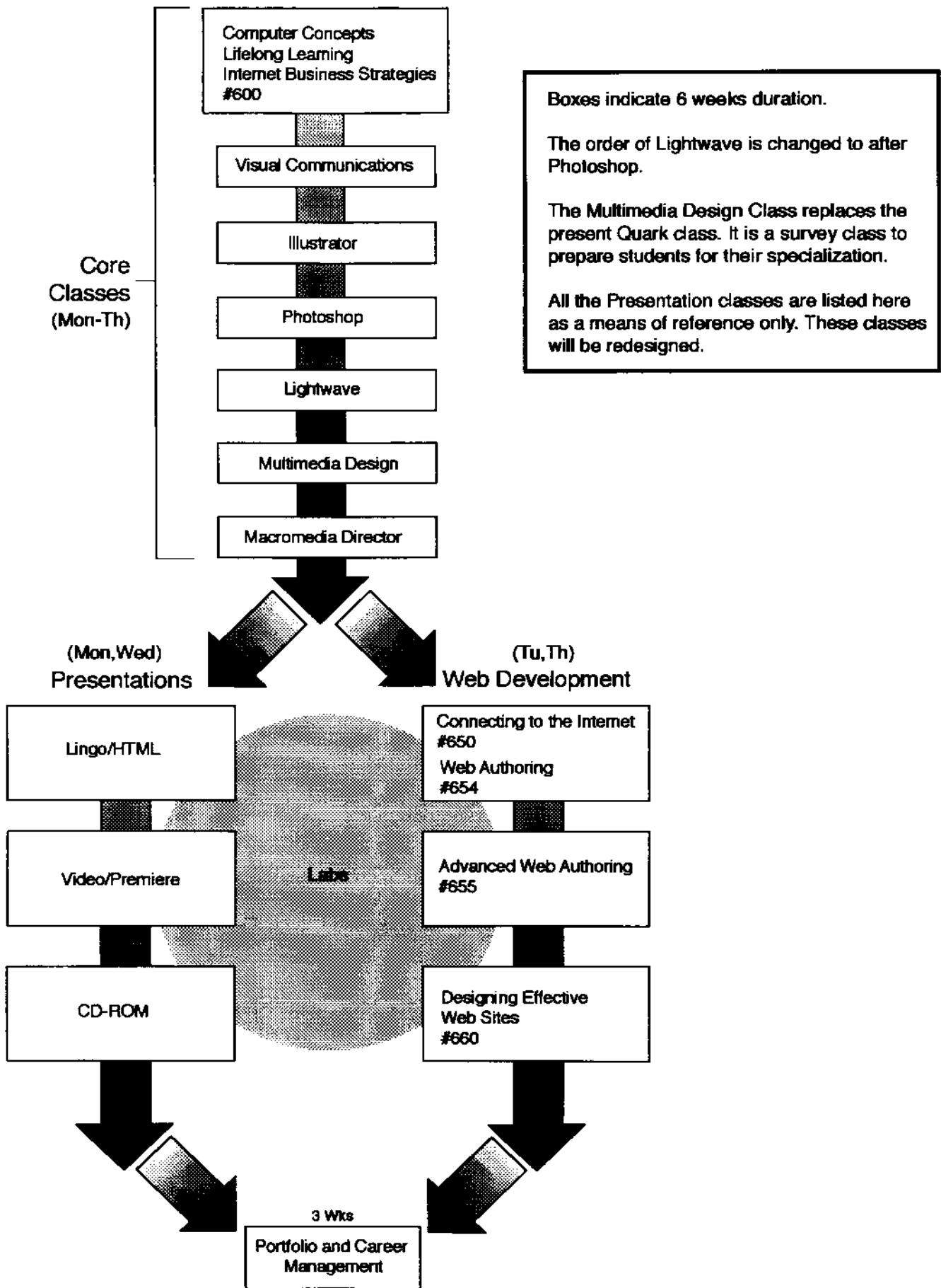


Figure 2 — Proposed Class Schedule