

Digital Design Fundamentals Preliminary Design Document

Draft Paper

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Preliminary Design Document

This preliminary design document outlines a foundation course that will be interjected into the computer graphic design curriculum at Camden County College (CCC) because of the new lecture/lab format that has been instituted in the department. The theory of design will be separated from the hands-on instruction in order to differentiate between lecture-based and lab-based courses as required by the college administration. The updated course that will break out of the computer graphics class is Digital Design Fundamentals (DDF).

The Problem

Students taking classes in any of the computer graphics degree programs need to learn the foundation of design. This has always been taught as part of the Computer Graphic Design I class. CCC made the decision to require any classes involving hands-on instruction of software packages to be lab-based courses; this new format has made it impossible to teach both theory and hands-on techniques in one class. The new DDF course will contain all the theory that will be removed from the level one computer graphics class. It is important for students to understand the relationship of the design theories to the real-world; therefore, the course will be developed around a series of projects. This project-based learning approach will allow the department to teach technique and theory separately without losing the tangible outcome of portfolio quality finished work.

The materials and activities created for the Digital Design Fundamentals course provide students with a variety of options to learn and test their knowledge as well as give the creator the opportunity to reflect on the process and continue to refine the product. Even though (DDF) is a theory class, it will still be developed around a constructivist theory. Constructivism is centered on the idea that learners build new knowledge upon the foundation of previous learning and that

learning is active rather than passive (Hoover, 1996). Grunert O'Brien, Mills, and Cohen (2008) stated, students learn more when they participate in the process of learning and participation can be in the form of discussion, practice, review, or application. The Digital Design Fundamentals course incorporates discussion, practice, and application using real-world projects, and review in the form of critique. At the outset, it was difficult to update activities and assignments from the original course into an updated course that will also be offered online; however, it was evident, while the goals and objectives are the same, the activities and assignments would need to reflect updated techniques and knowledge needed for the student to be successful in the co-requisite lab-based course. Students will gain the knowledge and skills necessary for a foundation in the graphic design industry.

The Learners

Camden County College is a vital resource for transfer education and career training in Southern New Jersey. Our total student body (exclusive of non-credit courses) for FY2015 was 22,526: 50.1% Caucasian, 20% African-American, 5.9% Asian, 15.8% Hispanic, 1.3% American Indian, .2% Native Hawaiian or Pacific Islands, .9% two or more races, 5.7% not reported. The mean age is 27 with 47% male and 53% female. While 51% of the students are enrolled full-time and 48% part-time, the majority work full-time while taking a full course load (Camden County College Fact Book, 2015, p. A-6). The computer graphics department includes degrees in: Computer Graphics, Game Design and Development, Video Imaging, and Web Design and Development. The computer graphics department has one of the largest enrollments in the Business and Technical Studies division with just under 250 students taking classes in the aforementioned degree programs offered each semester (Camden County College Fact Book, 2015, p. B-3). Students in the computer graphics program range from 17-80 years of age and

have a diverse background. There are a handful of students who have some basic experience with graphic design and technology while others have not used any digital design equipment. The range of students' technical expertise varies each semester. Many students coming from area high schools are well versed in the use of technology; however, there are other older students or students on foreign visas who have little or no technical knowledge. The make-up of the student body in the program mirrors closely the demographics of the college with most students having no prior design experience. There is typically a mix of students from different backgrounds with a variety of educational proficiency. The two main groups are broadly associated in two particular areas: (1) first year community college students who are either interested in or wish to pursue a career in one of a variety of graphics programs and (2) the students who need technology training in order to acquire the skills needed to continue to work in the graphics field.

Learning Theories

Although the Digital Design Fundamentals course is being developed as a foundation theory class, it is still essential for students to demonstrate their knowledge through examples, therefore, the major assessments will be in the form of projects. The course is considered a lecture based course because no software will be taught. The course is built on the constructivist view pertaining to learning environments and instructional strategies as outlined by Reiser & Dempsey (2007) such as: engaging learners in realistic activities, providing for collaboration, supporting learner goal setting, encouraging reflection on what and how students are learning. Specifically, project-based learning will be implemented to offer students realistic challenges that relate to real-life situations they may encounter in the industry. Studies have shown that successful implementation of project-based learning can increase retention and improve students'

attitudes toward learning (Vega, 2012). The Buck Institute for Education identified eight elements that are essential to project-based learning: significant content, 21st century competencies, in-depth inquiry, a driving question, a need to know student voice and choice, critique and revision, and student presentation of work. (Zhang, Ridgway, & Sachs, 2015). Students will be required to evaluate multiple solutions to open-ended design problems, develop and articulate their design, and defend their design choices.

The instruction and assessment for DDF will revolve around four major projects, which will be worth 70% of the final grade. The project-based learning approach gives students an opportunity to engage in realistic problem solving (Boss, 2011). The DDF class revolves around real-world projects to learn fundamental design principles. Students will interact with clients, conduct research in real settings and develop designs that could be used in industry. Thomas (2000) revealed that in project-based learning, the project is the central teaching strategy, including complex tasks based on challenging questions or problems to involve students in problem-solving, decision making, or investigative activities; also to give students the opportunity to work relatively autonomously over extended periods of time; and, culminate in realistic products or presentations. Barron, Schwartz, Vye, Moore, Petrosino, Zech, and Bransford (1998) explained that a project must be designed to help students to make a connection between activities and the underlying conceptual knowledge designated in the objectives. The activities and products that students pursue must be orchestrated in the service of an important intellectual purpose (Blumenfeld, Soloway, Marx, Krajcik, Guzdial, & Palincsar, 1991). The four projects developed for the DDF course will incorporate real-world activities that will relate to design techniques that will be part of the instruction as well as class discussion culminating in a critique for each project. Tinapple, Olson, and Sadauskas (2103) believed a

critique-based environment fosters personally relevant learning and allows students to hone communication skills.

Goals and Objectives

This course introduces students to the fundamentals and practical applications of design for a variety of media. Course content includes principles of conventional and modern design, typography, and effective use of color depending on the final output. Students will gain experience in executing variations of rough layouts through to final composition. The vocabulary (advertising language) associated with graphic design/advertising and production processes will be covered.

Course Objectives:

- Demonstrate an understanding of the power of design, and explain what is "good design"
- Utilize the principles of design, concept formation, typography, and color in developing designs for various types of media
- Interpret target audiences
- Utilize the sequence of layout stages – thumbnails, roughs, comprehensives, and final renditions
- Prepare creative advertising pieces for specialized environments
- Utilize the vocabulary and language associated with graphic design
- Demonstrate the ability to work with art and color in different design environments
- Demonstrate the basic principles of using visual cues to achieve appeal and functionality
- Employ visual hierarchy in headings and body to organize information and use these

elements on a page to guide the reader's eye through the material

Rationale

Digital Design Fundamentals will be a foundation course for all classes in the computer graphics department. Every student must take this course and it is recommended that it be taken in the first semester. The degrees in which the course will be required are: Video Imaging, Computer Graphics, Game Design, and Web Design. Students who enroll in these degrees are looking for careers as: video editors, producers, front-end web designers, animators, editorial designers, user interface designers, and game designers. Students in the program range from some experienced designers to students who have never taken a creative course; some are highly technical while others have not used a computer for more than word processing.

The project-based course is developed using Gagne's Conditions of Learning. Gagne (1985) believed that in order for cognitive strategies to be learned, students must have the opportunity to practice developing new solutions to problems. This course is established around four major projects that mimic assignments that students could encounter when working in the industry. Instruction centers on the theory and principles of design, which is introduced systematically as it relates to each of the four major projects, in order to gain the student's attention and inform the learner of the objectives of each learning experience. Design is all around us. It is important for students to recognize how the principles of design relate to things they may have already seen or experienced, thus some of the learning activities involve students leaving the classroom to find examples. Once students have recorded details of things they have seen and experienced, discussion ensues to facilitate a better understanding of what is expected as they begin developing their ideas to create a comprehensive design. The projects become the framework of the lesson plan. The culmination of the assignment is a

group critique, which gives the students a chance to explain their process and also hear what other students have to say about their work. In this way, students are involved in all aspects of delivering a final project from researching, to understanding, to creating a finished piece that reflects their knowledge. Bell (2010) believes that project-based learning is an approach to learning that allows students to drive their own learning.

The design activities combine comprehension and research, and culminate in student created original designed pieces. The connection of what has been learned to an actual real-world project resulting in a new design is a critical and effective departure from the more theoretical approach. Learning is facilitated when the learner is provided the opportunity to apply the new knowledge to a new specific situation; this application requires the learner to use the information to complete specific concrete tasks or solve specific problems (Merrill, 2007).

Students are not fond of having their work criticized but critique is an important skill for a designer to learn. Communication is imperative; students must be able to talk about their work and comment effectively on others' work as well. Critique will help broaden communication skills, which is important because designers need to learn to take feedback from their peers, clients, and bosses (Lawless & Crabill, 2015). Critique is an entire class collaboration that requires each student to present his or her work as well as talk about another's work in order to offer the student the most appropriate and relevant experience within his or her learning environment. This objective ability to dissociate oneself from his or her work, and allow constructive criticism to shape the final outcome, is an integral part of design. Bandura (1971) asserted that learners are dependent upon each other to get what they want. Critique gives the students the opportunity to learn from each other as well as the instructor; and because critique is such an important part of the learning experience, the students are rewarded for participating by

having the option to use the suggestions given during the critique exercise to enhance their pieces and resubmit them for a higher grade. Learning is wrapped in a social context and according to Hatcher (2015), the learner plays an active role in the learning process and does not simply receive information. Group critique takes advantage of discussion forums to help learners learn from other learners (Horton, 2012).

The target audience is the focus of one of the collaborative assignments designed for the (DDF) class. The assignment requires students to work in groups of three from concept development through final comps. Collaborative approaches benefit students in learning skills, such as the ability to work in teams, solve complex problems, and apply knowledge from one lesson to others (Barron & Darling-Hammond, 2008). The groups will research their specified targets, write individual biographical information for each, confer and swap materials to research further the product that will logically pair with each target. This structure forces the collaborative model and allows creativity to be more robust giving students a real-world design development experience. Barron and Darling-Hammond (2008) reported that collaboration supports individual learning by supporting resolutions through arguing different perspectives, explaining one's thinking, observing the strategies of others, and listening to explanations.

Presentation skills are essential for a designer to succeed in the selling of his or her ideas; if a student cannot express himself or herself with passion, enthusiasm, and one hundred percent confidence in his or her concept, chances are the idea will never amount to anything (Garcia, 2010). Creativity is not enough. Many great ideas never reach fruition because the architect of the thought was unable to communicate the inspiration in a cohesive and understandable way. Presenting to a client quickly becomes a more emotionally charged situation for even the coolest student; presentations call for a set of skills and attitudes that do not always come naturally

(Downs, 2012). A designer must never be overly reactive to the positives or the negatives; moreover, the individual designer must strive to be objective about his or her own work and understand that he or she is part of a larger process. The learning activities require an interactive component that involves students researching a specified topic and presenting that topic to the class. Presentation skills are broadly applicable in a professional environment. Presenting for the class teaches students how to prepare material for public presentation, and practice improves their public speaking skills (Weimer, 2013).

An important skill for any designer to master is the ability to communicate effectively with the client. Poor communication is a surefire way to damage any project or relationship; no matter what business you are in, healthy communication skills will help you do it better (Girard, 2012). Most clients are not designers, so they do not think like an artist nor do they always understand a designer's vocabulary; therefore, "visual literacy" is a crucial element for graphic designers. One of the learning activities forces students to communicate with imagery, no words. Students will have to work hard to develop imagery that makes a statement while other students will need to interpret that image, also initiating dialogue.

Color is one of the most difficult of the design elements to understand and conquer. Color has many intricacies such as hue, variation, saturation, etc. and color also holds emotion and meaning. Students must understand that some colors may be interpreted differently in other cultures. Another learning activity is designed as a social activity to engage students in conversation about the meaning of colors in relation to different cultures as well as to their own personal experience. This assignment is a great way to get students to start to recognize the power of color.

Assessment

Assessment for the DDF course comes from a combination of different elements, the largest percentage being the major project assignments. The grading breakdown: 70% of the final grade will come from the major projects and learning activities associated with those projects, 25% will be for participation, and 5% will come from tests and quizzes. Project specifications will be outlined for each major assignment but students will be responsible for analyzing the need, defining the design features, and developing the finished piece from beginning to end. Bruner (1961) believed the instructor's role was to facilitate the learning process by giving students the information they needed without organizing it for them. Students are in complete control of all elements of their projects from beginning to end, mirroring what they may encounter in industry. Design education is very complex because it does not fit neatly into a simple matrix for measurement of success; it relies on a subjective form of measure. Critique is a very important component of the DDF course and, therefore, is weighted more heavily than tests. Learning how to give and receive feedback effectively is essential for a design student (Cheng, 2013). Tinapple et al. (2013) suggested that well run critique sessions are powerfully motivating; hearing feedback from a diverse group allows the learner to form an overall picture of how their work is perceived.

Each major assignment is evaluated on three distinct characteristics; client satisfaction – has the student followed all of the specifications outlined by the client, support material – has the student used strategies to research and analyze the design problem to offer the most affective solution, overall design – have the elements and principles of design been used effectively in the overall look and feel of the piece. This is a creative, project-based course; 70% of the final grade will be based on individual designs. Assignments will go through the thumbnail, rough and final comp stage. Comps will be shown online for formal class critiques.

Peer evaluation and feedback is an important part of the design process and will count toward the class participation grade. Figure 1 details the grading rubric for major project grades.

Points	Description
	Supporting materials
30	Research, thumbnails and roughs complete
15	Partially complete research, thumbnails and roughs
7	Incomplete research, thumbnails and roughs
0	No research, thumbnails and roughs
	Client satisfaction (following directions)
30	Followed directions explicitly
15	Followed most instructions
10	Disregarded instructions
	Product Final Comp
30	Excellent design, well represented with clean professional work
15	Satisfactory redesign complete but not professional
7	Incomplete designs
0	No completed work

Figure 1. Digital Design Fundamental major project grading rubric.

Learning Activities

Weekly lectures will be posted including discussion topics that will require responses. For some assignments, emailed roughs will be required, which will allow for comments of progress on a project before the piece is critiqued. It is expected that students will spend a minimum of seven (7) hours per week developing projects, perusing course material, writing on assigned topics, and participating in course discussions.

Every week a question will be posted in the discussion forum. Online discussion forums are used to encourage thought and interaction between classmates. This interaction is a critical

part of the course experience. Online participation will be evaluated on a quantity and quality basis. Comments should advance the discussion, add value, and be relevant. Comments such as "I agree" or "ditto" are not considered value-added participation. Therefore, support for agreement or disagreement should be clearly stated with reasons. One (1) participation point will be added to the final grade each week when a thought provoking post and response is made. Homework is assigned every week and should be completed in order to better understand the material covered that week.

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