BAUHAUS COLOR PEDAGOGY; EXPLORING INFLUENCES AND RELEVANCE IN TODAY'S U.S. VISUAL COMMUNICATION DESIGN PROGRAMS

A Thesis
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ABSTRACT

No school has impacted color pedagogy more than the artists and teachers of the Bauhaus. Its transference to America in the early to mid 1950's created a paradigm shift in the methodological approaches of art education and consequentially, design education as well. Today, questions concerning relevance and validity of those past pedagogical influences have surfaced, particularly with regard to adaptability in today's changing design curricula. A nationwide survey was conducted to ascertain the current state of color theory education in the U.S. The survey also investigated the adoption or adaptation of Bauhaus color pedagogy into U.S. visual communication programs. This research will document the influences and continuing relevance of Bauhaus color pedagogy in U.S. design education. It will evaluate current methodologies being taught in color theory courses, and make suggestions for future color theory curriculum in visual communication programs.
This thesis is dedicated to the memory of my mother, Gabrielle V. Gravina.

Her life was cut short by the worst our world has to offer, but her pain and suffering is no longer a burden she bears. She is greatly missed, and I know she is looking down and watching out for me and my family.

Gabrielle V. Gravina
1957 - 2004
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CHAPTER I

INTRODUCTION

"If we teach color solely as theory and fact, then its relevance is limited. If we teach color to expand how a student thinks, then it will never lose its relevance."
- Richard Lytle

The idea of something losing its relevance requires a certain level of innovation or change to take place, which results in that something being obsolete or out of date. For those that believe the methodological influences of color pedagogy attributed to the Bauhaus and its Emigre's here in the U.S. are obsolete in today's visual communication programs, this thesis offers support and defense of its continuing relevance.

At the beginning of this chapter is a quote by Richard Lytle of Yale University. He succinctly and concretely summarizes through his statement "The idea that teaching color (or for that matter any subject at all), if done with the intent of expanding a student's mind and thinking will never lose its relevance." Learning about the subject of color has an incredible ability to not only develop professional and pragmatic abilities in design, but it can also expand a student's awareness of themselves and their acuity to the surrounding world.

The pursuit of this research topic and inquiry is based on a personal passion for the history that surrounds the Bauhaus. As a design educator with a strong enthusiasm for teaching color, it seems ideal to be able to blend these two
interests and make a contribution to the body of knowledge in design through this research. One of the key issues of inquiry was the unavailability of information about the current form of color pedagogy here in the U.S. since the closing of the Bauhaus, and the pedagogical offerings that were formed here afterwards. The direction of this thesis was solidified out of a desire for that information.

The structuring of this thesis offers the reader some insight into defining "Bauhaus Color Pedagogy," looking at its start, and how it was brought to the U.S. and disseminated into classrooms today. This thesis will also offer support for the continuation of the methodological influences of color pedagogy from the Bauhaus, and show that it still possesses relevance today.

Chapter Two begins the historical insight through a look at the historical associations and pedagogical influences regarding color from the Bauhaus during its existence in Germany between 1919 and 1933. Chapter Three touches on the pedagogical influence and transference regarding color that occurred in America in the mid 1930's and the years that followed. Chapter Four showcases the results and findings of a nationwide survey that was conducted in 2005 as a means of gathering quantitative and qualitative data about the current state of color pedagogy in the U.S. Included in that chapter are comments about the findings from the survey. Chapter Five is an analysis and critical look at a course developed for the Department of Industrial, Interior and Visual Communication Design at The Ohio State University in 2005. The course was an extension to new developments occurring in the department, affording an opportunity to
create a discipline specific color course. Chapter Six offers suggestions for future consideration, specifically for those who have an interest in color pedagogy. Chapter Seven includes closing thoughts supporting the relevance and continuation of the past methodologies and influences that the Bauhaus and its educators brought forward for us to apply in our visual communication design curricula today.
CHAPTER 2

BAUHAUS COLOR PEDAGOGY: HISTORICAL ROOTS
OF INFLUENCE AND TRANSFERENCE

2.1 The Bauhaus In Context

The historical significance the Bauhaus offers us is vast and plentiful. So much of our world today has been affected by the influence that the school has had on art, design and architecture. This influence has spread outward into many avenues of our lives, from the simplest things to the most intricate. In the education of art and design, the Bauhaus played a very important role in the remodeling and teaching of those subjects.¹

It was in the year 1919 shortly after the end of World War I, that a new form of education came to rise from the former academic and "salon art" schools that were the teaching institutions of that time. A revolution that was aimed at an avant-garde thinking and worked at creating a "New Man" from the disaster that Germany faced at the end of the first World War.² This revolution took shape as the Bauhaus or "building house." It was the school's founder Walter Gropius (1883-1969), one of the most important architects and educators of the 20th century, who came forth to head the school after returning from the war himself.³

The changes in art education were just one example of a postwar renaissance of new thinking and processes aimed at reviving a country that was
socially and politically recovering from the war. The new model of education, which was a continuation of progress made by the Deutsche Werkbund founded in 1907, recognized the importance of education as a means to that recovery. There was a spread of a new philosophy that called for hands on experiential learning and mastery of solving design problems through fundamental knowledge of theory, materials and design processes. Gropius became a follower and believer of this approach while he was a practicing architect and Werkbund member, prior to joining the war effort.5

Gropius recognized the importance of delivering practical and theoretical skills that could benefit the student, and make them useful in the working world. His intentions were to offer reform and renewal in the arts and design to a young German republic consisting mostly of returning soldiers from the war. He offered them a practical education which could help reunite society through integrating art and design more into life.6 These skills which would benefit a student to both think in terms of an artistic and aesthetic sense, along with the functional and practical application for production purposes. Those intentions became the foundation for the pedagogical approaches at the Bauhaus.7

Gropius's idea was to build a school where encouragement was given to create, instead of being taught merely to repeat that which had already been created, (a method of education that was the keystone of academic or salon style school of times past).8 One example of that new method of education which this thesis is based upon, was the teaching of color and a strong emphasis on a more
purposeful and pragmatic application.

The Bauhaus's first location, the city of Weimar, where it resided from 1919 to 1925, is one of Germany's most cultural and historically significant cities. Great artists and writers have furthered their talents and made names for themselves while residing in this city. Such names as Johann Wolfgang von Goethe, Friedrich Schiller and the philosopher Friedrich Nietzsche were all profound contributors to the cultural heritage the city still possesses today. Artists such as Auguste Rodin and Edvard Munch both had their breakthroughs in the arts world while living in such a culturally rich city.  

Politically the city of Weimar also shares historical significance with its cultural heritage. The city hosted the National Assembly in 1919 where the first parliamentary constitution was adopted. This constitution lead to the creation of the famous "Weimar Republic." Simultaneously, the start of the Bauhaus was connected with Germany's first democracy. The Bauhaus and the Weimar Republic both shared the commonality of beginning and ending under the same political conditions.

The second and probably most influential location for the Bauhaus was in the mass production and manufacturing city of Dessau, Germany. The Bauhaus was moved to Dessau due to a lack of funding from the city of Weimar, as well as political issues which put pressure on the faculty. Dessau was chosen for the excellent resources of its production and warehouses, which at the time were manufacturing airplanes in the Junkers factories, and producing other goods.
During the move to Dessau in 1925 the Bauhaus was undergoing a shift in its artistic and pedagogical direction. A direction towards a more reductive and systematic school aimed at its original focus of architecture and building that was in Gropius's first manifesto from 1919. In Weimar that idea was never able to be fully grasped, so the move to Dessau allowed for the seed to be planted and a new direction to take place.\textsuperscript{11} When the Bauhaus moved to Dessau it began its rise as the one school in the world where modern problems of design and production were approached in a systematic and modern atmosphere. Color was dovetailed into the curriculum and took on a similar systematic approach.\textsuperscript{12}

During the years that the Bauhaus resided in Weimar and Dessau there were four key instructors who greatly influenced the teachings and the application of color theory at the school. The first was a Swiss artist and devoted educator Johannes Itten, a strong personality who was deeply concerned with the complete understanding of man and the making of art.\textsuperscript{13} The second was the German raised but Swiss born Paul Klee, who was a well known modernist painter that drew from a systematic exploration into color. Klee made significant contributions in developing strong theories towards the understanding of color and its relationship to art.\textsuperscript{14} Third, the Russian educator and painter Wassily Kandinsky, who was one of the leaders of the abstract art movement, contributed some of the most important and fundamental stages of thinking and teaching to the world of color. His theories focused on the objective aspects of color and their effects, making him an incredible asset to the Bauhaus faculty.\textsuperscript{15} Last on the list was the Hungarian László Moholy-Nagy, a virtual
unknown at the time of his appointment. Moholy-Nagy possessed an amazing sense of experimentation in his work. He also helped usher in the Constructivist and the De Stijl’s geometric reductivity, that the Bauhaus students and teachers would eventually draw influence from.16

This thesis chapter will explore these four instructors and their influences because of their significance to this subject. Although other artists and instructors like Joost Schmidt, Oskar Schlemmer, and Ludwig Hirshfeld-Mack helped in the understanding of color, the four instructors chosen for this chapter in the thesis produced the most significant influence and body of work on the subject of color pedagogy while at the Bauhaus. In addition it should be noted that Josef Albers, the student turned teacher at the Bauhaus, would not make any contribution to color pedagogy during his years at the Bauhaus. However, he did begin to formulate his conception and approach that he would eventually bring to America while studying with his teachers and colleagues at the Bauhaus in Germany.17

Color can be one of the most exciting and interesting forms of learning in the visual arts. Its theoretical history can be traced all the way back to Greek Antiquity and its pedagogical history can be traced back to the earliest forms of art education. However, the past methods and application of color theory were very narrow in scope and dealt primarily with individual painting application and personal use of color as needed. The methods and of the Bauhaus proved to be more scientific and systematic, devoted to finding a usefulness for students and practitioners as a pedagogical process for manufacturing and production.18
The Bauhaus was historically one the foremost educational institutions that brought about many theories and approaches to color. Boasted by a group of talented and strong willed personalities that taught at the Bauhaus, the school characterized a unique faculty working within it walls.\textsuperscript{19} The school's use of pragmatic and skill training gave the students a great deal of experience and knowledge to build upon as they worked towards the mastery of a particular trade. Students that entered the Weimar Bauhaus had to pass a series of courses known as the "basic course," which was built by Johannes Itten when he was brought to teach at the school in 1919.\textsuperscript{20} Itten formulated a series of classes that could give the student a firm grasp of the fundamental abilities – and in that process could open the students minds and abilities to what was available to them, and experiment in both the physical as well the psychological world.\textsuperscript{21}

The teaching of color at the Bauhaus was part of other curricula as an added piece. It took on the form of demonstrations, hands on experiments, lectures, and explorations into works of art as examples of the theories that the instructors believed. The theories and approaches of the instructors held similar characteristics and resembled a complimentary attitude towards one another. They also shared similar influences and references in the modeling of their individual theories.\textsuperscript{22} Their sources are derived from a handful of artists, scientists, and theorists who offered their own explorations and experiments into the world of color. What stands out as an interesting fact that can be observed through learning about these five instructors is that many of their ideas did not originate from their own minds. Some of their theories and applications came
from other sources. However, it was their ability to assimilate these ideas and apply the results in their teachings which made them twice as effective and meaningful to the program and to the students.

The artists, scientists, and theorists who had the most influence on the color pedagogy at the Bauhaus were Johann Wolfgang von Goethe, Philip Otto Runge, Adolf Hölzel, Michel Eugéne Chevreul, and Wilhelm Ostwald.\textsuperscript{23} Influences also came from other sources, such as art movements that were current at the time the Bauhaus was in effect. Examples of this include the Dutch De Stijl movement headed by Theo van Doesburg, and the Russian Constructivist movement. Both of these movements come into play near the end of the Weimar Bauhaus years.\textsuperscript{24} What sets apart these influences is the theories they presented and how the Bauhaus instructors were able to use them in a functional and methodological way.

2.2 Artistic, Scientific, And Theoretical Influences

Johann Wolfgang von Goethe (1749-1832) for example, was a famous German poet, writer, and theorist. He gave forth one of the earliest and most impactful theories of color that the Bauhaus instructors used.\textsuperscript{25} His theoretical approach was sought by Bauhaus instructors for his personal venture to understand color from an artistic point of view. Goethe published a book on his theories titled \textit{Farbenlehre} (Doctrine of Colors) in the year 1810. He wrote in his book about his beliefs that the system evolves from an elementary opposition between light (positive) and darkness (negative). Goethe's intention was to deal
with the body's senses to color and how it effected our consciousness. His theory of yellow representing a positive color being associated with the words such as light, brightness, warmth, and closeness brought about a good impression to a viewer's eye. The color of blue was labeled as a negative impression using words like unsettled, distant, and yearning. His intent was to deal with the human reaction and psychological responses to color. He was able to equate emotional responses and terms to the interpretations of color, thus giving his theories and approaches a more humanistic quality.

It is easy to understand why the instructors of the Bauhaus favored his view based on the understandable reasoning and relationship to people from an elementary standpoint. His system was able to create a sense of order in a chaotic and subjective area, and bring it down to terms that related more to artists and viewers alike.26

Goethe devised his most well known color system in 1810 that he described as being made up of three colors, not producible by any other colors. Those being pure yellow, pure blue, and pure red. All three of these colors were individual and held no characteristics of the other counterparts.27 Today these are viewed as the three subtractive primary colors, or primary pigments. The mixing of any pair of the three subtractive primary colors creates a secondary mixture of green, orange, and purple which are also known as secondary colors. These three colors become a part of their particular level of positive or negative translation, depending on which colors they are derived from based on Goethe's theory. The strength in his theory as a benefit to artists is the assigning of an
opposing color to each of the three primaries in the color wheel. This lent a great deal of worth in being able to balance a composition and create harmony, using a guide to establish contrast through complimentary color.\textsuperscript{28}

Goethe relied heavily on a perceptual and emotional response in his theory of color. He also dealt with the aspect of three color phenomena which he wrote about in his book. The first being colors which appear in the natural world. He titled these colors as "chemical colors" which were comprised of pigments and surface colors in nature. The second observation he made was that of colors produced in a laboratory. These colors fell into the category of "physical colors" which were produced by prisms or light reflections. Lastly were those colors that were viewed as illusions or perceptual colors. These colors were categorized in the "psychological" heading and produced after image colors that were not physically present but were made by the eye and the mind. Goethe's writings on this part of the subject lent themselves well to the more expressionist artists, in particular the instructors at the Bauhaus that came from that background, because Goethe's approach dealt with the mind's interpretation of colors.\textsuperscript{29}

Another influence in color theory who was alive during the time that Goethe published his book \textit{Farbenlehre} (Doctrine of Colors), was Philip Otto Runge (1777-1810), a romantic painter that was publishing his own work \textit{Die Farbenkugel} (Color Globe). This book presented his theory based on the shape of a perfectly symmetrical sphere which he published in a three dimensional color arrangement.\textsuperscript{30} It is interesting to note as well that Runge's sphere was only the
second attempt at creating a dimensional structure. The first real attempt was
done by an English physicist and philosopher by the name of J.H. Lambert, who
created a dimensional pyramid structure for a theory of ordering color.
Lambert's structure proved to be a starting point of reference for Runge in his
creation of the sphere.31

Using the sphere allowed Runge to use polar axis endpoints of black and
white with an achromatic grayscale in the middle of that axis as the median
point where all colors come together. The pure colors lay in the center outer
ring, which he referenced Goethe's color system for in his application and
placement of the colors. The levels of value changes in the mixtures between
the pure colors and the polar ends become the stages of lightness and darkness
around the sphere.32

Runge was trying to gain a sense of order to the totality of all possible
colors. His sphere represents an aim at gaining a genuine color system which
was produced with his intent as a blend between science and art, taking a view of
being a mathematical figure of various philosophical reflections. Runge's sphere
also gave dynamic qualities to his theory in the movements which colors can take
throughout the sphere. Three movements in the sphere were described by Runge
as colors that move from left to right, up towards the white pole, and down
towards the black pole, and lastly the movement toward the center gray of the
axis. If the color movement continues on past that gray center it will then travel
towards its complimentary color on the adjacent side of the sphere. Paul Klee
would later use this theory as a foundation when he gave names to the various
types of movements within the sphere. This validates the usefulness and success of Runge’s theory and the sphere system he brought forth, which was at the time a completely new way of thinking. It would lay the groundwork and foundation for future color systems.  

The third influence that played a major role in contributing to the teachings that the Bauhaus offered was the German artist and educator Adolf Hölzel (1853-1934). He was one of the important artists and educators alive during the time when the old classical academic forms of art education were prevalent. He was able to take part in the changes that led to creating a more modern educational frontier. Hölzel’s favoritism was based largely on his abilities to look ahead and be open to new ideas. His teachings and theories were favored heavily at the Bauhaus, based on his intentions of being at the forefront of the new modern movement in education. His theories and ideas were greatly informed by his ability to absorb the things that he saw around him and experienced, along with his ability to translate that information into teachable curriculum for the students.  

Hölzel’s theories on color were a lifelong pursuit of the “basic laws” of education and how they worked in all forms of art, color being just one avenue of those laws. His drive was perpetuated by a willingness to learn and to be able to share with others. One person in particular whom he taught even before the Bauhaus became a reality was Johannes Itten. Itten was a student of Hölzel’s and studied very hard under his instruction. Hölzel’s affects, as we will see later in this paper, were influential on Itten’s methods of teaching both in his color
theory and his inception of the “basic course” that Itten and the Bauhaus are so well known for.³⁵

What becomes interesting about Hölzel’s color theory is that it was more of a recognition of other existing theories that came before him. His ability to recognize and implement those theories into his teaching became an important part of how he taught color in his classes.³⁶ Art also became an important element in what he observed and learned. His observation and interest in the Neo-impressionist theory played a role in how he saw the future of color being used.³⁷

The color system that Hölzel created was a model that showed various combinations of the primary, secondary, and tertiary colors. His diagram within the center gives the structural pattern that the colors can be grouped in. Hölzel chose to negate some of the more scientific discoveries and thinking about color. Instead he took a stance toward the more natural and humanistic side of color and how it is perceived by a viewer. At that time the German chemist Wilhelm Ostwald was working on his color theories that were almost solely based on scientific observation and categorization. Hölzel respected that viewpoint, but settled on taking the approach that could better serve the artist and student, on the grounds of an artist’s pursuit to achieve perfect harmony. He felt that the pursuit of emotional and spiritual qualities in color was far more useful for the artist in their own works.³⁸

Another of Hölzel’s offerings in color theory was his system of the seven categories of color contrast. The idea behind his seven color contrasts was based
on offering an approach to color that was not rigid, but gave an artist alternatives
from which one could choose. The order of the seven categories comes from
looking into color phenomena, and reflecting on the areas of change that an
artist can reach into and use. The seven categories are as follows: A simple
contrast between one color and another, a contrast between a light and dark
color, a contrast between a warm and cool color, and between complimentary
colors. There was also the simultaneous contrasts and the contrasts of quality and
quantity. Each of them was created to enhance and bring out the greatest
qualities of color within a work of art.

The fourth influence included in this thesis which this thesis was the
French professor of chemistry Michel Eugène Chevreul (1786-1889). His research
into color brought forth a practical foundation for a theory of color that could be
useful for artists and designers alike, although Chevreul had little interest in
dealing with color from an artistic viewpoint. Instead he opted to focus on
the perceptual and deceptive nature of color, which came to his attention while
working as the director of the famous Gobelin factory in 1824, a tapestry and
carpet manufacturer in France. He came to realize that colors could be observed
that were not present in the fabrics being produced. Instead he saw optical
mixtures of two adjacent dyes which produced an undesired effect for the
company's customers. He resolved that is was not the dyes themselves which had
any faults, but the combination of the colors which produced unintended
results.
In 1828 Chevrel began to publish his research into color phenomenon. This is where he first offered insight into the terms of Simultaneous Contrast and Successive Contrast. The first deals with a phenomenon of how our perception of one color can be affected via proximity or juxtaposition to another color.\(^4\) The later term of Successive Contrast is explained best as the afterimage of a given color. This occurs when the eye’s photoreceptors (known as cones), become saturated or worn down in their color acuity. As a result an after image (usually the colors complimentary color) will appear, creating an illusion or unpredictable result which appears physiologically, but in reality is not there.\(^5\)

Shortly after his initial discoveries, Chevrel began a comprehensive study into the physiological phenomenon of the contrast of colors.\(^6\) In 1839 he published a book *Dela loi du Contrast Simultané des Couleurs* (The Principle of Harmony and Contrast of Colors). His book dealt with issues of after image, juxtaposition, diffusion, analogy, and contrast. Chevrel offered support that colors which posses the greatest level of difference between the colors will result in a higher level of contrast. With colors that are similar, the higher the risk of producing optically unintentional or unwanted results. This became a road map for students and instructors that wished to avoid unintentional color phenomena in their work, particularly when the Bauhaus began to move towards a more production and mass produced pedagogical methodology. Diometric to that view, were some students of the Bauhaus (and even Impressionist artists like Georges Seurat) that used this physiological phenomena to their advantage, by applying the knowledge of optical mixtures of color to achieve a desired effect.
in their work.\textsuperscript{47} Later Josef Albers would build his own pedagogical methods of color around many of the theories and approaches that Chevreul brought forth.

The most influential person at the Bauhaus, from a scientific perspective on color, was the German scientist Wilhelm Ostwald (1853-1932).\textsuperscript{48} A Nobel Prize winner in chemistry, he was asked by the Werkbund to devise a systematic color atlas or measuring devise that could assign numeric values to colors for universal systematic usage. Ostwald created a color system that had a broad range of applications. Industry and secondary educational systems heralded the application he devised, and it was almost mandatory in many programs and businesses.\textsuperscript{49}

Ostwald's system was comprised of a twenty-four hue color circle divided into eight principle colors, with the twenty-four colors divided in eight subgroups of three each. Ostwald also used four primary colors, versus the three primary color variation which many theorists had used in the past. This allowed for a more mathematical system and was divisible by even numbers.\textsuperscript{50}

His system took shape as well in a three dimensional fixture which is similar to a double ended cone. The cone possessed the three major factors that Ostwald believed all colors were comprised of. One being the pure hue, which is one of the twenty-four periphery hues in the color wheel. The second being the value movement toward white (positive), and the movement toward black (negative). The third was the chromatic shift towards the middle achromatic grayscale, and on to the complementary color on the diametrical side of the system.\textsuperscript{51}
Ostwald's book *Die Farbefibel* (The Color Primer) successfully promoted his discovery of a system that produced a method of measuring color and selecting color based upon standardization. The universality he created by assigning a numeric value to the three kinds of movements achievable through the various colors gave a producer, artist, or designer a method of matching exactly the colors specified. This became very useful for manufacturing, where exact reproductions of a color were necessary.\(^5^2\)

In regards to how the Bauhaus valued Ostwald's ideas and system scales, it was a mixed bag of acceptance and application. Those designers that produced work that needed a systematic and consistent standard reaped the usefulness of exact measurable color.\(^5^3\) Gropius had Ostwald's charts and systems hanging in the halls and classrooms as guides, and some of instructors at the Bauhaus valued his theories. However, some were skeptical about having such a structured and exact method of applying color, but respected the advancement that was made.\(^5^4\)

Lastly one of the artistic and theoretical influences that played a role on the development of the color pedagogy of the Bauhaus was the Dutch De Stijl movement and the artists that participated in it. One artist in particular was one of the movements and most prolific supporter, Theo Van Doesburg (1883-1931). De Stijl got its start during World War I, when Piet Mondrian, Bart van der Leck, and Van Doesburg took from what was then Cubism, and began to take it even further in its reductivity and abstraction, both in form and of course in color.\(^5^5\) By 1917 a journal was created ironically called "**DE STIJL**." Like so many other avant garde movements that had journals, *DE STIJL* used this medium as a means
of disseminating the ideas associated with that movement. During that same
time Van Doesburg and the rest of the De Stijl participants signed a manifesto
aimed at a more rational and objective approach to artistic and design problems.
The movement emphasized the use of rectilinear form, primary and achromatic
color, and asymmetric compositions.

As early as 1919 De Stijl was beginning to be known around the Bauhaus
amongst the instructors and students. However its true inception would come
in 1921 when Van Doesburg approached Walter Gropius for a job at the Bauhaus.
He was rejected due to Gropius's feelings that Van Doesburg was too aggressive
and rigid in his theories. Theo Van Doesburg was disappointed that Gropius
didn't offer him an instructor position, so he decided to move to Weimar and
work from outside the walls of the Bauhaus building.

Van Doesburg's influence on the color pedagogy of the Bauhaus was
focused on a very refined and primary universality to color. The use of three
primary colors along with what he viewed as the "non colors," or achromatic
colors of white black and gray, perpetuated a rational use of color and
contributed to a major shift in thinking at the Bauhaus. The shift went deeper
then just color however. Evidence of De Stijl's methodology resonated in the
typography, architecture, furniture, metalwork, and weaving workshops to name
a few.

How Van Doesburg was able to influence such a change since he was not
able to acquire a job at the Bauhaus was simple, he just moved to Weimar and
found himself an apartment close to the school. There he began to offer lectures,
discussions, and his own form of instruction in the evenings after classes had ended for the day at the Bauhaus. During the time Van Doesburg was in Weimar he expressed a strong disgust for the expressionistic aspect the school was taking. After Itten’s departure in 1922, it seemed an ideal time for the school to go to what it was proclaiming in its original manifesto declaration when Gropius started the school in 1919.61 Van Doesburg remained in Weimar for two years, but his influence on the Bauhaus students and some of the instructors contributed to a shift from a more expressionistic viewpoint to a reductive geometry and color methodology.62

2.3 Four Influential Color Pedagogy Instructors

The four Bauhaus instructors covered in this thesis, (Itten, Klee, Moholy-Nagy, and Kandinsky) were afforded an opportunity to push the conventional methods of education by formulating their teachings of color pedagogy toward bettering the students as a whole artist, designer, and producer. Along with this opportunity came the responsibility of preparing and creating the materials and lectures that were to be used to teach such lessons. Each of the three had their own unique style and approach to color pedagogy, and each of them took from the various influences in color theory and applied them into the curriculum at the Bauhaus.63

Johannes Itten (1888–1967), a trained educator, was the first of the four to be hired by Gropius. He has become in the world of color, a leader in his theories and teachings. His participation at the Weimar Bauhaus proved his intensiveness
and ability to give all of himself in what he did. This characteristic was one of many that stand out in his teachings. Today many schools and color theory teachers still follow his methods. What Itten gave to the Bauhaus in terms of color theory was a passion for learning and complete submersion into grasping the world of color and its relationship to the making of art. There has not been many findings from Itten’s teachings of color at Weimar. However Itten’s diary from 1930 offers some ideas and methods in his teachings that he had while he was in Weimar.

As a former student of Adolf Hölzel who used the technique of teaching color through observation of art, Itten also exercised this technique in his preliminary courses. Observation became a great way for Itten to explain to the students the actual occurrences in a painting and the effectiveness of color usage as a part of the success of a piece. Itten, like Klee, Moholy-Nagy, and Kandinsky all drew for a variety of influences, Itten’s most significant one was Hölzel and his theories of color, which were a derivative of Goethe’s theories. Itten dealt with the subjective and the objective experience of color, and during his time in Weimar he developed two color systems to use as teaching guides. Through those systems he was able to create a systematic approach to the objective properties of color in his teachings.

His first attempt at a color system looked like Runge’s three dimensional structure of the color sphere. Itten used this as his initial guide in creating his own structure where he took the three dimensional form and flattened it out. This gave him a two dimensional view of the exterior surface of the color sphere.
This structure took the form of a twelve point color star and has become one of the staples in color theory pedagogy today.\textsuperscript{69}

The usefulness of the color star ranges from being able to observe groupings of color chords. The groupings of two, three, four, five, and six tones allows for a wide range of color chords to choose from. The system uses the polar positions of white and black as endpoints of the pure colors. The movement shows the value changes from the pure color, when moved towards white you see the tints, towards black you observe the shades.\textsuperscript{70} This structure takes what Itten viewed as the best parts from Runge, Hölzel, and Ostwald's systems and combined them into a comprehensive teaching tool which he felt encompassed all the parts that he felt were useful and valid.\textsuperscript{71}

Itten changed the teaching of that time through his building of the basic course. This course viewed within the context of color gave Itten a chance to offer to the students a way of understanding the physical properties of color and how they can create emotional, and psychological effect in works of art through a raised level of contrast. Itten also used Goethe's breakdown of the three categories of color phenomena, and through this Itten was able to offer his students examples of the various practical methods color could be perceived or used. The teaching of color was also perpetuated to allow a student to become sensitive in perception, and to encourage the use of an imagination. This fits with the expressionist quality of the school at the time, and it reflects in the work that was produced.\textsuperscript{72}
Itten remained distant from the goal of an integration of art and technology that Gropius had proposed in his Bauhaus manifesto. Instead Itten viewed an art which was steeped in tradition. This leads to the eventual separation of Itten from the Bauhaus when he departed in 1922, after numerous disagreements with the changing direction of the school and its pursuit towards a more architectural form of education. However his contributions should not go unnoticed, as he offered many benefits to the students and the overall program. Itten’s theories on color have proven to be some of the most useful and most treasured pedagogical influences from the Bauhaus, and one can still see them being implemented today in many visual communication programs across the United States.

The German modernist Paul Klee (1879-1940), was the second of the four instructors in the group. When the Bauhaus was starting, his career as a painter was gaining in recognition. In 1922 Klee was brought on board at the Bauhaus to teach and offer his expertise in art to the students. Klee, unlike Itten, was not a trained educator and was very nervous and lacked confidence when speaking in front of others. Klee made up for the shortcoming by being a very disciplined and meticulous teacher. He took good notes of all his findings and observations, keeping them in journals and notebooks. Unlike Itten’s lack of a written record of his activities what he did during his time at the Bauhaus, Klee has produced an abundance of written work which is still available today.

Klee’s biggest contributions to the pedagogy of color sided more on his ability to devise systems and application tools. Klee was very attuned to the
many theories that were available to him, in particular those of Goethe, Runge, and even his associate and fellow instructor Kandinsky.\textsuperscript{79}

Klee paid a great deal of attention to the movements in color and the subtleties of how one color was related to the other. What Klee discovered was that the most primary and formal activity in art was that of color. His notion that movement was the most essential element and created energy and life within a work of art. This was in disagreement with what Itten believed, that contrast was one of the most important elements in a work of art.\textsuperscript{80}

Klee's most original contribution as a system and theory on color came in the form of a diagram using a sphere similar to Runge's to give nomenclature to three movements that color can make.\textsuperscript{81} These three movements were diametrical (complementary), peripheral (color next one side or another), and polar (moving towards black or white). His diagram of these movements was based on how the six color wheel system and the global sphere system could be better understood in terms of the movements and the subsequent resulting colors that were made. This gave the three dimensional sphere a topographical quality and offered even more credence in its effectiveness, because now there was a way of labeling those movements.\textsuperscript{82}

Another observation that Klee brought forth was the assigning of a psychological hierarchy to the twelve colors in the color wheel. Those colors being the primary, secondary, and tertiary colors. Klee came to the opinion that the primary colors, when thought of psychologically, held dominance over the secondary colors, and those held dominance over the tertiary ones. Klee devised
a color system that shows that emphasis through the space in which the colors occupy.\textsuperscript{83}

Klee also took from nature many of the primary findings of his theories, not just in color but in other parts of art as well. Some of the color courses that he taught rose from an elementary and systematic exploration of color composition.\textsuperscript{84} Klee, through his observations, found that the six part color wheel which Goethe devised was very close to the spectral colors in the rainbow.\textsuperscript{85} Klee used this color wheel as his primary instructional tool in the classes he taught. His belief was that the rainbow being in the atmosphere was at a halfway point between earth and the cosmos, which meant it possessed a degree of perfection.\textsuperscript{86}

Klee believed that color was very mysterious and could not be bound by a concrete and systematic structure, and this proved to be one of the hardest aspects of his issues with color pedagogy to truly grasp. Klee was very spiritual about art and his works show that quality. His works became a testing ground for his endeavours into those mysteries, and offered him the ability to produce work that showcased what he believed.\textsuperscript{87} Klee remained at the Bauhaus for next eight years as an instructor, however, over the years he slowly grew to dislike giving lectures and teach theory. He left in 1930 to take a teaching job at the Art Academy in Düsseldorf where there were no requirements to meet such objectives.\textsuperscript{88}

The third instructor on the list to come to the Bauhaus was the Hungarian and highly experimental artist Lázsló Moholy-Nagy (1895-1946). Gropius's appointment of Moholy-Nagy was one of far-sightedness.\textsuperscript{89} He was hired in 1923
as a replacement to Itten after his leaving the Bauhaus. Moholy (unlike Itten) was a progressive and forward thinking artist and designer. His experiments with new media were some of his most ground-breaking achievements in his career. He came to the Bauhaus with a fire for the avant-garde, a solid contemporary view, and a high level of determination to take risks and try things never done before.\textsuperscript{90}

What Moholy-Nagy helped to usher into the Bauhaus was the ideal of Russian Constructivism and De Stijl. He advocated objectivity and universality, not only in his pedagogical efforts with color, but as a whole in all that he taught about art and design. His ideas and efforts were a reflection of the Constructivist and De Stijl methodologies active at the time. Those efforts aided with the removal and development away from the expressionism the Bauhaus had amidst its halls before his arrival.\textsuperscript{91}

Moholy-Nagy’s approach to color pedagogy was very encyclopedic, which afforded him the widest applicability in his scope and efforts. Moholy-Nagy did not offer any new color system or significant theory, however he was a true supporter of the theories and approaches which he viewed as useful and pragmatic. Moholy-Nagy favored the theories of Goethe and Ostwald, although he was not a big fan of the scientifically laden theories. He adapted those approaches in his aim to provide a systematic view of the overall realm of color focusing on the physiological and psychological process.\textsuperscript{92} He did this as a means of making his pedagogical offerings very practical and useful to problems his students would face in their work and in life.\textsuperscript{93}
The basis and essence of his pedagogical approach, particularly when he taught the basic course and the subject of color, revolved around the idea of art embracing the whole of human life, and its objective was the salvation of man and the world.\textsuperscript{44} Moholy-Nagy believed that the stimuli provided via visual art satisfies a human psychological need. This provides a justification for the creation of visual things. Color, which is an integral part of that need, provides a fulfillment to the biological necessity in human beings. This approach he viewed could best be achieved through a strong study of the visual aspects of art and design. This was done in an effort to strengthen a student’s perceptual acuity and help develop their abilities to create work which is applicable and innately satisfying.\textsuperscript{45} These theories and approaches mark him as an educator that was ahead of his time, and offer support to his embracing the original intentions of the Bauhaus manifesto.

Wassily Kandinsky (1866-1944), a former educator who was a painter in Russia, was summoned by Gropius in 1921 to teach at the Bauhaus. He was also appointed the head of art education development in the Russian school system, working on remodeling and modernizing the method by which art was being taught.\textsuperscript{46} It would seem a perfect fit then for Gropius to seek out someone of talent in art as well a passion for seeking a synthesis in all the arts through a modern form of education.\textsuperscript{47}

Kandinsky arrived in Weimar in 1921 and took his position in 1922. His appointment came at a critical time. The school was having troubles with Itten’s
methods of teaching and the direction he was trying to go with the school. This was also when Van Doesburg was starting to have a profound influence on the direction the school was taking. Kandinsky's arrival brought about a new sense of hope with his own theories. His book *Über das Geistige in der Kunst* (*Concerning the Spiritual in Art*), which he had written a few years prior in 1911, was well known in art circles and also with the students of the Bauhaus. In the book he begins to articulate his early theoretical views on color and its effects on man. This brought great favor among the students in Gropius choosing to bring Kandinsky to the Bauhaus.

What Kandinsky brought to the Bauhaus in terms of contributions of color pedagogy and theory were not as focused on building systems like Itten and Klee had done. Kandinsky did not place as much stock in the prior applications and systems from theorists. He only referenced Goethe for his spiritual and simplistic view of colors in the color wheel. Kandinsky's own theories took a slightly different view in using a six part color wheel in which he used blue and yellow as complimentary opposites similar to the early theories of Goethe. This becomes an important part of the theories he develops on color relationships. Kandinsky based his choices of color more on intuition versus the more mathematical and scientific approach. This plays a major role in his abstract style and approach to painting, which was heavily based on intuitive expression and freeing himself of all restrictions.

Kandinsky was also focused on universal definition for the correspondences between the primary colors and the primary forms. This was
key in that the Bauhaus was moving toward this kind of reductive geometric and primary based color thinking which was rooted in the influences from De Stijl and Constructivism. In addition, Kandinsky helped develop some of the first research into audience testing to gain quantitative and qualitative data from other artists, educators, and the public at large. The questionnaire which he titled “psychology test,” addressed the assigning of a color best suiting the shape or form perpetuated by its inherent angle and visual assertiveness. This gave the tested audience a chance to offer their own view as to which colors best fit into the primary forms of a triangle, circle, and square.

Kandinsky’s own view, which he began to formulate in his first book prior to coming to the Bauhaus was that the three primary colors are the foundation colors. These colors produced a visual assertiveness and quality that fit with specific angles such as acute, right, and obtuse. His theory was that the yellow color, being the warmest and most active color, worked well with the active nature of an acute angle object like the triangle. The second form of the square with its right angles took on the color or red, which Kandinsky felt was more neutral and passive. This seemed to be the midpoint between one extreme and the other. The third form was the circle, which doesn’t have specific angles but was closely related to the obtuse angle that Kandinsky felt had a restrained and calm quality, and should be given the color blue for its cool quality and temper.

Kandinsky’s new research approach helped to further formulate his own theories and studies of the correspondences between color and angle.
relationships. Not everyone agreed with his view, and still today people argue about his theories in this realm.\textsuperscript{110} However, this was a totally new approach and development in color pedagogy at the time.

Kandinsky’s produced second book relating to the analytical methods in the fundamentals of visual art, \textit{Punkt und Linie zu Fläche (Point Line and Plane)}, was written in 1926 while he was an instructor at the Bauhaus.\textsuperscript{111} The text was a direct reflection of his approaches and theories he devised while teaching at the school.

Another theory Kandinsky offered was in the inherent temperature that a color possesses, its warmth and coolness, along with the lightness and darkness. This created for Kandinsky four tones of color: 1. warm-light; 2. warm-dark; 3. cold-light; and 4. cold-dark. His thinking was associated with the level of yellow being the warmest color on the wheel and blue being the coolest.\textsuperscript{112} He also believed that white was the lightest color, and black was the antithesis of white by being the darkest.\textsuperscript{113} He, like Goethe, often assigned words to a color as a representation. Kandinsky also gave white and black a category like element in associating certain words in their behalf. Words like birth, silence, high sound, infinite strength, and maximum light were reflective of the color of white. Black was associated with words like, bottomless hole, absolute darkness, death, silence, and deep sound. This gave a contrasting element to his associations and equated a human emotion to the color.\textsuperscript{114}

Kandinsky’s theories were very much pragmatic and useful in nature. His approach to color was much more persistent in his pursuit of the understanding
of color. His teaching and fundamental contributions pushed the element of experimentation and exploration, and were some of his greatest assets as an artist as well an instructor. His constant personal struggle with art and how it relates to the world was something he battled with constantly. Kandinsky left the Bauhaus in 1933, concluding his eleven year career as an instructor in the school. Kandinsky moved to Paris to avoid the issues occurring with the new Nazi party. He remained there until his death in 1944.

The teaching of color at the Bauhaus proved to be of great significance in both art and art education. The assembly of such great minds and talent in one school proved to be one of the greatest assets that Walter Gropius ever devised. What makes coming together of these instructors so amazing is that they came with the purpose of educating students to become better artists and thinkers, with an intention to hopefully evolve art to better serve man as a whole. The instructors who taught at the Bauhaus brought about their own talents and expertise in their respective fields, and helped to develop curriculum and teaching tools which could help in their goal. Many of the pedagogical tools and approaches they developed with regard to color still survive today in many colleges and schools around the world. This offers support as a testament to the great talents and abilities of the instructors and the vast influences they drew upon as foundations for what they offered in the school.
2.4 The Bauhaus Closing In Context

During the last years that the Bauhaus existed in Dessau and in Berlin, a great deal of interest from American professors, museum organizers, and investors began to flourish about the pedagogical, architectural, and design offerings that the school was involved in.117 Numerous visits from those interested parties were arranged and hosted by the Dessau Bauhaus directors and educators. One visitor in particular was the American architect Philip Johnson, who had developed a strong interest in the school’s educators. In particular he was interested in Mies van der Rohe (1886–1969), who at the time was the third and final director of the Dessau Bauhaus, and its last location in Berlin, Germany before its final closing in 1933. Johnson had visited the Dessau Bauhaus in 1930 to see Mies, who he had a great admiration for both as a teacher and as an architect.

The Bauhaus under the directorship of Mies van der Rohe was becoming forced to run as a private school versus a government funded institute. He was subjected to reaching out for financial support for the school, which was not something considered routine in Germany at that time.118 America was supplying students that had began coming to the Bauhaus to study and take part in what the school had to offer during its last years. Mies van der Rohe recognized that there was a slow growing level of interest in the school in America, so he recruited Philip Johnson to help. Johnson, through his connections and position as the Museum of Modern Arts Director of the Department of Architecture, could be a useful asset in gaining financial support.
This connection would later prove very beneficial in aiding the transference and continuation of the Bauhaus influences and methodologies in America through its former instructors.¹¹⁹

However, the efforts of Mies van der Rohe were short lived. Adolf Hitler (1889-1945) became the Chancellor of Germany on January 30th 1933, and would later combine the two roles of chancellor and president and assume the role as the leader or "Führer" after President Von Hindenberg died in 1934. Hitler had the power to finally put an end to the democratic constitution formed during the Weimar Republic on March 3, 1933. Subsequently, under extreme pressure by the Nazi party, the Bauhaus was sealed off on April 11, 1933. The Bauhaus faculty and Mies van der Rohe decided on July 20th, 1933 to close down the school for good, ending its fourteen year existence in Germany.¹²⁰
ENDNOTES


2) Ibid., 8.


14) Ibid., 6-7.

15) Ibid., 162.


18) Ibid., 5-6.


21) Ibid., 67-69.


23) Ibid., 392-396.


27) Ibid., 60.
28) Ibid., 60-63.

29) Poling, Clark V. *Color Theories of the Bauhaus Artists.*

(Berlin: Gebr Mann, 1996.), 263.

31) Stromer, Klaus, ed. *Color Systems in Art and Science.*

32) Ibid., 65.

33) Ibid., 66-67.

34) Parris, Nina Gumpert. *Adolf Hölzel's Structural Color Theory.*

35) Ibid., 1.

36) Ibid., 4.

37) Ibid., 64.

38) Ibid., 68-69.

39) Ibid., 77.

40) Poling, Clark V. *Color Theories of the Bauhaus Artists.*


42) Stromer, Klaus, ed. *Color Systems in Art and Science.*
(London: Regenbogen Verlag, 1999.), 73-77.


54) Ibid., 6.


57) Poling, Clark V. *Color Theories of the Bauhaus Artists.*

58) Barr, Alfred H. *De Stijl.*

59) Dearstyn, Howard. *Inside the Bauhaus.*

60) Poling, Clark V. *Color Theories of the Bauhaus Artists.*


63) Wick, Rainer K. *Teaching at the Bauhaus.*
(Germany: Hatje Cantz, 2000.), 67-69.

64) Roters, Eberhard. *Painters of the Bauhaus.*

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67) Wick, Rainer K. *Teaching at the Bauhaus.*
(Germany: Hatje Cantz, 2000.), 109.

68) Poling, Clark V. *Bauhaus Color.*


71) Poling, Clark V. *Color Theories of the Bauhaus Artists.*

72) Ibid., 64.

73) Wick, Rainer K. *Teaching at the Bauhaus.*
(Germany: Hatje Cantz, 2000.), 131.


75) Ibid., 242.

76) Wick, Rainer K. *Teaching at the Bauhaus.*
(Germany: Hatje Cantz, 2000.), 31.


78) Poling, Clark V. *Color Theories of the Bauhaus Artists.*


80) Poling, Clark V. *Color Theories of the Bauhaus Artists.*

81) Wick, Rainer K. *Teaching at the Bauhaus.*
(Germany: Hatje Cantz, 2000.), 245.


83) Ibid., 508-511.
84) Werkmeister, O.K. *The Making of Paul Klee's Career.*

85) Wick, Rainer K. *Teaching at the Bauhaus.*
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86) Poling, Clark V. *Color Theories of the Bauhaus Artists.*

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(Germany: Konemann Pub., 1999.), 249.

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CHAPTER 3

BAUHAUS COLOR PEDAGOGY: TRANSFERENCE AND INFLUENCE IN THE U.S.

3.1 Bauhaus Transference In Context

The American connections made during the last years that the Bauhaus was a functioning school proved to be very advantageous when the school was finally closed. These connections helped with the acceptance and enthusiasm of the types of pedagogical methodologies and approaches that were just beginning to receive attention and subsequently develop in the United States.

Simultaneously, during the time that the pedagogical awareness was being sparked in American educational institutions, an awareness of a new visual aesthetic in architecture and design from the movements of the 1920's was also occurring. That new aesthetic began a transition towards a more minimalistic and functional one. A key figure in that awareness was Philip Johnson, (1906-2005) who traveled to Europe and visited some of the most prominent designers of the 1920's, including Le Corbusier, J.J. P. Oud, Frank Lloyd Wright, Walter Gropius, and Johnson's most highly admired, Mies van der Rohe. These connections helped to fill an unending hunger for architecture and design that was a driving force behind Johnson's enthusiasm to help spread the knowledge and word about what was going on in Europe in those fields.¹²¹
Johnson recognized the importance of what was occurring in Europe and set out to promote what he had seen and learned on his visits in America. He was in part a visionary, seeing a future where those influences and ideas would someday be implemented here in America. As a result, he helped to put together a show at the Museum of Modern Art that would put the architecture and the design of the 1920's at the forefront of its offerings. So in 1932, Johnson helped organize *Modern Architecture: International Exhibition*. This contributed to the start of a paradigm shift in American architecture and design, and would also lend influence to the new models of education in both of those fields as well. The publication *The International Style*, which accompanied the show, set forward the new name for this transference and influence here in America, and coined a new term in the books of architecture and design history. 

Shortly before the Bauhaus had officially been closed, Josef Albers (1888-1976), who was a former student turned teacher at the Bauhaus, received a threatening letter on June 15th, 1933 from the Dessau Council dissolving his position as a teacher and accusing him of political bolshevism which went against the direction of the Nazi party and Hitler. Having felt a serious threat on their well being and future to remain in Germany, Josef and Anni (his wife, who was also of Jewish decent), reached out to various friends to seek a safe place to live and possibly continue teaching.

Philip Johnson had heard that the Albers's were trying to find a new place to live and teach. Coincidentally, at that very same time Black Mountain College, a new liberal arts college, was just being formed in the mountains of Asheville,
North Carolina by John Andrew Rice and a handful of former Rollins College faculty. Black Mountain as it was often referred to, rose out of a revolt against the rigidity and staleness of educational institutions at the time.  

Rice's idealism lead to his being fired from his former job as a philosophy professor at Rollins College in Florida over disputes about how he ran his classes. This resulted in his leaving and starting up Black Mountain, which was intended to be an exciting and exhilarating place where new ideas could be tried and experimentation was expected. Much like the Bauhaus and its pursuit of providing a forward thinking model of education that rebelled against the academic institutions of the time, Black Mountain also sought a similar move away from a closed-minded and stale program. Rice knew that he needed a strong educator who understood these freedoms and could flourish in such an environment that put art at the center of its existence. Art was defined with a very broad stroke, and Rice was an idealist, pushing a new form of education that challenged the norm and encouraged inquiry against the status quo.

There had been a link between Black Mountain and the MOMA in New York through various friends. Rice had visited the MOMA to seek someone to fill the position and in doing so caught the ear of Philip Johnson who suggested Josef Albers for the job, despite the small issue that Josef did not speak English. Rice agreed that this was not a problem, and upon Johnson's recommendation that Albers was a good candidate, left it in his hands to organize their trip and make the deal happen.
A telegram was sent out to Josef and Anni, inviting them to come to America and join the Black Mountain faculty. Trustees from the MOMA had offered to cover the expenses of getting them here and supply their initial year's salaries. Part of the selling point was the notion that Black Mountain, much like the Bauhaus, was a college that promoted self learning and explorations of new ideas. All of these things took place within an environment that promoted and stimulated living together in a free environment that favored dialogue, collaboration, and artistic creation. 129 This was something that rang true to Josef's heart, since he was very familiar with the positive atmosphere a place like that can have coming from the Bauhaus and having been there for thirteen years. 130

So upon their acceptance to come to America, Josef and Anni Albers boarded the S.S. Europa and sailed west docking in the New York harbor on November 24, 1933.131 On the ship's deck were the Bauhaus' first emigres that would set the stage for a series of former Bauhaus instructors that would eventually come to America and begin a new paradigm shift in art, design, architecture and, of course, color pedagogy.

3.2 Albers' Color Pedagogy In The U.S. Develops

Albers' move to Black Mountain gave him an opportunity to adapt the Bauhaus curriculum, in particular the Basic Course, which he was a product of as a student under Itten. Albers would later assume an instructor role of the course after Moholy-Nagy left in 1928. In a more encompassing form, Albers was able to
bring to Black Mountain the progressive ideals of the Bauhaus, and the spirit of European Modernism in which he played a role during his time in Germany.  

Black Mountain also afforded Albers the opportunity to begin to develop his own pedagogical teachings on color. It became a center of interest for him when he moved to America, which would begin a major influence not only on his teaching of color through the successes and achievements of his students, but his own art as well.  

The first sentence that was spoken by Albers in a pedagogical context was in reply to a student’s question about what he intended to teach at Black Mountain College? Albers’ replied, “I want to make open the eyes,” which was later reduced down to “To open eyes.” This would become his mantra and lifelong purpose in his methodology and pedagogical approach. It applies to many things in his pedagogical offerings, but more specifically it applies immensely to the context of color.  

What Albers did in Black Mountain during his sixteen year tenure was to help develop and contribute to a new model of education that was void of the inculcated traditional approaches of the past. No more was there a focus on copying and mastering the works of the past, instead Albers offered a method of study that pursued exploration and cultivation in the fundamental principles of observation, design, and an immersion in the study of materials. It was a focus back to the basics, and one which put emphasis on developing intrinsic self learning and having a stake in the process.
Albers knew how important having a multiplicity of opinions, ideas, and approaches in a faculty was to students and a college such as Black Mountain. He arranged for numerous visits, lectures, and the popular summer workshops to allow exposure to other forms of art, and to develop a richer atmosphere to the learning than what he was able to offer alone. The list of people that came to Black Mountain to teach is a who's who of the visual arts world. Such names as Willem de Kooning, Amédee Ozenfant, Franz Kline, Leo Leonni, Will Burtin, Buckminster Fuller, and even some of the former Bauhaus faculty like Xanti Schawinsky, and Lyonel Feininger. So many personalities and diverse ideas helped to give Black Mountain the flavor and uniqueness it had, and attributed to the vast connections and influence that Albers' pedagogical approach had at the time.\(^{137}\)

For Albers, a contributing part of developing the unique pedagogical approach to color at Black Mountain was the absence of mechanical and production oriented tools, which he had at his disposal in Germany. In addition, Albers relied less on the systematic ordering devices and diagrams which were an integral part of the pedagogical offerings on color at the Bauhaus. Instead, he lead a color course that was more laboratory like, and took a workshop approach unguided by strict rules and preconceived theories or approaches. Albers had a tremendous respect for the theories of the past, in particular those of Goethe, Chevreul, and Ostwald, all of which he studied while he was the Bauhaus. However, at Black Mountain he opted to pursue empirical exercises and studies of the phenomena of color and studies on the conditions
which affect how colors are perceived. The reduced amount of need for theoretical approaches, and the physical absence of supplies and mechanical tools afforded Albers the chance to develop a reliance on what he had around him. Black Mountain was nestled in the mountains and was surrounded by a multitude of natural offerings. This became one of the key assets for his teachings, and for the students as well, since art supplies and the money to purchase them was not readily available. Many of the works that were created during those years by both faculty and students alike were produced partially or completely from things found in the surrounding environment. It gave everyone an opportunity to connect with nature and to assume a more connected and simpler life, away from the technological advances available at the time.

From a technical and facilities standpoint, Black Mountain was never able to offer students an entire educational pathway from foundations to upper level courses. The ability to offer an education that simulates professional practices using state of the art equipment was unattainable for the college with its lack of funds and suitable spaces. Instead, the college focused more on the fundamentals, and general education focused on a creatively active foundation building curriculum offerable with such limited means. This also allowed the college to put more emphasis on a smaller student to teacher ratio, averaging two to one, a ratio that was unheard of in any college at that time.

The natural and immersive experience Albers had at Black Mountain affected his pedagogical methodology not just in the limiting factors of
available tools and facilities, but also in his ability to absorb and see his surroundings in a more organic fashion. He began to formulate his assignments and teachings less on the mechanical object and more on the living one. He also steered away from the practice of secondary knowledge, which had already been explored. For example, in the context of color, instead of using systems and theories, he pursued the more imaginative and exploratory assignments aimed at a more experiential and self-learning process. Only near the end of a course did he endeavour into theories and systems as a supplement to the knowledge and experience held during the first part of the course. This was a sign of change in Albers' teachings, away from the Bauhaus years and the heavily geometric and production-oriented curricula he took part in.

It was at Black Mountain that Albers began to formulate the exercises and studies of his *Interaction of Color* book which would later be published in 1963. Those exercises and studies became the staple of his pedagogical influences and contributions in the subject of color. They were designed to focus on a systematic exploration of color and the interactions and conversations between colors.

Albers knew he had a limited amount of materials and tools which to work with, so he began to think about ways of conveying his ideas about color in a form that was both efficient and effective. This is just another example of Albers' methodology of achieving maximum meaning through minimal means, or as he stressed the economy of form, that is the "ratio of effort to effect." His material of choice became colored papers which he gathered and collected from various manufactures and samples that he could find. This was done for the
pragmatic expediency and efficiency of working with color that was consistent, and offering students more time to work on observational and awareness training versus dealing with paint. Albers was aware of the variables and difficulties of working with paint at such a fundamental level. Inconsistent color reproduction, drying time, and color shift from wet to dry were all factors for choosing paper over paint.\textsuperscript{149}

Having access to a multitude of natural materials in the woods and surrounding fields in particular during the autumn season, presented Albers with even more opportunity to develop perceptual acuity and awareness to color. Using leaves as an investigative tool in conjunction with colored paper for backgrounds, allowed for exercises in seeing the relationships and exchanges that happen between all the materials. These exercises allowed Albers to further the perceptual development in his students which was at the heart of his pedagogical offerings in color.\textsuperscript{150}

By the mid 1940's Josef and Anni had both begun to venture away from Black Mountain, taking sabbaticals. They visited Mexico, Central America, and the Southwest states of the U.S. in their travels. At the time Black Mountain was beginning to take a toll on him with its varying political processes and dissagreements. A college which was founded on a sense of freedom and democracy was in a way its own worst enemy by virtue of how the leadership ran the college.\textsuperscript{151} Funding was always an issue, much like the Bauhaus. The same feuding within the leadership at Black Mountain began to take a toll on both of them. The college was already showing signs of slow decline and dissolution, and
it would eventually close in 1957 as a result.\textsuperscript{152} So the Alberses resigned their positions in 1949, ending a 16 year period of pedagogical practice at Black Mountain College, but not ending the pedagogical influence that was still strong for Josef and ready for a new place of residence.

3.3 The Pedagogical Floodgates Open

Josef and Anni Albers were not the last of the Bauhaus’ emigres to come to the U.S. and make a pedagogical impact. A few years following their arrival at Black Mountain College, a group of former faculty and students from the Bauhaus added to the transference of ideas and methodologies in art, design, architecture, and of course, education. The faculty that came to the U.S. became a representative group of the various fields of activity at the Bauhaus including most importantly its pedagogical model of education.\textsuperscript{153}

An approximation of about 50 former Bauhaus instructors and students came to the U.S. and either visited for a short time, or stayed for the rest of their lives. Their arrivals had been a positive and promising opportunity to usher in new ideas and directions for art, design, and education, just to name a few examples.\textsuperscript{154} For many of the former Bauhaus emigres it was a career motivated decision, for others it was the chance to escape the tumultuous and chaotic place Europe had become with Hitler’s rise to power.\textsuperscript{155} The more influential figures were those that held roles that allowed them to perform and contribute. This is one of the key reasons there is such a wealth of material and accounts, both visual and written, about their contributions today. These are people who helped shape
the model of education and the profession of design in general, so it is easy to see proof of their impact and influence.\textsuperscript{156}

The second wave after the Albers’ arrived, came in 1937 with the appointment of Walter Gropius as the director of Harvard University’s Department of Architecture. Harvard’s architecture program was deeply rooted in the tradition Beauxs-Arts pedagogical model, and was in dire need of a new and modern approach in its offerings. Gropius was asked to come take the lead of the program since he had pragmatic experience as an architect as founder and director of the Bauhaus, a position he held until 1928. The appointment to Harvard allowed him to return to a similar role as an instructor and leader, contributing to the change in a program needing a new spirit and direction.\textsuperscript{157}

In addition to the second wave was the \textit{Bauhaus 1919-1928} show held at the MOMA in New York in 1938. Like Philip Johnson’s \textit{International Style} exhibit, the \textit{Bauhaus 1919-1928} exhibit became a launching point for the dissemination of ideas associated with the Bauhaus in Germany and its history to people in the United States. It also gave credit to the work that had been done during those years, and helped support the changes that were beginning to occur from both a pedagogical and visual aesthetic level here in the U.S.\textsuperscript{158}

The third wave came in the form of László Moholy-Nagy, who had left the Bauhaus in 1928 and resided in Europe, struggling to find work as an artist and designer. He suffered greatly under the political uprisings occurring at the time.\textsuperscript{159} Prior to his coming, Walter Gropius had been offered to direct and create a new iteration of the Bauhaus school in America. However, Gropius’
position at Harvard had already been secured, so he suggested Lászlo Moholy-Nagy as a suitable person for the job. The new iteration was to be called the New Bauhaus, and it was set up in Chicago, Illinois.¹⁶⁰

Much like its German predecessor, the “New Bauhaus” endeavoured to offer an education that promoted vocational training under a modern visual aesthetic in the fields of Industrial Design, Advertising, Textiles, and Photography. The idea came from *The Association of Arts and Industries*, which was based in Chicago, and was dedicated to creating a school of design.¹⁶¹ The curriculum would be directed as a means to support companies and businesses with educated and trained employees to help improve the quality of product design and manufactured goods in the region.¹⁶² *The Association of Arts and Industries* functioned much like the Werkbund did in Germany, and it strived for the similar goals of supporting education to train a workforce to be productive, while still maintaining aesthetic and visual quality to the end products and offerings.¹⁶³

The Association was also riding on the coattails of the 1933 *Century of Progress* exposition which was held in Chicago. The expo opened up the discussion of a need for better designed goods. This helped to fuel the need for such a school to support those directions, and the New Bauhaus was the result.¹⁶⁴

Moholy-Nagy was an ideal choice for the director position. His background as a former artist and designer, along with his pedagogical experience teaching at the Bauhaus gave him the skills necessary for such a role. His enthusiasm and fire for teaching also contributed to his assets, and
Moholy-Nagy brought that with him when he assumed the directorship in the summer of 1937. The timeline for setting up such a program and all its various elements from curriculum, developing collateral, and acquiring faculty to name a few, was only three months. The school was slated to open on October 18, 1937.\textsuperscript{165} However, the fiery personality and optimism was more than enough to carry Moholy-Nagy through such a task.\textsuperscript{166}

The curriculum structure retained many of the facets that were offered at the Bauhaus in Germany, including the "preliminary course" which was renamed "foundation course" based on the more industrial and constructive nature the school was heading toward. However, the addition of the supportive element to local and regional businesses placed an added pressure on Moholy to include curricula that covered the needs of those practices. So the more artistic and individualistic aspects of the German Bauhaus curricula were replaced by more practical and scientific offerings. The key component was the addition of science and the study of its various directions as an integrated part of the curriculum which was diametric in what the German Bauhaus had devised for its curriculum.\textsuperscript{167}

Moholy-Nagy recognized the need for science and the understanding of the human race as a method to develop a richer experience and learning environment for the students. A focus on teaching all the faculties of a student giving a greater depth of understanding to the whole picture, versus a narrower and more myopic one.\textsuperscript{168} Courses in physical, life, human, and social science were some of the offerings in the new curricula that added the science profile into the
design process. This approach and model was a paradigm shift toward the recognition of science and technology being integral in the direction the U.S. was taking in the fields of design.

From a color pedagogy standpoint, the subject was taught in a more focused context, adding in the science and technological aspects to the influences brought from the years it was taught in Germany. The addition of science added a more pragmatic and practice oriented slant to the courses in color. A focus on the understanding of color as it relates to the profession of design through learning about models and systems as a method for teaching standardized color was one aspect that took place.

The addition of science opened up the study from a dye and pigment based learning to additive light aspects of color, elevating the pedagogical offerings which was the primary teachings prior to the new technology being put into play. The emphasis of additive color study into the curriculum resulted from both Moholy-Nagy's very experimental and forward thinking methodology for the visual world, and the new technology and science that supported the progress of practice as well.

Color was also studied in terms of psychological aspects and how humans react to them in product and commercially oriented contexts. Study in taste, appeal, and suggestivity within the subject of color supported the pragmatic and commercially oriented emphasis being placed on the curriculum from professional practice and industry.
The New Bauhaus, like its German predecessor, felt the effects of funding being stripped away, leaving no means to pay faculty or keep the facilities open. The school was closed in 1938 after the Association pulled its funding. The school had been open for only one year. Moholy-Nagy, the catamount enthusiast that he was, did not fall to such a struggle. Through the support of friends and faculty and his own money, he opened the School of Design in 1939. It retained many of the curriculum aspects throughout the time it was in operation. In 1944, the school had been renamed the Institute of Design, and shortly after that Moholy-Nagy had fallen ill with Leukemia. After his passing in 1946, the college began to lose its prosperity until it joined with the Illinois Institute of Technology in 1949, who’s architecture program was under the guidance of another famous Bauhaus emigre, Ludwig Mies van der Rohe (1886-1969). The new amalgamation became a pedagogical blend, focused on learning and progress in industry.⁷⁴ The Illinois Institute of Design @ IIT still survives today as a functioning college developing artists, designers, architects, and educators. The influences of both Moholy-Nagy and Mies van der Rohe can still be seen in the visual world today.

As a consequence of Moholy-Nagy dying at such and early age, the artists, designers, and teachers he impacted were a much smaller group of individuals than those affected by some of the other German Bauhaus faculty. Many of those that he did make an impact upon choose a similar career path as his, and went into teaching.⁷⁵
Moholy-Nagy’s inability to participate in post Bauhaus discussions and offer insight in the mid to late 20th century left a void in knowing the hindsight of his thoughts and experiences. The books that he wrote prior to his death offer a glimpse into the world he saw during his years as an artist, designer and teacher. Unlike Itten and Albers who could offer insight into their color pedagogy after the fact, Moholy-Nagy died before he was able to do so. Moholy-Nagy was in constant pursuit of understanding the creative potentialities of light and color. His efforts of the past, particularly with regard to his pedagogical influences, are considered by many to be highly modern and current even today.

3.4 Albers’ Color Pedagogy Matures

Albers’ color pedagogy began to mature prior to leaving Black Mountain, but its true realization and integration into a pragmatic and influential curriculum didn’t take form until he started teaching at Yale University. Albers arrived in New Haven with his wife Anni in 1950. He was hired to both chair and develop the design department at Yale. This was an incredible opportunity for Albers to make a worthwhile contribution in a very well known and well respected university. The contrast between Yale and Black Mountain was vivid. Albers had left a very liberally oriented and open ended program with its anything goes in the name of art methodology, for a more conservative and regimented college where academics and status were catamount.  

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The year that the Albers’ moved was the same year the Josef began to create his most known and largest body of work, the *Homages to the Square*. The paintings, as Albers called them were, “platters to serve color.” They were created as vehicles to present something greater then themselves, creating a level of autonomy away from form as much as possible and placing focus on his most beloved subject matter which was of course, color.\(^{177}\)

For Albers, the appointment to Yale was a wonderful opportunity to make a significant contribution and impact on education. He was given the freedom to develop the curriculum and course structures for the department. His discipline and rigorous attitude toward art and the visual world reflected in his curriculum design. The rigor of a student’s learning was guided by the principles of sequentiality, where the exercises and assignments built upon one another. This was one of the principle beliefs he had about pedagogy in general.

Albers elaborated a systematic program of courses beginning with a first and second year foundation and general study leading to the third and fourth years in specialized professional study. He believed very strongly in a student’s learning of the fundamentals before ever being allowed to pursue any advanced forms of learning. This belief was a reflection of the Bauhaus model which he was a product of, and which could be seen in his own teaching of the preliminary course both at the Bauhaus in Germany and at Black Mountain here in the U.S. It would seem logical that those very same principles would carry over into his curriculum design at Yale.\(^{178}\)
Albers' color course, which was one of the four courses offered in his foundational curriculum structure, has become by far the most influential contribution of his entire pedagogical offerings. The model of his color course was versatile enough to be applied into the other three foundational avenues of study; basic drawing, basic design, and sculpture. All of these benefited from Albers' many years of experience as a teacher. Albers devised the color course as a means of placing emphasis and focus on the interactions of color. The intent to bring discipline to the reactions to color and the perceptual and psychological issues surrounding those interactions. Albers was a teacher of perception and seeing, which goes in hand with the first statement he made on U.S. soil regarding education which was, "To open eyes."

His color course also placed emphasis on the material study of color and a mastery of color's visual potentialities to understand the characteristics and inherent qualities of color. Albers did this through a variety of exercises which put color autonomous from any representational forms, and allowed the students to put their focus on the interactions of color away from any unnecessary information. It was a class devoted to disciplined focus and intense observational training as a basis for understanding art, not the making of art itself. Albers was a very disciplined, rigorous, and regimented person in his own life and work. He brought those qualities to Yale and subsequently into his classroom. Students were very aware of his unique approaches and those who did not heed them, faced the consequences. Albers rewarded hard work and enthusiasm, and found unique and effective ways to correct those students that didn't produce.
That level of discipline also funneled down to his own work, most obviously with his Homage paintings. In those paintings, he strove as much as possible for a form that possessed an economical and geometrical reductivity. The idea was to place emphasis on the interactions of color independent of as much form as possible.\textsuperscript{187}

The perceptual interplay and discussions between the colors in his Homage paintings, of which he created many of, is the subject matter that Albers was trying to deal with over the last years of his life. Albers believed that “in visual perception a color is never seen as it really is, as it physically is. This fact makes color the most relative medium in art.” In addition, Albers also stated, “in order to use color effectively it is necessary to recognize that color deceives continually.”\textsuperscript{188}

Those statements were the backbone of his color pedagogy. The rigor and discipline he showed making many of those paintings and his preachings and pedagogical methodology on color pushed toward gaining a mastery of the relativity and deception of color through practice, experience, and self discipline.\textsuperscript{189} Which he certainly practiced what he preached based on his own body of work.

The genius in Albers’ courses was that a student could apply the perceptual awareness and mastery they developed into their own work and also apply those same principles of observation into viewing the work of others. This would also lend itself to the advanced courses, when a student becomes more objective in their own work and maintains that objectivity in viewing the work of others.\textsuperscript{190}
Albers remained at Yale for nine years, until 1958 when he retired from full time teaching to devote himself to painting full time and to pursuing teaching at other colleges in visiting roles. He retained ties to the University until his death, and in support of his efforts in color pedagogy at Yale, the college published his book titled *Interaction of Color* in 1963. This book is perhaps one of the most unusual publications ever to come from a university press. It contains a text by Albers with 81 folders containing reproductions of over 200 color studies done by himself and his former students. The book was dedicated to his students and was designed to serve as a guide and teaching aid for artists, students, and educators. It has become one of the most revered and fundamental works on color pedagogy, and remains a prominent tool in color courses around the U.S. today.

Albers' role and impact on color pedagogy is by far the most influential on the U.S. visual communication programs. His objective over the subjective approach lends itself to the study and practice of color for visual communication, and how color in that pursuit needs to maintain objectivity in order to achieve its goal of clear communication to an audience. Trying to assess Albers' impact on color pedagogy in U.S. visual communication programs today is not easy considering the years that have passed since he died in 1976. What can be ascertained is that the influences that he brought to the United States, and his subsequent development of a methodology as a teacher here are very profound and extensive. Proof of his pedagogical impact can be seen in the dissemination of his students and the various artists, designers, and educators that held positions of influence,
helping to further his ideas. Those that were fortunate to have studied with him reaped the benefit of having an education from a well respected university, but they also benefited from Albers' reputation, and the mark he left on the design program. For many years, to be armed with a degree from Yale, having studied with Albers or under someone who did, was much like possessing the experience to teach the color course. This was an almost certain ticket to a teaching job here in the U.S.  

One must not forget that it was his origination of that program that helped to build its reputation as one of the best visual communication design programs in this country. Even today, Yale University still offers the color course to those who wish to gain perceptual and visual awareness of color. Many of Albers' exercises and assignments are still taught, unchanged and unaltered by those lucky enough to take the wheel of someone who greatly influenced and forever changed color pedagogy in the U.S.
ENDNOTES


126) Ibid., 15-20.

127) Ibid., 20.


145) Wick, Rainer K. *Teaching at the Bauhaus.* (Germany: Hatje Cantz, 2000.), 349.


151) Ibid., 39.


155) Ibid., 216-217.


160) Wick, Rainer K. *Teaching at the Bauhaus.*
(Germany: Hatje Cantz, 2000.), 160.

(New York: Thames and Hudson, 1985.), 69.

162) Wick, Rainer K. *Teaching at the Bauhaus.*
(Germany: Hatje Cantz, 2000.), 356.

163) Fiedler, Jeannine, Peter Feierabend. *Bauhaus.*
(Germany: Konemann Pub., 1999.), 66.

164) Ibid., 67.


*Design Issues Vol.7 No.1* (Chicago: The Univ. of Illinois at Chicago, 1990.), 6-7.

(New York: Thames and Hudson, 1985.), 344.


170) Ibid., 7.


172) Ibid., 352-359.

173) Ibid., 359.

174) Ibid., 72.


178) Wick, Rainer K. *Teaching at the Bauhaus.* (Germany: Hatje Cantz, 2000.), 356.


CHAPTER 4

COLOR PEDAGOGY SURVEY OF TODAY'S VISUAL COMMUNICATION DESIGN PROGRAMS

4.1 Survey Concept Defined

This chapter reports the results and findings from a color theory pedagogy survey of 36 colleges in the United States. The survey was I.R.B. approved prior to being mailed during the Spring of 2005. The survey participants were initially obtained via e-mail and telephone calls. The criteria sought from the faculty contacted, was firsthand experience in teaching color theory. Fifty-six colleges agreed to the survey, and subsequently each was mailed an anonymous format survey that contained 15 questions regarding my research.

Out of the 56 colleges, 36 surveys were returned over the ensuing months resulting in a 64 percent response rate. The fact that so many participants responded was a very welcome surprise, and offers this thesis a significant foundation in which to base its findings. The participants in the survey, mostly from four year colleges, offered excellent feedback including both quantitative and qualitative data, which this chapter intends to showcase. A great deal of thanks and gratitude is extended to those that did participate. Without their help the bulk of this thesis would not have been possible.

The survey was conceived out of a need for information unattainable through sources searched regarding the subject of color theory pedagogy.
Therefore a survey of color theory educators was conceived as an efficient and effective means of inquiry.

The questionnaire was constructed to acquire information about the following topics: when a student learns color theory; suggested texts; teaching aids and color systems; artists and designers work discussed and featured; faculty contributions and publishing within the subject of color theory, pedagogical issues with regard to students comprehension; past pedagogical and historical methods followed; program assets; and purpose for teaching color theory.
4.2 Survey Results And Analysis

Question #1
When does a student learn color theory in your program?

Foundations  97%  (35 respondents)
Other        3%    (1 respondent)

Comments:

As a whole this question showcases a reflection of college program curriculums that maintain a foundational or first year instruction that focuses on fundamental art and design learning. Color is directly related to that fundamental learning, and the respondents to the survey reinforce this notion. The subject of color is a very important and valuable part of a student’s learning. Maintaining the presentation of the subject at an introductory level gives students the necessary tools and knowledge to begin to understand a complex and subjective area of art and design.
Color Pedagogy Survey

Question #1

When does a student learn color theory in your program?

- Foundations 97%
- Other 3%

Figure 4.1: Survey Question #1
Question #2
Do you offer a separate course in color theory outside of foundations?

Yes 36% (13 respondents)
No 64% (23 respondents)

Comments:

Upon reading the responses more closely half of the colleges don’t address color beyond the foundational level. This is something that needs to be addressed with regard to the emphasis and value color has in these design programs. The overwhelming lack of adequate time devoted to teaching color at the foundational level precipitated the need for some of the respondents to offer an advanced course on color, which is a way for those programs to fill the voids left by the foundation courses.
**Color Pedagogy Survey**

Question #2

Do you offer an upper level color theory course outside of foundations?

- Yes
- No

Figure 4.2: Survey Question #2
Question #3

Does the curriculum you teach have any required or suggested texts for color theory? If so please list titles.

*Interaction of Color* by Josef Albers (9 title mentions)
*Color* by Zelanski and Fisher (5 title mentions)
*The Art of Color* by Johannes Itten (4 title mentions)

Comments:

This question resulted in a wide variety of answers and suggestions about books that are recommended or suggested. The interesting fact is that Albers's books are still a favorite amongst many of the color theory courses. This coincided with question #4 about Color-Aid and the use of the two as a component in the course. The responses support the hypothesis of this thesis and show how the continuance of the Bauhaus influences has manifested itself in today's color theory courses. Two out of the top three books are by Bauhaus educators, and other titles that did not make the final list came from the Bauhaus's historical offerings as well.
**Color Pedagogy Survey**

Question #3

Does the curriculum you teach have any required or suggested texts for color theory?

- **Title Mention**

9 5 4 (tie) 3

*Figure 4.3: Survey Question #3*
Question #4
Do the students use Color-Aid packets to assist them in the learning of color?

Yes 50% (18 respondents)
No 50% (18 respondents)

Comments:
Many of the programs offered reasoning why they did or did not facilitate the use of Color-Aid as a teaching aid or material. Reasons ranged from cost, chromatic uniformity, to using more easily acquired materials. The material that garnered favoritism over Color-Aid was found samples of color (i.e. magazines and printed fields of color). In one particular case a suggestion was given for acquiring large fields of color through a billboard or sign manufacturer. They were using the excess scraps left over from print jobs as a substitute to Color-Aid. The even split between the respondents still shows some favoritism towards the material. Some responses seemed to suggest that the cost of a Color-Aid set is quite expensive, and since there is not enough time allocated to the subject to warrant requiring students to purchase this material other alternative methods are used instead. The comments received went both ways from being highly useful and very pragmatic with regard to using Color-Aid, to comments that said it was an outdated method and that similar skills could be learned using digital technology in a more efficient and economical fashion.
**Color Pedagogy Survey**

Question #4

Do the students use *Color Aid* packets to assist them in the learning of color theory?

- **Yes**
- **No**

50% 50%

**Figure 4.4: Survey Question #4**
Question #5
Do the students use the Munsell Student Color Set to aid in color learning?

Yes 22% (8 respondents)
No 78% (28 respondents)

Comments:
The respondents overwhelmingly answered this question as being an expensive and somewhat outdated teaching tool. The few that did respond with a yes, seemed to have a strong favor of its usefulness. Most of the people that responded to having this as a teaching tool also incorporated the Munsell Color Tree as an additional teaching aid for working in the book.
Color Pedagogy Survey
Question #5

Do the students use
*Munsell Student Color Set*
to aid in the learning of
color theory?

- Yes
- No

78%

22%

Figure 4.5: Survey Question #5
Question #6

Are there any other teaching aids that you use?

Digital Projector (12 mentions)
35mm slides (7 mentions)
Interaction of Color Portfolio by Josef Albers (4 mentions)
Munsell Color Tree (4 mentions)
Itten’s 12 hue color wheel (4 mentions)

Comments

This question was included in order to see what kind of teaching aids aside from the Color-Aid and the Munsell Student Color Set were being used. Many educators are beginning to use digital projectors to show work but some responses from educators are still using 35mm slides. One argument was the color quality and gamut range was better through the 35mm slides, but many of them slides are becoming a thing of the past and for the purposes of teaching color, the digital projectors were adequate.

With regard to the three items that all received the same number of mentions, what stands out is the use of the Albers Interaction of Color book, and the Itten color wheel. Both of these devices seemed to have heavy favor from the respondents that used them. The Munsell Color Tree was favored by those that taught his theories, which seems obvious as an aid when using the Munsell Student Color Set.
Color Pedagogy Survey

Question #6

Are there any other teaching aids that you use?

Mention

12

7

4 (tie)

Figure 4.6: Survey Question #6
Question #7

Please list some of the artists or designers and their work that you use to show examples of good and bad use of color?

Josef Albers (11 mentions)
Henri Matisse (11 mentions)
Claude Monet (9 mentions)
Chuck Close (8 mentions)
Georges Seurat (8 mentions)

Comments:

A large number of responses came back that asked the question of “what is meant by bad use of color?” However, many of the respondents were able to understand the questions aim and answered in a way that defined the artists and designers whom they showed the work of most frequently. The focus on the responses that helped clarify the question, added that the intent of showing work in a color theory course is used as a means for discourse, which did not discriminate based on bad or good.

The Bauhaus approaches and methodology are still very heavily favored in the teaching of color when looking at the responses and the artists that were chosen. What is interesting is the methodology of color relativity, optical color, and color perception which were highly regarded pedagogical offerings in the color courses of the Bauhaus and Alber’s teachings. Examples of those theories can be seen through the works of Matisse, Monet, Seurat, and Close.
Color Pedagogy Survey

Question #7

Please list some of the artists or designers and their work that you use to show examples of good and bad use of color?

Mention

Figure 4.7: Survey Question #7
Question #8
Have you or any other faculty, past or present, made significant contributions to color theory education, research, or publishing?

Yes 25% (9 respondents)
No 75% (27 respondents)

Comments:
This question, was one of the most important in understanding some of the issues regarding color education. The overwhelming majority of color theory educators responded that they were not focused on color as a major subject of inquiry or pursuit as a body of research. There were a few respondents that said they were interested in color, but this is mostly because they use color in their personal work.

There are a handful of reasons behind the overwhelming lack of interest of this subject as a body of research. One reason is that color is taught merely as a part of foundations education, and it could possibly be looked upon as just one component of the whole picture. This means that they are unable to devote a significant amount of time to the subject as a stand alone topic. Reason two, some of the programs surveyed are not research based institutions, rather they are more interested in teaching. This is not necessarily an excuse, but just a fact that may cause a reduction in the interest or pressure to pursue additional research outside of their teaching duties. Lastly, there were some respondents that seemed
to have a passion and love for the subject and they offered positive answers, and spoke often to their own unique contribution in the field of color.

A program that values the teaching of color must possess someone skilled and passionate about the complex body of knowledge of color and its scientific, theoretical, pragmatic, and appreciation building abilities. Equally there needs to be departmental support about its importance in a student's learning that could directly reflect the educator teaching the subject.
Color Pedagogy Survey
Question #8

Have you or any other faculty, past or present, made significant contributions to color theory education, research, or publishing?

- Yes
- No

75%

25%

Figure 4.8: Survey Question #8
Question #9
In your experience teaching color theory what concept, skill, or application is the most easily grasped overall and which is the most challenging overall for students?

Easily grasped 50% (18 respondents)
Most challenging 50% (18 respondents)

Comments:
This question was left open-ended to see what kind of responses would be received. The interesting fact was that it was split right down the middle. Some colleges said that students struggled with one concept and other colleges said that their students found that same concept easy to grasp and visa versa.
Color Pedagogy Survey
Question #9

In your experience teaching color theory what concept, skill, or application is the most easily grasped overall and which is the most challenging overall for students?

50% Easily grasped
50% Challenging

Figure 4.9: Survey Question #9
Question #10
In what ways, if any has the Bauhaus, Black Mountain College, and Yale University’s past pedagogy on color theory influenced your teaching of color theory?

Yes it influences 86% (31 respondents)
No influence 14% (5 respondents)

Comments:

This question proved interesting based on the level of responses that overwhelmingly came back with how much influence the Bauhaus and its past methodologies were still being followed or practiced. Some responses however just plain denied the validity or usefulness of the Bauhaus all together. Ironically upon further review of those particular respondents survey’s, multiple examples could be seen of them referencing and facilitating Bauhaus influences in their teaching of color.

Those that did respond positively however allowed this thesis and its research intentions to have validity. An interesting note is that many of the educators responded with having a heavy favoritism towards the methods and teaching of Josef Albers and what he was able to achieve during his time at Black Mountain and Yale on a pedagogical level. This shows that the transference and influence he brought from the Bauhaus, and thus was transferred onto his students here in America can still be seen in many programs teaching color today.
**Color Pedagogy Survey**

Question #10

In what ways, if any, has the Bauhaus, Black Mountain College, and Yale University's pedagogy on color theory influenced your teaching of color theory?

- Yes It Influences
- No Influence

86%

14%

Figure 4.10: Survey Question #10
Question #11
What would you describe as being the ultimate aim of teaching color theory?

Comments:
Every respondent offered up their own unique answer to this question.
After carefully analyzing the responses, a single synopsis statement was formed that was an amalgamation of all the answers received.

Synopsis statement:
To help students develop the awareness and understanding of the vast world of color and to have the ability to make informed and meaningful decisions regarding color in their chosen pursuit.
Color Pedagogy Survey
Question #11

What would you describe as being the ultimate aim of teaching color theory?

Rough synopsis statement:

To help students develop the awareness and understanding of the vast world of color and to have the ability to make informed and meaningful decisions regarding color in their chosen pursuit.

Figure 4.11: Survey Question #11
Question #12

Please briefly explain the strongest asset in your program’s teaching of color?

Pragmatic projects and exercises 50% (18 respondents)
Other 50% (18 respondents)

Comments:

Many of the responses spoke about a heavy focus on pragmatics and a hands on experiential and tactile learning of color. Some of the programs also mentioned experimenting with either complete or partial learning via technology. However, there were mentions of weaknesses associated with the technology in some of the responses. Some of the issues mentioned ranged from a lack of tools, adequate time, and of course the issue of the overall timing. Color theory is offered mostly during foundations and many students at that point are not familiar with the technology.
Color Pedagogy Survey
Question #12

Please briefly explain the strongest asset in your program's teaching of color theory?

- Pragmatic projects and exercises. 50%
- Other 50%

Figure 4.12: Survey Question #12
Question #13
Does the design department or design program offer a separate color theory course?

Yes 22% (8 respondents)
No 78% (28 respondents)

Comments:

Based on question #1 and #2, it is obvious that this question was going to result in an answer like this. Most programs handle the teaching of color theory in the foundations as was found in question #1. As a result, it is easy to assume that most programs combine their “potential” designers into the larger foundational courses until they learn the fundamentals and then go on to the more specific discipline course. (Sounds very familiar to the Bauhaus educational model) Since most programs of design fall under an art department umbrella, it proves to be quite difficult to add or alter a course that is discipline specific considering the already strained academic issues of course load and class offerings in a college or university setting.
Color Pedagogy Survey
Question #13

Does the design department or design program offer a separate color theory course?

- Yes
- No
- Not sure

70%
22%
3%

Figure 4.13: Survey Question #13
Question #14
What color systems do you use in teaching color theory? Please list and explain why?

Johannes Itten's Color Star and Color Wheel (13 mentions)
Albert Munsell's Color System (13 mentions)
* Josef Albers's Interaction of Color (8 mentions)
Wilhelm Ostwald's Double Cone System (4 mentions)
Johann Wolfgang von Goethe's Color Wheel (3 mentions)
Michael Chevruel's Color Wheel (3 mentions)

Comments:

The largest portion of systems mentioned were heavily practiced and followed by the artists and teachers of the Bauhaus. There was an even distribution of responses with regard to the kinds of systems mentioned which draw from art, science, and theory. There were multiple mentions of Josef Albers's Interaction of Color text as an example. The interesting discovery here is that some educators view his methodology and approach as a possible color system weather that is intentional or not is hard to tell from the responses. Ironically Albers was never in heavy favor of color systems, but found them to be something that was learned after the development of the "seeing" and perceptual acuity was acquired.
Color Pedagogy Survey
Question #14

What color systems do you use in teaching color theory?

Mention

13 (tie)  8  4  3 (tie)

Figure 4.14: Survey Question #14
Question #15
Can you offer any suggestions or comments with regard to my thesis topic?

A wide variety of opinions and suggestions were offered to this question. It was encouraging to have the interest from the majority of the respondents that participated in the survey. It seemed that researching this type of subject was long overdue as a topic of inquiry.
CHAPTER 5

EMPIRICAL LOOK AT DESIGN 310: COLOR FOR DESIGN AND COMMUNICATION

5.1 Course Conception

In the Winter of 2005 The Ohio State University’s Department of Industrial, Interior, and Visual Communication Design provided an opportunity to develop and implement a design specific course on color. It was an incredible opportunity for a graduate student to make a positive contribution to the department. Design 310: Color for Design and Communication was born and began to be taught in the Spring quarter of 2005. The objectives were to find a way of taking the three disciplines of design in the department, and their unique pragmatics for the use of color, and tie them all into a ten week long course. This course was also to teach the fundamentals of color, since for many of the students who would eventually take the class, it would be their first refined introduction about the subject outside of their high school classes, etc.

The Department of Industrial, Interior, and Visual Communication Design defines design as a purposeful, systematic, and creative activity. Its general pedagogical direction is focused on user centered design. This became the backbone for the curriculum objectives and helped frame the structure for the various exercises and assignments needed for the course.
The objective statement for the course as follows:

Design 310: Color for Design and Communication is a course designed to enhance the awareness, understanding, and sensitivity of color and its relationship to Industrial, Interior, and Visual Communication Design. Emphasis will be placed on the grammar and pragmatic study of color including physical, psychological, perceptual, and historical issues of color.

What makes the teaching of color so interesting and unique from other forms of design education, is that the subject itself at a foundational level has the ability out of the gate to allow students with little or no background in design to think for themselves and begin developing a sensitivity to the world around them. There is also the added benefit for the department to be able to offer to the university the course in a general education format, since the material can offer non design majors a chance to learn about color and become more aware of their surrounding world around them. Albers himself knew that color pedagogy was unique in that it didn’t require any prior knowledge or experience to participate in the learning about color. So opportunities for growth and discovery are plentiful for students in such a course.

The curriculum for the course is structured into three categories, research and grammar, exercises, and a final cumulative project. The course is designed to be a cumulative pathway for students. Each class builds upon the other, assignments and exercises are intended to be building blocks for the next and so on. Some of the material covered and assignments are supported through
lectures, visual examples of work in art, design, nature etc., given at varying intervals throughout the course.

Technology is also introduced, at least as much as is possible, since each design discipline in the department has their own unique set of tools, devices and methods for achieving color. Coverage of these issues is faced primarily through lectures and investigations.

Research is emphasized for both being a key part of the university's educational mission as a tier one institution, and also so that students have a stake in the process of gaining knowledge. The initial assignments are created to begin to develop an understanding for the nomenclature of color and the biological fundamentals associated with vision and optics. Emphasis is also placed on writing, which encourages objectivity and self-analysis about a student's past and present experiences and views of color.

In addition to the writing and research, is the implementation of having an expanded vocabulary and a raised level of articulation in the subject of color. This is achieved through offering a new vocabulary word which is handed out at the start of each class. Expanding a student's vocabulary in color or for that matter any context can help level the playing field of understanding and also raise a student's ability to communicate clearly and effectively. A student that comprehends a word or term, and understands its contextual usage, allows for a higher level of verbal articulation when discussing visual work, research, etc. In addition as these students eventually go out into the working world, their expanded vocabulary when used effectively offers a significant increase in the
professionalism and respect given by their peers. The idea is to help raise the literacy, verbal and written acuity, all of which design students need in order to be more successful in this field. It also aids in the reputation of the program when students are recognized and respected as leaders and developers in the field and have good skills in these areas.

Research and writing is also conducted on the historical influences of color pedagogy, which coincide with lectures given about the chronological history of color and of course its development into color pedagogy through the Bauhaus, Black Mountain College, The New Bauhaus, Yale University etc. This is where students are given an opportunity to make the connections between the intersections of culture, science, politics, etc. they are learning in other courses. This is a way of blending the liberal arts model of learning across a curriculum and also opens up avenues of research, knowledge gathering, and the evolution of critical thinking all formed around the context of color.

Throughout the development of this course there has been an awareness and recognition of the fact that Albers so often defended his reasons for color pedagogy in a manner that puts observation and visual exercises before theory. This course curriculum was structured in such a way to put everyone on the same page with regard to the language of color and its specific nomenclature when talking and discussing what is being observed.

The physical working and experiential aspect of color takes the shape of a series of assignments which both reinforce the nomenclature they are learning, and also to begin the visual and perceptual development that characterizes what
the Bauhaus color pedagogy is all about, specifically with regard to the exercises created by Josef Albers. The effort is placed upon taking the visual and observational training exercises from Albers and modifying them slightly. As a consequence to being a design program which is ultimately in service of an end user, presentation and craft skills are reinforced throughout the visual exercises, but the added craft issues in turn make them more like assignments. The initial visual exercises leading to the final assignment don’t necessarily offer hard and fast solutions, this gives students options and choices to learn about the process over the end result.\textsuperscript{196}

There is also the added issue of having a chance to offer a course that is solely devoted to the learning of color as it applies specifically to design – a rarity which was shown in this thesis through the color pedagogy survey. Very few colleges offer a color course outside of one being grouped in with other foundational learning, let alone being pursued solely in support of design. Even Rob Roy Kelly once wrote that he was not able to teach color in an autonomous course that he had to squeeze it into other classes where he could.\textsuperscript{197} So the opportunity is indeed unique, and students that do take the course are fortunate to have such an offering available to them.

5.2 Curriculum Structure

Over the ten week course eleven assignments or exercises are given out along with the final cumulative project. The syllabus is set up in such a way to allow for the projects to bleed over into one another, and since the course is only
three credit hours, class time is limited, so many of the assignments are done during out of class hours.

Assignment One is given the first day of class and is usually due the next class. It is a simple research and information gathering exercise focused on nomenclature development and basic biological function of human perception. The objective is to place focus on consistent communication within the context of color. Color has its own unique terminology which helps to define various elements, identifications, theories etc. So having a grasp on such a vocabulary is important in such a course. In addition to the research part of assignment one, a response essay is required based around the following question:

*How do you see the world of color, and how has it changed your life in any way?*

This question is intended as a means of getting to know the student better and see if there are any unique experiences or views they may have about color in their lives. It is also a way for students to begin confronting issues of color and the world around them, which builds upon the overall intent of the course.

Assignment Two is called the *Color Police Project*, the idea is based around finding examples of good and bad use of color. The focus is on color usage as it relates to meaning, appropriateness, audience, etc. Students are asked to bring in a minimum of five examples of color used on a variety of designed goods (i.e. packaging, objects, etc.) The intent is to open up discussion during class to get students thinking and talking about what they are observing. This usually takes
place on the second or third class meeting and is given out the same time as Assignment One.

Assignment Three is a research study of two seminal educators' lives and work with emphasis in color. This assignment gives students an opportunity to produce a college level research paper that is produced in MLA format and follows guidelines for citations, bibliography, etc. The key focus of this assignment is to keep students away from internet research and to enforce library and book-form learning. The two figures for the assignment research are Johannes Itten and Josef Albers. Students are asked to learn biographical and pedagogical information about the two figures and also evaluate work by them in the context of color. Prior to the assignment being handed out, the students are taken to two libraries on campus, the first being the ARC or Architecture Library, the second being the FIN or Fine Arts Library. Both have excellent books and resources in art, design, and architecture. The trip is done to familiarize students with the available resources, and also to make students aware of the locations for Assignment Three, since class is held at the FIN library.

Assignment Four is the first in a series of visual exercises which introduce the achromatic colors of black and white, and the many grays that lie between them. The emphasis is on the ability to discern the various grays, and to create an even scale change between the two end colors. A total of twelve achromatic colors are required to be made out of paint and applied in a systematic fashion onto a black board. This assignment is done in paint as a means to familiarize students with the difficulties and issues of working with
paint and color. It is also done to reinforce craft issues and professionalism with regard to overall presentation and proper delivery of the assignment within the given parameters. The challenge for students is in achieving an even, smooth transition between the two endpoint colors of black and white. The project is aimed at seeing the subtle differences between one achromatic color and another.

Assignment Five is also done with paint and allows only the use of two complimentary colors for its materials. The assignment uses a variety of skills associated with design and color. A concrete form is offered to the students in the form of three neck ties. This gives students a focal point to think about and to contain the solutions to the given assignment. For each tie students are given a word to define and to produce a visual representation for the term in both form and color.

Assignment Six is designed to combine elements of three-dimensional seeing and drawing. The project focuses on monochromatic color and the use of a dimensional pattern on a flat surface. The intent is for students to explore transitions of value and chroma through a simulated light source and the monochromatic palette, all while showcasing those changes through the pattern.

Assignment Seven is an Albers classic taken from his *Interaction of Color* book. This is the students first opportunity to work with Color-Aid, which is provided for them. The objective to the project is simple to show two same colors and how they are both changed or influenced by the surrounding, different background colors. This gives students a chance to see how much interaction occurs between colors and the influence they can have on each other. The class
discussion is prompted to talk about the ramifications of such issues with color. The key is to discuss unintentional color or results that are not wanted and how to prevent those from happening. Supporting lectures on color deception and optical illusions take place to reinforce what the students are seeing in this assignment.

Assignment Eight is another Albers example from his Interaction of Color book. The assignment is to create a simulated transparency using only opaque colored paper (i.e. Color-Aid) as the material. Students are given an opportunity to explore and find the middle mixtures that occur between two colors. When the middle mixture is found and placed in the center of the two “parent colors” an illusion of transparency can occur. Students also explore interesting ways of showcasing the simulated transparency’s through fundamental two dimensional forms and shapes.

Assignment Nine was an assignment brought back from a visit to Yale University in the Summer of 2005 to meet Richard Lytle. Richard was a former student of Albers and also has taught the color course at Yale for many years. He suggested the “4 worlds, 4 colors” assignment which entails the use of describing four different worlds through four colors. The project creates an environment where students have to tackle a limited palette, along with the additional aspect of framing visuals that represent four worlds encased in a theme of their choosing. The visuals are intended to be abstract and non-representational in order to put emphasis on the use of color as the method for interpreting the intended theme and worlds.
Assignment Ten take from assignment one and three and compiles the skills and research knowledge students have gained into a presentation project. The intention is for students to look at a designers work (designer choice given by instructor) within the context of color. Students are expected to research and familiarize themselves with biographical information and to also seek out work which uses color. The project requires students to build a five minute presentation with slides that discusses the designers lives, careers, and use of color. This gives students an additional opportunity to practice presentation skills framed within the contextual subject of color and its use in design.

The last element of the course, which was conceived in support of the three various disciplines of design offered in the department, is the final cumulative project. The project developed out of a need to satisfy a handful of outcomes and also as potential portfolio piece for students that wish to enter into the design program at The Ohio State University.

The project description is: The creation of an interactive teaching tool framed within the context of color learning and exploration. The level of interaction is the key and the possibility of creating unique solutions is vast.

The first outcome was the varying students intending to enter the three discipline areas of industrial, interior, and visual communication design. The idea was that they could focus more specifically on a comprehensive project in their chosen area. For those not majoring in design, the criteria is open to suggestions and permission to pursue other ideas, the final decision is left to the instructor's discretion.
The second outcome is the re-emphasis of research on something with depth. This forces students to think beyond the surface and to create something meaningful and useful, reinforcing the user center design emphasis of the department.

The third outcome is the origination of a unique idea contained within a limited context or form, and the process in the creation and implementation of that idea. Design is about process, and the project goes through a series of iterations throughout the final weeks of the course.

The fourth outcome is time management and supply management, which is for some of the students a real eye opener in trying to clearly define the problem and create a unique solution within the given block of time, which is usually four to five weeks. The process of the project and development stage takes place in conjunction with the other assignments occurring at that time. The last few weeks are devoted entirely to the project itself.

The last outcome is the issue of reverse role play. Through the creating of a teaching tool or interactive learning device, an environment can be simulated where the student must think like a teacher and consider the many variables associated with color pedagogy. The project allows for students to take from what they have experienced and learned throughout the course and find a unique component regarding color to use as subject matter for their solution.

What the Department of Industrial, Interior and Visual Communication Design at The Ohio State University has done with allowing for this course to take shape is unique, and in the ensuing years will prove beneficial for both the
students and the work being created in their other courses. Part of this course's development was benefited from this thesis research. It provided an opportunity to analyze what was being done in other programs, and also refine some of the pedagogical ideas for the course, in conjunction with feedback and support from the department faculty.
ENDNOTES


CHAPTER 6

SUGGESTIONS AND SUPPORT FOR FUTURE COLOR PEDAGOGY

6.1 Influence And Transference Disseminated

By the end of the 1960s, much of the influence had been made from the Bauhaus emigres that came to the United States. Black Mountain College became a launching point for Josef Albers and his pedagogical influence here in the U.S. It also helped him attain a position at Yale University, which was an opportunity to solidify his mark as one of the greatest pedagogues in history, especially in regard to color. László Moholy-Nagy’s New Bauhaus school and its eventual maturation into the Institute of Design at the Illinois Institute of Technology still supports and disseminates elements of his pedagogical influences.

These were two key players that had the largest impact on the U.S. in color pedagogy, through their transference of the Bauhaus education model and various ideas and methodologies that occurred during its existence. Those who were fortunate enough to have studied under Albers or Moholy-Nagy were given the opportunity to learn under exemplary role models, and were able to have exposure to effective methods of teaching. The question lies in what has transpired since their roles as educators have come to an end, and how have their pedagogical offerings on the subject of color been disseminated into visual communication programs across the U.S.?
Yale University, being the first U.S. college to develop a degree program in Graphic Design, influenced nearly all of the newly formed graphic design programs occurring across the U.S. The Yale model, which was partially the creation of Josef Albers genius and experience, was a solid model and pathway possessing exceptional clarity and coherence that developed a unified way of looking and thinking. This was highly applicable to those new programs. These characteristics defined the influence and reputation Yale had as both a top level educational institution, and a graphic design program having Albers and a group of other great designers and educators on its campus.

Having a graphic design degree from Yale added weight and respect to a graduate's credentials, thus making them highly sought after both in industry and in education. So the initial dissemination started when those newly formed graphic design programs began to seek out graduates from Yale to teach and help construct curriculums for their institutions. The most influential of all the students who graduated from Yale, on a pedagogical level at least, was Rob Roy Kelly (1925-2004). Kelly had been a player in the second iteration of that dissemination, when he was hired to create a program at the Kansas City Art Institute in 1964. He put together a group of educators that would teach and later go out and work in other programs, thus furthering the dissemination.

During the research for this thesis, it became obvious that an entirely separate body of research could be made out of trying to find out where the dissemination of influences of Bauhaus color pedagogy went, in terms of the
second generation instructors who continued teaching the subject. This is a topic of research that is quite immense, and its one that this thesis will not even make an attempt to investigate. This research could, however, be very fruitful for anyone who does take up such a task in the future. It would certainly be an interesting contribution to the body of knowledge to understand in a more myopic fashion, the level of transference that actually occurred from one instructor to the next.

6.2 Issues Facing The Dissemination Today

The basic course or preliminary course, which originated at the Bauhaus, has proven to be the most resilient and lasting of all the pedagogical influences to come from the school. Color, which was included in the preliminary course from its inception, was maintained throughout its variations and changes as it evolved under the leadership of Moholy-Nagy and Josef Albers. Today we see it being included in most cases at the foundational or first year level of visual communication programs in the U.S. This is due partially to the fundamental nature of the subject matter, and also its ability to develop visual awareness in students as well as making them sensitive to the world around them.

A key part of the research for this thesis from the start was trying to fill a void regarding the transference and dissemination of color pedagogy in the methodologies and influences devised at the Bauhaus in Germany and brought here to the U.S. There seems to be a serious lack of any substantial source
of information which could help fill that void. There is more than an adequate amount of material on the vast history of the Bauhaus on all levels of visual and pedagogical ideas. There is even a developing and growing body of knowledge in many books and journals that accounts for the influences and transference by the Bauhaus emigres that came to live and work in the U.S. Where it gets questionable is in finding material on how those influences and transferences have been passed down and disseminated into today’s color teaching. The window of research for this thesis was basically comprised of looking into the last 30 years of teaching, if we consider that most of the emigres that made a contribution and impact had passed on by the mid 1970’s.

As a result of the lack of source material, interviews and a national survey was conducted on how color pedagogy was being offered today, and if the Bauhaus model of color education was still relevant and useful. Issues that resonated the most, as a result of the survey, (results can be found in chapter four), were the inclusion and difficulties of a technological and computer driven field of design on color pedagogy, the inclusion of a history of color into the curriculum, and the issue of color pedagogy needing to be taught by someone with a mastery of color. These were just some of the issues this thesis attempted to address in the research. Not that the other topics are any less valid, but those three areas seemed most beneficial in bringing to the table for educators who face color pedagogy today.

The first issue is the subject of technology, and how its inclusion and importance affects color pedagogy today. The debate about technology and its
level of inclusion/importance has been going on for quite a while now from a
general design education standpoint. Today it seems that the argument has been
mostly put to rest. Educators, for the most part, have moved on to other topics and
pursuits. Steven Heller's second edition of *The Education of a Graphic Designer*,
published in 2005, is one example of that shift. The book contains an abundance
of essays and articles that deal with other topics compared to the first edition,
which was more about dealing with integration and inclusion of technology. Ten
years have nearly passed since the first edition of *The Education of a Graphic
Designer* was published in 1998, so the evidence is there that we have moved on.

As far as technology goes for the teaching of color, there seems to be a
severe time lag between the current levels of technology for other design
applications versus any significant methods or applications for teaching color.
Color as a whole is still being taught in the traditional way through a more
hands-on experiential learning style, using medias outside of technology.
(i.e paint and Color-Aid) Some of the people surveyed offered suggestions and
direction towards incorporating some elements of technology into the
teaching of color. Those suggestions all seemed to be possible explorations, but
overall nothing was presented that offered any significant or major change that
rivaled traditional methods passed done from the Bauhaus and Albers.

The area of teaching color through technology is ripe with potential
exploration. For years we have incorporated the various pedagogical offerings of
color that the Bauhaus and its U.S. iterations brought forward for us to use. These
methods of color pedagogy, in a more immersive and hands-on way, have shown
to be useful and pragmatic in developing a student's awareness and sensitivity to color and to the visual world around them.

Albers believed that the heart and essence of a creative education is best learned through an intense level of immersion and experience, stripped away of context and form.201 His methodology, remains effective in learning about color through the traditional hands on immersive approach that focuses on process over an end result.202 However, the fact that the technology of today's visual communication design practice warrants consideration and some level of inclusion into today's color pedagogy. Such inclusion is necessary on the basis that pragmatic levels of understanding are needed by visual communication students so that they may have a strong fundamental knowledge of perceptual issues, interactions of color, and the technological ability to implement it into design projects.203

Today's practice of visual communication design almost requires some level of proficiency with current technology. In the context of color for practice, a student's ability to apply the fundamental principles learned in the classroom into the wide range of devices currently available in the profession has become an issue many student's are facing as they graduate and get jobs. The design profession today deals with everything from digital monitors, projectors, input and output devices, and general printing, just to name a few.

One example of confusion and degree of difficulty in acclimatizing to the varying levels of devices for students is the achievable gamut range that varies in each example just given. The variety of devices are so diverse that their sources of
color come from multiple levels of technology, primarily derived from years of developments and research in the science of color.

So a question that should be asked, “Is the science of color and its contributions to technology something that should be taught in a color curriculum?” Many of the responses to the survey seemed to have been facing these same issues, and some have chosen to embrace it and find ways of dealing with it. Others seemed apprehensive or unsure of the validity and reasoning to go beyond what has been taught in the past. One thing that we know for certain is that technology has provided a paradigm shift for color pedagogues to face.

The boundaries of a hands-on, tactile, and experiential learning of color have come into question due to some hesitation about the validity and effectiveness of teaching color in another medium, aside from the colored paper methods passed down by Albers. The computer has challenged craft in other design pedagogy; color is not autonomous to that same challenge. This thesis attempted to see at what level we are with these new mediums, and to find out if any one had contributed something better then the methods passed down from the Bauhaus. Overall the tone of the surveys seemed that we are in a transition period and these issues are relevant to be asked, but the methods of the past do possess relevance to the most fundamental aspects of color and visual perception learning.

The second issue found to be important during the course of the survey was that there seemed to be a disconnect about the history of color and its contributions to scientific developments, but most of all in terms of influences.
on the various viewpoints, theories, and approaches to color pedagogy. By this I mean outside of a surface or facade treatment of the key players, the overall body of history. The information gathered was based on the various responses to the survey. The increasing pursuit into the history of design today and the more recent explosion of support for its inclusion into design curriculum, warrants an equal support for the history of color as it applies to color pedagogy. In addition, issues of adding greater depth to the teaching of design history has been raised. One key component is the addition of contextual history that includes cultural, sociological, and political occurrences as a means of adding that depth.

In the history of color it is obvious that the theoretical, scientific, and pedagogical developments and influences are equally affected by such issues, and can be an integral part of a student's learning about color. The contextual and chronological history of color, I believe, has the ability of becoming a unique and compelling devise for teaching color. It offers support and can give concrete examples of the progress and investigations into trying to understand an area that is already highly subjective. Basically, it gives students an understanding of all the things they are learning about and observing in regard to the various issues of color. It helps them to understand that this did not happen in a vacuum, and that there is a long history of evolution that is behind the methods of seeing and learning that they are currently under. The history of color should not be a replacement or substitute for the effective development of visual awareness and sensitivity to color. Just as the history of design is not a substitute for the effective use and the creation of visual communication design. The
history of color should however be used creatively, as a tool in a curriculum for reinforcing the learning of color and to add a greater depth to the over experience.206

The third issue that resonated highly when reading the surveys was the idea of a master or highly skilled and knowledgeable person in color being responsible for the teaching of the subject. The level of achievements and learning about color can only be best addressed on the objective outcomes and values placed by a skilled and effective instructor. An instructor that possesses solid knowledge, experience, and a high level of enthusiasm will benefit the students more than one of mediocre knowledge, experience, or enthusiasm on the subject. The key point is the already subjective nature of color has enough variables to knock it off track very easily, a prepared and experienced teacher at the wheel can help steer students through the complexities of that subjectivity and keep the perceptual and visual development moving forward and on track.207

When we take a look at the responses to the survey it is very obvious that many of the programs teach color at the foundational level or first year track of the program. As in most cases of foundational learning there are already inherent issues and problems with teaching students with little or no background in the fundamentals the basic skills associated in the foundation of visual communication design.208 This reinforces the notion of having someone skilled for teaching something so critical and influential in a students learning. It seems though that very few experienced and skilled teachers prefer to teach fundamental courses, which includes color, since it is offered primarily during
that time. The responsibility and burden is often given to the inexperienced graduate student, or a faculty member with little interest in the subject, who only teaches it because they are required to do so as part of an overall foundation program. This is a problem endemic in many colleges that offer some form of color pedagogy in their curriculum. The subject of color, with all its variables and subjectivity, is a complex and difficult road to travel let alone teach. Equally for all its complexities, color possesses an intensive level of excitement and discovery about oneself and the world around them.

Color pedagogy demands an instructor that possesses a high level of mastery and enthusiasm on the subject. An instructor that can inspire a student and create a great course that will expand and grow a students understanding of color and the world around them. If an instructor is to expect an equal level of enthusiasm from their students then they must offer that same level of enthusiasm in their teaching and personal work. Students today are much more aware of our “output” and enthusiasm then we are sometimes, and having an instructor that lacks confidence and enthusiasm will certainly be noticed by the students whom they intend to teach, and be a disservice to them as well.

6.3 Suggestions For Future Consideration

Visual communication design has the potential to be a highly effective medium of conveying knowledge and meaning. It can influence decisions, inspire change, and visually articulate ideas effectively to help make life
simpler and easier, just to name a few benefits. Color can do all of these things, but is more closely related to the psychological aspects of communication through response and reaction. Color is often the first level of visual communication viewed by an audience or user, giving an idea incredible power in the initial responses and suggestivity it is trying to communicate.

The teaching of color should help students develop the awareness and understanding of the vastness the world of color has to offer. Students should be educated in knowing the power of color as a tool for communication and have the ability to make informed and meaningful decisions regarding color in their chosen pursuit. Students must be made aware that color has a purpose and that using it in an arbitrary fashion, or merely as decoration with no informed intent, leads to a message of communication that is ineffective, and often leads to results that are unsuccessful.

There used to be a time in visual communication design, when the knowledge of subtractive color processes (and at the most four color process) was suitable enough to function in the profession. Today, students studying visual communication design are faced with a variety of directions and pursuits within the discipline, covering a wider need of knowledge and the changes associated with color for the profession. Technology, as it applies to color in the profession, has had to ride the waves of changes, and students are faced with that added level of complexity for achieving color that is effective and exact. Add that to the already inherent subjectivity of color and things get even more intense.
Offering a color course that is in service of both the perceptual issues of color and today's current definitions of color for practice is not an easy one to find balance with. Visual communication design still retains roots in craft, and the skill building of the eye and hand in the process of design. Students also need to develop confidence and objectivity with color in conjunction with the other skills of design they are learning. The ideal situation is when you are able to find threads and connections, where you can teach the fundamentals of color first, and as technology in color becomes the focus, a teacher can demonstrate examples of those fundamentals in the technological environment of the profession. Doing this will increase the effectiveness and efficiency of the pedagogy and give students the reassurance that the fundamentals are useful and necessary to know.

The teaching of color can also make for an exciting and stimulating environment to teach, not just visual communication design students, but others as well. One is able to offer students with little or no background in visual communication design that might take the course, a taste of the power and grace the discipline has to offer. Teaching these kinds of students has the added possibility of developing an awareness and objectivity to the world around them that goes beyond the subject matter's pragmatics. The idea that someday these students could use that awareness about color in their lives, awaken and promote it use in a positive and satisfying way whatever the medium or choice is very exciting, and serves a greater pedagogical purpose.
198) Roy Kelly, Rob. *Yale Years.*
(Chicago: Graphic Design Education Association, 1989.), 11-12.

199) Ibid., 19.


201) Poling, Clark V. *Color Theories of the Bauhaus Artists.*

(Chicago: The Univ. of Illinois at Chicago, 2000.), 11.


204) Dormer, Peter. *The Culture of Craft.*
(Manchester: Manchester University Press, 1996.), 137.


206) Ibid., 223.

(Rochester: Rochester Institute of Technology, 1999.), 85.


209) Ibid., 46.


212) Ibid., 87.


CHAPTER 7

CONCLUDING ANALYSIS OF THESIS

The Bauhaus approach to color was one example of the broad scope in its educational program and offerings. The initial focus of color at the Bauhaus was on providing objectivity and universal standards for the use of color in art and design. Color was also taught as a means to develop visual awareness, going beyond purely physical properties towards the more perceptual effects of color. Color was also investigated for its functional and aesthetic capabilities in a variety of applications within art and design.\textsuperscript{215}

When those focuses and approaches came to the U.S., a paradigm shift was created in the educational methodology of art and subsequently graphic design as it came to form. Today, many of those methodologies are still present and remain relevant, mainly on the basis of their ability to expand a student's thinking and processes. Evidence exists that many visual communication programs across the U.S. still follow or practice the methodologies of color education from the Bauhaus.

Technology as it relates to color has added complexities to the educational expectations and competencies for students intending to practice visual communication design. The fundamental focus of Bauhaus color pedagogy maintains universality and flexibility that is moldable to the evolving technologies and developments of the future. The adaptability of its
methodologies give it validity, and also credit the faculty of the Bauhaus for taking into account such issues as they developed its curriculum.

Today those contributions continue to play a role in the education of visual communication designers though, the questions and concerns that have surfaced regarding the validity of those past methodologies should continue to be raised as a means of keeping things current and in check. Color education and its methodologies both past and present should be called into question regarding their relevance and continuation into the future. That form of checks and balances will keep the classroom offerings current and serve the students in a beneficial and functional way.\textsuperscript{216}

Color is a highly subjective medium that requires immersive and experiential learning to begin to grasp its complexities as it relates to visual communication design. The contributions of the Bauhaus with regard to color helped to harness those complexities and offer tangible and pragmatic ways to use color in art and design applications. They should continue to be taught in the future, until another methodology that serves the students better comes to the surface.
ENDNOTES


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APPENDIX A

COLOR SYSTEM ILLUSTRATIONS
A.1: Johann Wolfgang von Goethe’s Color Wheel (1793)
A.2: Johann Wolfgang von Goethe’s Color Triangle (1793)
A.3: Philip Otto Runge's Color Sphere (1810)
A.4: Adolf Hölzel's Color Wheel (1914)
A.5: Michel Eugène Chevreul’s Color Wheel (1839)
A.6: Wilhelm Ostwald's Color Wheel (1914)
A.7: Wilhelm Ostwald’s Double Cone System (1914)
A.8: DeStijl’s Reductive Color Palette (1917-1932)
A.9: Johannes Itten’s Color Star (1920)
A.10: Johannes Itten’s Color Wheel (1921)
A.II: Paul Klee’s Color Wheel (1920)
A.12: Paul Klee’s Movements of Color System (1921)
A.13: Wassily Kandinsky’s Color System (1914)
A.14: Wassily Kandinsky’s Color To Form And Movement Theory (1914-1923)
APPENDIX B

COURSE STRUCTURES
B.1: Bauhaus Course Structure (1919-1933)
B.2: New Bauhaus And Institute of Design Course Structure (1937 & 1938)
APPENDIX C

DESIGN 310: CURRICULUM & STUDENT WORK
Design 310: Color For Design And Communication

Developing awareness, sensitivity, and a pragmatic understanding of color in design.

| Description | Students will explore projects that enhance understanding and awareness in the fundamentals of color theory and its relationship to Industrial Design, Interior Design, and Visual Communication. Emphasis will be placed on the grammar of color theory, including the physical, psychological, perceptual, and historical issues of color. |
| Format | This is a project-oriented course that requires active student participation. Class meets two days a week for 3.25 hours each day. The course is comprised of lectures, assignments, presentations, and participatory activities. |
| Objectives | This course will help students begin to grow in their knowledge and understanding of color theory as it relates to design. The aim of this course is to foster sensitivity, awareness, and knowledge of color through fundamental principles of color interaction for design and communication. |
| Attendance | Participation in ALL classes is expected. Attendance is taken each class through a sign-in sheet. It is your responsibility to sign-in during each class. Failing to sign will result in a “T” for the course for all students involved in the violation! Any unexcused absences will result in the final grade being lowered by one letter grade for each day missed. If you will be missing class, please e-mail prior to the class and explain why you are not coming. If you have an emergency contact me via my cell phone. |
| Evaluation | Students are evaluated on MOTIVATION, preparation, participation, and craft. Students must show a willingness to share ideas with peers, instructor, and be accepting of constructive criticism from all parties. |
| Grading | Each assignment is graded on a 100 point scale. (A to F) and averaged within the assignment’s specific category. Extra credit is not available, it’s your responsibility to get any assignments or notes if you miss class. Late assignments will NOT be accepted! |
| Grading criteria as follows: |  |
| ☐ 25% Written Assignments | ☐ 25% Color Exercises/Assignments |
| ☐ 50% Final Color Project | |
| Special Circumstances | Please bring any special circumstances to the instructor’s attention at the beginning of the quarter. This course outline and content are subject to change at any time according to the discretion of the instructor or the department. |

C.1: Design 310 Syllabus Page 1
Course Schedule
Weekly breakdown and due dates

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<tr>
<th>Week 1</th>
<th>3/27</th>
<th>3/29</th>
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<td>Assignment 1 due. Lecture (Color history/perception).</td>
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<th>Week 2</th>
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<th>4/5</th>
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<td>Meet at PPL Library to do research.</td>
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<th>4/19</th>
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<td>Intracourse 1 &amp; 2 due. Lecture (Allure/Monet).</td>
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<th>Week 5</th>
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<td>Intracourse 3 &amp; 4 due. Lecture (Electronic color).</td>
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<th>Week 6</th>
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<th>Week 7</th>
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<th>5/10</th>
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<td>Presentations of assignment 1 &amp; 2.</td>
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<th>Week 8</th>
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<td>Concept presentations and critique of 3rd</td>
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<th>Week 9</th>
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<td>Present project in progress critique.</td>
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<th>Week 10</th>
<th>5/29</th>
<th>5/31</th>
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<tbody>
<tr>
<td>Final project is due and turn in.</td>
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Office Hours & Contact Information

Tony Reynolds 393-9932
myrales@crcc.edu
ext: 414-397-9000

I will be holding office hours on Monday and Wednesday from 11:00 a.m. to 1:00 p.m. in room 304. If you have a question concerning assignments, any other issues related to this course that cannot be answered during class time, please see me during these office hours or call my cell phone.

C.2: Design 310 Syllabus Page 2
Course Materials

Supplies and books both required and suggested.

Description & Locations
In-classes will need to purchase materials for the course. These materials can be found at various locations around Columbus as well as online. If you have difficulty obtaining these materials, bring it to the instructor's attention immediately.

Following is a list of locations to obtain necessary materials:
1) Ustreet - 692 N. High Street - 614 - 224 - 7298
2) Furr - 1529 E. Powell Rd. - 614 - 261 - 4520
3) Bicits - Addie Street Rd. - 614 - 730 - 7900
4) Longs - 1946 N. High Street - 614 - 267 - 0000
5) www.pent.com (National art supply retail stores)

Required Materials
1) 2 or 3 black mounting boards. (30 by 30 inchs) No Foamcore
2) 6 Acrylic paint and a minimum of 5 new brushes
3) Pencil (Eraser preferred)
4) Ruler (16 inch or longer is a good size)
5) A sheet of mat board. (30 by 30 inch approx.)
6) Man Phot. Paper. (White with blue cover)
7) 2.30 feet for instructor supplied materials due 4/20/06
8) Tube of white and black acrylic
9) Tube of a primary or secondary color acrylic. (Your choice)
10) A flat and round white plastic brush
11) One roll of 3/4 wide white artists tape
12) 2 sheets of white poster board. (Grocery store type is perfect)

Required Texts
There are no required texts for this course. I encourage you to read and immerse yourself in the many books available on color at our libraries and bookstores.

Some Suggested Texts

C.3: Design 310 Syllabus Page 3
Color Assignment 1

Color nomenclature research and personal color essay.

**Description**
Having a solid grasp on the vocabulary and terminology associated with color helps us communicate within the practice. Color is an aspect of art and design and has its own unique terminology which helps to define various elements, identifications, theories, etc.

**Format**
1) Familiarize yourself with the following terms by researching and writing in a simple understandable definition about each one. Use diagrams or sketches to help illustrate the definition if needed. Please type all of the following parts to this assignment.
   1. Hue
   2. Value
   3. Chroma
   4. Monochromatic
   5. Chromatic
   6. Chromometer
   7. Saturation
   8. Gamut
   9. Secondary colors
   10. Tertiary colors
   11. Photopic Vision
   12. Scotopic Vision

2) Below is a diagram of an eye. Identify and describe the function of the ten marked parts.

3) On a separate sheet of paper please type your response to the following essay question. (Length is necessary.)
How do you see the world of color, and how has it changed your life in any way?

**Evaluation**
Effort and completion of the assignment.

**Grading**
Grade will be placed within category W as described in syllabus.
Design 310  
Department of Industrial, Interior, and  
Visual Communication Design

**Color Assignment 2**  
Color police project: Seek out and find examples of good and bad use of color.

| Description | We will have a discussion on color as it relates to meaning, appropriateness, audience, and time. Based on what is brought into the classroom, we will observe and analyze the objects through various criteria in the context of color. |
| Format      | 1) Bring in a minimum of five examples of color usage in the form of printed materials or products. They can be magazine ads, posters, packaging, etc. Look for creative uses of color and unique applications. Also keep an eye out for bad uses of color or color which may not make sense for the particular use or audience it is intended for. |
| Evaluation  | As a class we will have a discussion about the various aspects. Participation is expected. |
| Grading     | This assignment will be graded as a whole taking into consideration the evaluation criteria. Grade will be placed within category V as described in the syllabus. |

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C.5: Color Assignment 2
Color Assignment 3

Research study of two seminal educators' lives and work with emphasis on color.

Description

Two of the most seminal figures in color theory education were Johannes Itten and Josef Albers. Both of these artists and teachers contributed some of the most widely used pedagogical methods for color theory. Today, many programs which teach color still echo their contributions within educational curriculums.

Format

1) Research and familiarize yourself with the various aspects of Itten's and Albers' lives. Spend time reading from the sources available at the library. Immerse yourself in their works and determine what each offered towards the development of art and design education. Pay particular attention to the subject of color.

Produce a written paper (MLA Style) with at least three bibliographical sources (books are suggested). The paper should be about your observations and knowledge gathered about Itten and Albers. Details such as their education, influences, and contributions should be considered for inclusion in the paper. I am also looking for interesting discoveries that you find out about them that you may have not been aware of prior to your research.

This portion of the paper length is discretionary. Be prepared to have a discussion about Itten's and Albers' lives and their contributions.

2) List below are works by Itten and Albers that you will find in the open-shelf section at the FN Library. Write your thoughts on two of the works in the list (Itten and Albers) and how you feel about them in relationship to color and their meaning as you interpret the length is discretionary but articulate your thinking and write clearly.

Type your papers and include a verbatim copy of the price.

2) Itten's Works by Albers (1938: 48 pp. £10.95) - pp. 4-7
5) Itten's Works by Albers (1990: 48 pp. £13.95) - pp. 16-19
6) Albers' Works by Itten (1990: 48 pp. £13.95) - pp. 20-23
7) Itten's Works by Albers (1990: 48 pp. £13.95) - pp. 24-27
8) Albers' Works by Itten (1990: 48 pp. £13.95) - pp. 28-31
9) Biographies of Albers (1990: 48 pp. £13.95) - pp. 32-35

Evaluation

You will be evaluated on your research as well as participation in the class discussion. Thoroughness, grammar, and articulation of thoughts are very important for receiving a high grade. Late or unsubmitted papers will not be accepted.

Grading

This assignment will be graded using evaluation criteria and averaged within category V as mentioned in syllabus.

C.6: Color Assignment 3

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Color Assignment 4

Twelve step achromatic color scale project.

**Description**
Black and white possess one of the strongest levels of contrast. Between those two achromatic colors lie a series of many possible grays, achievable through varying measures of the two. This project is designed to help train your "eye" to see the subtle differences in the achromatic colors.

**Format**
1) Using your white and black paint, mix a series of grays between the two endpoint colors.

2) Choose the twelve achromatic colors (including black and white) that show a smooth transition of value from darkest to lightest, and paint an area about 1 inch wide by 4 inches long. Once the paint is dry, cut from these twelve selections a 7.5 inch by 3 inch rectangle.

3) Line the strips in a row from darkest to lightest value using black and white as your endpoints.

4) Cut down a black board to the dimension of 5 inches by 11 inches. Arrange the strips in the center of the rectangle side by side leaving no space between the strips. The rest of the matrix is up to you to solve. (Lines between diagram parts are for dimension purposes)

**Supply Requirements**
1) Brushes and Pint (White & Black)
2) Card Stock & Extra paper for printing
3) Small containers
4) Black mount board
5) X-Acct Knife
6) Ruler
7) Pencil & Eraser
8) Duo-Tac (provided)

**Evaluation**
Completion of the project, color and the even transition between achromatic endpoints.

**Grading**
Grade will be placed within category V as described in syllabus.

C.7: Color Assignment 4

164
Color Assignment 5

Create three necktie designs using word interpretation through complementary colors.

Description
A project that uses a variety of skills associated with design and color. You will develop skills such as understanding complementary colors and the chromatic transition from pure hue to middle gray.

Format
1) Create a necktie outline. Make sure the tie is proportional and equally symmetrical on both sides. Cut down a 10 in. by 18 in. piece of illustration board for your working surface. Transfer the tie outline using pencil onto the board three separate times. Space all three evenly across the board making sure to leave at least a one inch border of white board around the group of three. Remove any smudges or unnecessary marks before moving on to the next step.

2) Choose two complementary colors from the color wheel and mix them out of your three primary color paints. Store the mixed colors in small containers, being sure to mix enough to complete the entire project.

3) Mask off the areas to be painted with masking tape. Be sure that any paint you have applied is completely dry before applying or removing any tape.

*Keep your hands and working area clean. It will make the process much easier, and will show in your overall craft when you complete the assignment.*

4) You will be interpreting the following three words: Amplitude, Industrial, and Accelerated. You may use pattern, dimensionality, repetition, scale, etc. as visual devices to help interpret these words. You may NOT have any blending in your test. ALL colors must be even and flat.

*A well-planned layout of where the pure hues, tints, and shades are going to be placed, will help make the process much easier.*

<table>
<thead>
<tr>
<th>Supply</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Brushes and Paint (primaries, black, and white)</td>
<td>1) Paper for testing</td>
</tr>
<tr>
<td>2) Paper for testing</td>
<td>2) Small containers</td>
</tr>
<tr>
<td>3) Smaller containers</td>
<td>3) White illustration board</td>
</tr>
<tr>
<td>4) White illustration board</td>
<td>5) Ruler</td>
</tr>
<tr>
<td>5) Ruler</td>
<td>6) Pencil &amp; Eraser</td>
</tr>
<tr>
<td>6) Pencil &amp; Eraser</td>
<td>7) Ruler</td>
</tr>
</tbody>
</table>

Evaluation
Completion of the project and good craft.

Grading
Grade will be placed within category V as described in syllabus.

C.8: Color Assignment 5
**Design 310**  
Department of Industrial, Interior, and  
Visual Communication Design

## Color Assignment 6
Creating a three-dimensional repetitive pattern and transition of monochromatic color.

### Description
A project that uses a variety of skills associated with design and color to achieve the illusion of a three-dimensional pattern on a two-dimensional surface. Development of skills in understanding color transitions, tints, shades, and tones.

### Format
1) You will need your black and white paints in addition to any color of your choice to achieve the monochromatic palette for this assignment. Store all mixed paints in small containers, being sure to mix enough to complete the entire project.

2) Cut down a 15" by 18" piece of white illustration board for your working surface.

3) Once you have completed your pattern you will need to transfer it onto the illustration board. Be sure to remove any smudges or unnecessary pencil lines. Also make sure to leave at least a one inch border around your pattern of white board. Make off the areas to be painted with masking tape. Be sure that any paint you have applied is completely dry before applying or removing any tape.

"Keep your hands and working area clean. It will make the process much easier, and will show in your overall craft when you complete the assignment.

4) Starting at one end or a corner, begin the transition of monochromatic color, and continue across the pattern evenly, creating a smooth transition to the other end of the pattern.

"A well planned layout of where the pure hues, tints, and shades are going to be placed, will help make the process much easier.

### Supply Requirements
- 1) Brush and Paint (black, white, and other color)
- 2) Paper for testing
- 3) Small containers
- 4) White illustration board
- 5) X-Acet Knife
- 6) Ruler
- 7) Pencil & Eraser

### Evaluation
Completion of the project. Solid effort to create a unique pattern that emphasizes the monochromatic transition in addition to a strong showing of good craft.

### Grading
Grade will be placed within category V as described in syllabus.

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**C.9: Color Assignment 6**

166
**Color Assignment 7**

Simultaneous contrast and relationship studies in the phenomenological aspect of color.

<table>
<thead>
<tr>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Simultaneous contrast can be generally defined as the way colors interact and affect each other. This can be both a useful and detrimental occurrence when choosing colors to use in a given medium. Interaction can lend the same color a varied appearance depending on its surrounding colors.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Format</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Using Color-Aid paper, explore variations of simultaneous contrast using similar color squares placed on top of two different color squares.</td>
<td></td>
</tr>
<tr>
<td>1) Choose a color and cut it down to two 1-inch squares. Choose two full-size sheets that have not been used for any other previous assignment and place them side by side. Then place the similar 1-inch squares in the center of the two full-size sheets.</td>
<td></td>
</tr>
<tr>
<td>Observe what occurs to the similar colors, and how the background colors influence the smaller squares. Some variations will be more extreme than others. It is up to you to try many variations using different colors for both the 1-inch squares, as well as the background pieces.</td>
<td></td>
</tr>
<tr>
<td>Please keep the examples you combine that show the strongest simultaneous contrast occurrences.</td>
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</tr>
<tr>
<td>2) In order to help conserve some of the Color-Aid sheets for later use, please cut down the full sheets you have chosen to a 3-inch by 3-inch square. Keeping the already cut 1-inch squares, mount them directly in the center of the 3-inch by 3-inch squares.</td>
<td></td>
</tr>
<tr>
<td>3) Lastly, mount the three strongest example sets on three separate black mount boards as shown below.</td>
<td></td>
</tr>
</tbody>
</table>

![Diagram of color assignment](image)

<table>
<thead>
<tr>
<th>Supply Requirements</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1) Color-Aid (provided)</td>
<td></td>
</tr>
<tr>
<td>2) Black Mount Board</td>
<td></td>
</tr>
<tr>
<td>3) X-Ace Knife</td>
<td></td>
</tr>
<tr>
<td>4) Ruler</td>
<td></td>
</tr>
<tr>
<td>5) Pencil &amp; Eraser</td>
<td></td>
</tr>
<tr>
<td>6) Duco-Tac (provided)</td>
<td></td>
</tr>
<tr>
<td>7) Masking tape</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Evaluation</th>
<th></th>
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<tbody>
<tr>
<td>Completion of the project and good craft.</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Grading</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade will be placed within category V as described in syllabus.</td>
<td></td>
</tr>
</tbody>
</table>

C.10: Color Assignment 7
## Color Assignment 8

Creating the optical illusion of transparency using colored paper.

| Description | It is obvious that in working with colored paper, we have no means to mix the colors mechanically like one would with paint or light. This project allows us to create a transparency mixture via the illusion of overlap. This will simulate the "in between" mixture that occurs when two colors combine. |
| Format | 1) Explore the notion of "in between" mixtures of two colors using the Color Aid sheets provided. Where those two colors intersect will be the third "in between" or mixed color which should result in an optical illusion of transparency.  
2) Create three strong examples of transparency on separate black mount boards that are cut down to 7 inches by 10 inches. Be sure that you leave at least a 1 inch border surrounding the example to give some framing space for viewing. Creativity is encouraged. Some examples below. |
| Supply Requirements | 1) Color Aid (provided)  
2) Black mount board  
3) X-Acet Knife  
4) Ruler  
5) Pencil & Eraser  
6) Duct Tape (provided)  
7) Masking tape  |
| Evaluation | Completion of the project, creative solutions, and good craft.  |
| Grading | Grade will be placed within category V as described in syllabus.  |

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C.11: Color Assignment 8
Color Assignment 9

Personal interpretation of four words using a limited color palette.

Description
This project will help to explore personal interpretations of four words using limited color palettes. The idea is not to allow anyone else to know what words you are interpreting, and for the class as a whole to try to decipher your choices through the visuals you create.

Format
1) You will be given four colored sheets of paper. This will be your color palette for this entire assignment. No other colors can be added to this project in any way shape or form.
2) Cut your colors into 1 inch squares. Place them side by side to begin assembling a layout showing your interpretation for each of the four words you are using for this assignment.
3) You have a choice of two final board dimensions in which to use. See below for details. These in mind you are creating one board for each of the words. Whichever dimension you choose, you must stick with it for the entire assignment. Once you are satisfied with your visual arrangement of the colored squares, mount them to the boards.

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Supply Requirements
1) Color sheets (provided)
2) 24 x 18 mount board
3) X-Arc Knife
4) Ruler
5) Pencil & Eraser
6) Duo-Tac (provided)
7) Masking tape

Evaluation
Completion of the project and good craft. You will also be expected to participate in the class discussion as part of your grade.

Grading
Grade will be placed within category V as described in syllabus.

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C.12: Color Assignment 9

169
Color Assignment 10
Research study and presentation on a designer with a focus on the context of color.

Description
The field of design requires the ability to illustrate and explain your work in a professional and prepared form. This project allows the bridging of both a research study and a presentation. The research follows the subject by which this course is based, and the presentation allows for the refinement of speaking skills.

Format
1) You will create a five-minute presentation which will be given to the class on your designer. The presentation should take the form of a PowerPoint, PDF, or Keynote application. Designers will be chosen by the instructor.

2) Present information about the designer’s significance, background, history, cultural influence, and any other pertinent information that is educational and beneficial to your audience. Show a series of works (6-10 pieces) by the designer, and include on each slide: the name of the piece (if applicable) and date it was created.

3) You will produce your presentation on a CD and hand it in the day of your presentation. You will also include in the CD a cheat sheet listing your bibliographic sources in MLA format. Please arrive ten minutes early to turn in your CD and list on the day of your presentation. Quality images will be expected in your presentation. Low-resolution files need to be chosen with care. Please be sure to test your presentation before the day it is due.

* Please print your name and the designer you researched on the CD.

Evaluation
Evaluations are going to be based on good presentation, both verbal and visual. Well researched information about your designer and useful information regarding their lives, career, etc. is expected. Late presentations will not be accepted.

Grading
This assignment will be graded using evaluation criteria and averaged within category V as mentioned in syllabus.
## Final Color Assignment

Interactive teaching tool framed within the context of color learning and exploration.

### Description
Learning about the vast world of color can be an exciting and fun experience. This project is directed towards the teaching of a particular element of color theory. Taking that element and integrating it into an interactive teaching tool. This project is limited only to your imagination but must maintain the objective of offering some form of knowledge in regards to color to a given audience through the interactive process.

### Format
1. You are required to create an interactive teaching tool which can take the form of just about anything. The only rules are that it cannot harm or hurt anyone via any part or parts of its final rendering. Questions regarding materials or methods of execution should be brought to the instructor’s attention for approval.

2. Choose a specific element of color, anything from theory, historical figures, or pragmatic elements. Investigate various ways of creating an interactive teaching tool that will convey a clear and concise way what the tool is trying to teach. This is open to interpretation based on level of interactivity and the experience one gets while exploring or learning from your tool.

3. For brevity sake, any questions, concerns, or issues with regards to concepts, form, or final execution should be brought forward in class with the instructor. This is a process oriented project which will be graded with the goal of being a portfolio level piece. So quality, execution, and well thought out solutions are to be expected.

### Evaluation
Evaluations will be based on concepts, process evaluation, final rendering, draft, articulation of project in discussions and critiques. Willingness to go above and beyond the bar is expected, and will be looked at as a strong effort and graded accordingly.

### Grading
This assignment will be graded using evaluation criteria and placed in the final grade category detailed in the syllabus.

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C.14: Final Color Assignment
C.15: Student Work 1 (Final Color Assignment) Musical Color Instrument
C.16: Student Work 2 (Final Color Assignment) Interactive Sculpture
C.17: Student Work 3 (Final Color Assignment) Bezold Effect Using Legos
C.18: Student Work 4 (Final Color Assignment)
Interactive Homage To The Square Tool
C.19: Student Work 5 (Final Color Assignment)
Complimentary Color Puppets
C.20: Student Work 6 (Final Color Assignment)
Simultaneous Contrast Using Legos
C.21: Student Work 7 (Final Color Assignment)
Psychological Color Experiment Using Food
C.22: Student Work 8 (Final Color Assignment) Spectrum Game
C.23: Student Work 9 (Final Color Assignment) Color Corn Hole Game
C.24: Student Work 10 (Final Color Assignment) Color Kids Characters
C.25: Student Work 11 (Final Color Assignment) Color And Emotion Wheels
C.26: Student Work 12 (Final Color Assignment)
Interactive Color Sculpture Garden
C.27: Student Work 13 (Final Color Assignment) Color Basics Board Book
C.28: Student Work 14 (Final Color Assignment)
Musical Compositions Set In Color Fields
C.29: Student Work 15 (Final Color Assignment) Interactive Color Blocks
C.30: Student Work 16 (Final Color Assignment)
Interactive Simultaneous Contrast Tool