

Chapter 5

Data Analyses interpretation and discussion

5.1 Introduction

The objective of the present study was to identify the difficulties faced by the students while using colors and prepare an instructional strategy for teaching the Course in Color and Form. Also; to study the effectiveness of the prepared instructional strategy.

This chapter gives the data generated by the study. And the data have been organized for objective 1 and objective 3 respectively. The first objective was to assess the present degree of awareness of use of color and form.

The third objective was the impact of the intervention in teaching the course on students work.

By the end of the course an assignment of the similar type of the pre intervention test was administered and the product is analyzed based on the objectives of teaching this course.

They were also asked to reflect on the learning on the work they have submitted.

5.2 Pre-Intervention Assessment of students

Color is an important aspect in designing. Most of the students use color without adequate knowledge. This affects the communication quality of the product. To understand the competence level of the students, the investigator administered a pre intervention test. The pre intervention test consisted of two parts. One is a questionnaire to understand the background of the student. Second is an assignment in which the students were given a subject on which they were asked to create an abstract composition. After making the composition they were asked to justify the use of color in their composition in the form of a write up. On completion of the assignment the investigator discussed the work with the student to identify the difficulties faced by the students. The data collected from the questionnaire, assignment, the discussion with the student and observations of the investigator are presented student wise as follows:-

5.2.1 Student -1

1 Data from questionnaire

The course attended before was a combination of exploring things by the students and at the same time fulfilling certain requirement of the

course. There was no course abstract or a structured content for the course. No color theory was taught.

2. Assignment work



Figure 17 Pre intervention assignment work, student 1

3. Discussion with the student and investigator's observations

The subject chosen by the student was happiness. The discussion was based on the assignment work and the use of color in the work, compositional aspects and use of form created by the color was also discussed.

The student's pre intervention assignment work showed a lack of skill in application of color on paper. The student had undergone a color course in the previous degree. But most of the color theories were not taught in the course. The learning was inadequate for design field. Colors were not

evoking the feeling of happiness, in the write up the student could not justify the use of color with proper theoretical understanding. But in design, as there is a target audience: there is a need to have a conscious application of colors, which was missing in the student's work.

Also while discussing with the student, it is understood that the course was not structured. The contents changed according to the teacher. No feed back was given by the teacher on the work done during the course.

5.2.2 Student -2

1. Data from questionnaire

The student had taken a course in color in the previous degree. The course was less structured. Contents were relevant for that particular course. Inputs were discussed but not in detail. The class had only lectures. Theory was delivered through lectures. No course abstract was given. Feedback on the work was not given during the course too.

2 Assignment work

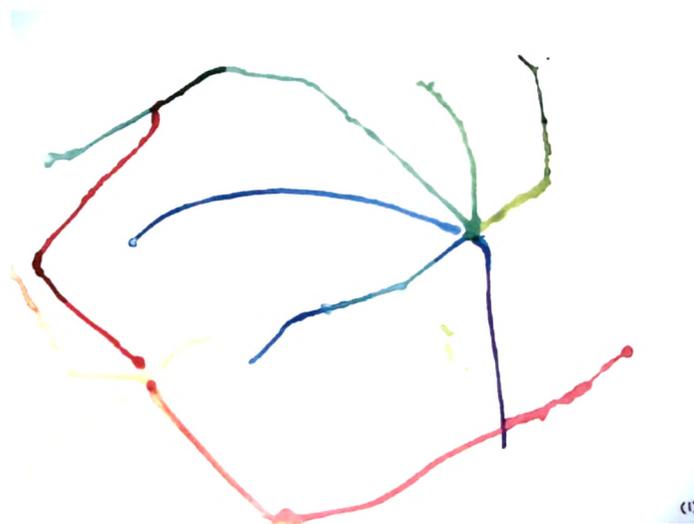


Figure 18 Pre intervention assignment work, student 2

3. Discussion with the student and investigator's observations

After completing the pre-test assignment a write up regarding the use of color was also submitted along with the assignment. The subject chosen by the student was happiness. The assignment work and the justification for using the colors in that particular work were not very much related to each other. The justification on the use of color was not appropriate. From the visual a lack of understanding in terms of meaning of color was evident. The concept of creating forms with color was not clearly understood by the student.

Sense of background and foreground creation by the use of color was missing in the composition. Use of relative proportions of color to evoke a particular feeling was absent. Precision of application of color was poor. By observing the work and from the discussion, the investigator observed the following points:-

The ability to apply color as per the subject requirement on the paper was poor.

Adequate theoretical knowledge was lacking.

Use of form and color was inappropriate.

Precision and color interaction was missing.

From the discussion, it is seen that most of the important aspects of the colors were not discussed in the earlier course. The contextual meaning

and cultural context of color were some of the important points which were never discussed.

5.2.3 Student 3

1. Data from questionnaire

The student had done a color course in the previous education. The course contained some techniques which were very particular to that stream of education. It contained only specialized technique in using those colors. So the course was only about coloring techniques. It was adequate for that particular course. Aspects related to coloring techniques were only discussed.

The course had only, projects as the teaching method. No feedback was given; the evaluation was done on the basis of final product.

2. Assignment work

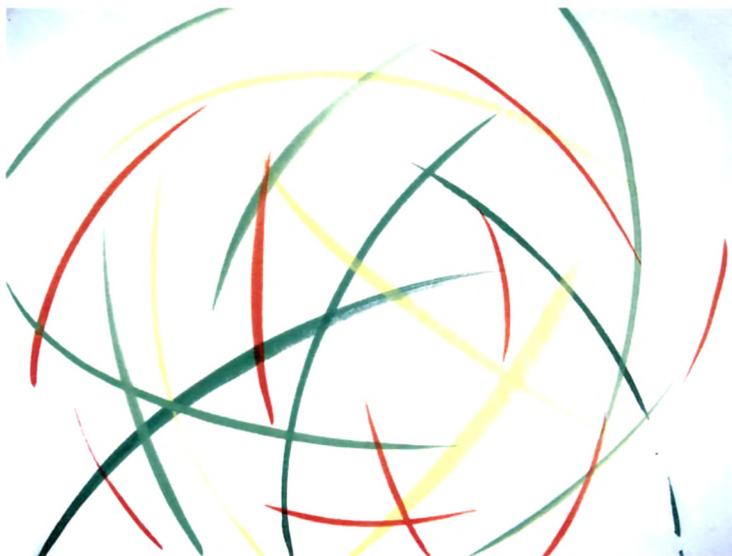


Figure 19 Pre intervention assignment work, student 3

3. Discussion with the student and investigator's observations

The student has chosen happiness as the theme. In the write up the colors and their meanings were personal interpretation. Intuitive approach was used rather than a systematic scientific analysis to interpret the meaning.

According to this student's write-up happiness is expressed through fresh colors. During the discussion with the student, the investigator realized that the previous course on color was only about techniques pertaining to some particular mediums in painting. No other aspects of color like geographical, gender, culture specific color preferences were covered in contents.

While observing the student's work, the investigator noticed that the ability to apply color on the paper with accuracy was poor. From the questionnaire it was evident that the course on color which this student had attended previously was only about some techniques. So the other aspects like physics of color, color theories, context of color, color interaction, color contrast and color harmony were to be taught in the color course as they are important for a designer. Color application, color mixing and theoretical knowledge of color are equally important in the process of learning about color.

5.2.4 Student -4

1. Data from questionnaire

This student was never introduced the color separately though the degree was in painting, the liking and disliking were developed just by practice.

The learning in color happened as part of another course and it was not structured. The course contents were not relevant; the color application was never taught. The course dealt with very few aspects of color only. The class had no lectures or demonstrations. Theories were never discussed. No course abstract was given. No feedback was given and the evaluation was based on the final product.

2. Assignment work

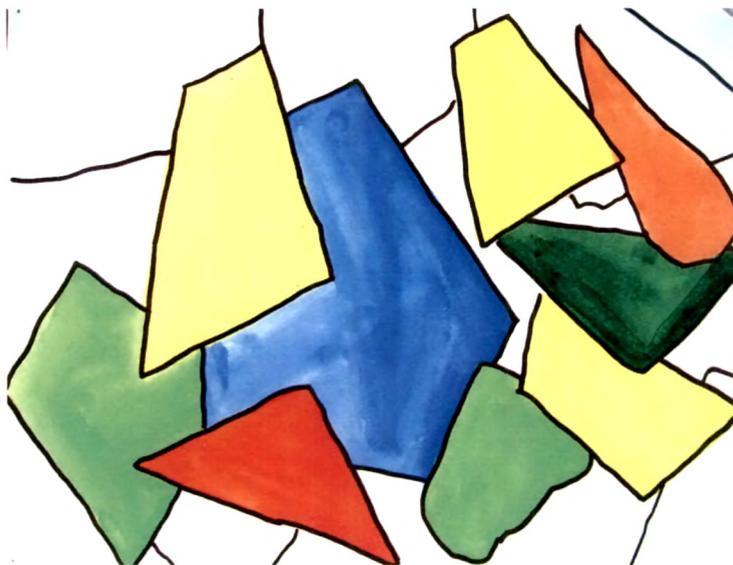


Figure 20 Pre intervention assignment work, student 4

3. Discussion with the student and investigator's observations:

The subject chosen by the student was 'pain'. In the write-up the student had given a brief description of the use of bright colors. The colors are not representing pain. Few lines are what were denoted as imbalance and pain in the composition. The visual is in bright colors. While discussing with the student the investigator realized that in the previous education the student has not attended a course especially for color. Color was part

of another course and it was not structured at all. Aspects of color theories, color interaction color application and meaning of color were never discussed in the class. In the work the form was not defined by color. Communicative quality and level of accuracy was less.

From the work, write up and discussion the investigator observed that the level of accuracy was very less. Use of hue, tint, shade, tone and different values was not known to the student. Use of color to create form and meaning was to be improved. Understanding of color theories, basics of colors and physics of color was to be strengthened. To have an adequate knowledge of color and its use in design, it has to be taught separately. Meaning of color as per the culture and geographical regions are to be taught as it is important to understand the associated meanings of color.

5.2.5 Student 5

1. Data from the questionnaire

As per the information from the questionnaire this student is coming from a completely different degree which never had any inputs in color. It had only machine drawings and computer graphics. They all were technical courses and had no reflections to color. So the other questions in the questionnaire were not applicable for this particular student.

2. Assignment work



Figure 21 Pre intervention assignment work, student 5

3. Discussion with the student and investigator's observations

The subject chosen by this student was pain. The work and write-up was more intuitive and had not theoretical support of color theories. This student was from a technical background and hence the whole subject was new to this student. While discussing with the student it was noticed that the pre intervention assignment was done only on the basis of intuition. He could not justify the use of color in the assignment work through the write up.

The investigator noticed that the competency level of this particular student in terms of scientific knowledge of color was very low as this

person came from a very different background. Everything which was to be the part of the course was new to the student. In born talent as an artist was the positive point in this student. But theoretical knowledge and color applications skills are important to be a designer. This shows that students with no prior input in color are also were part of the class.

5.2.6 Student 6

1. Data from the Questionnaire:

As per the questionnaire, this student has not undergone any course related to color. So the other questions in the questionnaire were not relevant to this particular student.

2. Assignment work



Figure 22 Pre intervention assignment work, student 6

3. Discussion with the student and investigator's observations.

The subject chosen by the student was 'happiness'. According to the student's write up the student had tried to depict the happiness through bright colors. While having the discussion the student revealed that no conscious application of color was tried in the assignment. What ever came to the mind of the student at that moment of doing the work was expressed as happiness.

Since there was no previous exposure to color as a subject the pre intervention assignment was based on the student's personal imaginations which had no theoretical support. Even the student was not clear about what is bright color and dull color. Being a designer it is very important to use the right terminologies while explaining the work. The approach to work was purely intuitive. The student was not aware of most of the aspects of color including basic theories and color mixing. The student did not have an exposure to primary, secondary and tertiary colors, color harmony, color contrast. The student was also not aware of important aspects like color contrast, color interaction and contextual meaning of color.

In design education color is one of the most important aspects of color because, color defines form. Transparency and translucency are created by the use of color. Communicative quality of the product is improved by accurate application of color.

5.2.7 Student 7

1. Data from the questionnaire:

From the questionnaire the investigator has found out that there was no separate course on color in the previous degree. Only one drawing course was there.

2. Assignment work



Figure 23 Pre intervention assignment work, student 7

3. Discussion with the student and investigator's observations.

The subject chosen by the student was pain. In the assignment the student was asked to depict the subject with color but in the work the student has painted closed eye and some red tear drops in a dark

background. The student has justified it as 'shattered and tearful' and red as color of blood. Brown color was interpreted as sad color. The color association was not based on any previous study. While discussion, the student explained the use of color was purely intuitive and visuals were dominating than the color. But the assignment was to depict the theme through color.

The investigator observed that the student had not gone through a structured color course. The pre intervention assignment showed the intuitive approach of the usage of color. In design both intuitive and calculated approach are required. Design has a user in the market. So some kind of generalization is required in the selection of color, so theoretical knowledge as well as ability to apply the color with appropriate control is important. Communicative quality of the product, contextual meaning of color and interaction of color are some of the major aspects of a successful design.

5.2.8 Student 8

1. Data from the Questionnaire

The student had a course called basic design in which color, composition and form were taught. The course was less structured; the contents were relevant to that course. Only some aspects of color were discussed that too not in detail. The class was delivered theory lecture and demonstration. Theory was delivered through discussion. Course abstract

was not given to the students in the beginning of the course. There was a one to one feedback session during the course. Both process and product were considered for evaluation.

2. Assignment work

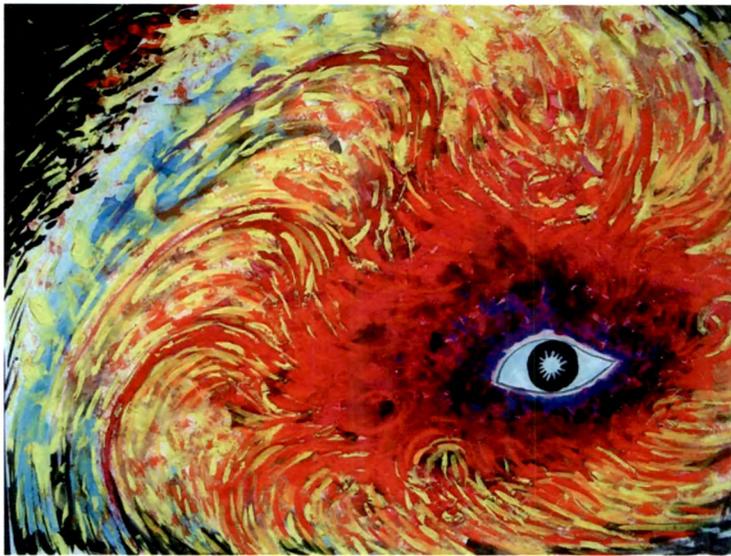


Figure 24 Pre intervention assignment work, student 8

3. Discussion with the student and investigator's observations

During the discussion with the investigator the student told that the success of the course was very much teacher specific. Some teachers deliver the course very well. But some others don't deliver as much as it is required. The assignment work and write-up showed a certain amount of understanding and it was evident in the discussion too.

This student showed a good understanding of many aspects of color. Some areas like gender, culture, geography specific preferences of color

were not taught in the previous course. The course was very much teacher specific. The investigator observed that it is very important to have a structured course with defined objectives of learning in a course.

5.2.9 Student 9

Data from the questionnaire

From the questionnaire the investigator found out that in the previous course they used to explore with water-color and on a theme nature and form. Understanding to color was limited only to mixing and applying in a picture. The course was conducted through projects; course abstract was not given to the student before the beginning of the course. And the evaluation was based on process, participation, in the class and not the final product.

2. Assignment work



Figure 25 Pre intervention assignment work, student 9

3. Discussion with the student and investigator's observations.

The work of the student was in single color and it was illustrating a lens and a window. The aspects of color were not even considered in the work. The given subject was also not followed.

It is observed that the assignment work and write-up justifying the use of color in the assignment was not adequate. While discussion with the student it was evident that the student was ignorant about most of the aspects of color. Even after going through a course on color, the basics were unclear. The student could not articulate color harmony color contrast, color for background and fore ground, relative meanings of color and color interaction. The student could not explain the geographical, cultural and gender implications on color preference. Role of color creating the forms and uses of hue, tint, shade and tone was not coming up through the student's pre intervention assignment.

5.2.10 Student 10

1. Data from the questionnaire

The student had a course in the previous degree and it was an assignment to trace their journey in color. The course was not structured and the contents were not relevant. The assignment was done as a project and the class had only assignment work; no lecture, no demonstration or any

other mode of delivering the course contents. The final product was never a consideration and the process was the only criteria for evaluation.

2. Assignment work

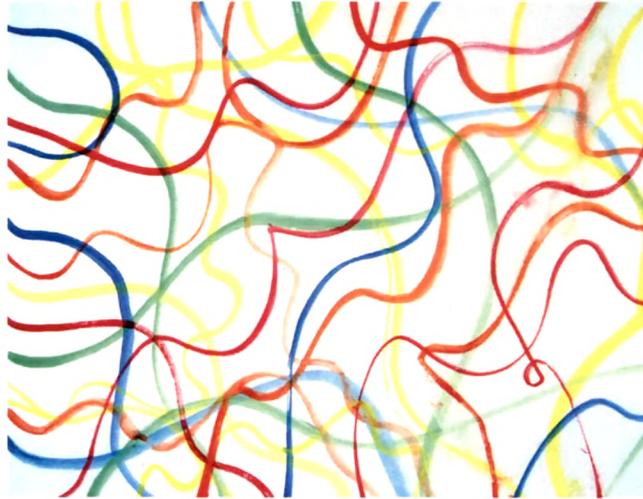


Figure 26 Pre intervention assignment work, student 10

3. Discussion with the student and investigator's observations

The subject chosen by the student was happiness. The write-up was just explaining what the assignment was. And the work was some colored lines without any conscious effort to create any meaning.

Investigator has observed that the course which the student has undergone was not structured. So many aspects of color were not taught during the course. Course abstract was not given to the student which leads to a confusion as the student was not aware of the expected outcome of the course. Lack of understanding was evident in using color to the appropriate context in a composition. During discussion it was observed that color theories, color interaction, contextual meaning and

associated meanings were never introduced to them in the previous course.

5.2.11 Student 11

1. Data from the Questionnaire.

The student had a course in color in the previous degree attended. The course according to the student was near to perfect in structure. Course contents were relevant to that course. The inputs were not discussed in detail. The class had lecture and discussion. Course abstract was not given. Both the process and product were considered for evaluation

2. Assignment work



Figure 27 Pre intervention assignment work, student 11

3. Discussion with the student and investigator's observations.

The subject chosen by the student was 'happiness'. In the write-up it was mentioned that "soft colors show balanced happiness". The student also could not explain the meaning of the above mentioned sentence. There were many other sentences in the write up which had no direct relationship with the work but an explanation of happiness. During the discussion the investigator found out that there was no structured course in color in the previous degree and color was considered to be an art not a skill. In fine arts color is used more intuitively. But in design there are many aspects like contextual meaning, color interaction, color seen in different lights, color contrasts, color harmony and other theories are important. So an instructional strategy which incorporates all the above mentioned aspects is important for design education.

5.2.12 Student 12

1. Data from the questionnaire

The student had some courses in the first and second semester of previous degree. But it was a material oriented course. It was theme based expression and painting on tiles. The course was lacking in discussion and explorations. Only few aspects of colors were discussed. No course abstract was given, no feedback was given and the evaluation was based on the final product.

2. Assignment work



Figure 28 Pre intervention assignment work, student 12

3. Discussion with the student and investigator's observations.

The subject chosen for the pre intervention assignment by the student was humor. The write-up was like a definition of the subject, but not very clear in explanation. During the discussion in terms of earlier exposure to the subject was found quite inadequate. The course was more of an exploratory in nature and not much care was given to the process.

Investigator has observed from the assignment work, write-up and discussion that the previous inputs were quite inadequate for the level of understanding required. The subject was delivered to the student without many preparations. Course abstract was not given. Many aspects of theories, physics, color applications, interaction of color and communicative qualities of color were not discussed in the class. Level of accuracy and precision were lacking in the pre intervention assignment.

5.2.13 Analysis and Interpretation of pre intervention data

The data emerged from the pre intervention test which contained an assignment and a questionnaire has led to the following inferences.

The entry level of each student was varied. Their levels of inputs received in color and form studies have shown drastic differences. Some students were from engineering and computer background and they have not received any inputs in color and form. Some others were from architecture background and though they received some inputs in color and form in their previous courses, they were found inadequate for designing as their medium of usage was different. The others were from fine arts back ground. They have received color inputs, but in a different context. In fine art there was a notion that color is intuitive. A scientific approach to color was not practiced in many of the art institutes. The functional aspects of color were never taken in to consideration. Only aesthetic aspects were given importance and that varied from person to person.

In some cases the course under gone by the students were lecture based and since color is an application oriented subject; practical sessions and assignments are necessary as part of the course. In some other cases the students were exposed to techniques only. Adequate theoretical knowledge was not imparted to them. So a conscious application of color in a design problem was not happening. In many cases continuous feedback on work and group discussions in the class were missing. So

what ever mistakes made by the student in work happened during the class never got a chance to rectify or improve during the course. So an instructional strategy which includes all above mentioned aspects, like lectures, demonstration, group discussion, assignments, documentation, survey ,slide shows, continuous feedback are needed in a course which teaches color and form in design education in order to maximize the learning.

In the case of most of the students, a systematic approach was missing in the course taken by them earlier. Course abstract was never given in most of the cases. So the students were not aware of what they were going to receive during the course till they completed the course. The learning was not focused because of this. Evaluation criteria were also not known to the students. While observing the work, analyzing the questionnaire and discussing with the students, it emerged that many aspects like color application, color mixing theoretical knowledge, basics of color theories, primary, secondary and tertiary colors, color harmony, color contrast, color interaction, contextual meanings of color, preference of color based on gender, culture and geographical regions, relative meanings of color had to be included in the context of the course.

Also other factors such as precision, bringing transparency and translucency and color creating form, use of hue, tint, shade and tone in creation of forms and the sense of composition and communicative

quality of the final product also had to be included in color and form studies. As a result the students found it difficult to use it appropriately with adequate knowledge of color. In design, conscious use of color is necessary as the design is for the public.

The data thus obtained in the pre intervention test phase helped the investigator in the selection of the content of the course and to evolve methodologies of teaching the course on Color and Form. The detail of the revised course is presented in chapter IV.

5.3 Post Intervention assessment of students

The post intervention test was administered to understand the impact of intervention in teaching the course on students work. The post intervention test was an assignment equivalent to the pre intervention test and a focused group discussion. The assignment was to create an abstract composition on any one of the given themes. After completing the composition, the students were asked to justify the use of color in the form of a write-up and the investigator discussed the work with them to understand the impact of intervention.

The data collected from the assignment work, write up and from the discussions with the students are presented student wise as follows:

5.3.1 Student I

1. Assignment work



Figure 29. Post intervention assignment work student 1

2. Discussion with the student

The subject chosen by the student was "mystic". The discussion was based on the post intervention test work as well as the learning from the entire course.

During the discussions, the student mentioned that the day to day discussion and feedback sessions were very helpful in internalizing the concepts. It helped the student to refresh and strengthen the theories of color, became more conscious of the application skills. Inputs on the influences of color, gender and religion were a new learning. Peer feedback helped to understand the concepts of color theories in a better manner.

5.3.2 Student 2

1. Assignment work



Figure 30. Post intervention assignment work student 2

2. Discussion with the student

The subject chosen by the student was mystic. Discussion was based on the post intervention test work and the learning from the course.

The student mentioned the following points as the learning from the course. Color application became more conscious. Awareness about color has improved even on every day life. Understanding of primary, secondary and tertiary colors became clear. The decision of the color usage changed from personal likings to conscious application. Started following color theories in order to use the colors in a design problem. And the ability to see from another person's point of view has developed. Interaction in the class and presentations and discussions helped to a better understanding of the subject. The exercises helped to prove the

sensitivity of color and understanding of color association. Influences of gender, geography and culture on color were learned first time from this color course.

5.3.3 Student 3

1. Assignment work



Figure 31. Post intervention assignment work student 3

2. Discussion with the student

The subject chosen by the student was mysterious. The student knew the basics of colors from the previous course.

During the discussion the student mentioned that most of the contents in this course were a new learning for the student. The major learning from the course was application of color with purpose. According to the student the course was interesting because of the kind of exercise which strengthened the learning, discussion based classes, goal oriented

assignments, and day to day feedback on work which helped to understand the subject in depth.

5.3.4 Student 4

1. Assignment work

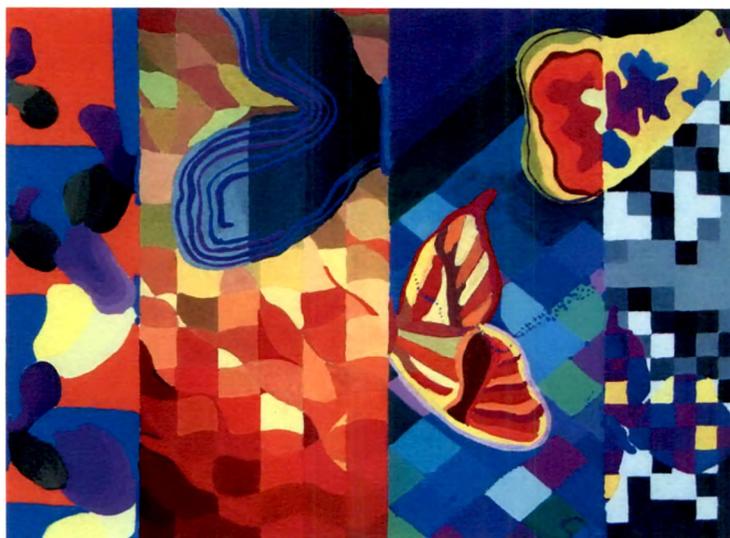


Figure 32. Post intervention assignment work student 4

2. Discussion with the student

The subject chosen by the student was "mystic". The discussion was based on the post intervention test work and overall work done during the course.

The following points emerged from the discussion. Basic theories like primary, secondary and tertiary colors were learned from the course. Doing and refining after the feedback improved the color application and sense of neatness. Conscious application of color was one of the major

learning's as compared to sub conscious application of color in the previous times. Relationships of color and gender, color and religion, color and context were a new learning. A habit of hard work developed during the course. Peer feedback helped to improve the work.

5.3.5 Student 5

1. Assignment work

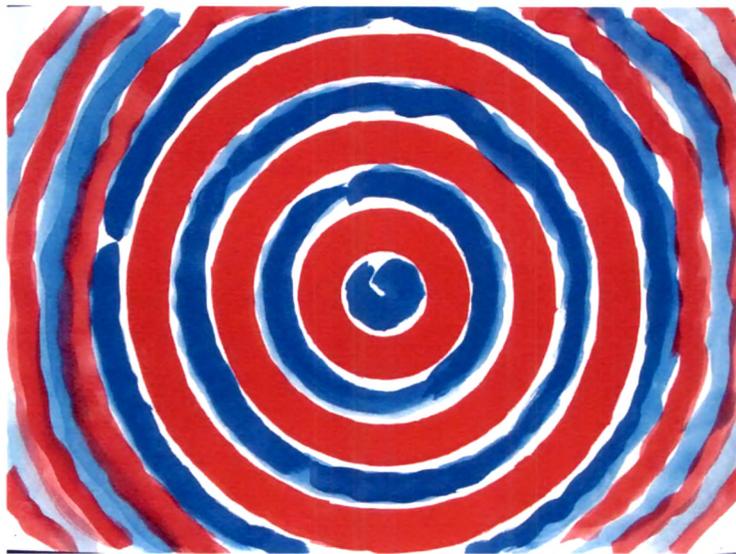


Figure 33. Post intervention assignment work student 5

2. Discussion with the student.

The subject a post test assignment was "mystic".

During the discussion with the student the following points emerged. Sensitivity in application of colors improved. The slide shows were very informative and structured approach helped in a systematic learning. Different methodologies like lecture, survey and presentations and assignments helped in a holistic learning. Sensitivity to finer details and

color associations with gender and religion improved. Learning on science of color contributed to a stronger understanding on the phenomenon of light and color.

The student mentioned that since he had not undergone any color studies before so each and every aspect in the content was relevant. Also assignments allowed the student in developing an individualistic approach to each design problems.

5.3.6 Student 6

1. Assignment work

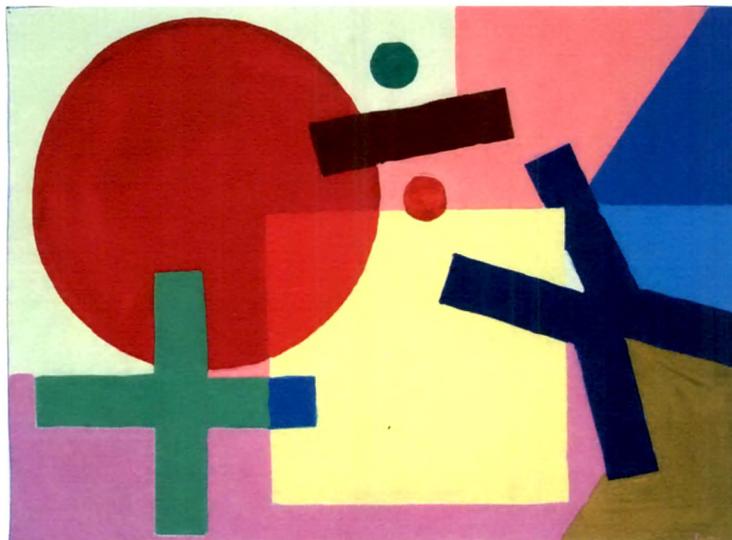


Figure 34. Post intervention assignment work student 6

2. Discussion with the student

The student has chosen "chaos" as the subject. The student explained that he has used geometric shapes and mathematical symbols in

disorganized manner to depict chaos. Contrasting colors are used for background and foreground. Use of form and colors evoked chaos.

While discussing with the student the following points emerged regarding the learning through the course. Thought this student has undergone a course in color in the previous degree because of this course the awareness to color has improved. Earlier, the aspects of color which is perceived differently by the difference in culture, gender religion and geographical conditions were never taken in to consideration while using color in a design problem. Scientific approach helped in finding out the appropriate colors to a context.

5.3.7 Student 7

1. Assignment work

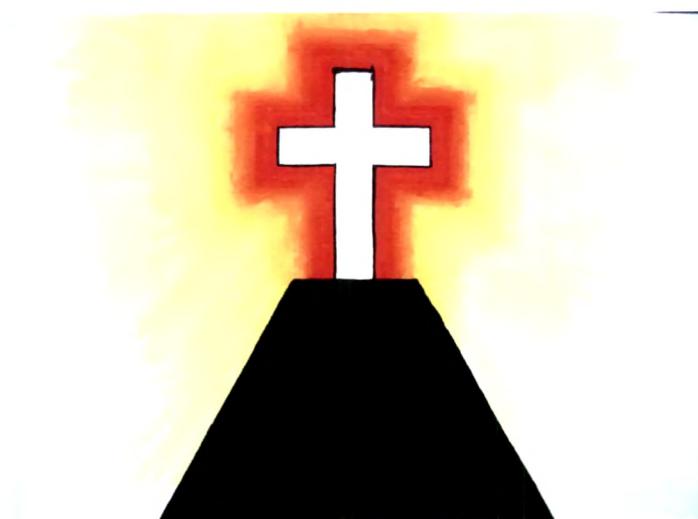


Figure 35. Post intervention assignment work student 7

2. Discussion with the student

The subject chosen by the student was "mystic". Here the colors were used to evoke the feeling along with the form. Here the approach was figurative and the colors used justify the theme.

While discussing with the student it was found that a tendency to use figures was very prominent in each and every work of this student. Before undergoing the course the usage of color in design was based on popularly accepted meanings of colors. And most of the time a definite meaning was not available to many of the colors. The following points were the outcome of the discussion. Long working hours on a particular assignment was physically tiring but at the same time it was enjoyable as the results were very concrete. Color sensitivity increased. Now the ability to differentiate between subtle variations of colors has improved. Continuous work improved the skills; scientific approach has given definite positive results. Now the student is able to relate the theories with the work and analytical ability and consciousness on color decisions improved. Documentation, survey and slide shows helped to understand the basics and other theories. Explorations and assignments helped to improve the skills. Discussions and feedback sessions conducted in an informal method helped to keep the mind free and maximize the learning.

5.3.8 Student 8

1. Assignment work



Figure 36. Post intervention assignment work student 8

2. Discussion with the student.

The subject chosen by the student was mystic. The post intervention test work demonstrated a good understanding of the use of color. The discussion was based on the work done during post intervention test and the learning happened throughout the course. By going through the course the student had acquired knowledge in the aspects of influences in the preference of color by gender, culture and geographical region. Color contrasts, color interaction and contextual meanings of colors were well explored in the work.

5.3.9 Student 9

1. Assignment work

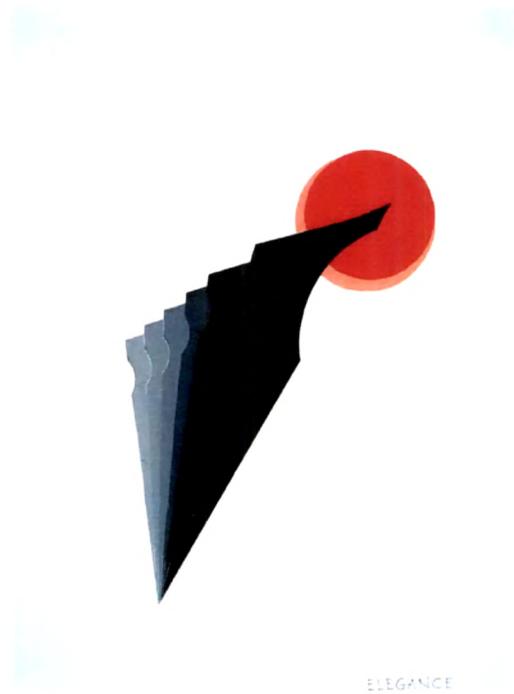


Figure 37. Post intervention assignment work student 9

2. Discussion with the student

The discussion was based on overall learning in the course and post intervention test.

The points emerged from the discussion are as follows. Basic understating has shown a lot of improvement in terms of quality of work. Color application skill and conceptual quality improved. Sensitivity developed in the area of color interaction. Learning by doing made the fundamentals very clear. A lot of new terminologies on color were learned from the course. Color theories were understood clearly. Good understanding has been achieved in psychology of color. Some other new leanings were

about understanding how people interpret color and understanding of color perception

5.3.10 Student 10

1. Assignment work

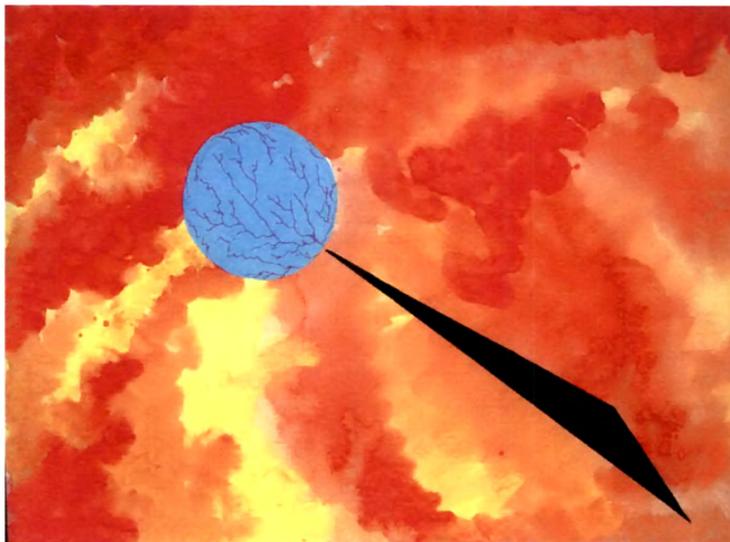


Figure 38. Post intervention assignment work student 10

2. Discussion with the student

The subject chosen by the student was chaos.

While discussing the work the student had reflected on certain points regarding the course. In the earlier course the assignments were done very mechanically. The student followed the teacher's instructions and there were not much thought process involved in the work. In this course the initial lectures and slide shows helped to understand the purpose of doing it. Since the assignments were based on practical work. The following aspects of learning improved:

- Ability to apply colors with proper mixing and even thickness on the paper
- Color application in the assignment work is with appropriate reasons for the use of each color.
- Proper methods of Survey and data collection also learned, because as part of the assignment, the student had to go out to do survey and data collection.

5.3.11 Student 11

1. Assignment work



Figure 39. Post intervention assignment work student 11

2. Discussion of the work with student

The subject chosen by the student was 'calm'.

While discussing the work and learning in the class; the following points emerged. The exactness of color to be used in each situation was learned. Earlier, the concept of correct color was never a consideration. From

intuitive approach to conscious and calculated use of color was learned from the course.

5.3.12 Student 12

1. Assignment work



Figure 40. Post intervention assignment work student 12

2. Discussion of work with students

The subject chosen by the student was 'calm'. In the post intervention test the student has given a landscape which shows calm atmosphere though the colors used were appropriate, the scene which shown a landscape has the image of a mountain side with snow with some houses. Here the atmosphere created in the picture is very calm and silent.

During the discussion with the student it was observed that the understanding of color has improved. Earlier the color associations were

intuitive and very much depended on personal likings. But during the course logical and calculated approach has been adopted in color application. Skill of color application improved and overall confidence of the medium improved.

5.3.13 Interpretation post intervention test data

The data emerged from the post intervention test which contained an assignment equivalent to the pretest. Focused group discussions and one to one interactions also were conducted by the investigator to understand the effectiveness of the prepared instructional strategy on color and form. Almost all students used color consciously in the post test. The skill of color application improved. Introduction of a systematic approach and structured course had helped the students to internalize and demonstrate the learning.

5.3.14. Grades obtained by the students on the course.

As an academic requirement the students were evaluated by the end of the course and grades were awarded as per the evaluation. The evaluation was based on the evaluation criteria given along with the course abstract. (Ref. Ch.4.2.2). The grades obtained by each student are given below student wise.

Student 1

Student Name

Course ID

Program Name Ceramic & Glass Design

CourseName Colour & Form

Year of Joining 2004

Semester I Student's
Photograph

Course Duration 2

Credits 1.50

Attendance

Regular

Evaluation Type E05

Course Status

Complete

Cognitive Skills

ID	Parameter	Description	Grade	Remarks
1	Knowledge & Comprehension	Ability to understand concepts remembers and articulates them, ability to comprehend.	A	
2	Communication	Fluency in verbal/ written/ visual/ persuasive/ gestural presentation	B+	
3	Application	Relates theoretical concepts to practice	B+	

Weightage : 20
 Obtained : 16.66666666
 Grand Total : 25
 Grade : A

Studio Skills

ID	Parameter	Description	Grade	Remarks
1	Sensitivity	Responds to distinctive and subtle features, details and variations of material, tools and medium.	B+	
2	Proficiency	Over all confidence and proficiency in skills.	A	
3	Precision	Over all confidence and proficiency in skills.	B	

Weightage : 30
 Obtained : 24
 Grand Total : 24
 Grade : A

Design & Creativity

Skills

ID	Parameter	Description	Grade	Remarks
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1	Originality/Innovation	Generates ideas that are original, distinct and new.	B+	
2	Imagination	Quality of Visualization/ Ability to generate alternatives	B+	
3	Content/Meaning	Communicative or expressive quality of Creation	B+	

Weightage : 30
 Obtained : 24
 Grand Total : 24
 Grade : A

General Attitudes

ID	Parameter	Description	Grade	Remarks
1	Motivation	Self-initiative, concern and motivation	B+	
2	Commitment	Responsibility, concern and commitment	B+	
3	Punctuality	Punctuality in class/ work submission, neatness, and sense of quality	A	
4	Interaction	Team work, class participation and interaction with teacher	A	
5	Attentiveness	Attentive, listens and responds, curiosity, inquisitive	B+	

Weightage : 20
 Obtained : 42
 Grand Total : 16.8
 Grade : A

Grand Total : 81.46666666666666
 Grade : A

Student 2

Student Name		Course ID	
Program Name	Ceramic & Glass Design	CourseName	Colour & Form.
Year of Joining	2004	Semester	I
Course Duration	2	Credits	1.50
Attendance	Regular	Evaluation Type	E05
Course Status	Complete		

Student's photograph

Cognitive Skills

ID	Parameter	Description	Grade	Remarks
1	Knowledge & Comprehension	Ability to understand concepts remembers and articulates them, ability to comprehend.	B+ ▼	
2	Communication	Fluency in verbal/ written/ visual/ persuasive/ gestural presentation	B ▼	
3	Application	Relates theoretical concepts to practice	A ▼	

Weightage : 20
 24
 B+

Obtained : 16
 Grand Total Grade

Studio Skills

ID	Parameter	Description	Grade	Remarks
1	Sensitivity	Responds to distinctive and subtle features, details and variations of material, tools and medium.	B ▼	
2	Proficiency	Over all confidence and proficiency in skills.	B+ ▼	
3	Precision	Over all confidence and proficiency in skills.	B+ ▼	

Weightage : 30
 Grand Total 23
 Grade B+

Obtained : 23

Design &

Creativity Skills

ID	Parameter	Description	Grade	Remarks
1	Originality/Innovation	Generates ideas that are original, distinct and new.	A ▼	
2	Imagination	Quality of Visualization/ Ability to generate alternatives	B ▼	
3	Content/Meaning	Communicative or expressive quality of Creation	B ▼	

Weightage : 30
 23
 B+

Obtained : 23
 Grand Total Grade

General Attitudes

ID	Parameter	Description	Grade	Remarks
1	Motivation	Self-initiative, concern and motivation	B+ ▼	
2	Commitment	Responsibility, concern and commitment	B+ ▼	
3	Punctuality	Punctuality in class/ work submission, neatness, and sense of quality	B+ ▼	

4	Interaction	Team work, class participation and interaction with teacher	B+	
5	Attentiveness	Attentive, listens and responds, curiosity, inquisitive	B+	

Weightage : 20 Obtained : 40
 Grand Total : 16 Grade : B+

Grand Total : 78
 Grade : B+

Student 3

Student Name		Course ID	
Program Name	Ceramic & Glass Design	CourseName	Colour & Form
Year of Joining	2004	Semester	I
Course Duration	2	Credits	1.50
Attendance	Regular	Evaluation Type	E05
Course Status	Complete		

Student's
Photograph

Cognitive Skills

ID	Parameter	Description	Grade	Remarks
1	Knowledge & Comprehension	Ability to understand concepts remembers and articulates them, ability to comprehend.	B+	
2	Communication	Fluency in verbal/ written/ visual/ persuasive/ gestural presentation	B	
3	Application	Relates theoretical concepts to practice	C+	

Weightage : 20 Obtained : 21
 Grand Total : 14 Grade : B+

Studio Skills

ID	Parameter	Description	Grade	Remarks
1	Sensitivity	Responds to distinctive and subtle features, details and variations of material, tools and medium.	B+	
2	Proficiency	Over all confidence and proficiency in skills.	B+	
3	Precision	Over all confidence and proficiency in skills.	B+	

Weightage : 30 Obtained : 24

Grand Total Grade

Design & Creativity

Skills

ID	Parameter	Description	Grade	Remarks
1	Originality/Innovation	Generates ideas that are original, distinct and new.	B	
2	Imagination	Quality of Visualization/ Ability to generate alternatives	B	
3	Content/Meaning	Communicative or expressive quality of Creation	B	

Weightage : Obtained :
 Grand Total Grade

General Attitudes

ID	Parameter	Description	Grade	Remarks
1	Motivation	Self-initiative, concern and motivation	B	
2	Commitment	Responsibility, concern and commitment	B	
3	Punctuality	Punctuality in class/ work submission, neatness, and sense of quality	B	
4	Interaction	Team work, class participation and interaction with teacher	B+	
5	Attentiveness	Attentive, listens and responds, curiosity, inquisitive	C	

Weightage : Obtained :
 Grand Total Grade

Grand Total :
 Grade :

Student 4

Student Name		Course ID	
Program Name	Ceramic & Glass Design	CourseName	Colour & Form
Year of Joining	2004	Semester	I Student's
Course Duration	2	Credits	1.50 Photograph
Attendance	<input type="text" value="Regular"/>	Evaluation Type	E05
Course Status	<input type="text" value="Complete"/>		



Cognitive Skills

ID	Parameter	Description	Grade	Remarks
1	Knowledge & Comprehension	Ability to understand concepts remembers and articulates them, ability to comprehend.	B+	
2	Communication	Fluency in verbal/ written/ visual/ persuasive/ gestural presentation	B+	
3	Application	Relates theoretical concepts to practice	B+	

Weightage : 20
 24
 Grand Total 16
 B+ Obtained : Grade

Studio Skills

ID	Parameter	Description	Grade	Remarks
1	Sensitivity	Responds to distinctive and subtle features, details and variations of material, tools and medium.	B+	
2	Proficiency	Over all confidence and proficiency in skills.	B+	
3	Precision	Over all confidence and proficiency in skills.	B+	

Weightage : 30
 24
 Grand Total 24
 B+ Obtained : Grade

Design & Creativity

Skills

ID	Parameter	Description	Grade	Remarks
1	Originality/Innovation	Generates ideas that are original, distinct and new.	B	
2	Imagination	Quality of Visualization/ Ability to generate alternatives	B+	
3	Content/Meaning	Communicative or expressive quality of Creation	B+	

Weightage : 30
 23
 Grand Total 23
 B+ Obtained : Grade

General Attitudes

ID	Parameter	Description	Grade	Remarks
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1	Motivation	Self-initiative, concern and motivation	B+	
2	Commitment	Responsibility, concern and commitment	B+	
3	Punctuality	Punctuality in class/ work submission, neatness, and sense of quality	A	
4	Interaction	Team work, class participation and interaction with teacher	B+	
5	Attentiveness	Attentive, listens and responds, curiosity, inquisitive	B+	

Weightage : 20 Obtained : 41
Grand Total : 16.4 Grade : B+

Grand Total : 79.4
Grade : B+

Student 5

Student Name _____ **Course ID** _____
Program Name Ceramic & Glass Design **Course Name** Colour & Form
Year of Joining 2004 **Semester** I Student's
Course Duration 2 **Credits** 1.50 Photograph
Attendance Regular **Evaluation Type** E05
Course Status Complete

Cognitive Skills

ID	Parameter	Description	Grade	Remarks
1	Knowledge & Comprehension	Ability to understand concepts remembers and articulates them, ability to comprehend.	B+	
2	Communication	Fluency in verbal/ written/ visual/ persuasive/ gestural presentation	B	
4	Application	Relates theoretical concepts to practice	B	

Weightage : 20 Obtained :

22
B+

Grand Total

14.66666666

Grade

Studio Skills

ID	Parameter	Description	Grade	Remarks
1	Sensitivity	Responds to distinctive and subtle features, details and variations of material, tools and medium.	A	
2	Proficiency	Over all confidence and proficiency in skills.	C+	
3	Precision	Over all confidence and proficiency in skills.	C+	

Weightage : 30 Obtained : 21
Grand Total 21 Grade B+

Design & Creativity

Skills

ID	Parameter	Description	Grade	Remarks
1	Originality/Innovation	Generates ideas that are original, distinct and new.	B	
2	Imagination	Quality of Visualization/ Ability to generate alternatives	C+	
3	Content/Meaning	Communicative or expressive quality of Creation	C+	

Weightage : 30 Obtained : 19
Grand Total 19 Grade B+

General Attitudes

ID	Parameter	Description	Grade	Remarks
1	Motivation	Self-initiative, concern and motivation	B+	
2	Commitment	Responsibility, concern and commitment	B+	
3	Punctuality	Punctuality in class/ work submission, neatness, and sense of quality	B+	
4	Interaction	Team work, class participation and interaction with teacher	B+	
5	Attentiveness	Attentive, listens and responds, curiosity, inquisitive	B+	

Weightage : 20
 Grand Total : 16
 Obtained : 40
 Grade : B+
 Grand Total : 70.66666666666666
 Grade : B+

Student 6

Student Name Saloni Nagpal **Course ID**
Program Name Ceramic & Glass Design **CourseName** Colour & Form
Year of Joining 2004 **Semester** I Student's
Course Duration 2 **Credits** 1.50 Photograph
Attendance Regular **Evaluation Type** E05
Course Status Complete

Cognitive Skills

ID	Parameter	Description	Grade	Remarks
1	Knowledge & Comprehension	Ability to understand concepts remembers and articulates them, ability to comprehend.	B+	
2	Communication	Fluency in verbal/ written/ visual/ persuasive/ gestural presentation	A	
4	Application	Relates theoretical concepts to practice	B	

Weightage : 20
 Grand Total : 24
 Obtained : 16
 Grade : A

Studio Skills

ID	Parameter	Description	Grade	Remarks
1	Sensitivity	Responds to distinctive and subtle features, details and variations of material, tools and medium.	A	
2	Proficiency	Over all confidence and proficiency in skills.	B+	
3	Precision	Over all confidence and proficiency in skills.	B	

Weightage : 30
Obtained : 24
Grand Total : 24
Grade : A

Design &

Creativity Skills

ID	Parameter	Description	Grade	Remarks
1	Originality/Innovation	Generates ideas that are original, distinct and new.	B	
2	Imagination	Quality of Visualization/ Ability to generate alternatives	B	
3	Content/Meaning	Communicative or expressive quality of Creation	B+	

Weightage : 30
Obtained : 22
Grand Total : 22
Grade : A

General Attitudes

ID	Parameter	Description	Grade	Remarks
1	Motivation	Self-initiative, concern and motivation	A	
2	Commitment	Responsibility, concern and commitment	A+	
3	Punctuality	Punctuality in class/ work submission, neatness, and sense of quality	A+	
4	Interaction	Team work, class participation and interaction with teacher	A	
5	Attentiveness	Attentive, listens and responds, curiosity, inquisitive	A	

Weightage : 20
Obtained : 47
Grand Total : 18.8
Grade : A

Grand Total : 80.8
Grade : A

Student 7

Student Name

Course ID

Program Name

Ceramic & Glass Design

CourseName Colour & Form

Student's

Year of Joining 2004

Course Duration 2

Attendance

Regular

Course Status

Complete

e

Semester I

Credits 1.50

Evaluation

Type E05

Photograph

Cognitive Skills

ID	Parameter	Description	Grade	Remarks
1	Knowledge & Comprehension	Ability to understand concepts remembers and articulates them, ability to comprehend.	B+	
2	Communication	Fluency in verbal/ written/ visual/ persuasive/ gestural presentation.	A	
4	Application	Relates theoretical concepts to practice	B+	

Weightage : 20
 Obtained :
 25
 Grand Total 16.66666666
 A Grade

Studio Skills

ID	Parameter	Description	Grade	Remarks
1	Sensitivity	Responds to distinctive and subtle features, details and variations of material, tools and medium.	B+	
2	Proficiency	Over all confidence and proficiency in skills.	B+	
3	Precision	Over all confidence and proficiency in skills.	A	

Weightage : 30
 Obtained :
 25
 Grand Total 25
 A Grade

Design &

Creativity Skills

ID	Parameter	Description	Grade	Remarks
1	Originality/Innovation	Generates ideas that are original, distinct and new.	B+	

2	Imagination	Quality of Visualization/ Ability to generate alternatives	A	
3	Content/Meaning	Communicative or expressive quality of Creation	B+	

Weightage : 30
 25
 Grand Total 25
 A
 Obtained :
 25
 Grade

General Attitudes

ID	Parameter	Description	Grade	Remarks
1	Motivation	Self-initiative, concern and motivation	B+	
2	Commitment	Responsibility, concern and commitment	B	
3	Punctuality	Punctuality in class/ work submission, neatness, and sense of quality	B	
4	Interaction	Team work, class participation and interaction with teacher	A	
5	Attentiveness	Attentive, listens and responds, curiosity, inquisitive	B+	

Weightage : 20
 Grand Total 15.6
 Obtained : 39
 Grade A

Grand Total : 82.26666666666666
 Grade : A

Student 8

Student Name _____ **Course ID** _____

Program Name Ceramic & Glass Design **CourseName** Colour & Form

Year of Joining 2004 **Semester** I Student's

Course Duration 2 **Credits** 1.50 Photograph

Attendance Regular **Evaluation Type** E05

Course Status Complete

Cognitive Skills

ID	Parameter	Description	Grade	Remarks
1	Knowledge & Comprehension	Ability to understand concepts remembers and articulates them, ability to comprehend.	A	
2	Communication	Fluency in verbal/ written/ visual/ persuasive/ gestural presentation	A	
4	Application	Relates theoretical concepts to practice	B+	

Weightage : 20
 Obtained : 17.33333333
 Grand Total :
 Grade : A

Studio Skills

ID	Parameter	Description	Grade	Remarks
1	Sensitivity	Responds to distinctive and subtle features, details and variations of material, tools and medium.	A	
2	Proficiency	Over all confidence and proficiency in skills.	A	
3	Precision	Over all confidence and proficiency in skills.	A	

Weightage : 30
 Obtained : 27
 Grand Total :
 Grade : A

Design &

Creativity Skills

ID	Parameter	Description	Grade	Remarks
1	Originality/Innovation	Generates ideas that are original, distinct and new.	A	
2	Imagination	Quality of Visualization/ Ability to generate alternatives	A	
3	Content/Meaning	Communicative or expressive quality of Creation	B+	

Weightage : 30
 Obtained : 26
 Grand Total :
 Grade : A

General Attitudes

ID	Parameter	Description	Grade	Remarks
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1	Motivation	Self-initiative, concern and motivation	A	
2	Commitment	Responsibility, concern and commitment	A	
3	Punctuality	Punctuality in class/ work submission, neatness, and sense of quality	A	
4	Interaction	Team work, class participation and interaction with teacher	A	
5	Attentiveness	Attentive, listens and responds, curiosity, inquisitive	A	

Weightage : 20 Obtained : 45
Grand Total : 18 Grade : A

Grand Total : 88.33333333333333

Grade : A

Student 9

Student Name _____ **Course ID** _____
Program Name Ceramic & Glass Design **Course Name** Colour & Form
Year of Joining 2004 **Semester** I Student's
Course Duration 2 **Credits** 1.50 Photograph
Attendance Regular **Evaluation Type** E05
Course Status Complete

Cognitive Skills

ID	Parameter	Description	Grade	Remarks
1	Knowledge & Comprehension	Ability to understand concepts remembers and articulates them, ability to comprehend.	B+	
2	Communication	Fluency in verbal/ written/ visual/ persuasive/ gestural presentation	B+	
4	Application	Relates theoretical concepts to practice	B+	

Weightage : 20 Obtained :

5	Attentiveness	Attentive, listens and responds, curiosity, inquisitive	B+	
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Weightage : 20 Obtained : 34
Grand Total : 13.6 Grade : B+

Grand Total : 74.6
Grade : B+

Student 10

Student Name

Course ID

Program Name Ceramic & Glass Design

CourseName Colour & Form

Student's
Photograph

Year of Joining 2004

Semester I

Course Duration 2

Credits 1.50

Attendance Regular

Evaluation E05

Type

Course Status Complete

Cognitive Skills

ID	Parameter	Description	Grade	Remarks
1	Knowledge & Comprehension	Ability to understand concepts remembers and articulates them, ability to comprehend.	A	
2	Communication	Fluency in verbal/ written/ visual/ persuasive/ gestural presentation	B+	
4	Application	Relates theoretical concepts to practice	A	

Weightage : 20 Obtained :
26 Grand Total : 17.3333333333
A Grade

Studio Skills

ID	Parameter	Description	Grade	Remarks
1	Sensitivity	Responds to distinctive and subtle features, details and variations of material, tools and medium.	B+	
2	Proficiency	Over all confidence and proficiency in skills.	A	
3	Precision	Over all confidence and proficiency in skills.	B	

Weightage : 30
 24
 A
 Grand Total 24
 Obtained :
 Grade

Design & Creativity Skills

ID	Parameter	Description	Grade	Remarks
1	Originality/Innovation	Generates ideas that are original, distinct and new.	A	
2	Imagination	Quality of Visualization/ Ability to generate alternatives	B	
3	Content/Meaning	Communicative or expressive quality of Creation	B	

Weightage : 30
 23
 A
 Grand Total 23
 Obtained :
 Grade

General Attitudes

ID	Parameter	Description	Grade	Remarks
1	Motivation	Self-initiative, concern and motivation	A	
2	Commitment	Responsibility, concern and commitment	B+	
3	Punctuality	Punctuality in class/ work submission, neatness, and sense of quality	B+	
4	Interaction	Team work, class participation and interaction with teacher	B+	
5	Attentiveness	Attentive, listens and responds, curiosity, inquisitive	B+	

Weightage : 20
 41
 A
 Grand Total 16.4
 Obtained :
 Grade

Grand Total : 80.73333333333333
 Grade : A

Student 11

Student Name		Course ID	
Program Name	Ceramic & Glass Design	CourseName	Colour & Form
Year of Joining	2004	Semester	I
Course Duration	2	Credits	1.50
Attendance	Regular	Evaluation	E05

Type

Course Status

Complete

Cognitive Skills

ID	Parameter	Description	Grade	Remarks
1	Knowledge & Comprehension	Ability to understand concepts remembers and articulates them, ability to comprehend.	B	
2	Communication	Fluency in verbal/ written/ visual/ persuasive/ gestural presentation	B	
4	Application	Relates theoretical concepts to practice	B	

Weightage : 20 Obtained : 21
 Grand Total 14 Grade B+

Studio Skills

ID	Parameter	Description	Grade	Remarks
1	Sensitivity	Responds to distinctive and subtle features, details and variations of material, tools and medium.	B	
2	Proficiency	Over all confidence and proficiency in skills.	B	
3	Precision	Over all confidence and proficiency in skills.	B	

Weightage : 30 Obtained : 21
 Grand Total 21 Grade B+

Design & Creativity

Skills

ID	Parameter	Description	Grade	Remarks
1	Originality/Innovation	Generates ideas that are original, distinct and new.	C+	
2	Imagination	Quality of Visualization/ Ability to generate alternatives	B	
3	Content/Meaning	Communicative or expressive quality of Creation	B+	

Weightage : 30 Obtained : 21
 Grand Total 21 Grade B+

General Attitudes

ID	Parameter	Description	Grade	Remarks
1	Motivation	Self-initiative, concern and motivation	B+	

2	Commitment	Responsibility, concern and commitment	B+	
3	Punctuality	Punctuality in class/ work submission, neatness, and sense of quality	B+	
4	Interaction	Team work, class participation and interaction with teacher	B+	
5	Attentiveness	Attentive, listens and responds, curiosity, inquisitive	C+	

Weightage : 20 Obtained : 38
 Grand Total : 15.2 Grade : B+

Grand Total : 71.2
 Grade : B+

Student 12

Student Name _____ **Course ID** _____
Program Name Ceramic & Glass Design **CourseName** Colour & Form
Year of Joining 2004 **Semester** I
Course Duration 2 **Credits** 1.50 **Student's**
Attendance Regular **Evaluation** E05 **Photograph**
Course Status Complete **Type**

Cognitive Skills

ID	Parameter	Description	Grade	Remarks
1	Knowledge & Comprehension	Ability to understand concepts remembers and articulates them, ability to comprehend.	C	
2	Communication	Fluency in verbal/ written/ visual/ persuasive/ gestural presentation	C+	
3	Application	Relates theoretical concepts to practice	C	

Weightage : 20 Obtained :
 16 Grand Total : 10.6666666666
 B Grade

Studio Skills

ID	Parameter	Description	Grade	Remarks
1	Sensitivity	Responds to distinctive and subtle features, details and variations of material, tools and medium.	B	

2	Proficiency	Over all confidence and proficiency in skills.	B	
3	Precision	Over all confidence and proficiency in skills.	B	

Weightage : 30 Obtained : 21
Grand Total 21 Grade B

Design &

Creativity Skills

ID	Parameter	Description	Grade	Remarks
1	Originality/Innovation	Generates ideas that are original, distinct and new.	C+	
2	Imagination	Quality of Visualization/ Ability to generate alternatives	C+	
3	Content/Meaning	Communicative or expressive quality of Creation	B	

Weightage : 30 Obtained : 19
Grand Total 19 Grade B

General Attitudes

ID	Parameter	Description	Grade	Remarks
1	Motivation	Self-initiative, concern and motivation	B	
2	Commitment	Responsibility, concern and commitment	B	
3	Punctuality	Punctuality in class/ work submission, neatness, and sense of quality	B	
4	Interaction	Team work, class participation and interaction with teacher	B	
5	Attentiveness	Attentive, listens and responds, curiosity, inquisitive	C+	

Weightage : 20 Obtained : 34
Grand Total 13.6 Grade B

Grand Total : 64.26666666666666

Grade : B

5.4 Interpretation and Discussion of results

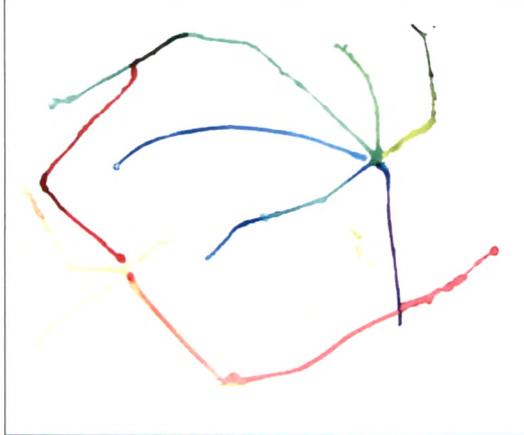
5.4.1 Student 1

Pre intervention test	Post intervention test
	
<p>Figure 41. Pre and Post intervention assignment works student 1</p>	
<ul style="list-style-type: none"> • Color application is patchy and mixing is irregular • Creations of form with color are at random and hues and shades are not used. • All colors are tints. No variation in value. No sense of space is achieved. • Harmony is not achieved through colors • Effects are accidental 	<ul style="list-style-type: none"> • Color application has become smooth and mixing is more calculated • Able to create form with tints, hues and shades and the use of color is calculated. • Tints, shades and hues are used to create the sense of space. Different values are also used. • Contrast is achieved through juxtaposition of opposite

	<p>colors</p> <ul style="list-style-type: none"> • All the effects created are calculated and pre visualized.
--	--

The student has shown a definite improvement on visualization and color application. The color application became more conscious. The basic theories of color was clear to the student and it was observed that a conscious effort to apply the learning into the work. Since the teaching was a mixture of lecture, survey and practical work, the students understanding may have improved as the learning happened through doing it by themselves.

5.4.2 Student 2

Pre intervention test	Post intervention test
	
Figure 42. Pre and Post intervention assignment works student 2	
<ul style="list-style-type: none"> • Drawing is irregular 	<ul style="list-style-type: none"> • Drawing is regular has

<ul style="list-style-type: none"> • Color application is at random and mixing is irregular • Causal approach. Completely dependent on accidental effects • Interaction of color is not present in the work. • No conscious use of color theories, like primary, secondary and tertiary colors • The final visual impact is not visualized • Precision is not achieved 	<p>improved a lot</p> <ul style="list-style-type: none"> • Color application has improved • Conscious usage of color, well calculated use of proportions of colors • Use of opposite colors in the adjacent places creates the vibrations which are used well in the composition. (E.g. use of yellow near violet. Use of red near green etc.) • Flat application of primary, secondary and tertiary colors with black produces the desired effect. • Conscious use of colors and the final product is as pre visualized • Precision in selection of color and use has achieved
--	---

By looking at the work an improvement in color application can be seen. Application of color became more conscious. Understanding of the contrasts of color and its right usage is very evident. And from the discussion a good understanding of color theories was demonstrated. The work improved continuously after each session. Color interaction work

done during the course has shown a lot of involvement in the work. Systematic and structured approach may have helped the student to understand the theories. And learning by doing approach and active participation through survey and documentation must have helped the student to internalize it.

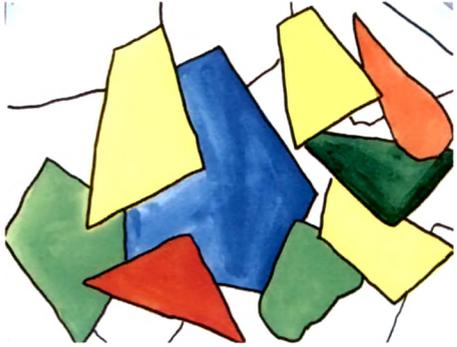
5.4.3 Student 3

Pre intervention test	Post intervention test
	
<p>Figure 43. Pre and Post intervention assignment works student 3</p>	
<ul style="list-style-type: none"> • The color application is irregular and no thought process has gone in to the decision of colors • Use of color is random • Form does not justify the subject. Effect is accidental • Meaning of color is not considered while using in the composition • Contextual meanings of color 	<ul style="list-style-type: none"> • Color application is regular and well thought of • Use of color is precise and calculated • Form is well thought of and the result is executed exactly in the way it was visualized. • Color and its associated meanings were considered while deciding the colors • Selection of colors was based

is not considered	on Indian tradition and each color was chosen as cultural context of color for the attributed meanings.
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The post intervention test work showed an improvement in color application and knowledge of color considerably. The selection of color was very conscious and attributes of color related to the cultural context was used in the work. This shows that the student has used the learning from the presentations conducted during the class. The level of understanding on tint, shade and hue has been strengthened and well demonstrated in the assignment. Sense of composition and communicative quality of the product has improved. During the discussion with the student most of the questions related to physics basic theories of color were answered.

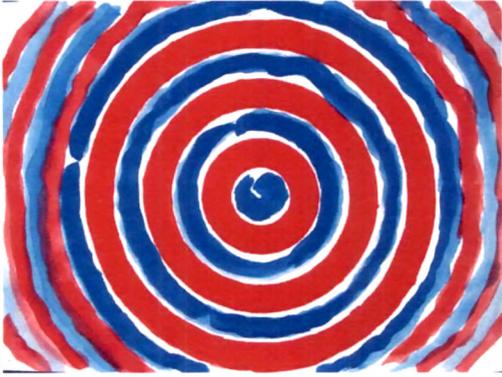
5.4.4 Student 4

Pre intervention test	Post intervention test
	
Figure 44. Pre and Post intervention assignment works student 4	
<ul style="list-style-type: none"> • Decision of colors are not based 	<ul style="list-style-type: none"> • Color decisions are well

<p>on any accepted theory</p> <ul style="list-style-type: none"> • Aspects of color mixing is not used • Color application is patchy and irregular • Contrast or harmony is not present in the work • Division of colors and calculation of color proportion is random • Color mixing is poor • No precision in color selection and application. 	<p>calculated</p> <ul style="list-style-type: none"> • Tint, shade and hue is used and in a calculated way • Color application is well controlled and regular • One of the seven contrasts are used consciously in the work • Division of colors and proportion of colors are calculated • Color mixing is of superior quality • Selection of colors are well thought of and application is precise
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Improvement in color application and usage of color with appropriate meaning was evident from the post intervention test work. A systematic approach to color was visible in the work. The color was used in an appropriate manner with relative proportions of color. Contrast of color was used logically. Survey and assignment during the class must have helped the learner regarding the influences of religion, culture and gender on the color preferences people.

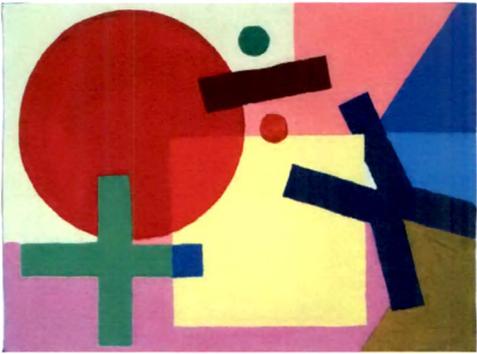
5.4.5 Student 5

Pre intervention test	Post intervention test
	
<p>Figure 45. Pre and Post intervention assignment works student 5</p>	
<ul style="list-style-type: none"> • Subject is expressed through an image; color plays a minor role in the composition. • Variations of color is not used • No color theory is used • Poetic thought process used in creation of visual • Color interaction is not taken into consideration 	<ul style="list-style-type: none"> • Subject in conveyed primarily through color. • Colors are used to bring the meaning. Use of hue at the center and towards the end shades of red and blue are used • Understanding of color theory is well demonstrated. Use of contrasting colors creates the visual impact • Poetic approach in the thought process in creating the visual.

	<ul style="list-style-type: none"> Interaction of color is well applied and the effect is apt for the subject.
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This student had no exposure to systematic learning to color before. The improvement is from a visual based approach to a color based expression in the subject. During the class color wheel, seven contrasts and other theory based assignments may have helped this student to improve the color application abilities as well as understanding of theories. Use of color contrasts and color harmony to improve communicative quality of the product was well demonstrated in the work

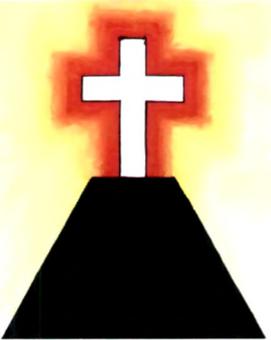
5.4.6 Student 6

Pre intervention test	Post intervention test
	
<p>Figure 46. Pre and Post intervention assignment works student 6</p>	
<ul style="list-style-type: none"> Color application is patchy and color mixing is random Random use of color. No conscious effort to create a 	<ul style="list-style-type: none"> Color application is smooth and color mixing is methodical Calculated use of color. Color on each form in the

<p>meaning through color.</p> <ul style="list-style-type: none"> • Aspects of contrast or harmony are not applied to the work. • Proportions of color are not justifying the desired effect for the subject. • Transparency or translucency is not achieved colors look dull and opaque. 	<p>composition is well thought of</p> <ul style="list-style-type: none"> • Conscious use of contrasting colors to the forms creates the relevant effect in composition. • Concepts of relative proportions are used to achieve harmony in the composition. • Colors look fresh and bright translucency is achieved by the use of color mixing.
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This student has demonstrated the knowledge of the use of color with proper knowledge of the meanings of color through the work. After the course, the right usage of terminology was clear to the student as it was expressed during the discussions. From trial and error method of color mixing to a methodical and systematic approach was also visible in the work.

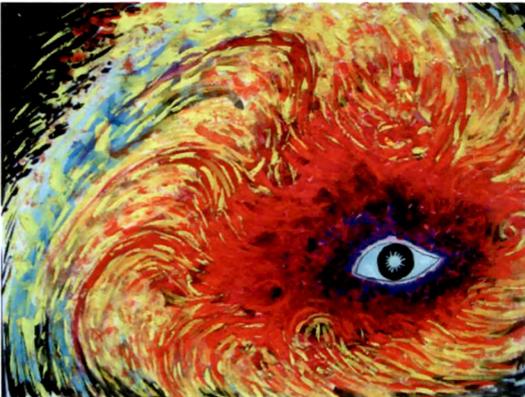
5.4.6 Student 7

Pre intervention test	Post intervention test
	
<p>Figure 47. Pre and Post intervention assignment works student 7</p>	
<ul style="list-style-type: none"> • Composition is figurative • Composition is an image depicting the subject • Use of color is intuitive, no calculated attempt • Emphasis is not given to colors • Color application is patchy and handling of color is not well thought of • No sign of any color associations or contextual meaning of color. 	<ul style="list-style-type: none"> • Composition is figurative • Composition is an image depicting the subject • Use of color is calculated as per the color perception theories along with intuition • The whole emphasis is created by the use of color • Color application is improved and handling of color became very conscious • Cultural, religious significance of color is used. Change in meaning of color as per the context is applied.

The student has shown an improvement in color application. The figurative approach was dominating and the image was over powering.

The student was a hardworking person and had done a lot of work even beyond the class hours. Communicative quality of the product was better in the post intervention test

5.4.8 Student 8

Pre intervention test	Post intervention test
	
<p>Figure 48. Pre and Post intervention assignment works student 8</p>	
<ul style="list-style-type: none"> • Content of the subject is very well expressed in the assignment work • Color application and color selection as per the subject is appropriate • Use of color as per the context requires further improvement. No scientific reasoning for the use of color • In composition the support of 	<ul style="list-style-type: none"> • Contents of the subject is well expressed in the assignment work • Color application and color selection as per the subject is appropriate • Use of color as per the context has improved selection of colors in a composition has been made as per the color theories to get maximum emphasis.

<p>figures is used to get maximum communication</p> <ul style="list-style-type: none"> • Precision is good. 	<ul style="list-style-type: none"> • Communication quality has been brought to the maximum by the use of color it self • Precision is good.
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The student had a good ability to work with the medium and understanding of the theories, which was demonstrated through the pre intervention assignment. By going through the color course this student may have acquired the knowledge in the aspects of influences in the preference of color by gender, culture and geographical region through the assignments based on these aspects. The student had entered with a reasonably good understanding of color. The skills were improved through continuous work. The post intervention test was more refined in terms of the ability to apply color in the composition and color selection for appropriate contexts.

5.4.9 Student 9

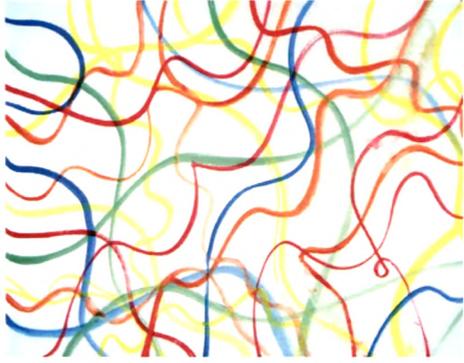
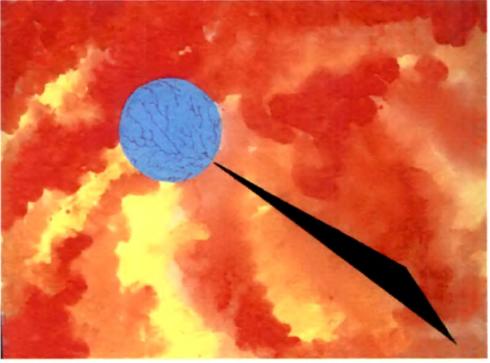
Pre intervention test	Post intervention test
	
<p>Figure 49. Pre and Post intervention assignment works student 9</p>	

<ul style="list-style-type: none"> • The composition created was figurative. No importance was given to color • Good ability of drawing is shown in the work but the composition was not relevant to the subject. Conceptual quality of the assignment work was not in agreement with the theme. • No understanding of color theories • Basics of colors like primary, secondary and tertiary are not clear. • No understanding of color interaction • No usage of tint, shade and tone. 	<ul style="list-style-type: none"> • The composition was between figuration and abstraction • Good ability of drawing and coloring has shown in the work and the composition was relevant to the subject. Subject's conceptual quality improved. • Reasonably good understanding of color theories • Basics are more or less clear. Much better than prior to intervention • Concept of color interaction is understood • Tit, shade and tone are used in post test work to bring the communicative quality of the work.
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Apart from the improvement in the ability to apply the colors; which was very evident in the post intervention test works; the basic color theories were well understood by the student. It was evident from focused group

discussions Color application became conscious. Use of hue, tint, shade and appropriate use of color in the design problems has improved.

5.4.10 Student 10

Pre intervention test	Post intervention test
	
<p>Figure 50. Pre and Post intervention assignment works student 10</p>	
<ul style="list-style-type: none"> • Color application is random and uncalculated strokes • Color is not used to create a form • Color is not used with appropriate meaning and associations • No visualization in color while making the composition • random application of color for 	<ul style="list-style-type: none"> • Color application is well calculated • Color is used to create form • Color is used with a logical and analytical approach • Image is visualized with proper thought process in terms of the use of color. Use of color in appropriate and well thought of • Colors are mixed with proper

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some accidental effect. <ul style="list-style-type: none">• Color mixing is uncontrolled and accidental	theoretical understanding the result is a well controlled and accurate colors
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Level of understanding in the usage of color improved. The color survey and creation of a color scheme led to an understanding of the aspects like religion, age and gender's influence of color preference of people were very clear to the student. This was expressed during the focused group discussions.

The post intervention test assignment shows a good understanding of the usage of color to appropriate contexts.

5.4.11 Student 11

Pre intervention test	Post intervention test
	
Figure 51. Pre and Post intervention assignment works student 11	

<ul style="list-style-type: none"> • Color application is even and brush strokes are smooth. • The decision of choice of colors in the composition is not based on any color theories • No logical reason for the colors • Interaction of colors and relative proportions are not considered • Product has communicative quality 	<ul style="list-style-type: none"> • Color application is even and brush strokes are smooth • The decision of choice of color in a composition is conscious and based on theories of color perception • Contextual meaning and relative meaning of colors are considered while deciding on the use of colors in the composition • Color interaction and relative proportions of color is taken in to consideration • Communicative quality of the product is improved.
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Since this student was from a fine arts background shown a fairly good sense of color even in the intuitive approach. But by the end of the course the student was able to articulate the reason behind the use of each color. A lot of explorations in color interaction assignment were done which may have helped in improving the perception of color in relation to background and foreground.

5.4.12 Student 12

Pre intervention test	Post intervention test
	
<p>Figure 52. Pre and Post intervention assignment works student 12</p>	
<ul style="list-style-type: none"> • Un able to draw a pre determined form to express the subject • Color application is poor and random • Color has been used in the composition without any logical meaning to it. • No color theory is used while deciding on the choice of color in the composition • Only hues are used. No color mixing is tried. 	<ul style="list-style-type: none"> • Able to draw the subject with accuracy and theme of the subject is well expressed. • Color application has improved and became more systematic and controlled • Colors are used to create the mood and the selection of colors are very much calculated and logical • Color theories and understanding of basics of color is used in the composition.

<ul style="list-style-type: none"> • Contextual meaning or relative proportions of colors are not used to bring the subject more effective. 	<ul style="list-style-type: none"> • Colors are mixed well and hue, tint, shade and tones are used as per the requirement of the composition • Contextual meaning of color is used to bring the meaning of the subject.
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Conceptual quality of the work needed improvement as the student had painted a visual which had elements other than color to give interpretations. The skill of application and handling of material has shown a definite improvement. Choice of colors in a particular composition became more scientific. Understanding of theories in colors was demonstrated well in the work. Color mixing and selection of color palette for a composition showed improvement. The investigator has observed that by doing each topic one by one the learning became more focused and the student was able to use many of learning in the final assignments.

5.5 Discussion

The students who join the institute of design to learn design are from varied background such as fine arts, architecture, and engineering. Some students never had an input of color in their previous course. Others have

received some inputs in color but not all aspects of color which is required for a designer. The students who received inputs in color had mainly gone through some color application techniques, mainly dealing with some specific materials which they were using at that point of time.

After having taken the students through the course on color and form , what may have helped the students in enhancing their competence in the usage of color and form may have been the variety of teaching methods employed like discussion, both individual and group, feedback on assignments, lecture, practical work, survey and research. These may have helped them to integrate theory and practice in unique ways for each student.

The instructional strategy which was developed by the investigator contained the above mentioned methods in the teaching learning process. Skill may have improved because of the hands on experience of color application and it's refinement after the feedback sessions. Sensitivity and conscious application of color may have improved as the theory lectures were followed by a practical assignment to ascertain the theories. The students started to make use of the psychological aspects of color and its meaning in to consideration in a design problem. This may be because of the lecture and slide shows on these aspects of color. Use of color became methodical and scientific. This may be because the learner learns by doing. The students reported that they started to take the

effects of color interaction into consideration. And the students reported that as a result the product became more communicative. This may be because the learner learns to learn. Each time they apply the learning consciously a new learning happens.