

Contents

Supervisor's certificate	i
Acknowledgements	ii
Table of Contents	iii

Chapter I

	Introduction	1
1.1	Design Education	1
1.1.1	Craft and design	3
1.1.2	Design	4
1.1.3	Training of the designer	5
1.1.3.1	Artists' Guilds	5
1.1.3.2	The academies	5
1.1.3.3	The Bauhaus approach	6
1.1.3.4	Elements and principles approach	9
1.1.3.5	Institute of design approach	10
1.1.3.6	The unstructured approach	10
1.1.3.7	Today's approach	10
1.1.3.8	Constructivism	11
1.1.3.9	Principles of learning	13
1.2	Design education in India	16
1.3	Need for color and form studies in Design Education	18
1.4	Color and Form: How we see objects	20
1.5	Color Theory	21
1.5.1	Color wheel	21
1.5.2	Primary colors	21
1.5.3	Secondary colors	21
1.5.4	Tertiary colors	21
1.5.5	Color harmony	22

1.5.6	Color Context	23
1.5.7	Successive contrast	24
1.5.8	Simultaneous contrast	25
1.6	Importance of color and form; what brain sees	25
1.7	Perception of color	26
1.7.1	Color and culture	26
1.7.2	Color, Gender and psychology	27
1.7.3	Color Context	29
1.7.4	Color and Geographical region	30
1.8	Associated meanings	39
1.9	Importance of preparing an instructional strategy for learning about color	39
1.10	Rationale of the study	40
1.11	Problem statement	42
1.12	Research Questions	42
1.13	Objectives of the Study	42
1.14	Operational definitions of terms used	43
1.15	Limitations of the study	44

Chapter II

	Review of Related Studies	45
2.1	Introduction	45
2.2	Studies related to design Education	45
2.3	Educational research	46
2.4	Studies related to Visual Communication	52
2.5	Studies related to color and form	55
2.5.1	Aesthetic aspects of Color and form	55
2.5.2	Studies related to aspects of Color and Physics	62
2.6	Implications of the review of related studies for the present study	67

Chapter III

	Methodology	69
3.1.	Introduction	69
3.2	The Design of Research	70
3.3	Sample of the study	70
3.4	Tools used for the study	74
3.5	Procedure of the study	76
3.5.1	Assessment of students prior to intervention	77
3.5.2	Development of the Instructional Strategy	78
3.5.3	Implementation	79
3.5.4	Post intervention Assessment of students	79
3.6	Data Analysis	80

Chapter IV

	Materials developed for teaching the course on color and form	82
4.1	Introduction	82
4.2	Instructional pattern at NID	83
4.2.1	NID's evaluation system	84
4.3	Course Content	86
4.3.1	Earlier Course Contents for the course Color and Form	87
4.3.2	Content for the course on Color and Form and the Evaluation Criteria developed by the investigator	88

4.3.3	The major changes introduced by the investigator	90
4.4	Pre Intervention Assignment	91
4.4.1	The assignment	91
4.4.2	The questionnaire	92
4.5	Intervention	92
4.5.1	Session I	93
4.5.1.1	Learning Objectives	93
4.5.1.2	Instructional strategies employed	93
4.5.1.3	Procedure	93
4.5.1.3.1	Physics of color and light	94
4.5.1.3.2	Basic color theories	97
4.5.1.3.3	Primary colors	97
4.5.1.3.4	Subtractive color and additive color	98
4.5.1.3.5	Harmonious colors	100
4.5.1.3.6	Complimentary colors	100
4.5.1.3.7	Analogous colors	100
4.5.1.3.8	Warm Colors	100
4.5.1.3.9	Color Wheel	101
4.5.1.3.10	Relative proportions of color	102
4.5.1.3.11	Hue, intensity and value	103
4.5.1.3.12	Complimentary colors and its degree of neutralization	104
4.5.1.3.13	Color sphere	105
4.5.1.3.14	Color star	106
4.5.1.4	The assignments	107
4.5.2	Session II	108
4.5.2.1	Learning Objectives of this session were	108
4.5.2.2	Instructional strategies employed	108

4.5.2.3	Procedure	109
4.5.2.3.1	Contrast of hue	110
4.5.2.3.2	Light and dark contrast	111
4.5.2.3.3	Cold warm contrast	111
4.5.2.3.4	Complimentary contrast	112
4.5.2.3.5	Simultaneous contrast	113
4.5.2.3.6	Contrast of Saturation	114
4.5.2.3.7	Contrast of Extension	114
4.5.2.4	The assignments	115
4.5.2.5	Criteria of evaluation	116
4.5.3.	Session III	117
4.5.3.1	Learning Objective	117
4.5.3.2	Instructional strategies employed	117
4.5.3.3	Procedure	121
4.5.3.4	Assignments	121
4.5.4	Session IV	123
4.5.4.1	Learning objective	124
4.5.4.2	Instructional strategies employed	124
4.5.4.3	The procedure	124
4.5.4.4	Assignment	125
4.5.4.5	Criteria for evaluation	125
4.5.5	Session V	126
4.5.5.1	Learning objective	126
4.5.5.2	Instructional strategies employed	126
4.5.5.3	Procedure	126
4.5.5.4	Assignments	127
4.5.6	Post Intervention Assignment	128

Chapter 5

Data Analysis Interpretation

And Discussion 129

5.1	Introduction	129
5.2	Pre-Intervention Assessment of students	130
5.2.1	Student 1	130
5.2.2	Student 2	132
5.2.3	Student 3	134
5.2.4	Student 4	135
5.2.5	Student 5	137
5.2.6	Student 6	139
5.2.7	Student 7	141
5.2.8	Student 8	142
5.2.9	Student 9	144
5.2.10	Student 10	145
5.2.11	Student 11	147
5.2.12	Student 12	148
5.2.13	Analysis and Interpretation of pre intervention data	150
5.3	Post Intervention assessment of students	152
5.3.1	Student 1	153

5.3.2	Student 2	154
5.3.3	Student 3	155
5.3.4	Student 4	156
5.3.5	Student 5	157
5.3.6	Student 6	158
5.3.7	Student 7	159
5.3.8	Student 8	161
5.3.9	Student 9	162
5.3.10	Student 10	163
5.3.11	Student 11	164
5.3.12	Student 12	165
5.3.13	Interpretation post intervention test data	166
5.3.14	Grades obtained by the students on the course	166
5.4	Interpretation and Discussion of results	187
5.4.1	Student 1	187
5.4.2	Student 2	188
5.4.3	Student 3	190
5.4.4	Student 4	191
5.4.5	Student 5	193
5.4.6	Student 6	194
5.4.7	Student 7	196
5.4.8	Student 8	197
5.4.9	Student 9	198
5.4.10	Student 10	200
5.4.11	Student 11	201

5.4.12	Student 12	203
5.5	Discussion	204

Chapter 6

Summery, Findings and

Conclusions 207

6.1	Introduction	207
6.1.1.	Design Education	207
6.1.1.1	Design	209
6.1.1.2	Training of the designer	209
6.1.1.3	Constructivism	209
6.1.1.4	Principles of learning	210
6.1.2	Color and Form: How we see objects	214
6.1.2.1	Color Theory	214
6.1.3	Importance of color and form; what brain sees	215
6.1.4	Need for color and form studies in Design Education	215
6.1.5	Color and culture	215
6.1.6	Color, Gender and psychology	217
6.1.7	Color and geography	219
6.1.8	Color Context	220
6.1.9	Associated meanings	220
6.1.10	Importance of preparing an instructional strategy for learning about color	221
6.2	Rationale of the study	221
6.3	Research Questions	223
6.4	Problem statement	223
6.5	Objectives of the Study	223

6.6	Operational definitions of terms used	224
6.7	Limitations of the study	225
6.8	Methodology of the study	225
6.8.1	Design of Research	225
6.8.2	Tools used for the study	225
6.8.3	Sample of the Study	226
6.9	Procedure of the study	227
6.9.1	Assessment of students prior to intervention	227
6.9.2	Development of the instructional strategy	227
6.9.3	Implementation	227
6.9.4	Post intervention assessment of students	228
6.10	Data Analysis	228
6.11	Findings	229
6.12	Conclusion	232
6.13	Implications	233
6.14	Suggestions for further Research	234
	References	236
	List of Figures	242
	Appendices	245
1.	Questionnaire	245
2.	Contents of the C.D. submitted along with the Thesis	247