

# Colored Text Enhances Learning Power of Medical Students “A New Concept of Learning”

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## ABSTRACT

**Objectives:** To assess colored text motivates, enhances concentration & learning Skills of medical students. To assess colored text helps in memory retention & release stress, anxiety of medical students

**Study Design:** A Cross Sectional Study

**Place and Duration of Study:** This study was carried out among the medical students of Sindh & Dow medical College, Karachi from March to December 2010,

**Materials and Methods:** A sample 341 student was drawn through systemic random sampling. Every 5<sup>th</sup> student was selected, ischiaria chart was used for color blindness and Students were divided into 2 groups. One group was given paragraph with important points written in bold black, second group with important points written in different colored. Data was collected through structured questionnaire, entered & analyzed on SPSS version 16.

**Results:** Out of 341 students, 83.60% students were motivated by colored text, 80.90% students maintained interest, 74.80% student's maintained concentration, 77.10% students had memory retention and 53.1% student had released their stress and anxiety. Overall 84.80% students preferred colored text over black and white text.

**Conclusion:** The study proved significant difference between the two groups, students with colored text showed good memory retention, motivation, concentration, Stress was also relieved by colored text.

**Key Words:** Medical Students, Colored text, Motivation, Memory Retention, Stress

## INTRODUCTION

Color choice is the result of our genes, early childhood memories, education, parent's belief, cultural training, political learning, and other aspects of living.<sup>1</sup> Color is an element of design that is used to create ideas, convey messages, evoke feelings, accentuate areas of interest.<sup>2</sup> If color can increase arousal, can increase memory then it is possible that we could find color can increase memory.<sup>3</sup> 80% of the brain receives information visually, color stimulates the visual sense, encourages the retention of information. The colors red, orange, yellow stimulate, increase brain activity. The colors green, blue, violet induces relaxation.<sup>4</sup> Colors clearly evoke certain emotions but can these emotions enhance memory? <sup>5</sup> Colors send signals to the brain without us even thinking about it<sup>6</sup>, Scientists have found red makes our adrenaline flow, resulting in an increase in pulse, blood pressure, energy level. Orange can trigger hunger. Blue relaxes us, causing the brain to secrete tranquilizing hormones, green gives us a sense of security<sup>7</sup> The main aim of our learning is to gain knowledge, information, memorize them firmly, recall the material easily. There are many problems student faces during their academic years. These include fear, confusion, anxiety, stress, depression, eyestrain fatigue and progressive loss of interest which are a source of

hurdle in learning. This study aims to determine colors impact us physiologically, psychologically, they can help in overcoming these problems in learning, can make learning interesting, easy.

## MATERIALS AND METHODS

341 medical students of Sindh & Dow medical College (DUHS) Karachi were selected through systemic random sampling. Every 5<sup>th</sup> student was selected; students were divided into 2 groups. Both were given the same paragraph one group with important points written in bold black ink, second group with important points written in different colors. Students who had colored paragraph were tested for color blind test using the ischiaria chart. Both groups were given 5 minutes to read the paragraph, 15 minutes gap was given for retention of memory. After 15 minutes they answered the questions related to the paragraph. Questionnaire was designed to assess student's memory retention with colored text while the paragraph was designed to assess the actual impact of colors on learning. Data was collected through structured questionnaire, analyzed on SPSS version 16.

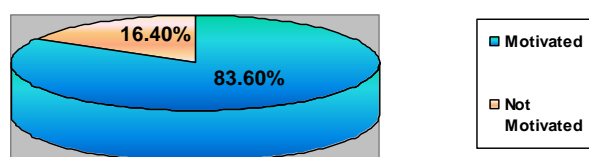
## RESULT

Out of 341 students 83.60% students were motivated by colored text, 80.90% students' maintained interest,

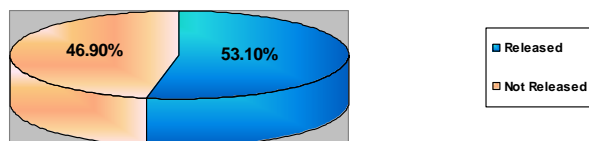
74.80% students maintained concentration, 77.10% students retained more with colored text, 53.10% students claimed it helps in releasing their stress and anxiety. Overall 84.80% students preferred colored text over black and white text.

**Table No.1: Frequency of positive & negative answer given by Medical students**

Variables	Yes	No
Motivated	83.6%	16.4%
Maintained interested	80.9%	19.1%
Maintained concentration	74.8%	25.2%
Memory retained with color text	77.1%	22.9%
Stress Released	53.1%	46.9%
Preferences of color text	84.8%	15.2%



**Figure No.1: Percentage of students motivated by colored text**



**Figure No.2: Percentage of students in which anxiety and stress is released with colored text**

## DISCUSSION

Colors seems to help people process, store images in their brains, remember them as well.<sup>8</sup> Color help us to process, store images more efficiently than colorless (black and white) scenes as a result to remember the better.<sup>9</sup> Colors can actually increase focus, work productivity accuracy in work.<sup>10</sup> It has ability to enhance experience of the learning environment.<sup>11</sup> Colors improve attention span by avoiding a monotonous environment helping the student to stay focused through mental stimulation, increasing productivity, accuracy. Eyestrain, glare, minimal distraction, degree of stimulation, degree of concentration are directly impacted by colours.<sup>12</sup> Different colors enhance different achievement motivations, performance on different type of cognitive tasks<sup>13</sup>, the right color can put the learner in the right mood for optimal participation.<sup>14</sup> Colors open up brain, allow greater, easier learning<sup>15</sup>, the students showed preference for colored text. Most of them believed colored text motivates to learn, it increases memory retention, maintains concentration, interest, releases anxiety, stress. The colors have psychological impact on mind. They add variety to life attracting power

which caused the inclination of students towards the colored text. The psychological impact of colors can be emphasized by the student's eager willingness with colored paragraph, interest in reading the paragraph. Such behavior was not observed among those given black and white paragraph. Colors have an ability to relax, comfy, relieve its perceiver.

## CONCLUSION

Color text enhances learning, retaining power. It has attracting power for maintaining concentration, interest for a longer time. Researchers have shown different colors have different effects on lives. They affect mood, emotions, they have the ability to make us feel happy, sad, pleased or depressed, it can indirectly enhance learning skills.

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