

# A Study of Interior Design Colour Scheme Impact on Undergraduate Students' Mood

Fatema Salim Ali<sup>1</sup>, Reham A. Sanad<sup>1\*</sup>

<sup>1</sup> Interior Design Department, Oman College of Management and Technology, Muscat, Oman

\*Corresponding Author: [reham.sanad@omancollege.edu.om](mailto:reham.sanad@omancollege.edu.om)

Accepted: 15 April 2023 | Published: 30 April 2023

DOI: <https://doi.org/10.55057/ajact.2023.5.1.1>

---

**Abstract:** *Colour is one of the significant design elements that should be considered by designers during design. The purpose of this study is to investigate the impact of four distinct interior colour schemes on undergraduate students' moods. The range of colours investigated was based on four tints of various hues that would be realistically used in painting interiors different hues. A sample of students majoring in interior design from (Oman College of Management and Technology) responded to an online questionnaire examining the colours selected and their impact on their moods. Anxiety, tension, anger, focus, learning more and relaxation are the impressions and moods investigated in the questionnaire. The analysis of the data collected shows that Bright Green had fewer responses than Orange Yellow for all emotions. The findings also confirmed the idea that red colour is responsible for evoking negative feelings including rage, tension, exhaustion, and others. It was found that blue colour, would be used efficiently to design interior spaces for people who face negative energy to boost their feelings. This study is believed will be supportive of interior designers, and architects using colour in their design processes.*

**Keywords:** color, university student, interior design, classroom

---

## 1. Introduction

The environment is the interaction between people and their spaces. Humans develop their space to meet their psychological and functional needs. Therefore, in the interior design process, designers should consider users' needs and demands to maximize their advantage in these spaces. (AL-Ayash et al., 2016)

It has become important concern for interior designers to recognize how these aspects affect human attitude and behavior. This is because inappropriate design of interior spaces would generate negative impact on human and vice versa i.e., appropriate interior design would affect them positively.

The physical educational rooms have an impact on students' mood and performance. It is more than just creating a visually appealing and impressive educational environment; it is about giving students a place where they can feel relaxed, organized, and motivated. All of which are known to have a direct impact on our ability to learn, grow, and progress. (Kurt & Osueke, 2014)

Several studies have been published investigating color schemes in interior spaces and their impact on the student. An investigation into the effects of three distinct office interior colors on employees' moods was conducted by Kwallek, N. in 1997. Each color was employed in one of three offices, and the workers were asked to complete their tasks for 4 consecutive days. The results indicate color schemes alone may not have a significant impact on mood. (Kwallek et al., 1997)

Another research study conducted by Nurlalawati Ab. Jalil studied the effect of color on students' perception and preferences for color, it was found that blue was the most liked color among male respondents, and pink was the most preferred color among female respondents. Additionally, it was discovered that females are more responsive when it comes to connecting color with emotion (Jalil et al., 2013).

A research study carried out by Robert Kane in 2016 investigated the impact of color on students' emotions and performance in learning environments. The study found that color influenced emotions and heart rate. Pale colors were rated more positive for the mood than bright colors, and white had a significant effect on excellent learning and good understanding, The pale-yellow color had a positive effect on concentration and intellectual activity, unlike the blue color, which stimulates a feeling of relaxation, comfort and tranquility, while the red color did not prompt students to study and focus and is a major cause of tension. The red and yellow colors were found able to increase the heart rate, while the blue causes the heart rate to decrease. (AL-Ayash et al., 2016)

Research conducted by Naz Kaya in 2004 investigating the relationship between color and passion for a group of university students. The study requested the students to indicate their emotional responses to various hues. The results showed that the primary colors had the highest number of positive emotional responses, followed by medium colors and then the achromatic colors. (Kaya, 2004)

In the classroom environment, there are many factors that affect students' performance, mood, and productivity, such as colours (wall colour, desk colour, lighting, etc.) performance and focus.

Previous studies highlighted the effect of different colour schemes on users. It was found that these studies conducted were in different cultures from current study namely western culture, therefore, it was found important to investigate this aspect in the local community having significant and different background and culture from the previous research; because it is believed that colour impacts are associated to culture. This study's aim is to explore how undergraduate students' moods are affected by four different interior colour schemes.

The objectives of the current research study are to: study the extent to which university students are affected by classroom colours/paints on their psychological state and mood, Deepen designers' knowledge of the relationship between colour and undergraduate performance in terms of emotion, Investigate the importance of colour and its effect on mood, Create a guide to help interior designers choose the right colour tone for their classroom, Identify the immense importance of colour and how it may be employed in interior design.

It is believed that this study is exploratory research investigating the literature and test hypotheses on how the four-color schemes affect college students' moods, which will be supportive to designers, art psychologists, teachers, and researchers in the interior design field.

## 2. Methodology

This research is based on a survey study to collect the primary data regarding students’ mood relationship with interior spaces colors. This is to explore students’ mood evoked by the stimuli used. Anxiety, tension, anger, focus, learn more and relaxation are the impressions and moods investigated in the questionnaire.

### 2.1 Stimuli

In this study a range of colours were selected namely cyan, white, light red, and light green hues (see Figure 2 and Table 1) of similar low brightness and saturation. The research hypotheses of using this range of colours are based on previous studies found that these colours have different impact on students mood as well would be used in interior design of classrooms. These colours were used to recolour the interior of a room (Figure 1) using Photoshop Software.

### 2.2 Subjects

A sample of students majoring in interior design from (Oman College of Management and Technology) were send an online questionnaire to answer a set of questions to examine on four colors and five moods.



Figure 1: Test room diagram

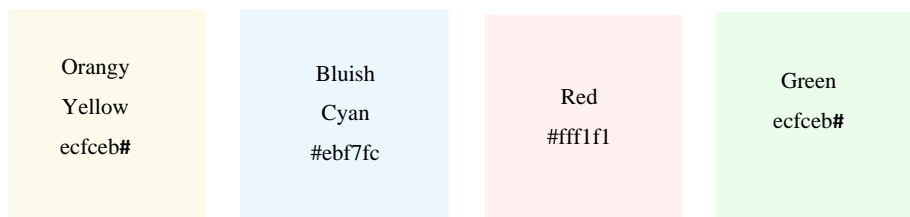


Figure 2: The four colour schemes used in the study

Table 1: Lab and RGB values of color

Colour used	Lab values			RGB values		
	L	A	B	R	G	B
Orangy Yellow	98	-1	7	252	250	235
Bluish Cyan	96	-3	-4	235	247	252
light Red	96	5	2	255	241	241
Green	97	-8	7	235	252	234

### 3. Results and discussion

The primary data collected using Google Form was analyzed to explore the responses. Based on the result obtained from the students' responses, Orangy Yellow had more responses towards all emotions, and Light green had fewer responses. Figure 3 shows the number of students' responded to each color, depending on the mood specified in the question.

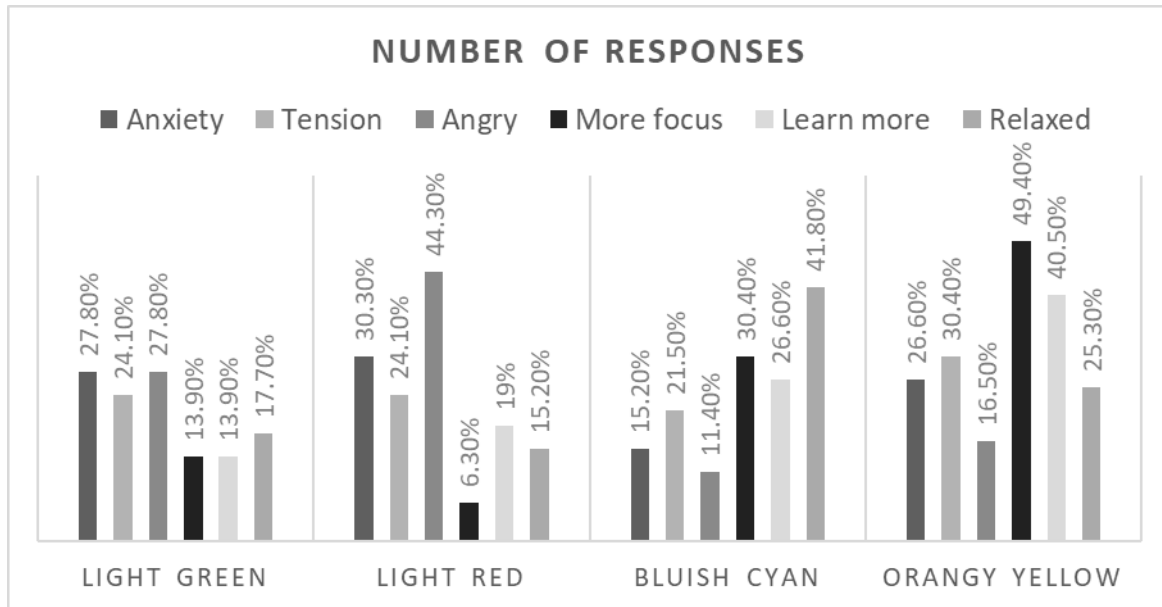


Figure 3: Emotional Responses towards the examined colors

#### 3.1 Anxiety

As shown in Figure 4, the color light red received the largest number of responses (30.4%), as mood reactions towards this color indicate that it creates negative effects in the brains of some, as it contributes to increased anxiety, and this is a valid indicator; Because some of the previous studies have concluded this effect, including the study conducted by Sevine Kurt. While other colors had the lower percentage of choice among the four colors.

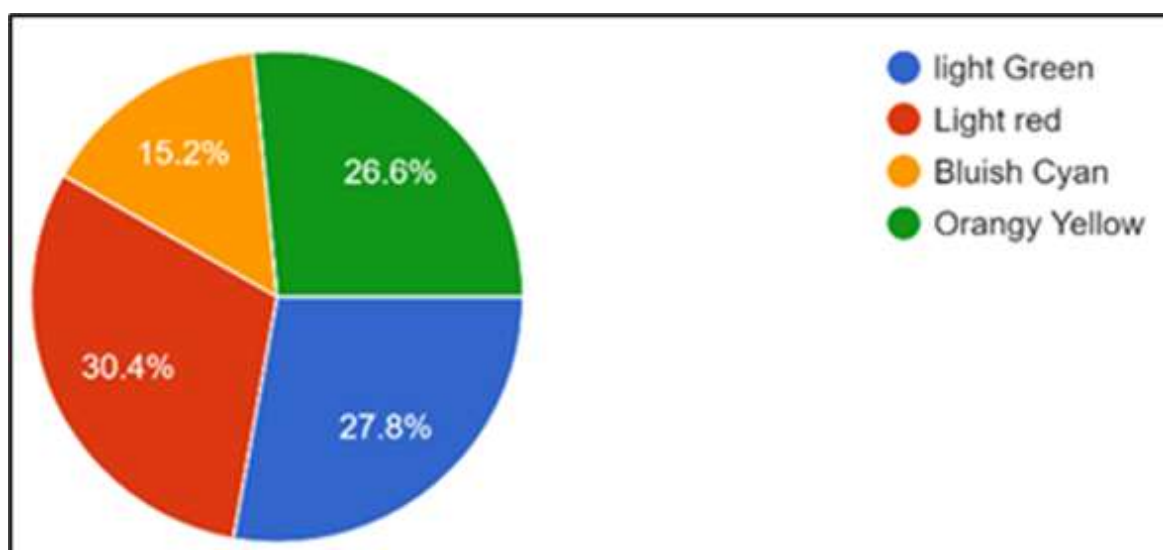


Figure 4: Percentages of subjects responded to the range of colors tested in terms of the emotion Anxiety

### 3.2 Tension

The bright red color elicited the largest number of subjects (30.4%) with negative emotional responses. Because it is closely related to stress. Yellow-orange and light green came in second place, after light red, with a percentage of (24.1%), and sky blue came in third place, with an appropriate percentage of (14.3%). Other studies have found that the red color causes tension in various actions, whether learning or otherwise, and this percentage obtained indicates that the red color does indeed cause tension.

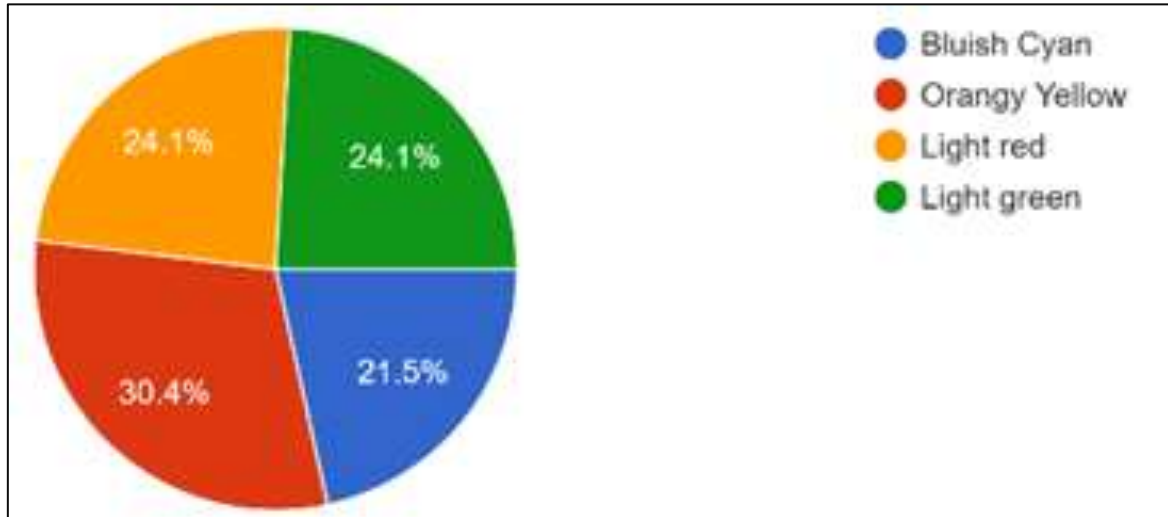


Figure 5: Percentages of subjects responded to the range of colors tested in terms of the emotion Tension

### 3.3 Angry

The percentage of the color light red is very high compared to other colors, reaching (44.3%) see Figure 6 , and this result indicates that the red color stimulates the feeling of anger, and it has also been proven in other studies that the red color is a primary stimulus for anger, because it falls under the hot colors or hot. The color light green obtained a lower percentage than the color light red and higher than the other colors.

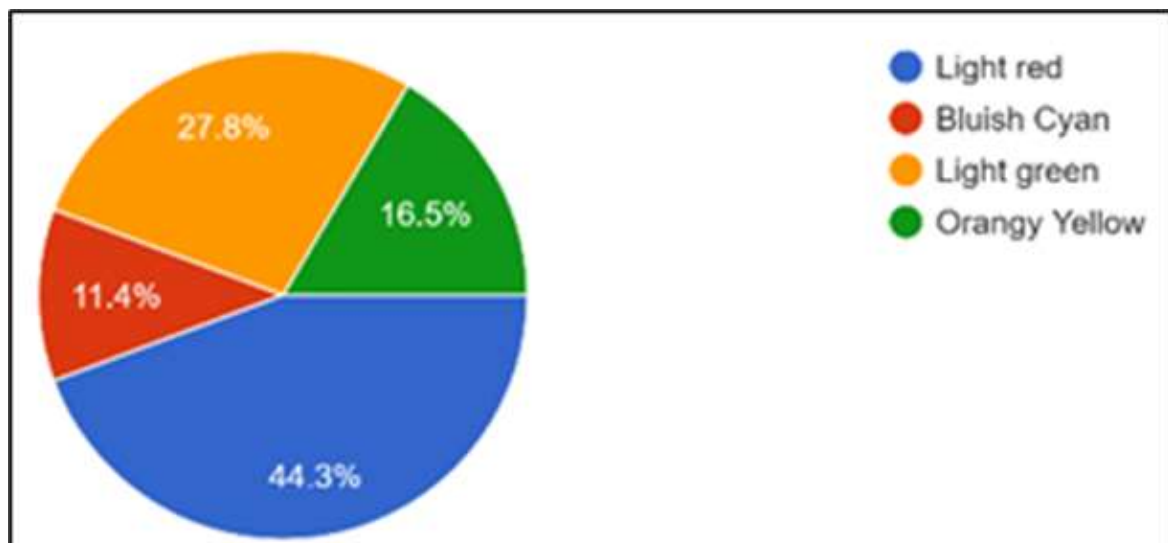


Figure 6: Percentages of subjects responded to the range of colors tested in terms of the emotion Angry

### 3.4 More focus

Concentration in the classroom is very important. It was found that orange yellow colour has the highest percentage among the four colors, with a percentage of (49.4%), followed by blue cyan with a percentage of (30.4%), followed by light green with the lowest. A percentage of (13.9%), followed by a light red color with a percentage of (6.3%) (see Figure 7). These percentages indicate that the red color does not stimulate concentration, unlike the color orange yellow, which got a very high percentage, by a very small percentage.

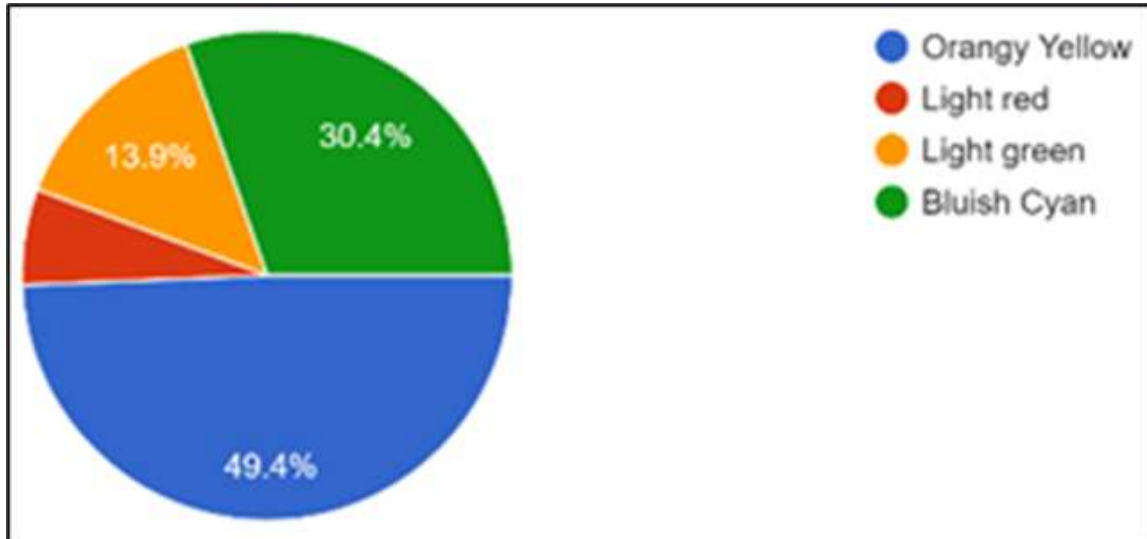


Figure 7: Percentages of subjects responded to the range of colors tested in terms of the emotion More focus

### 3.5 Learn more.

Deep learning impression and feeling is imperative for college students, therefore according to the collected data form the survey, painting a classroom with orange yellow is an efficient design element. From the result related to learning more, orange yellow has the highest percentage among the four colors, reaching (40.5%), followed by bluish cyan with (26.6%), followed by light red with the lowest percentage (19%) followed by light green (13.9%). These percentages indicate that the green and red colors do not stimulate concentration, unlike orange yellow, which got a very high percentage.

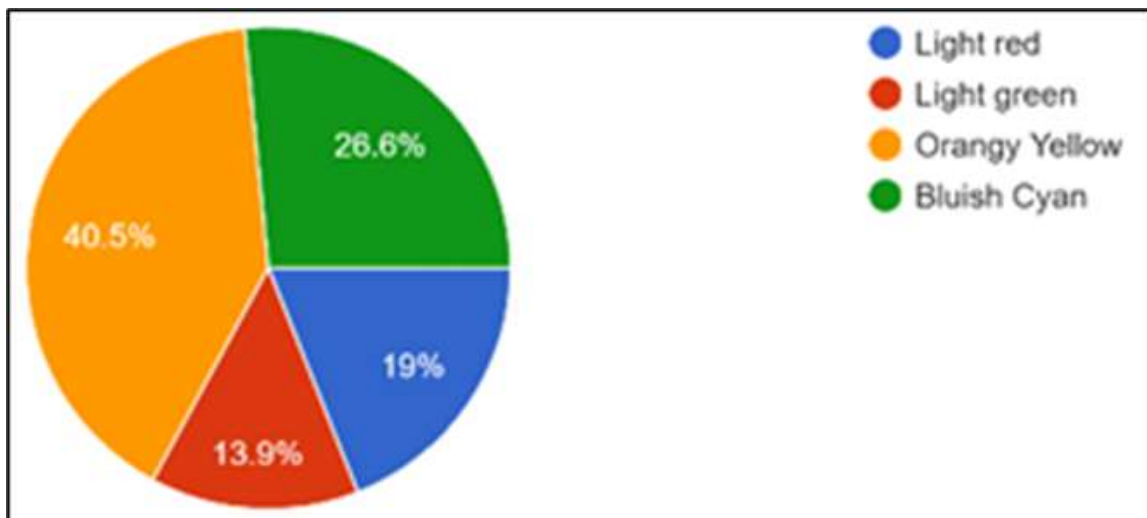


Figure 8: Percentages of subjects responded to the range of colors tested in terms of the emotion Learn more



### 3.6 Relaxed

Providing comfort is essential in all environments. In this study, it was found that the color bluish Cyne stimulates a feeling of relaxation with a rate of (41.8%), and orange yellow ranked second with a percentage of (25.3%), followed by light green with a percentage of (17.7%) and then light red. by (15.2%) Figure 9. Where these results proved what was obtained from the results of previous research.

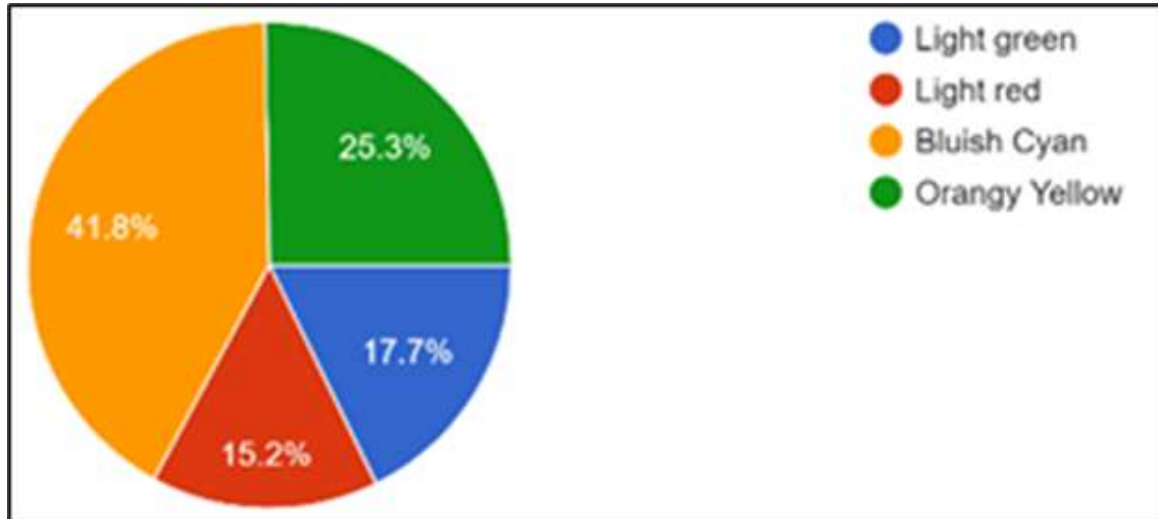


Figure 9: Percentages of subjects responded to the range of colors tested in terms of the emotion Relaxed

### 3.7 Preference and its relation to colors and emotions

Most of the students preferred the color bluish cyan, as it reached 48.1%, and this indicates that students tend to prefer positive colors that do not negatively affect their mood. The color light red came in second place, with a percentage of 30.4%, and this result reflects what was obtained in the color bluish cyan, as students do not always prefer positive colors, and it also indicates that preference is not a requirement related to their knowledge of the effect of color on the mood. (see Figure 10)

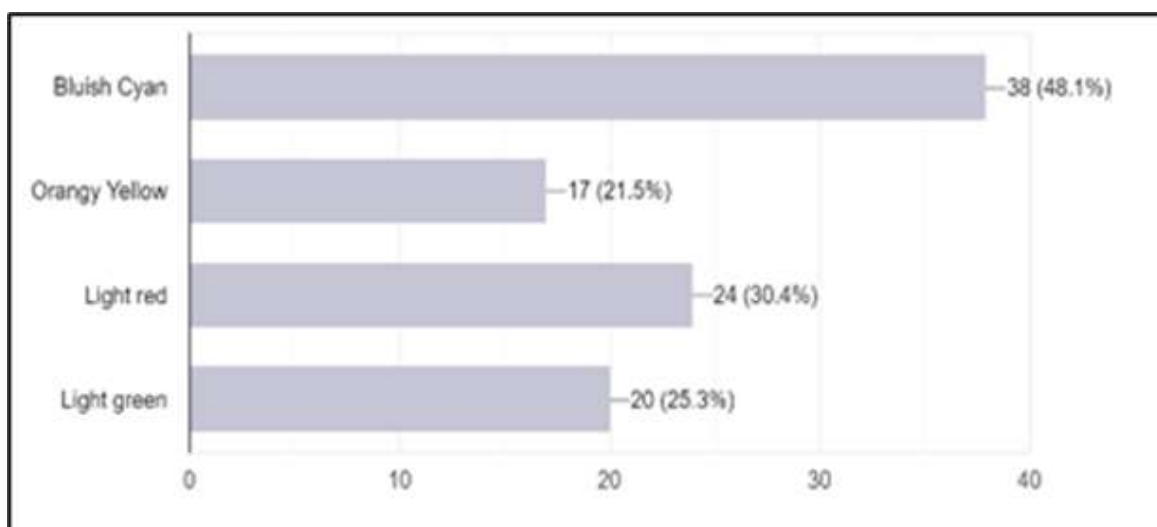


Figure 10: Preference and its relation to colours or emotions

These preference results were found agrees with the results of researcher Kwallek, N. and researcher Keene, R. Current research results indicate that these four colors had different

impacts on students' mood and emotional responses. The results also supported the hypothesis that the red color is a primary color in stimulating negative emotions such as anger, tension, fatigue, and others. It was also found that the blue color increases the feeling of relaxation, meditation, and calm, due to its presence in natural places such as the sky and the sea, and these two places are considered a refuge for those who feel negative energy.

#### 4. Conclusion

This study found that when examining the effect of four different colours on the mood of students in the classroom, the colour affects them. The two colours i.e., bluish cyan and orange yellow were classified as calming and relaxing colours having a positive effect on students' behaviour and consequently support the students in the learning process and their educational level. Frequency of learning, comprehension, focus, and comprehension were significantly better for the students perceiving these colours. The light green colour showed positive impact on students mood and does not students moods negatively in terms of anger, tension and anxiety. Regarding the light red colour, it was found directly affects producing negative mood and stimulating feelings of anxiety, tension, and anger.

It is interesting to find that mood and colour preference has no relationship with each other, as the results indicated that these two variables are independent and not related to each other, as the individual may prefer a colour, but this colour often negatively affects mood.

#### 5. Future research work

This study has some limitations, although the answers and the solution were collected via online survey, Further research work is planned to involve participants of various ages ranges and specialization. The future planned research is to conduct deepen this study to investigate various realistic work and education environments such as computer classes, educational laboratories classes, etc., to ascertain the extent to which colours affect students' moods.

#### References

- Jalil, N. A., Yunus, R. M., & Said, N. S. (2013). Students' colour perception and preference: An empirical analysis of its relationship. *Procedia-Social and Behavioral Sciences*, 90, 575-582.
- Kurt, S., & Osueke, K. K. (2014). The effects of color on the moods of college students. *sage Open*, 4(1), 21.
- Kwallek, N., Woodson, H., Lewis, C. M., & Sales, C. (1997). Impact of three interior color schemes on worker mood and performance relative to individual environmental sensitivity. *Color Research & Application*, 22(2), 121-132.
- Kaya, N., & Epps, H. H. (2004). Relationship between color and emotion: A study of college students. *College student journal*, 38(3), 396-405.
- AL-Ayash, A., Kane, R. T., Smith, D., & Green-Armytage, P. (2016). The influence of color on student emotion, heart rate, and performance in learning environments. *Color Research & Application*, 41(2), 196-205.
- AL-Ayash, A., Kane, R. T., Smith, D., & Green-Armytage, P. (2016). The influence of color on student emotion, heart rate, and performance in learning environments. *Color Research & Application*, 41(2), 196-205.