

**Review Form 1.7**

Journal Name:	<b>Journal of Pharmaceutical Research International</b>
Manuscript Number:	<b>Ms_JPRI_107153</b>
Title of the Manuscript:	<b>The Influence of Color on the Process of Learning: An Analysis of Medical students' perception</b>
Type of the Article	

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**PART 1: Review Comments**

	<b>Reviewer's comment</b>	<b>Author's comment</b> <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<p><b>Compulsory</b> REVISION comments</p> <ol style="list-style-type: none"> <li><b>Is the manuscript important for scientific community?</b> (Please write few sentences on this manuscript)</li> <li><b>Is the title of the article suitable?</b> (If not please suggest an alternative title)</li> <li><b>Is the abstract of the article comprehensive?</b></li> <li><b>Are subsections and structure of the manuscript appropriate?</b></li> <li><b>Do you think the manuscript is scientifically correct?</b></li> <li><b>Are the references sufficient and recent? If you have suggestion of additional references, please mention in the review form.</b></li> </ol> <p><u>(Apart from above mentioned 6 points, reviewers are free to provide additional suggestions/comments)</u></p>	<ul style="list-style-type: none"> <li>Yes, the topic about the influence of color on learning is indeed interesting. It is crucial for educators, designers, and students as it could potentially influence how educational materials are designed in the future.</li> <li>The study design mentioned is cross-sectional, which is appropriate for assessing perceptions at a given time. Thus, the topic is valuable.</li> </ul> <p>2. Yes but the following would be more appropriate:  <b>Exploring the Role of Color in Enhancing Learning Outcomes: Insights from Medical Students in China</b>  <b>Or</b>  <b>From Textbooks to Study Spaces: How Medical Students in China Perceive the Impact of Color on Their Learning Journey</b></p> <p>3. <b>Abstract</b></p> <ol style="list-style-type: none"> <li>The title "The Influence of Color on the Process of Learning: An Analysis of Medical Students' Perception" sets the expectation the article will discuss how different colors impact learning and how medical students perceive these effects. The abstract touches on this by discussing medical students' perceptions of color combinations that influence readability and learning.</li> <li>The aim is clearly mentioned and relevant to the topic. It establishes that the study gauges perceptions of color combinations for readability and learning.</li> <li>The cross-sectional study design is mentioned, a basic but crucial detail for readers to understand the research approach.</li> <li>The methodology provides a brief overview of how the study was carried out. Including details such as the color chart and questionnaire components is helpful.</li> <li>The abstract presents an overview of the findings, and the conclusion succinctly summarises the study's primary findings.</li> </ol> <p>However,</p> <ol style="list-style-type: none"> <li>The study could be beneficial to expand slightly on the implications of the results. While it is clear that most students preferred black text on a white background, it would be helpful to discuss why this might be important in the context of medical education. Overall, the abstract is well-written and comprehensive for the article topic.</li> </ol> <p>4. Yes, the subsections and structure of the manuscript are appropriate</p> <p>5. The methodology section could be more detailed. For instance, how was the data analyzed using computer software? What statistical methods were used?  While the manuscript does discuss the results, there is room for a deeper analysis. For instance, are the results in line with previous research? If there are deviations, what might account for these differences?  Scientifically, the manuscript's claims seem plausible and adhere to basic scientific principles.</p> <p>6. Yes, the references are sufficient and recent</p> <p><b>Introduction</b></p> <ol style="list-style-type: none"> <li>The introduction directly addresses the primary theme of the article: the influence of color on learning.</li> <li>The introduction cites multiple references, suggesting that prior research has been consulted, giving the introductory section more credibility.</li> <li>It provides readers with a foundational understanding of light, its wavelengths, and how different colors are perceived by the human eye. This knowledge is essential when discussing the impact of color on learning.</li> <li>The purpose of the study is clearly stated in the last line of the introduction, ensuring that readers know what to expect from the subsequent sections.</li> <li>The introduction paints a comprehensive picture of the multifaceted ways colors can influence humans by discussing different physiological responses to color (such as EEG responses, blood pressure, pulse rate, and skin temperature).</li> <li>The section mentioning that genetic and cultural factors influence human psychology hints at the complexity of the topic and signals that the study might explore these nuances.</li> </ol> <p>However,</p> <ol style="list-style-type: none"> <li>Some sentences are wordy and can be simplified for better comprehension. The information is densely packed, which might make it difficult for readers unfamiliar with the topic to digest the content in one reading.</li> <li>The introduction delves into detailed technical information (e.g., details about EEG responses) that might be</li> </ol>	

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	<p>better placed in a methodology or results section.</p> <ol style="list-style-type: none"><li>iii. The phrase “color-based methods have revealed better student learning” is vague. What color-based methods? Compared to what other methods?</li><li>iv. While the introduction mentions the influence of genetic and cultural factors, it might benefit from a deeper discussion or some examples, given that cultural backgrounds can strongly influence the perception of color.</li><li>v. The introduction seems to emphasize blue and red colors significantly. While these might be pivotal colors for the study, introducing other colors or explaining the reason for the emphasis might provide more clarity.</li></ol> <p>Thus, the introduction is dense with information and relevant to the topic, providing a robust background on the influence of color on learning and physiology. However, simplifying language, improving organizational flow, and addressing ambiguities can make it even more effective.</p> <p><b>Methodology</b></p> <ol style="list-style-type: none"><li>1. The methodology ensures ethical standards by obtaining approval from the Local Committee of Bioethics, which adds credibility to the study.</li><li>2. The questionnaire avoids collecting personal identification information, ensuring participants’ privacy and reducing potential response biases due to fear of identification.</li><li>3. Providing an Arabic translation ensures that students who are more comfortable with Arabic can understand and respond to the questionnaire effectively.</li><li>4. With one hundred different combinations of text and background colors, the study can capture various preferences and perceptions.</li></ol> <p><b>However,</b></p> <ol style="list-style-type: none"><li>i. There is no mention of how the sample size was determined. It is important to mention if the sample size was sufficient to draw the conclusions presented.</li><li>ii. Including basic demographic questions like the study year and gender can help identify any patterns or variations in color perception related to these factors.</li><li>iii. The study seems to focus more on legibility and liking rather than directly measuring learning outcomes. It does not measure whether the perceived “easy to read” colors enhance understanding or retention.</li><li>iv. Presenting participants with one hundred color combinations could be overwhelming, leading to rushed or less thoughtful responses.</li><li>v. There is no comparison with a group not exposed to varying color combinations to see if there is any inherent bias or external influence on the reported perceptions.</li><li>vi. The described questionnaire seems to capture just the ease of reading and personal liking. It could benefit from deeper, more varied questions regarding the influence of color on learning.</li></ol> <p>In summary, while the methodology has several commendable strengths, especially in terms of ethical considerations and capturing a broad range of color perceptions, improvements can be made to capture a more comprehensive understanding of the influence of color on the learning process.</p> <p><b>Results</b></p> <ol style="list-style-type: none"><li>1. The data is organized neatly into a table, clearly separating male and female students’ preferences.</li><li>2. By separating male and female preferences, the study allows for gender-based analysis.</li><li>3. The study covers a broad spectrum of color combinations, which provides a more comprehensive perspective on preferences.</li></ol> <p><b>However,</b></p> <ol style="list-style-type: none"><li>i. How do the findings align or differ from other studies? Why might students have these preferences? Delve deeper into the significance of these findings.</li><li>ii. Including percentages in the table is good, but consider discussing or highlighting key patterns or observations from the table in the text.</li><li>iii. The results show preferences but do not analyze or indicate how these preferences affect learning.</li><li>iv. Though quantitative data is present, qualitative insights about <b>why</b> certain colors might be preferred are absent.</li></ol> <p><b>Discussion</b></p> <ol style="list-style-type: none"><li>1. By referencing other studies (like 7, 8, 9-10, and 11), the discussion adds credibility to its findings and places them in a broader context.</li><li>2. The discussion highlights the importance of the environment and color on brain function, adding depth to the topic.</li><li>3. Recognizing the importance of e-learning and its role in modern education makes the findings more relevant.</li></ol> <p><b>However,</b></p> <ol style="list-style-type: none"><li>i. Phrases like ‘Human brain is affected’ might be too broad without supporting evidence or specifics about how the color affects the brain.</li><li>ii. Though results were segregated by gender, the discussion did not delve into any potential gender-based</li></ol>	
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	<p>differences in color perception and its impact.</p> <p>iii. Like all studies, this one likely has limitations. Addressing these can add credibility.</p> <p><b>Conclusion</b></p> <ol style="list-style-type: none"> <li>1. The conclusion clearly states the major findings of the study.</li> <li>2. It mentions the potential application of the results, i.e., using high-contrast colors in teaching materials.</li> </ol> <p><i>However,</i></p> <ol style="list-style-type: none"> <li>i. The conclusion is quite concise and could delve deeper into implications or further research needs.</li> <li>ii. Usually, studies end with recommendations for future research or potential applications beyond the obvious. This is lacking here.</li> </ol> <p>Overall, the study gives a good initial insight into medical students' preferences about text and background colors in learning materials. However, further qualitative or experimental research might provide a deeper understanding of how these preferences translate into actual learning outcomes.</p>	
<p><b>Minor</b> REVISION comments</p> <p><b>1. Is language/English quality of the article suitable for scholarly communications?</b></p>	<p>There are several minor grammatical errors and awkward phrasings throughout the text. For instance, "The part one comprised a color chart" should be "The first part comprised a color chart." This questionnaire comprised two part" should be "two parts".</p> <p>Avoid redundancy. The sentence "Ease in readability facilitates the understanding of the content of written learning matter." reiterates what was said at the start of the introduction.</p> <p>Ensure that the tone remains consistently formal and scholarly throughout the article.</p>	
<p><b>Optional/General</b> comments</p>		

**PART 2:**

	<b>Reviewer's comment</b>	<b>Author's comment</b> <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<p><b>Are there ethical issues in this manuscript?</b></p>	<p><i>(If yes, Kindly please write down the ethical issues here in details)</i></p>	

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