



## An investigation into the effect of color on translation quality among Iranian students of translation

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### ABSTRACT

This study was designed at investigating the relationship between the color of the sheet on which the act of translating is done and translation quality. To achieve this purpose, at first 180 B. A. students majoring in Translation selected randomly from Islamic Azad University, Shiraz, Iran and Zand Institute of Higher Education. For the purpose of homogenizing the students' knowledge of translation in the posttest, a pre-test was given to the students and after that 50 of these students whose scores were in the same range were selected and divided into experimental and control groups. The experimental group involved the students who translated the text on blue paper and the control group consisted of those who translated on white paper. Next the translations were assessed by three evaluators and the mean scores of the experimental and the control groups were then calculated individually by the researchers. To analyze the data, an independent sample t-test was used to see the mean difference of two groups. The results of the study indicated that the mean score of the students who translated on blue paper was higher than the mean score of those who translated on white paper but the difference was not significant (Sig. = 0.690). It means that according to the statistical analysis, the color of the sheet on which the act of translating was done had no significant effect on translation quality.

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### Introduction

Throughout history, human beings have made an effort to take the advantages of different methods of communication with the intention of using the knowledge of the other nations and making every endeavor to preserve this knowledge for the coming generations. As the most effective methods of communication, language has been used to satisfy the very need of communication. In today's world, communication between various nations with different languages is possible through translation.

The demand in the translating field is greater than ever before because it becomes a major way for communicating between countries and cultures. Many translators work for themselves and others are employed by international organizations as well as government agencies. Nonprofit and religious organizations also hire or contract the services of translators for their document translation. And all of these agencies and organizations expect a good and adequate translation from their translators.

In Foster's (1958) point of view, the only good translation is one which fulfils the same purpose in the new language as the original did in the language in which it was written. As it is known in the field of translation studies, the quality of translation is an area that many researchers have studied and investigated the factors which can affect on it. To the researchers' knowledge, there are no particular investigations or published works on the effect of color on translation quality and it is interesting to find the relation between these factors.

Color is everywhere, and imagining life without color is difficult and depressing. We live in a world of color and

everything in nature is colorful. It is an integral part of our everyday life and as such may affect many aspects of our life culturally, psychologically and physiologically. Color is a part of our language, our vision and our art, and plays a big role in nature. Can you imagine yourself in a white and black world? ("The Color of Learning," n.d.)

Whether we are aware of it or not color plays an important role in all of our lives; it affects all our senses, sight, sound, smell, taste and feelings. Seeing color can change our moods very effectively both on a conscious and an unconscious level, red for danger or white for peace. People even use color in ordinary everyday conversations such as the sky is black, she is whiter than white or I am green with envy; so it is obvious that color is an important factor in our environment and a great deal of researches has been done on the effects of color in different issues by many researchers, Such as effects of color on memory, Huchendorf (2007), on learning, Grangaard (1995) and etc.

As it was mentioned before colors can affect different issues, in the color psychology it is proved that colors and especially cold ones can increase concentration. As it was explained, cold colors are blue, green and purple. Richmond (n.d) in his article "A Blue Room Helps Concentration" believes that medium or deep blue are ideal for applying to rooms requiring a high level of concentration. It is obvious that concentration is an essential factor in translating process and if a translator has a high level of concentration, it is expected that the quality of translation be in high level too.

To the best of the researchers' knowledge, there are no particular investigations or published works on the effect of color on translation quality, so this study intends to investigate

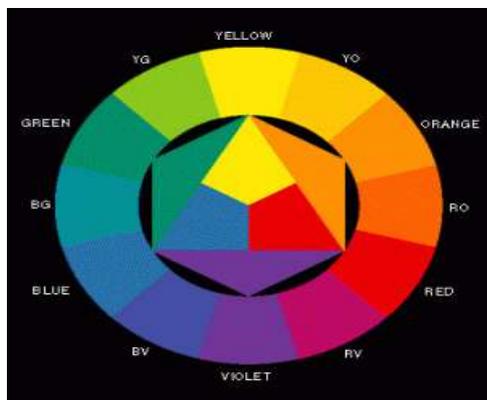
the relationship between the color of the sheet on which the act of translating is done and translation quality.

### Literature Review

Color is the visual perceptual property corresponding in humans to the categories called red, green, blue and others. Based on Oxford Advanced Learner's Dictionary (1999), color is a visible quality that objects have, produced by the way they reflect light.

McClurg (2006) defined color as the response of the eye to differing wavelengths of radiation within the visible spectrum. This is a valid definition, but it is only one of many various thoughts on what color is.

Colors have different classifications; one of these classifications is primary versus secondary colors as cited in "primary, secondary and complementary article" according to Itten and another one is cold versus warm colors. Itten was one of the first people to explain and identify the laws that form the structural basis of color theory in a famous graphic representation. In the central triangle we can find the three primary colors; in the triangles that form the hexagon there are the three secondary colors; in the outer circle primary, secondary and tertiary colors are arranged successively so that related colors are next to each other and complementary colors are opposite



In the color wheel, the complementary colors are pairs of colors which are opposite to each other such as yellow and purple, red and green, blue and orange. A color is defined opposite and therefore complementary to another when it was obtained by mixing of the other two primary colors. For example the opposite of yellow (primary color) is purple (secondary color) which is obtained from the other two primary colors: red and blue ("primary, secondary and complementary colors," n.d.).

The three primary colors are red, blue and green from which all other colors can be obtained by mixing. A secondary color is a color made by mixing two primary colors in a given color space such as yellow that comes from the combination of red and green. Another classification mentioned earlier is warm and cold colors. Yellow, orange and red which are associated with the heat of sun and fire are considered as warm colors. Warm colors are those that are vivid in nature. Warm colors tend to speed up our perception of time. As a matter of fact fast food restaurants use red and orange heavily in their decor to get customers in and out fast, so they can make more money per customer. Warm colors also lead us to have feelings of warmth & coziness and are often associated with happiness & comfort. In addition, blue, green and violet with the coolness of leaves, sea and the sky are cold colors. Cool colors visually enlarge a space, making it less confining. These colors can slow down your perception of time and can produce an environment that seems cold and distant. Cool colors can also have passive,

calming qualities that help concentration and can create a mood of tranquility and peacefulness ("Color Psychology: The Meaning of Color," 2006).

### Cold Colors

#### Green

Green is a combination of yellow and blue and it has a harmonizing effect. It is a cool color that symbolizes nature. Green is also considered to be the color of concentration. It promotes relaxation of the organs and stimulates general detoxification of the body. It's often used in decorating for its calming effect. For example, guests waiting to appear on television programs often wait in a "green room" to relax (Chapman, 2010).

#### Purple

Violet is the color of the emotions and is considered to be a meditative color. It's a combination of red and blue. Violet can lead to profound liberation of the mind. Purple promotes rest and productivity (Chapman, 2010).

#### Blue

Blue is the color of peace and infinity; it is one of the most popular colors. Our bodies and minds are conveyed to a state of peace, repose and softness. As a general rule, blue can be said to have a very positive effect on all kinds of pain conditions. Soft blues will calm the mind and aid concentration. In many researches show that blue is the world's favorite color. Blue increases productivity. It is a common choice for offices. Good for relaxing and concentration. Use in bedroom, nursery (lighter & pastel blues), sitting room, study, bathroom, and spa type rooms. According to Birren (1961) Blue is a favorite color of both men and women of all ages. And this was one of the reasons to choose this color in present study.

The response to color is based on three very important factors. The first is based on physiology. For example if you are color blind you will receive colors differently than someone who isn't. The second factor is psychological. If you experienced a horrible car accident as a young child and that car was red, you may find the color red leads to fear or anxiety for you. Finally, culture and society have a tremendous impact on our perception of color. For example in Western societies white implies purity and innocence and is used widely in bridal gowns. In China, the color white is representative of a state of mourning ("Color Psychology: The Meaning of Color", 2006).

Colors have a significant impact on people's emotional state. They also have been shown to impact people's ability to concentrate and learn. They have a wide variety of specific mental associations. In fact, the effects are psychological, physiological and sociological (VanAuken, 2006).

For instance:

- ✓ Non-primary colors are more calming than primary colors.
- ✓ Test takers score higher and weight lifters lift more in blue rooms.
- ✓ Blue text increases reading retention.
- ✓ Children prefer primary colors. (Notice that child's toys and books often use these colors.)

Color has been studied from biological, philosophical, anthropological and psychological perspectives over the course of time and although many researchers believe that the perception of color is biologically based, how the perceptions of these colors affects our emotions and reactions may be based on psychological, cultural and age influences (Church, 2003).

It is obvious that color psychology is an important topic and the effects of color have been tested in various fields and it is

proved that colors can affect different areas. As an example, in a study, Anthropol (2007) investigated the physiological effects of color in terms of blood pressure and the results of electroencephalogram (EEG) as subjects looked at the sheets of paper of various colors. Three colors (red, green, and blue) were shown to each subject randomly. Scores of the subjective evaluations concerning heavy, excited, and warm feelings also indicated significant differences between red and blue conditions. Contrary to the researcher's expectation, blue elicited stronger arousal than did red as expressed by the results of AAC and the mean power of the alpha band, which conflicted with the results of the subjective evaluations scores. This phenomenon might be caused by bluish light's biological activating effect. The powers of the theta band, and the alpha band, and the total power of the theta-beta bandwidth as measured by EEG showed larger values while the subjects looked at red paper than the blue ones. This indicated that red possibly elicited an anxiety state and therefore caused a higher level of brain activity in the areas of perception and attention than did blue.

As a surprise, it has also been found that color influences the evaluation of food and drink. For instance, red is commonly associated with sweetness (cherries and strawberries). Yellow and green are associated with citrus flavor and green especially with food that is unripe.

Surprising fact is that the meaning of color for gender and their response to it, is deferent. Many investigations have indicated that there are differences between genders in preferences for colors. As cited in Khouw's article (n.d.), Dorcus found yellow had a higher affective value for the men than women and St. George maintained that blue for men stands out far more than for women. Guilford and Smith (1959) understood men were generally more tolerant toward achromatic colors than women. Thus, Guilford and Smith (1959) proposed that women might be more color-conscious and their color tastes more flexible and diverse. Likewise, McInnis and Shearer (1964) found that blue green was more favored among women than men, and women preferred tints more than shades. They also found 56% of men and 76% of women preferred cool colors, and 51% men and 45% women chose bright colors.

In this part the researchers classify the studies related to colors into four groups involve color and mood, color and memory, color and learning, color and performance which are explained in details in following:

#### **Color and Mood**

There is remarkably consistent supportive literature that surrounds the relationship between color and emotion. The literature is full of statements that relate color with emotional states or mood-tones. Studies have reported the association of color and moods by using various methods such as objective impressions, clinical observations, introspective, and experimental investigations (Wexner, 1954).

For example in a study which was done by Odom & Sholtz (2009), sixty students from a general psychology class at Missouri Western State College in Saint Joseph, Missouri were participated. The materials in this research were four pieces of standard white computer paper were given to each participant. The first page had the directions and other demographics. The other demographics were the participants' age, gender, and whether or not they are colorblind. The last three pages each had two colors on it. The colors used were red, yellow, blue, and a lighter shade of each. Next to each color were the words

exciting, calm, and cheerful. Each word had a continuum from one to ten next to it. Each subject was given the survey. The papers with the colors on them were mixed up to counterbalance for order effects. The subjects were asked to circle a number on the continuum next to each adjective representing a mood tone. On the continuum, ten represented the highest feeling of that particular emotion, and one represented that that color did not invoke that particular mood. If the particular color invoked strong feelings of calmness, then the subject circled a number close to 10. For example, if the subject felt the color did not invoke a strong feeling of excitement, then they circled a number close to one. When the subjects were done, the survey was collected. In general, the results of this study support that different colors do invoke different moods. Some mood tones for certain colors are more pronounced than others. Yellow was found to be both cheerful and exciting while blue was associated with being calm. The primary colors were typically related to the moods they are associated with, although yellow was more associated with exciting than red.

#### **Color and Memory**

Collins (1931) conducted experiments in which subjects were asked to reproduce a previously seen color, and found that particular wavelengths of green and red were hard for the subjects to reproduce and also difficult to recognize again. This finding was confirmed by Hamwi and Landis (1955), who found that in addition to hue, ability to remember a color is also influenced by its lightness or darkness. Later, Nilsson and Nelson (1981) found that the most accurately remembered colors were violets, green-blues, and yellow-oranges.

In 2004, Helen and Kaya did a survey in a field of color and memory which is named "Color matching from memory". In this research Short-term color memory of two groups of university students, 20 with prior color coursework, and 20 with no color-related training, was evaluated in four hue categories: yellow, yellow-red, green, and purple. Munsell dimensions of hue, value, and chroma were used to select four target colors and nine distractor colors for each of the targets. Four of the distractor colors differed from the target in hue only, four were of the same hue as the target, but differed in both value and chroma, and one was identical to the target in both hue and value, but differed in chroma. The subject looked at the target color chip for 5 seconds, with the intent of remembering it. After removal of the target color, and an additional period of 5 seconds during which the subject focused on a white card, the subject was given a stack of ten randomly arranged color chips, including the target and the nine distractors, and asked to choose the target color. Of the four target colors, yellow was the most accurately remembered color, followed by purple, orange, and finally, green. Subjects in the two groups reported the use of similar cues in remembering the target colors.

Another study which is going to mention about the effect of color on memory is the research in title of "Effects of Color and Gender on Working Memory" by Lisa Beck, Tim Hughes, Brad Maddox, and Christine Martin. The participants of this study were 147 male and 142 female undergraduate students enrolled in eight different General Psychology courses at Arkansas Tech University. Each participant began the experiment by viewing a list of ten nonsense syllables that were shown through Microsoft PowerPoint on a projection screen for one minute. The consonant combinations were typed in all caps using 32-point, Arial Black font. In each of the four different classes, the same combinations were shown but in a different color (black, red,

blue, or green). After one minute had passed, the words were taken off the screen, and the students were instructed to perform a distracter task, which consisted of writing a series of odd numbers starting with the number one on the blank sheet of notebook paper provided for them. They engaged in this task for thirty seconds. In the next step, participants turned over their paper and were given one minute to write down all of the nonsense syllables they could remember from the list on the screen. After completing the experiment, each participant turned in the piece of notebook paper that their tasks were completed on without their name. The only other information written on the paper by the students was their gender and the color in which the nonsense syllables were presented to them. IRB approval was not attained as this experiment did not pose a risk to the subjects, and each individual's performance was kept confidential, and the data was not disseminated outside of the classroom. The hypothesis of this study was that color would have a positive correlation with memory, and that females would recall the colored nonsense syllables more accurately than males. The results of this experiment were not statistically indicative of any significant correlation between color and working memory. And the researchers believe that this is because of some reasons such as limited diversity of age in sample and the fact that the participants were being tested on a skill whereas other experiments they may have participated in were surveys. Also, the distracter task might have been strong enough that it actually skewed all the data for this particular sample and the lack of reward for participating are other possible reason.

#### **Color and Learning**

Sinofsky and Knirck (1981) found that color influences student attitudes, behaviors and learning. In fact, they cited the most important reasons for using color effectively in learning environments. These reasons include that color affects a student's attention span and affects the student's and teacher's sense of time.

Color and Light Effects on Learning is a title of survey which is done by Mannel in 1995. This study examined the effects of color and light on the learning of eleven 6-year-old elementary school students. The students were videotaped to identify off-task behaviors and had their blood pressure measured while in a standard classroom with white walls and cool-white fluorescent lights. As well as in a classroom with light blue walls and full-spectrum Duro-test Vita-lite lights. The study found that the students accumulated a total of 390 off-task behaviors in the standard classroom compared to 310 in the modified classroom, a decrease of 22 percent. It also found that students' mean blood pressure readings were nine percent lower in modified classroom when compared to their readings in the standard classroom.

From these findings, it is evident that lighting and color choices play a significant role in the achievement of students.

#### **Color and Performance**

In 2003, Engelbrecht had a study on performance of preschool or elementary students and found that younger children work better in an environment with bright colors such as red, orange and yellow. She also investigated that Adolescent students respond better to colors such as blue or green that are less distracting or stress-inducing.

Luckiesh and Moss (1940) found in their research of 5th and 6th grade students in well-lighted classrooms over regular (poorly lighted) classrooms that significant increases in the scores on the New Stanford Achievement Test were

demonstrated by the students in the well-lighted classrooms, and also Horton's (1972) study suggested that the ability of individuals in school to concentrate on instructions was strongly influenced by factors such as lighting.

In another study, Scientists at the University of British Columbia studied more than 600 people as they performed various tasks, usually on a computer. Sometimes the color of screen's background was red, sometimes blue. The experiments showed that with the red background, people did as much as 31% better at tasks, which require attention to detail. But for creative tasks, like designing a child's toy, a blue background improved performance.

As it was mentioned colors can affect on different subject that one of them is performance. The high level of performance needs high level of concentration. It was mentioned before that cold colors (blue, green and purple) can effect on concentration and increase it. In 2009, Richmond stated that Medium or deep blue are ideal for applying to rooms requiring a high level of concentration.

In the psychology of colors, it is stated that cold colors (green, blue and purple) lead to increase concentration and everyone knows that concentration is an important factor for any kind of activity, so the aim of this study is to determine the effect of the color of translation sheet on translator's concentration and therefore translation quality. The color selected in this study is blue. But it is important to know why blue? According to Birren's book (1961), blue color is the most favorite color among different ages.

According to the above-mentioned researches about the effect of color on various issues, it is hypothesized that there is a positive relation between the color (blue) and the quality of translation.

#### **Research Question**

This investigation tries to find the answer to the following question:

Does color have any effect on concentration of translator and consequently on his or her translation quality?

#### **Methodology**

##### **Participants**

As a quantitative phenomenological research design, this study used two groups to explore the relationship between the color of the sheet on which the act of translating was done and the students' translation quality. In order to form these two groups, the researchers selected the participants from B.A. students of translation studying at Islamic Azad University, Shiraz, Iran & Zand Higher Education Institute. A total of 180 students of translation were randomly selected to take part in this study. They were between 22 to 26 years old. For the purpose of homogenizing the students' knowledge of translation in the post-test, a pre-test gave to the population and after that 50 of these students whose scores were in the same range selected and divided into experimental and control groups.

##### **Instruments**

In order to achieve the purpose of the current research, some instruments were adopted for data collection as follows:

Firstly, as it was mentioned, the researchers provided two different paragraphs were extracted from the literary book under the title of *Lord of the Flies*, by: William Golding (1954), pages 164 and 168. One of these texts was written on white paper and another one on blue paper. Therefore, the colorful papers were the first instrument used in this study.

Secondly, the researchers posed a background questionnaire to gain some information about the participants. It contained 8 questions about students' opinions on the enjoyment of the translation and color. To prepare this questionnaire, the researchers used the questionnaire designed by Mahjoobi (2011). The questionnaires were given to the participants to be aware of some other factors that might influence the process of translation.

In addition, the quality assessment of students' translation in pre-test and post-test which Hubscher-Davidson (2009) used in her research entitled "*Personal Diversity and Diverse Personalities in Translation*" was another instrument that the researchers used in this study for evaluating students' performance.

The mentioned scale was designed to assess seven factors which are the most important factors in translation. These factors are as follows:

- Stylistic features e.g. register
- Vocabulary
- Grammar
- Idioms
- Cultural features
- Imagery/expressions
- Overall coherence of translation

#### Procedure

In the first step, a pre-test was given to the population in order to homogenize the students' knowledge of translation in the post-test. This pre-test was a short paragraph in literary type extracted from the book written by Golding (1954) under the title of *Lord of the Flies* (see Appendix A). A glossary was provided for the participants in the pre-test and post-test in which some difficult words of the source texts were translated into Persian. The Participants were asked to choose the best equivalent with respect to the function of the texts, and also they were asked not to use any kind of dictionary. The purpose of not using any kinds of dictionary and just using the glossary was to put all the students in the same condition. The students were asked to write the time of finishing their work of translating in order to obtain the average of the total times and understand how much time the students needed to translate. It lasted about 20 minutes. So 20 minutes was allocated for the post-test. It should be mentioned that all of the students wrote their personal information such as name and cell-phone number above the paper in order that the researchers can contact with them for the post test. After finishing the exam, the papers were gathered and all of the translated texts were sent for assessment. In order to avoid any bias that could affect the outcome of the study and to come up with a more accurate result in the process of translation quality assessment (TQA), three evaluators were selected. They were asked to evaluate each translation based on the method of assessment proposed by Hubscher-Davidson (2009). Before the translation papers were given to the instructors, a marking sheet (Hubscher-Davidson, 2009) had been attached to each translation paper (see Appendix C). A marking sheet contained some criteria like vocabulary, grammar, coherence and so forth based on which the evaluators evaluated each translation. The evaluators asked to consider only those criteria that could be applied to the texts for the process of assessment. Moreover, some space was left at the bottom of the marking sheets for the evaluators' comments on the translations. When the markers evaluated the students' translation and scored them. The researchers averaged the scores of three markers for each student

and then selected 50 students from the whole population whose score were in the range of 60 to 90 (out of 100). In the next step, the researchers divided them into equal groups in order to take part in the post-test. The experimental group translated the text which was written on a blue paper. The control group was those who translated the same text on a white paper. The fifty students who were chosen for the post-test were called and asked to participate in the second part of the exam. English source texts were distributed to the participants for the task of English-into-Persian translation in white paper (see Appendix B). And in the following day, the experimental group was given the test under the same condition as that of control group in blue paper. It should be mentioned that both groups were translated the same paragraph. A glossary of vocabularies was attached to each paper. The glossary contained the meaning of those vocabularies which were hard for the students. The students were asked to choose the best equivalent with respect to the function of the texts, and also were asked not to use any kind of dictionary.

After finishing the task of translation the questionnaires were distributed quickly and the participants answered the questions as they were fresh. This questionnaire aimed at providing the researchers with some necessary information about the participants such as their years of translating experiences, their performances involving translation difficulties, their opinions on the enjoyment of the translation, enjoyment of color and so forth. The researchers decided to pose the aforementioned questionnaire to be aware of some other factors that might influence the process of translation in general and the quality of translation in particular.

After finishing the exams, all fifty papers were copied on white ones in order that none of the markers become aware of the aim of study. Like the pre-test, the marking sheet attached to the translation papers and finally the papers were given to the previous markers and asked them to score the translations based on the translation quality assessment which was used in the pre-test. Again the evaluators were asked to consider only those criteria that could be applied to the texts for the process of assessment. They scored the students' translations and finally three scores for each of the translations obtained. Next, the average scores of three markers for each translation were calculated similar to that of control group.

The mean score of both groups were calculated separately. This mean score was the criterion for comparing the control and experimental groups. In addition, an independent sample t-test was used to see the mean difference of the two groups.

#### Results

Having prepared the scores and the mean scores of control and experimental groups, they were arranged into two different Tables which are presented below.

Table 1 presents the scores given by three evaluators to those participants who had translated on white papers, and Table 2 indicates the scores given by the three evaluators to those participants who had translated on blue papers.

According to these two Tables, the mean score of the experimental group is higher than that of the control group. Therefore, an independent sample t-test has been done to see whether the difference between the mean score of these two groups is significant or not.

Table 3 and 4 indicate the results of an investigation into the effect of color on translation quality. According to the significance value of Levine's test (0.471), the assumption of equal variances is accepted. The mean score of the students who

translated on blue paper (70.23) is higher than the mean score of those who translated the text on white paper (69.33). The difference observed between the quality of translation of the two groups is not significant (Sig. = 0.690). According to t-test value (0.402) and the level of confidence (95%), the above hypothesis is not accepted. It means that although the mean score of the students who translated on blue paper is more than the mean score of those who translated on white paper, the results cannot be generalized. In other words, according to the statistical analysis, the color of the sheet on which the act of translating was done had no significant effect on translation quality.

### Discussion

As mentioned earlier, color is an inseparable part of our everyday lives and its presence is evident in everything that we perceive. It is widely recognized that colors have also a strong impact on our emotions and feelings (Hemphill & Mahnke, 1996). For instance, orange has been perceived as distressing and upsetting, red has been associated with excitement, purple has been considered as dignified and stately, yellow as cheerful, and blue has been associated with comfort and security (Ballast, 2002; Wexner, 1982). Birren (1961) also states that color has an influence on our everyday personal and professional decisions by affecting our spending habits, buying decisions, or even our general personal wellbeing.

Mannel (1995) conducted a survey about the effects of color and light on the learning of eleven 6-year-old elementary school students. The study found that the students accumulated a total of 390 off-task behaviors in the standard classroom compared to 310 in the classroom with light blue walls, a decrease of 22 percent. This study was almost similar to the present study. In both, the researchers selected blue color for examining the students' performance. But the results of the present study were not the same. In Mannel's study, blue color had a negative effect on the students' performance, while in the present study the students who translated on a blue paper did their task more better than the students who translated on a white paper.

For translating some types of texts, such as literary ones, creativity can help the translators to translate better. In a study, scientists at the University of British Columbia studied more than 600 people as they performed various tasks, usually on a computer. The color of screen's background was sometimes red and sometimes blue. The experiments showed that with the red background, people did as much as 31% better at tasks, which required attention to details. But for creative tasks, like designing a children's toy, a blue background improved performance. Therefore, it was concluded that the color blue could increase creativity. In the present study, the text type chosen by the researchers was literary type and maybe the color blue affected the creativity of the students who translated on blue papers and led to increase of their translation quality.

In addition, Richmond (2009) stated that medium or dark blue are ideal for applying to rooms requiring a high level of concentration. Also, in the present study it has been showed that the color blue can increase the level of concentration of the students who translated on a blue paper and the mean scores of them was more than that of those who translated the text on white paper.

As mentioned before, the researcher gave a questionnaire to the participants after the post-test. The data collected from the questionnaires indicated some information which can explain some other factors that might influence the process of

translation, in general and the quality of translation, in particular.

According to the data collected from the questionnaires, more than half of the students (76%) have not ever translated on a piece of blue paper and all of these students claimed that they were in the habit of translating on a white paper. Table 2 indicates that the mean scores of the students who translated on a blue paper are more than the mean scores of those who translated on a white paper; therefore, it is possible to claim that if the students acquire the habit of translating on blue papers, it can help them translate better.

In addition, 80% of the participants claimed that they had problem in translating literary texts and that they preferred to translate nonliterary texts. Therefore, if the students who participated in this study had a sufficient knowledge of literary translation, the results of this study might change.

### Conclusion

An independent sample t-test indicated that the difference observed between the qualities of translation of the two groups was not significant. Also, according to t-test value (0.402) and the level of confidence (95%), the study's hypothesis was not accepted. It means, although the mean score of the students who translated on blue paper is higher than the mean score of those who translated on white paper, the results cannot be generalized. In other words, according to the statistical analysis, the color of the sheet on which the act of translating was done had no significant effect on translation quality.

The mean score of those students who did the translation on blue paper was (a little) higher than that of the students who translated on white paper; regarding this fact and since most of the students told that they were used to writing on white papers rather than blue in their questionnaires, and also taking into account the fact that color psychology says that the blue color results in more concentration, it can be concluded that if the students acquire the habit of rendering on blue sheets, the result would be desirable.

### Implications

According to the data collected from the questionnaire of this study, the students preferred to translate on white papers, but as it was mentioned in detail earlier, The mean score of those students who did the translation on blue paper was (a little) higher than that of the students who translated on white paper; regarding this fact and since most of the students told that they were used to writing on white papers rather than blue in their questionnaire, and also taking into account the fact that the blue color results in more concentration, it can be concluded that if the students acquire the habit of rendering on blue sheets, the result would be desirable. And the results can be useful for translators, students of translation, teachers and also those who work in translation centers. The researchers believe that these are the teachers who can introduce the effective color to the students, and ask the students acquire the habit of rendering on blue sheets.

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**Table 1: Percentage Scores given by the Three Evaluators to Those who translated on White Paper**

Students	Marker 1	Marker 2	Marker 3	Average
S <sub>1</sub>	71	60	52	61
S <sub>2</sub>	80	66	63	70
S <sub>3</sub>	91	74	75	80
S <sub>4</sub>	71	57	52	60
S <sub>5</sub>	82	83	78	81
S <sub>6</sub>	82	63	75	74
S <sub>7</sub>	74	63	60	66
S <sub>8</sub>	80	63	58	67
S <sub>9</sub>	71	63	52	62
S <sub>10</sub>	77	63	63	68
S <sub>11</sub>	85	57	63	69
S <sub>12</sub>	91	83	95	90
S <sub>13</sub>	82	80	63	75
S <sub>14</sub>	77	66	58	67
S <sub>15</sub>	85	72	55	71
S <sub>16</sub>	85	72	66	75
S <sub>17</sub>	74	60	52	62
S <sub>18</sub>	80	72	63	72
S <sub>19</sub>	88	69	74	77
S <sub>20</sub>	74	66	60	67
S <sub>21</sub>	80	63	60	68
S <sub>22</sub>	74	60	58	64
S <sub>23</sub>	68	49	48	55
S <sub>24</sub>	82	89	75	82
S <sub>25</sub>	68	49	48	55
Average	77.88	66.48	62.64	69.52

**Table 2: Percentage Scores Given by the Three Evaluators to Those who Translated on Blue Paper**

Students	Marker 1	Marker 2	Marker 3	Average
S <sub>1</sub>	80	77	75	78
S <sub>2</sub>	71	52	52	59
S <sub>3</sub>	71	72	69	71
S <sub>4</sub>	74	66	58	66
S <sub>5</sub>	85	83	66	78
S <sub>6</sub>	80	66	58	68
S <sub>7</sub>	80	60	63	68
S <sub>8</sub>	77	52	52	61
S <sub>9</sub>	85	75	49	70
S <sub>10</sub>	80	72	75	76
S <sub>11</sub>	85	66	58	70
S <sub>12</sub>	85	49	46	60
S <sub>13</sub>	82	66	58	69
S <sub>14</sub>	88	75	78	81
S <sub>15</sub>	85	75	58	73
S <sub>16</sub>	88	78	83	83
S <sub>17</sub>	85	52	63	67
S <sub>18</sub>	88	63	55	69
S <sub>19</sub>	82	66	63	71
S <sub>20</sub>	80	83	78	81
S <sub>21</sub>	88	72	89	83
S <sub>22</sub>	74	49	49	58
S <sub>23</sub>	80	60	58	66
S <sub>24</sub>	85	58	58	67
S <sub>25</sub>	91	60	60	71
Average	81.96	65.88	62.84	70.56

**Table 3: Descriptive Results Group Statistics**

	group	N	Mean	Std. Deviation	Std. Error Mean
Average	Blue	25	70.2267	7.25509	1.45102
	White	25	69.3333	8.42725	1.68545

**Table 4: Inferential Results Independent Samples Test**

		Levine's Test for Equality of Variances		t-test for Equality of Means				
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Average	Equal variances assumed	.528	.471	.402	48	.690	.89333	2.22400
	Equal variances not assumed			.402	46.962	.690	.89333	2.22400