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The Levels of Visual Distinction of Color Design Systems among Users of Educational Interior Spaces

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Abstract--- *The research covered the study of the visual distinction of the Color Design Systems among the users of the educational interior spaces. The research problem and target was defined in defining the levels of the visual distinction among the fine arts college students in Diyala University (Plastic Art Department, Arts Education Department). The research also defines the more visually distinct color system among the users of the educational interior spaces. Then, comes identifying the designing features of the color system which are distinguishable for most users of the educational interior spaces. During this study, a tool to measure the levels of the color distinguishable visual levels. This tool is applied on the sample of users of the educational interior levels; which is followed by implementing this tool on the sample from users of the educational interior spaces (Schools Halls) in Diyala University – College of Fine Arts in the Academic, Year (2018-2019). This sample consisted of 130 male & female & students of users of the interior spaces. This research reached a group of results including there are statistical significant differences between the visual distinction and between the male & female students and between the plastic arts department students and the arts education department and in favor of plastic arts students department. The Conclusions showed the possibility of using the research tool to measure the level of the color visual distinction for the fine arts college students in the Iraqi Universities through distinguishing the color systems for the educational interior spaces.*

Keywords--- *Visual Discrimination, Design Designs, Color, Interior Spaces.*

I. INTRODUCTION

1) Research Importance & Problem

Many studies concentrated on using certain standards to evaluate the relationship between the user and his needs inside the building. All these studies stated the existence of an influence to the building in the behavior of its users but they differed in explaining the nature and reasons of the influence.

Among these influences is the type of the design system which is used by the spaces and how to employ the interior design elements and the influence of these factors on the users of the spaces where the interior design factors play an important role in the effectiveness of these spaces. The most important factor is the (Color) which plays an important role in influencing the humans' feelings and even on the style of life of the humans' during its use for the interior spaces for the public buildings.

The way in which the color factor is employed in the design systems for the interior spaces, depends on the receiving process by the users of these spaces through their visual distinctions of the color features which are

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reflected by the color system for the interior space (especially the educational space).

The visual distinction is a knowledgeable process which enables the individuals to understand the surrounding environment and to adapt to it through the suitable behavior patterns in the light of meanings and explanations which are formed for the things. It is considered as various feelings expressions covering the surrounding world to be explained and organized in certain mental representations to form experiences from them (stored in the memory) to represent a referenced point for the behavior or the activity to which we refer during the interaction process and the adaptation process to the surrounding environment. This distinction has various levels according to the individuals themselves and the nature of their visual realization which varies from one individual to another based on the visual incentives which they receive and which are approved by the design system of the educational interior space.

Since the presence of variances in the scope of the visual distinction by the receivers or users of the interior spaces; the researcher sees it is necessary to define these variations through research and using the questionnaires forms and through using a group of research means which give us scientific results which explain the mutual relationship between the user and the space. For this reason, in addition to other reasons related to the importance of the color organization and how to overcome the interior spaces and the efficiency of the systems, there appeared the need to a study which shows the differences for the users. Concerning the color visual distinction for the used space, so as to safeguard a scientific base for the interior designer in his dealing with the color design systems and consequently, there arose a group of questions which are included in the following question: (What are the levels of the visual distinction for the color design systems for the users of the Educational Interior Spaces).

2) Research Targets

The Research aims at:

- Identifying the levels of the visual distinction for the color design systems for the educational interior spaces.
- Defining the color system which is more visually distinct by the interior spaces users from the fire arts colleges' students.
- Defining the design features for the color system which is distinct for most users of the educational interior spaces.
- Identifying the design features for the color system which are distinct for most users of the educational interior spaces.

3) Research Hypotheses

To achieve the research targets, the following hypotheses were used:

- There is no statistical significance difference at (0.05) in the visual distinction levels for the users of the Educational Interior Spaces between Female students in the Plastic Arts Department and Art Education Department Female Students according to the color visual distinction tool.

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- There is no statistical significance difference at (0.05) in the visual distinction levels for the users of the Educational Interior Spaces between Male students in the Plastic Arts Department and Art Education Department Male Students according to the color visual distinction tool.
- There is no statistical significance difference at (0.05) in the visual distinction levels for the users of the Educational Interior Spaces between Male & Female students in the Plastic Arts Department and Art Education Department Male & Female Students according to the color visual distinction tool.

4) Research Limitations

These research limitations are the subjective limit represented by the visual distinction levels for the users of the interior spaces; and the spatial limitation with the educational interior spaces including the study halls for the Fine Arts College, Diyala University. As for the time limitation, it covers the study period which was defined by the study year (2018-2019).

5) Theoretical Framework

First: The Visual Distinction for the Color Design System

The color visual distinction is considered as among the forms of the visual realization where the researcher studied the realization of the colors where scientists stated: The human's visual system treat the colors information in a way which is better than treating the other visual information. Also, the colors help the visual system in identifying the visual alerts and defining its shapes, features and location *(Ahmed &Bedr, 2007 Page: 107).*

The realization enables the individual to identify the sensual information where it represents the mechanism with which you distinguish the sensual alert and makes it meaningful that is it is an active knowledgeable process which is done through translating he senses which are transferred to the brain which in turn translates these feelings to meaningful realizations.

The researchers paid increased attention to the study of the color realization this is because the human's visual system treats the color in a way which is better that its treatment of the other visual information. These scientists stated that the colors help the visual system helps in identifying the visual alerts and defining its features, shape and location …. Etc.*(Moneh, 2010: Page: 44).*

The Visual distinction which is one form of the realization which is a compound process which include comparisons, distinctions and selections between the available aesthetical alternatives. They are expressed through pronunciation expressions or certain behavior selections *(Abd Al-Hamid, 2001, Page: 72).*

The process of virtual distinction starts by the realization through which there is surrounding with the virtual realizations and then distinguishing between analyzing to their essential components and then re-structuring them in a new complete structure. The methods of realizations vary with the variations of the senses where the virtual realization method differs from the acoustic where the first starts from the total realization to the incitement or the realized work and then is directed to the parts and then returns to the whole which becomes a new whole i.e. not the whole with which this process has started. *(Al-Taey, 2006, 164-165).*

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Note that the level of the individual's exposure to the virtual incentives depends directly on its location within the environment. In the wide and complicated spaces, the individual needs to move to view what can't be reached in terms of targets and needs. Therefore, the environmental knowledge must be known for the sake of the formation of an integrated framework for the mental representation or for the mental plan.

Rajeh (1973) sees that the realization is the process which explains the receiving through which the sensual incentives where the feeling records the environmental incentives and is explained and formulated by the realization in forms which the receiver can understand (Rajeh, 1973, Page: 18).

(Alexander) in his study (Imaging the City), stated that the importance of the realization and the thought in the exchangeable relationship in which the realization doesn't lead to the nature but to what is realized by the human. These results in achieving the self-realization and the variations in the visualizations between the human (Khalaf &Getan, 2016: Pages: 27-28).

The realization of the color represents the influence resulted from the interaction between the light and the surface and its reflection on the eye's retinal and the feeling with the color and its mental realization and then distinguishing it according to the experience of the receiver. (Al-Robeay, 2015: Page: 2).

This is confirmed by (Hamoda, 1981) in his definition of the color which he defined as the physiological influence which is generated in the eye's retina resulted from a light ray with a defined wavelength. The variation in the wavelength makes us differentiate between one color and other where it is a sense which has no existence outside the nerve system for the live creatures (Hamoda, 1981: Page: 25).

The Color is considered as the feature which distinguishes the shapes and clarifies them in the environment including the interior environment for the buildings where it is among the important building factors in the design through which the remaining factors are realized. The realization of the color occurs when a certain body reflects falling light ray with a certain wavelength and comes the eye pointing at the optical nerve causing a feeling of light and color in the brain. (Al-Robeay, 2015: Pages:13-14).

The visual Differentiation of the color is defined as an analysis of the alerts and giving them meaningful meanings and implications but there are some individuals who have difficulties in the optical differentiation including the difficulty of the virtual closure, difficulty in realizing the spatial relationships, difficulty in differentiating the picture from its background, difficulty in speed of realization and difficulty in the virtual memory and visualization.

Therefore, the virtual realization through which the realization process is done, is a compound process which consists of a group of operations including: reception, merging and analysis of the virtual incentives through compounded mental activities. This represents coping, organizing and analysis of the virtual sensual inputs such as: Shapes, volumes, distances & pictures Figure (1).

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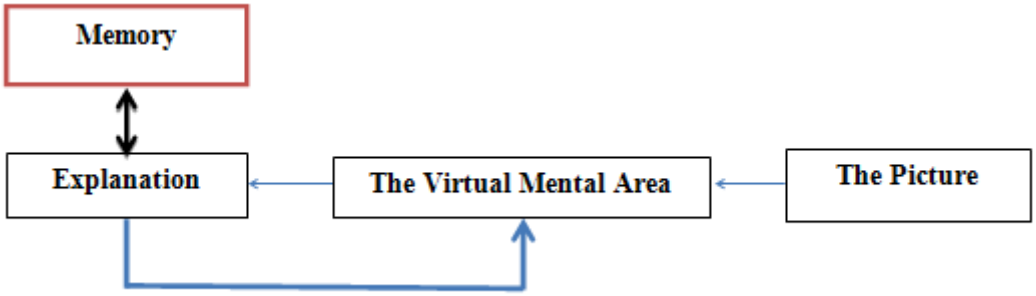

Figure 1: Stages of the Virtual Realization

FoadBahy Al-Sayed (1998) stated that the Virtual Realization is "Expressing the pictures of the Pictures on the Eye Retina i.e. it is a feeling and communication of these visions with the central nervous system and explaining it in terms of the shape, color and volume and its estimation for its meaning is a nerve realization" (Al-Sayed, 1998: Page: 123).

Looking at the Human Memory as a System for Information Processing, we find that it consists of the following three stages: Encoding, Storage and Retrieval which is considered as the most important memory operations because we can measure it directly where the retrieval concept refers to the individual's attempt to retrieve the information which has been received, learnt and stored in the long-term memory (Yasin, 2014: Page: 4).

The following are the factors for the Virtual Realizations:

1. The Degree of Brightness.
2. Proximity of things between themselves.
3. The Movement Factor: The moving thing gives the impression of movement and attracts attention more than the still object. The experience and the memorization perform an important role in realizing the color.

In general, the colors results in increasing the virtual incitement, increases the attention to the environmental stimulants which helps in a better realizing of the colored things. The increase in the incitement may results in increasing the potential in storage and on the possibility of retrieving it in the future because of the close relationship between the realization and the retrieval on the one hand and the relationship between preserving and retrieval through increasing the effectiveness of the color realization process (Yasin, 2014: Page: 3).

There are factors and conditions which must be available where some refer to interior factors such as the safety of the senses equipment's with the human and the availability of expertise with him and the psychological status. Some refers to external factors such as those related to incentives features (Light, Color). The following are the Color Realization Conditions:

1. There must be variations in the light wavelength which is received by the eye from the visual world.
2. There must be variations in the lighting reflections for the surfaces and the things.
3. There must be two or more Receptors which vary in their absorption of wavelengths which constitutes the

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visual light.

4. When it is received, there must be Coding; then this is transferred to the brain in a certain way concerning keeping the information included in the Light Spectrum reaching the Receptors.
5. There must be available an isolated and unique realization experience related to this information reaching the brain (Salih, 2006, Page: 16).

The (Color) is defined through the following Standards through which we can distinguish the Colors:

1) ***The Color Hue:*** This is the feature with which we distinguish between one color and another (Red, Green, Orange, Blue) where when me mix two colors (Red & Yellow) we get the Orange Color which is considered as a change in the Color Hue.
2) ***The Color Value:*** his is the relationship between the lighting color and the dark color that is Light Green or Dark Green. They in turn take various values in the directions of lighting or darkness.
3) ***The Saturation:*** This represents the extent by which the color is described in terms of number of color atoms in the area (color clarity). This is defined by mixing it with the white or black *(Zeit&Maad, 2008: Pages: 3-4).*

The Color design systems depend on the color theories which are used in the design in the design of the interior spaces. These theories use the color on a group of concepts connected to the color and its design and applied use and which is linked to the concept of the virtual distinction for the human and its philosophical vision and his intellectual trends. These concepts are as follow:

a) The Primary Colors: These are three colors where for each color is defined a different color (Hue); and give us when mixed all the other color features. It consists of two groups:

- Printing Colors which consist of: Red, Yellow, Blue.
- Light Colors which consist of (Red, Yellow & Green). (John F. Pile, 1997: Page: 289).

b) The Warm & Cold Colors: The Colors are divided into cold and warm colors according to the impression which comes from the view feeling where the blue color and its derivatives from the cold colors and the red color and its derivatives from the warm colors and the colors the white and black represent the neutral case for the colors between the warm and the cold colors.

c) The Color Harmony: This is defined as the good ordering of the constitute elements.

Second: The Design of the Educational Interior Spaces & Its Color Design Features

The importance of the architecture and its success depends on what human needs it provides and in safeguarding all the spaces which guarantees his requirements and achieves his interests for it. The success of these spaces (especially educational spaces) is linked to what it provides in terms of the needs for the users of these spaces where it is necessary to design these interior spaces to safeguard their requirements.

The Concept of the educational Interior Design is the life, feelings, interaction, growth and mutual influence.

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The more attention we give to the educational interior design, the more it gives us in terms of the rest and feeling of the educational process.

Following the scientific methods in designing the interior environment which plays an effective role in responding to the needs of the spaces users; The human beings are inclined to spend most of his activities inside these spaces and gives life to the architecture which it contents. The study of the design of any building is a research to an environment used by the human who is at the center of attention because he lives, eats, work and enjoys his products, health, happiness and psychological state which is largely dependent on the designed environment which surrounds him (Al-Dabagh& Al-Asady, 2015: Page: 399).

Here, arises the importance of investing the university educational interior spaces to avoid the problems which arise from not exploiting it efficiently regardless if these were social or economic problems. Also, the problem of using covers the possibility of increasing its investment to raise its performance efficiency.

Among the design features whose distinction levels and influences can be measured on the users of the interior spaces are the features or the color design systems which depend primarily on how to employ the color factor within the interior spaces specifications and on type of the space and its function which is represented in this research in the educational interior spaces. The Color is a visual feeling ordered on various light waves for the rays seen by the eye with various colors. It is considered as the external appearance for the shapes and surfaces which appear to us as the consequence of the light falling on it (Kanany&Dewan, 2012: Page: 600).

The modern era witnessed studying the Color Schemes which are related by the scientific and artistic basis for the design process. These schemes are linked to achieving the aesthetical influence for certain color groups which are proportional to the function of each space according to its nature. Among the important schemes are:

- ***The Achromatic Schemes:*** These schemes use the white, black and the calibrations between them where the variation appears at maximum between the black and white values.
- ***Chromatic Grays Schemes:*** These are defined as the neutral calibrations which mean using dark colors which approaches the gray color with its calibrations that is using colors with very low value of the color saturation.
- ***Monochromatic Color Schemes:*** These Schemes are based on using calibrated values in the value of the dark and light for the monochromatic color such as blue color i.e. one controlling color.
- ***Analogous Color Schemes:*** These are the adjacent colors in the color circle.
- ***Triadic Color Schemes:*** These schemes include the Red, Yellow & Blue that is the use of three colors which are equal in their sectors for the color circle (Zeit&Moad, 2008: Page: 360).

The Color element in the interior design several functions where this covers attracting the attention which depends on the variation. This attraction increases whenever the use of this effective element was more in opposite to according to the color system approved in the interior design for these spaces. Consequently, the process of the visual tension is achieved which is in addition to the aesthetical value and adding reality and vitality and creating the

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effective psychological influences through its several relationships including the variance and calibration.

The Variance is employed to move the form and to distinguish it from the space. The construction elements in the design help in the potential of investing them to achieve the predominance and guiding the receiver to its target to grant it a unity in the idea within the general framework (Al-Robeay, 1999, Page: 20).

The variation occurring as the consequence of the variation in the color degrees in the same receiving point, generate for him various impressions which pushes him to release his judgment that there are special depths which result in this diversity. This "Color diversity decided by the designer and its calibrations will result in achieving a strong feeling by the receiver by the depth and the movement" (Al-Gebory, 1997, Page: 33). According to this, we can count the diversity in the color by itself to create the feeling of movement "And that it transfer the receiver sight from one color spot to another where it starts in one location and ends up in another location". The human being realization of the distances is influenced greatly for the existence of features characterized by the colors when used and allows for the estimation of the distance and the real dimensions for the shape. The Psychological Experiments in the scope of studying the colors, proved that some color looks during the design that it is nearer to the receiver and more advanced than others which seem to be far away. The colors group which are defined as (Hot Colors) are defined from the First Class (Advanced) whereas the group of cold colors are the late class.

6) The Previous Studies

The research performed the Questionnaire Forms and searching through the literatures and the specialized scientific references including research and studies which looked into the color design schemes scopes which are included in the specialties of the interior design and the architecture. But the researcher didn't find any study which specialized in finding a relationship with the interior design research. Despite this, the researcher found a number of color studies which were utilized in the theoretical part of this study. Examples of these studies is the study by: Hossam Dabs &Zeit, Abd Al-RazakMoad: "The Functional & Aesthetical Dimension for the colors in the contemporary interior design" which is published in Damascus University Magazine in Year 2008; and the study by Mohamed Abd AL-Rahman Al-Gibory "Employing the Color Systems in the Design of Sino graphic Theatrical Iraqi Presentation" published in the Main Education College Year: 2012. And a study by TawfikAbd Al-Rahman TawfikGibriel, "The Influence of the Color in the Interior Spaces on the Marketing Activity for the Commercial Centers", Engineering College, Islamic University, Gaza, 2013; and the study by Ali Hussein Khalaf Al-Saady "The Effectiveness of the Color Relations in Promoting the communication with the Visual Art", College of Fine Arts, Babyl University, 2016. And a study by Amira Ahmed Al-Eisawy "Employing the Visual Incentives (Color Features) in increasing the efficiency of the interior design performance for the Closed Sports Hallsfor the Collective Sports" which is published in the Arab Universities Union Magazine for Engineering Studies & Research 2017.

7) Research Procedures

First: The Study Sample &Population

The research hypotheses were tested on the educational interior spaces users in Diyala University, Fine Arts College (Male & Female) Students where the interior spaces in the theoretical studies halls were defined which are

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used by two scientific departments students in the college which are: (Plastic Arts Department) and (Arts Education Department). The researcher used the comparative descriptive methodology in the current research procedures.

- ***Research Population:*** The current research population covered all the Fine Arts College Students in Diyala University for Academic Year: (2018-2019) whose numbers equals (800) make and female students from the morning session.
- ***Research Sample:*** The researcher the simple random method in selecting the research sample from which was selected students from the four stages for students from (Plastic Arts & Arts Education) departments.

The Sample size is (150) male and female students who are distributed as follows:[(65) male and female students from Plastic Arts Department] and [(65) male and female students from the Arts Education Department].

Table (1) shows the research sample individuals distributed according to the (Sex) and the (Percentage) for each of the male and female students.

Table 1: Distribution of the Sample According to (Type)

kind	Plastic Arts Dep.	Arts Education Dep.	Number	Percentage
Students (Male)	33	33	66	50.76%
Students (Female)	32	32	64	49.23%
TOTAL:	65	65	130	100%

Table 2: Distribution of the Sample according to (Study Stages)

Users Category	Plastic Arts Dep./Students	Artists Education Dep./Students.	Total Number	Total Percentage
First Stage	13	12	25	19.23%
Second Stage	15	16	31	23.84%
Third Stage	22	22	44	33.84%
Fourth Stage	15	15	30	23.07%
T O T A L	**65**	**65**	**130**	**100%**

Second: The Research Tool

To achieve the target of the current research, its procedures required preparing a tool for the color visual distinction where the researcher prepared the tool after exploring many measures and tools specific to the concepts of the realization and the Arab and international visual distinction.

Third: The Color Visual Distinction Tool

Which is a form which includes several colors taken from the color scheme for the interior spaces for the study halls. Four study halls were selected from the theoretical studies halls used by the plastic arts department students and the arts education department.

The researcher prepared a research tool using a (Color Detector) Program which discovers the color scheme for any interior space and distinguishes the type of the colors which are looked at. The researcher used this program (12 Colors) to define the colors of the theoretical study halls (Interior Spaces) where only (12 Colors) were used for each interior space which is represented in the study halls used by the two scientific departments' students.

Then, the researcher prepared a form directed to those benefitted (male and female students) where this form was

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designed on the forms of colored tapes which represent the interior spaces colors which ere sorted by the color distinction program. Then, they are presented to the interior spaces users during their presence in the educational study hall. The students have to distinguish (12) colors out of (48) colors which represent the total halls colors. In case of the student selecting (6) color or more which represent the study hall colors which he uses, then he is considered as having a visual color distinction where the estimation ofthe visual distinction level remains through defining the number of correct colors divided by the total (12) colors which were previously-defined by the researcher. The Total ratio can be presented though adding the repetitions of the color visual for all the student where distinguishing (6) colors represent 50% of the potential for distinction whereas distinguishing (12) colors represents ability to distinguish the colors at 100%. Table (3) shows how to calculate the Ratio of the Color Visual Distinction at the level of the one individual which represent the student male or female from the selected research sample.

Table 3: How to Calculate the Standard of the Color Visual Distinction

The number of colors distinguished by the users of the educational interior spaces											
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
8.3%	**16.6%**	**25 %**	**33.33%**	**41.6%**	**50%**	**58.33%**	**66.66%**	**75%**	**83.3%**	**91.6%**	**100%**

Among the features of this program used by the researcher is defining the type of the color design scheme for these interior spaces and their color schemes. This assisted the researcher in responding to the research hypotheses during implementing the research tool on the selected samples from the fine arts college students.

Fourth: The Apparent Validityof the Tool

The measure periods were presented on a group of specialized experts and their opinions were taken concerning the representation of the paragraphs of the measure tool to the character and the validity of the tool for the current sample. The apparent validity was achieved for the research tool through presenting it to a group of experts where no change was occurred on the paragraphs where all experts agree on its validity at 100% on all axes and therefore the measure became ready for experimentation on the research sample.

Fifth: Steadiness

The researcher calculated the value of the Coefficient of Steadiness for the research tool. For this purpose, the research tool was implemented on an exploratory sample consisting of (30) male and female students from the fine arts college students evening study dated 6/3/2019. After two weeks, the tool was re-implemented on the same student dated on 20/3/2019. When calculating the Coefficient of Correlation (Pearson), it became clear for the researcher that the value of the Tool Steadiness Coefficient is (0.84) which is a good coefficient of steadiness which is statistically significant and implies the steadiness of the visual distinction tool.

Sixth: Implementing the Research Tool on the Main Sample

Having confirmed the validity of the research tool (Visual Distinction); it is applied on the research sample which equals (130) male and female students from the Fine Arts College Students (Diyala).

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Seventh: The Statistical Methods

The research data related to the samples are input into the computer and processed through SPSS Program so extract Pearson's Correlation Coefficient to extract the steadiness by the method of re-testing and the percentage to extract the validity of the contents of the experts, Arithmetical Mean for the research results. This is in addition to the Second Test i.e. (t-test).

Eighth: Results, Conclusions & Recommendations

***Results*:** Having collected the data obtained from implementing the color visual distinction tool (prepared by the researcher) on the main research sample and analyzing the research results statistically, the results appeared as follows:

1. Concerning the First Hypothesis which stated: There is no statistical significant difference at (0.05) significance level in the visual distinction levels for the users of the educational interior spaces between the female students in the plastic arts departments and the female students from the arts education department according to the color visual distinction tool. According to the color visual distinction levels measure on the research sample and after statistically processing the data using SPSS Program. The results showed that average answers of first sample (Plastic Arts Department) equaled (32) with a Standard Deviation equaled (1.671) whereas Average Answers of the second comparison sample (Arts Education Department) equaled (13.65) with a Standard Deviation equals (1.504) and by using the (T-test) of two independent samples for the differences test between the two averages. Using the second test (t-test) for two independent samples to test the differences between the two averages, appeared that the second extracted value equal (0.361) which is greater than the tabular second value which equals (0.246) at (0.05) significant level and at (31) Degrees of Freedom. This means that there are statistical significant differences which reflect the existence of visual distinction for fine arts college female students, Diyala, but it is in favor of female arts education department female students.

Table 4: The Second Test for Finding the Significance of the Differences According to the Measure of the Visual Distinction Measure

(Plastic Arts Department& Art Education Department).

Sample	Number of Sample's Individuals	Average	Level of Significance	Standard Deviation	Calculated t-value	Tabulated (t)	Level of Signif.
Art Education Dep.	32	14	0.724	1.671	0.361	0.246	0.05
Plastic Arts Dep.	32	13.66	0.724	1.505			0.05

2. Concerning the Second Research Hypothesis: There are no statistical significant differences at (0.05) significant level in the visual distinction levels for the users of the educational interior spaces between the plastic arts department students and the arts education department students according to the color visual distinction tool. Through applying the color visual distinction tool on the research sample from the plastic arts department students and the arts education department students, an after statistically processing the data using SPSS Program, the results

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showed that average answers from first sample (Plastic Arts Department equal (13.63) with a Standard Deviation equals (1.741) whereas the comparative second sample answers (Arts Education Department Students) equal (13.40) with a Standard Deviation equals (1.642) and by using the second test (t-test) for two independent samples to test the differences between the two averages, it appeared that the extracted value equals (0.171) which is greater than the second tabular value which equals (0.063) at (0.05) Level of Significance and (32) Degrees of Freedom. This means that there are statistically significant values which reflect the existence of a color visual distinction for the Fine Arts College Students, Diyala but it was in favor of the Plastic Arts Department Students.

Table 5: A Test to find the Significance of the Differences Based on the Visual Distinction Measure

(Plastic Arts Department & Art Education Department).

Sample	Number of Sample's Individuals	Average	Level of Significance	Standard Deviation	Calculated t-value	Tabulated (t)	Level of Signif.
Plastic Arts Dep.	33	13.63	0.868	1.741	0.071	0.063	0.05
Arts Education Dep.	33	13.40	0.868	1.642			0.05

3. Concerning the Research Third Hypothesis which stated: There is no statistical significant difference at (0.05) significant level in the levels of the visual distinct levels for users of the educational interior spaces between the male and female students of plastic arts department and the female and male students of the arts education department according to the color visual distinction tool. The results showed that average answers of the total sample individuals (Plastic Arts Department) equals (13.64) with a Standard Deviation equals (3.012) whereas average answers of the second comparative sample individuals (Arts Education Department) equals (13.65) with a Standard Deviation (3.931).Using the second test (t-test) for two independent samples to test the differences between the two averages; it appeared that the extracted value equals (0.987) which is greater than the tabular value which equals (0.320) at (0.05) Level of Significance and at (64) Degrees of Freedom. This means that there are statistically significant differences which reflect the existence of color visual distinction for the Fine Arts College Students – Diyala but this was in favor of the Plastic Arts Department Students. Look at Table (6).

Table 6: The Test for Finding the Significance of the Differences according to the Visual Distinction Measure

(Fine Arts College – Diyala).

Sample	Number of Sample Individuals	Average	Level of Significance	Standard Deviation	Calculated (t) Value	Tabulated (t) Value	Level of Significance
Arts Education Dep.	65	27.56	0.346	3.012	0.987	0.320	0.05
Plastic Arts Dep.	65	25.56	0.347	3.931			0.05

This result explains that the Fine Arts College Students, Diyaladealt effectively with the requirements of the visual distinction tool requirements which is definitely linked with their skillful and knowledgeable standards in the

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scope of colors and the color realization and type and specialty of the study which they belong to. This is in addition realization of the interior spaces and responding to them is directly influences with the type of visual incentive and strength of its understanding and factors of attraction which he owns in addition to the sensual incentives for the sample individuals. But this visual distinction was in favor of the Plastic Arts Department and with a variation ratio which is very small for the Arts Education Department Students.

Through the above stated results and the stated research hypothesis, the research refuses accepting the three Null Hypotheses to ensure the presence of statistical significance at (0.05) level between the Plastic Arts Department Students and the Arts Education Department Students and in favor of the Plastic Arts Department Students.

1. As for achieving the research targets, then for the first target we notice that the research targets were achieved. The first target which stated the need which defines the levels of the visual distinction levels for the color design systems for the users of the educational interior spaces users was achieved through the study results which were previously presented. As for the second and third targetwhich stated the need to identify the color system which is more visually distinct by the interior spaces users. Also, is the need to identify the design features of the color system which is distinguishable for most educational interior spaces users. These targets were also achieved which is something will be stated in the research conclusions.

II. CONCLUSIONS

The research reached the following conclusions:

1. The Level of the color visual distinction for the sample's individuals (Plastic Arts Department and the Arts Education Department) is very close. This is in addition to the a proximity of the visual distinction at the levels of Type and Sex (Male & Female Students).
2. The Level of the visual distinction for the research sample individuals ranged between (41.66 – 66.66%) which may not be a high color visual distinction but it is within the acceptable limits especially that there is various factors on which the distinction and realization process inside the study halls spaces depend on despite they are not typical interior spaces in term of the type of used illumination and their reflection on the surfaces of the interior spaces in terms of the walls and floors. The used colors in the finishing are not of high quality and type of used furnishing and other factors influenced the method and accuracy of the color visual accuracy for the students.
3. The Students answers showed that the color visual distinction is at 75% in favor of the cold colors whereas the ratios of the correct answers concerning grades from the warm colors represent 63.4%. This shows that the color system whose design contains color degrees of cold colors in designing the study halls, is more distinct by the scientific department’s students in the Fine Arts College, Diyala University.
4. The questionnaires results performed by the researcher before and during the study showed that the features of the color system is the nearest to the realization and distinction of the students. This is what was shown by the results of the research that the color system is more distinguished among the neutral or integrated colors knowing that there is no color design system which uses the main or secondary colors completely in

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the color system for the educational interior spaces for the Fine Arts College in Diaya University. The followed system is a singular, neutral, integrated and using various color grades from these systems.

III. RECOMMENDATIONS

1. The Researcher recommends using the research tool (Color Visual Distinction) in measuring the color visual distinction level in the Fine Arts Colleges in Iraq.
2. Using the color computer programs in preparing scientific research in the field of the color responses for the Iraqi Universities Students.

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Tenth: The Appendixes

Appendix (1): List of Names of Experts

No	Name	Scientific Title	Work Location
1	DrAaad Mahmoud Hmady	Professor	Fine Arts College, Diyala.
2	DrNagmAbdAllahAskar	Asst Prof.	Engineering College, Architecture Department.
3	Dr Golan Hussein Alwan	Asst Prof.	Diyala University, Continuous Education.
4	DrWalid Ali Habeib	Lecturer	Fine Arts Institute, Diyala.

Appendix (2): The Color Systems Used in the Study Halls Covering the Research Samples.

Hall No: 4	Hall No: 3	Hall No: 2	Hall No: 1

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