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Applying Rapid Learning Methods Using Graphic Programs to Benefit from Them in the Field of Design for a Sample of Art Education Students at the Faculty of Specific Education Ain Shams University

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Abstract

Usage of Computer Graphics Programs in the Light of Rapid Learning Methods in Design of Art Education Students Sample, Faculty of Specific Education, Ain Shams University

This research aims to emphasize the importance of using some computer and Smart phone's graphic programs and to benefit from them in the field of design. It also reveals how to benefit from the advantages of rapid learning to give the students the best education and enhance their skills by using these programs (adobe Photoshop, Adobe Illustrator, Imoengine). The face was chosen as a key vocabulary in the paintings with the interest in detection and experimentation by combining the analysis of the face through digital photo processors using gouache colors and transfer them by these processors in an art form to enrich the design field.

Research problem:

the researcher wonders how and to what extent benefit from applying rapid learning methods using Graphic programs to benefit from them in the field of design for a sample of art education students at the Faculty of Specific Education Ain Shams University.

Research Objectives:

Disclosure of how to apply rapid learning methods using Graphic programs in the field of design for a sample of art education students at the Faculty of Specific Education Ain Shams University

Research hypothesis:

There is a positive relationship between applying rapid learning methods using Graphic programs and the field of design for a sample of art education students at the Faculty of Specific Education Ain Shams University

Most results are positive to confirm the importance of this research.

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Introduction:

The researcher noted the existence of problems facing the student of art education in the first year since the beginning of his reign to join the Faculty of Specific Education for the allocation of “design”,

and these problems are represented in his confrontation with new experiences in this specialization and dealing with the elements and foundations of design, and traditional materials and tools that need many practices that continue until his graduation and not the completion of his burdens in the first year. In this context, the researcher tried to resort to the computer, which has become more widespread among individuals at different ages as a way to help the new student in the field of design depending on his previous and new experiences to reach a design that possesses the satisfaction of the student and the teacher at this time, and all of the above is done in the light of rapid learning methods, which satisfies the student's motivation for achievement. The researcher has chosen the human face as a subject for expression in the field of design, where students share the existence of previous experiences around it, in addition to the importance of the human form in general as a subject of artistic expression among all individuals at different ages, and interest in this topic increases among individuals in adolescence until some have confined the concept of the ability to draw in the ability to draw the human form. The following researcher sheds light on some of the previous points, the use of computers and devices in teaching can be traced back to (S.J. Pressey, 1926), and then modified by (B.F.Skinner), who developed a number of educational programs, and required of the art teacher to prepare educational programs, analyzed, revised and evaluated in a manner consistent with the age and mental level of the student is a joint responsibility between engineers and computer designers, software developers, and art education professors. "The computer is one of the manifestations of the relationship between technology and art, as the artist employed the computer as an innovative medium, and considered it a mental partner, and the ultimate creative tool." (Mervat Zaki, 1978)

Challenges Faced by First-Year Art Education Students

1. **New Experiences**: Students encounter new experiences in the specialization of design, dealing with elements and foundations of design, and traditional materials and tools that require extensive practice.
2. **Technological Integration**: The researcher suggests using computers to aid new students in design, leveraging previous and new experiences to achieve satisfactory designs for both students and teachers.
3. **Human Face as a Subject**: The human face is chosen as a subject for expression in design due to its familiarity and importance in artistic expression, especially among adolescents.
4. **Historical Context**: The use of machines and devices in teaching dates back to (S.J. Pressey, 1926) and was later modified by B.F. Skinner, emphasizing the need for art teachers to prepare, analyze, revise, and evaluate educational programs in collaboration with engineers, computer designers, software developers, and art education professors.

The rule of Computer in Art Education

1. **Role of Computers**: Computers implement ideas presented to them, reducing human effort and assembling physical elements to create art. This differs from manual production, which is influenced by personal and environmental factors.
2. **Freedom from Constraints**: Computer technology in design has removed many restrictions, freeing artists from the constraints of two-dimensional painting and allowing for the generation of shapes and elements from multiple angles.
3. **Positive Educational Impact**: According to (Fath al-Bab Abdel Halim, 1995)), computers play a positive role in education by providing fast feedback, helping art learners quickly understand right and wrong, and progressing through educational situations efficiently.
4. **Accelerated Learning**: The current research confirms the effectiveness of accelerated learning methods in developing design problem-solving skills through plastic treatments of the human face. Accelerated learning, as described by American expert (Dave Meier, 2000), is a type of social learning based on interdependence and cooperation, moving away from traditional education patterns like indoctrination and memorization.

Nature and Artistic Creativity

1. **Learning by Doing**: (Dave Meier, 2000) asserts that the best type of learning comes from performing the skill directly, rather than just attending a slide show or reading a book. This hands-on approach is crucial for skill acquisition.
2. **Interaction with Nature**: Learning depends on interaction with the surrounding environment. Nature remains a fundamental source of artistic creativity, gaining meaning through the artist's interaction with it. This interaction helps crystallize the artist's style, reflecting their culture and experience.
3. **Developing Aesthetic Sense**: Students' aesthetic sense can be developed by observing natural elements, drawing inspiration from their forms and compositions, and expressing their vision through modification, alteration, and reorganization of elements.
4. **Human Face as a Symbol**: The human face, with its ambiguity, depth, and expressive values, has always attracted artists. It serves as a natural symbol that offers countless solutions and forms, demonstrating the essence of creativity.
5. **Artistic Pleasure**: (Ibrahim Issa, 2011) mentions that the art of faces is highly attractive to students, providing artistic pleasure through capturing expressions, sensations, and emotions. (Mostafa Abdel Aziz, 2008) notes that the human form is particularly exciting for adolescents, making it a compelling subject for artistic exploration.

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The importance of research:

1. Emphasizing the importance of the role of computer programs and smartphones in the field of design.
2. Employing the capabilities of these programs to present artworks that address a recipient who carries this modern culture.
3. The possibilities of computer programs are an interesting way to develop artistic taste.
4. Encourage the student to experiment and discover.
5. These programs allow to show individual differences through the method of use, which encourages the demonstration of distinctive artistic imprint that allows a degree of unexpected liberation and creativity.
6. Accelerated learning contributes to the launch of students from the space of imitation and simulation to innovation.

Sixth: Research Methodology:

The current research methodology falls within the so-called Pre- Experimental Designs, called by (Campbell & Stanley, 1966), which is one of three preliminary experimental designs, based on one group with dimensional measurement only and its procedures are as follows:

1. Selecting a group of individuals (research sample) in some way, and in the current research the sample represents all students of the first year of art education at the Faculty of Specific Education, Ain Shams University.
2. This group is exposed to the experimental variable (here the subject of the human face) for a while (here are three encounters).
3. A post-test (T2) is performed to measure performance after experimental treatment, and in the present research the researcher uses some axes for this measurement (Ali Maher Khattab, 2008).

Seventh: Research Limits

1. **Objective limits:** use of graphic computer programs, Rapid learning – human form.
2. **Human limits:** The strength of the current research sample is 92 male and female students representing the original (total) community of the first year of art education at the Faculty of Specific Education, Ain Shams University, and their ages are between the ages of 18 and 20 years and are classified within the late adolescence period according to the division of Hamed Zahran (Mostafa Abdel Aziz, 2008).
3. **Time limits:** Second semester of 2023.
4. **Spatial boundaries:** Lecture Hall in the Department of Art Education, Faculty of Specific Education - Ain Shams University.

Tools and Raw Materials

1. Computer Tools:

a. Adobe Photoshop
b. Adobe Illustrator
c. imaengine

2. Materials

a. Two paper 300gm, size 40 × 40 cm.
b. Gouache brushes of different sizes.
c. Gouache and pallet colors of different sizes

3. Research tool Description form for artwork in the field of design (prepared by the researcher).

Research Terms

1. **Computer:** It is an electronic device that works under the control of specific instructions represented in the programs stored on it, and has the ability to receive and store data and carry out many operations to process it and extract the information required from it, in a very short time and computers have the property of extreme accuracy in processing instructions and data, and with a little care and maintenance can work with the computer for long periods without stopping(Hosni Ali, Khaled Masrour, 2003).
2. **Accelerated learning:** Dave Meier defined it as natural learning that simulates human instinct and gives it the first place in creativity (Dave Meier, 2000). It is measured by results and is therefore open and continuously evolving. The researcher defines it procedurally as a simplified way in which the student learns through the field of design and in which the effort is less, and the results are greater.

Associate Studies:

The related studies were classified into two axes:

A- The first axis:

Studies related to the use of graphic computer programs in the field of design.

(1) (Ihab Muhammad Ali, 2002)**:**

"Preparing a multimodal computer program to enrich the decorative painting and measure its impact. "

Research Objectives and Achievements

The Research aims to:

1. **Prepare a Multi-Means Program**: Enrich the structural formation in decorative painting.
2. **Design and Prepare a Program**: Identify the impact of this program on fifth-year students at the Faculty of Art Education.

Achievements:

- The research goal was successfully achieved.

Commentary on Studies Using Computers in Design:

1. **Development of Abilities**: Studies on the use of computers in design have shown significant benefits in developing students' abilities.
2. **Enhancing Balance and Creativity**: These programs help in enhancing balance and creativity among students.
3. **Complementary Study**: The current study complements this technological path, building on previous research to further develop students' skills.

(2) (Muhammad Hassan Ghoneim Hassanein, 2011):

"Design values of plastic formulations of photographic image elements."

Research Objectives and Achievements

The research aims to:

1. **Prepare a Multi-Means Program**: Enrich the structural formation in decorative painting.
2. **Design and Prepare a Program**: Identify the impact of this program on fifth-year students at the Faculty of Art Education.
3. **Document the January 25 Revolution**: Convey and document the intellectual and cultural reality of the January 25 revolution as a fertile source for the selection and expression of human gatherings through graphic processing of computer programs.

Achievements:

- The research goal was successfully achieved.

Commentary on Studies Using Computers in Design:

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Impact of the January 25 Revolution on Graphic Design:

1. **Cultural Documentation**: The revolution provided a rich source of cultural and intellectual material that can be documented and expressed through graphic design.
2. **Graphic Processing**: Utilizing computer programs to process and represent the human gatherings and events of the revolution enhances the visual communication of these historical moments.
3. **Educational Integration**: Integrating these elements into the curriculum helps students understand and creatively express significant cultural events through modern graphic design techniques.

(3) (Maha Mazyad, 2013):

"Computer programs used in photography as a starting point for developing the creative abilities of basic education students."

The study focuses on integrating computer programs to innovate and enhance teaching methods in basic education. It highlights the use of various photography-related software to develop new teaching strategies for primary education. The programs mentioned include:

- **Magic Painter**: A digital painting tool that allows students to explore creativity and artistic skills.
- **Art Rage**: A realistic painting program that simulates traditional painting techniques.
- **Sketch Book**: A drawing and painting application that provides a wide range of tools for artistic expression.

- **Inspiropro**: A creative software designed to inspire and facilitate artistic projects.

By incorporating these programs, the study aims to:

1. **Enhance Creativity**: Encourage students to express themselves through digital art.
2. **Improve Engagement**: Make learning more interactive and enjoyable.
3. **Develop Technical Skills**: Familiarize students with digital tools and techniques.
4. **Update Teaching Strategies**: Introduce innovative methods to keep up with technological advancements.

This approach not only modernizes the curriculum but also increases the importance and relevance of the material being taught.

(4) (Mohamed Ahmed Hafez Salama, 2015):

"Artistic techniques for design formulations using Photoshop and their impact on building decorative paintings."

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2- The second axis:

Studies related to accelerated learning:

(1) (Erland, 1999 study) **:**

"The effectiveness of a rapid learning program in improving the academic achievement of a group of schoolchildren."

Study Summary

- **Participants**: 69 students from grades 4-8.
- **Groups**: Control and experimental.
- **Method**: Semi-experimental approach.
- **Training Program**:
  - Duration: 10 weeks
  - Session Length: 40 minutes
  - Focus: Visual, auditory, and tactile skills training
  - Goals: Overcoming learning difficulties and improving memory
- **Results**: Significant differences in basic skills tests, favoring the experimental group.

(2) (Fuller, 2001):

"The Impact of an Advanced Program on Accelerated Learning in Mathematics and Science."

The study aimed to examine teachers' views on the changes in their teaching methods of two subjects and the resulting changes in students. Conducted in Massachusetts schools, it focused on:

- **Development of Critical Thinking**: Encouraging students to analyze and evaluate information critically.
- **Cooperative Learning**: Promoting teamwork and collaborative problem-solving.
- **Accelerated Learning**: Implementing faster-paced learning strategies to enhance student engagement and retention.

Results:

- **Positive Feedback**: Both teachers and students enjoyed the program.
- **Classroom and Community Impact**: The program was effective in enhancing the learning experience within the classroom and the broader school community.

(3) (Study of Jenkis et al., 2010)

"The Impact of a Accelerated Learning Program on Students."

The study aimed to evaluate the impact of the Accelerated Learning Program (ALP) on 104 students from the University of Baltimore.

The program focused on enhancing English language skills, particularly writing. The findings confirmed the program's effectiveness in improving students' writing levels.

Exploring Faculty Perceptions of the Impact of Accelerated Developmental Education Courses on their Pedagogy: A Multidisciplinary Study.

(4) (Nicolette & Briony, 2010):

"The impact of accelerated learning on students' skills, teaching abilities and academic achievement."

Study on Accelerated Learning Lessons

Objective:

- Detect the impact of accelerated learning lessons on students.

Methodology:

- **Interviews**: Conducted with university members who underwent 12 accelerated learning sessions over six weeks.
- **Questionnaire**: Analyzed responses from students.

Findings:

- **Positive Results**: Accelerated learning lessons significantly increased students' motivation and confidence in their learning.

(5) (Wilkins et al., 2010)

"The impact of a program in teaching in the way of self-learning on students."

The study aimed to reveal the impact of this on a sample of students and distribute questionnaires to students to find out their opinions on this program or not,

Results: at the students enrolled in the program obtained superior grades in mathematics and English and praised the effectiveness of this program.

(6) (Nahla Saber Tawadros, 2014)

"Accelerated learning as one of the training methods that contribute to solving the design problems facing some students in silkscreen printing."

The study aims to reveal the importance of a program in accelerated learning for art education students at Port Said University in the subject of silkscreen printing to enrich them in this subject after they are unable to do so.

Commenting on previous studies:
the study of Nicolette, Briony & Wilkins et al. With them the study of Nahla Tawadros has already proven the positive impact of their use of rapid learning methods in improving students' abilities and increasing their motivation, although we are in dire need to raise the status of the educational system, especially in the design material at the Faculty of Specific Education, Ain Shams University, and the current study is complementary to previous studies in this curve.

Table (1) Subject Progress, Objectives and Basic Concepts

Basic concepts	Objectives	Progress of the topic	Number of weeks	Duration	Sequence
Design concepts, computer programs used and current research (see after this table). (1) Coloring means the process of arranging and installing and organizing elements within a painting. (2) Color: It is the physiological effect resulting from the retina. This color is determined by three qualities: - But the color . That is, its origin. - The intensity of the color, i.e. its purity. - Color clarity. (3) Area: It is the confined and specified space between the lines, which is the unit of building the artwork. Spaces differ from each other in many respects, including their number, size, location and shape. Stages of accelerated learning: 1 – Preparation stage: It is the stage of attracting attention.	1- To train on the appropriate and best shot for him skillfully and accurately. 2- Can store the personal photo. 3- Can use the computer. 4- Training on computer programs and graphic smart phones. 5- Flexibility in dealing with the capabilities of the computer. 7- The ability to experiment and discover using color. 8- Training to face technical problems and search for distinct solutions to them. 9- Deepening visual vision through continuous observation processes. 10- To know the design and suggestive tricks that the designer resorts to to confirm his idea.	**First interview:** Theme: Human Form: 1- The researcher asks the student to photograph himself or any other person. The second step is to enter what was photographed on the computer to convert them into color spaces with the ability to change the original colors of the image and the way to process and analyze the areas of the shape. **2- Second interview:** The researcher asks the students to download the computer result on a 40×40 cm lottery paper in order to color it while giving them absolute freedom in free experimentation and discovery. **Third Interview** The researcher asks students for the freedom of coloring, experimenting and discovering this element (color and	one week week A gun week A gun	3 Hours 3 Hours 3 Hours	1 2 3

2- Presentation stage: It is the first stage of presentation of new knowledge and skills and is considered the confrontation between the learner and the teacher. 3- Exercise: integration of knowledge. 4- Performance stage: any application of what the learner has learned on the computer.		space) and encouraging them to color compositions, transparency, gradation, contrast and compatibility, all in order to help achieve various color dimensional values and the coherence of the parts of the artwork, which helps the unity of the artwork.			

Concepts: Design, computer programs and smartphones used in the current research:

(1) Design:

- (Ahmed Rashdan and Fath al-Bab defined, 1990) design as "plastic innovation or the creation of pleasant, beautiful things and that the whole process of planning and creating a form in a functionally satisfactory way that is beneficial, beautiful and pleasant."
- (Robert Gillam Scott, 1980) defined it as "a fundamental work of man and defined design as the creative work that fulfills its purpose."
- (Abdel Fattah Riad, 1995) defined it "to approach thinking and creativity, which is beyond just arranging elements and composition in the sense of designing all the elements that make up the form."

Design elements and foundations: It means everything that can be seen in the artwork, including these elements point, line, space, space, mass, shape, floor, color, lighting, shade, texture and plastic vocabulary, and these elements are repeatable, juxtapose and exchange to be a whole that achieves a specific purpose (Robert Gillam Scott, 1980).

The more these elements are available in the artwork, the more intense the aesthetic vision and the more enjoyable and creative the aesthetic experience becomes.

The student relies on his innovative ability to move and exploit the potential of the basic elements to achieve successful training and design work.

The practice and experimentation of design elements activates and stimulates the imagination and creativity of the art student, and the basics of design are no less important than its elements, as they are an essential factor for the integration of the construction of the artwork, which are rhythm, balance, unity, symmetry, sovereignty, dependency, proportion, proportion, the center of sovereignty, movement and attracting attention.

(2) Adobe Photoshop:

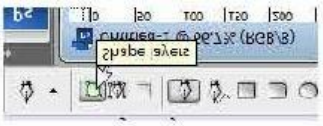
It is a design application for graphics, photographs, illustrations, as well as three-dimensional artworks and animation, in addition to that it designs websites of Internet pages and mobile applications, modifies videos, and modifies colors in them, and it also designs posters, logos and computer icons.

Also, for photography, it has a full set of professional photography tools to convert shots into works of art, it also contributes to the repair, refinement and adjustment of old images, the addition of effects using color, and it converts non-colored images into color.

Steps:

In the beginning, the images to be converted are selected through the File menu and then Open. After that, from the layers window, the background layer is repeated twice.

The view is then blocked from the first layer. The middle layer is worked on, and automatically desaturate your image, is done through ctrl+shift+U and it turns into black and white. Then the posturize is done through image>adjustment<posturize, after that we dilute the transparency of the layer that is posturize a little to be a guide tool for us then in the conversion process.



After that, we start creating a new layer and use the Line tool with the fill tool , provided that the color used for each area of the image is through the eye dropper tool until the panel ends as shown in the first explanation.

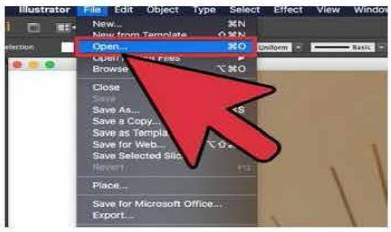
(3) Adobe Illustrator:

It is a program used to design logos, icons, drawings and complex illustrations in the fields of typography, web, video, as well as for mobile phones, and also in the design of books and billboards, through drawing tools you can convert shapes and colors into logos and icons, as the work of that program is characterized by having a specific idea and direction to be used as a logo and illustration, so the file size can be reduced to suit the mobile phone and also increase its size to suit the size of billboards, in addition to also merging company names into logos or design Publications or websites using the software tools, as well as modifying the writing and letter systems used to implement designs that express the desired objective.

Steps:

Initially, the program system is changed from essential to tracer, which is the easiest way in this program to convert images to vector or to images processed by the analysis method.

Then file<open is chosen to choose the image to convert.



Then the part of the image to be converted, whether part or all, is selected, and preview is selected from the trace menu, through which the image is modified and converted with multiple options for vector processing.

4-Imaengine:

It is a special application for smartphones. It is a fast, simple and powerful application to convert high-quality photographs and videos, whether from the phone camera or a camera connected to the phone or an image that was saved on the phone into images processed by design by processing vector technology or what is known as (Vector art) or (also known as vector drawings that process drawings in a geometric way by coordinates through lines with mathematical equations), and also the colors of the image are treated and the properties of special color circles are changed Photography. It also includes 33 photographic and color processing filters, as well as grayscale processing and the ability to convert images into modern-art works.

Steps:

At first, the program icon opens on the smartphone and then appears.

Then in all cases, the previous window will appear, in which it turns out as the rest of the results saved after working on the image or video, what the background, and so on.

After that, this screen will appear in all tests (image or video). Through the small icons at the bottom, they are considered systems that have tests, exchanges and combinations that transform the image into a specific system in the vector. The above transverse lines are the choices that each system contains separately (each small icon at the bottom).

This program allows many possible variables to obtain the vector system or the optimal transformation of any image provided that the details of the image are clear.

Research Result

Design Art Description Form	**Grand Total**	**)%(**
First: The extent to which graphic programs are used in analyzing the human face		
The first program: Adobe Photo Shop	34	36.9%
Second program: Adobe illustrator	5	0.05%
Third program: imaengine	53	57.6%
Second: The extent of success in analyzing the human face into areas		
Level Up	31	33.69%
Intermediate level	28	30.43%
Lower level	33	35.86%
Third: The extent to which the foundations of the design are achieved		
Rhythm		
regular	0	0%
Irregular	0	0%
Growing	0	0%
Decreasing	0	0%
Hot weather	92	100%
Balance		
Pivot	87	94.56%
Radioactive	2	2.17%
Delusional	3	3.26%
Unit	92	100%
Proportion and proportionality	92	100%
Fourth: The extent to which the design elements are achieved		
Point	0	0%
Line		
Geometric	7	7.60%0
Organic	85	92.39%
Area		
Geometric	7	7.60%
Organic	85	92.39%
Texture	13	14.13%
Color		
Primary colors	88	95.65%
Secondary colors	86	93.47%
Derived colors	84	91.30%
Contrasting colors	83	41.30%
Neutral colors	44	47.82%
Hot colors	83	90.21%
Cold colors	84	52.17%

Comment on the results:

First: The extent to which graphic programs are used in analyzing the human face:

It was clear from the results of the research that all members of the sample (92) have benefited from graphic programs and the ranking of graphic programs according to the percentage of use is as follows:

1. The third program is imaengine: with 57.6% and is located in the first place.
2. The first program is Adobe Photoshop: 36.9% and is in second place.
3. The second program, Adobe Illustrator: only 0.05%.

From the above, although all members of the sample have benefited from graphic programs in analyzing the human face, there is a preference for one program over another.

Second: The extent of success in analyzing the human face into areas:

It was clear from the results of the research that all members of the sample (92) have succeeded in analyzing the human face into spaces, but the rates of this success have differed as follows:

1. Higher level of success at 33.69%.
2. An average level of success of 3043%.
3. A minimum success level of 35.86%.

Third: The extent to which the foundations of the design are achieved:

Rhythm:

Despite the types of rhythm, the entire sample can classify its design works under the type of "free design" by 100%, and this can be attributed to the characteristics of the subject of the design expression.

Point:

The results showed that the point element disappeared from the design expressions.

Line:

1. Engineering line: It was clear from the results of the research that 7.6% of the respondents appeared in their design work engineering line.
2. Organic calligraphy: The results of the research showed that 92.39% of the respondents appeared in their design works organic calligraphy, which is the largest percentage and can be attributed to the characteristics of the subject of the design expression.

Shape:

Geometric surveying: The results showed that only 7.6% of the respondents appeared in their design work Geometric shapes.

Organic Shapes: The results showed that 92.39% of the respondents appeared in their design work organic shapes.

These results are consistent with the results that came under the element of calligraphy in its geometric and organic types, and these results can also be attributed to the characteristics of the subject of the design expression.

Texture:

The results showed that 14.13% of the respondents showed in their design work a sign of contact.

Color:

The results of the current research showed that more than 90% of the respondents appeared in their design works primary colors, secondary colors, derivative colors, and hot colors.

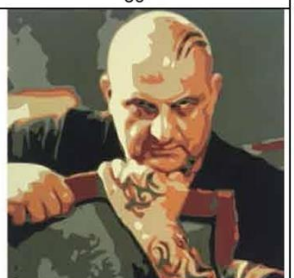
While more than 40% to 52% of the respondents appeared in their design works opposite colors, neutral colors, and cold colors.

The previous results do not mean that a group of sample members is alone in a color group without the other, but rather that the sample members appeared in their design work more than one color group.

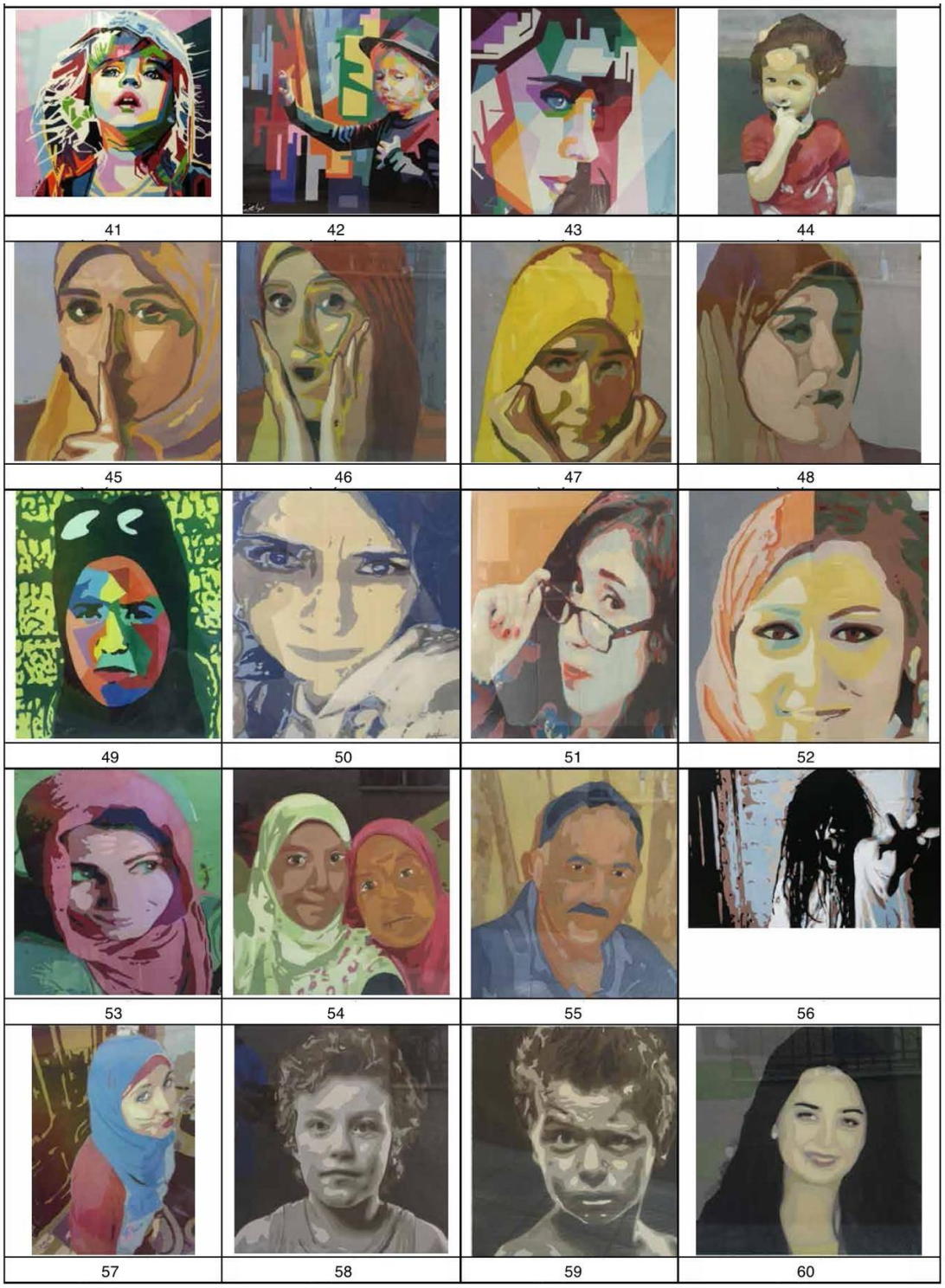
List of Student art designs

			
1	2	3	4
			
5	6	7	8
			
9	10	11	12
			
13	14	15	16
			
17	18	19	20

List of Student art designs

			
21	22	23	24
			
25	26	27	28
			
29	30	31	32
			
33	34	35	36
			
37	38	39	40

List of Student art designs



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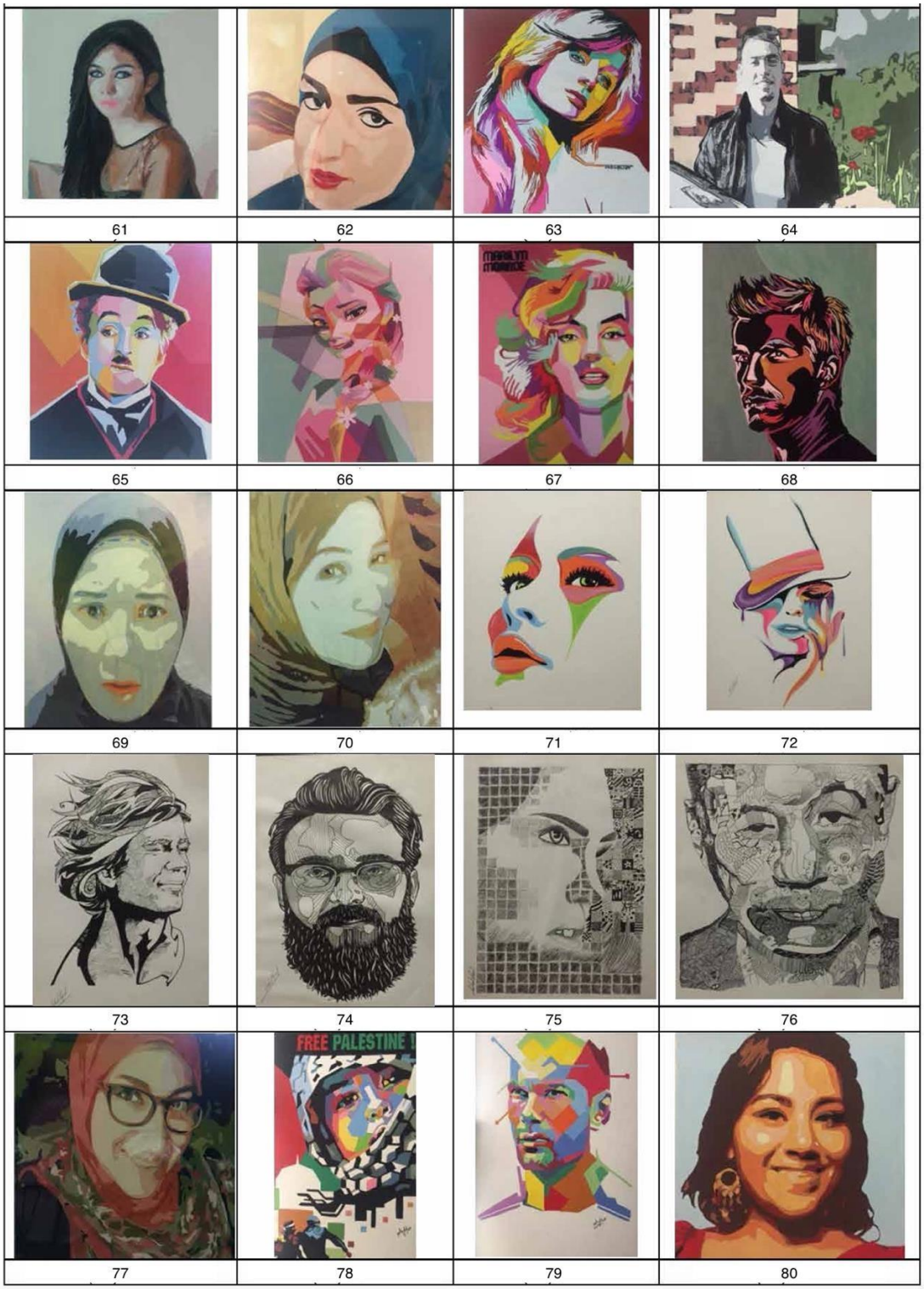

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