

# "The impact of a proposed program in media education on developing the skills static infographics production among secondary stage students"

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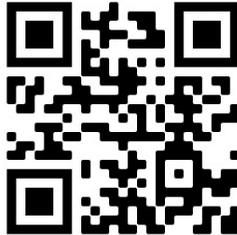
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## "The impact of a proposed program in media education on developing the skills static infographics production among secondary stage students"

### Abstract:

The study aimed to reveal the impact of a proposed program in media education on developing the skills of static infographics production among secondary school students. The students had the research sample, and the study tools were (a list of objectives and content, an achievement test in media education and a static infographics, a list of static info graphics production skills, an evaluation card of static infographics production, evaluation card for the performance of static infographics production skills), and the study was applied to a sample of (50) A male and a female high school student, and the study reached several results, the most important of which are: There are statistically significant differences between the average scores of the study sample in the pre-Test and the post- Test of the achievement test in media education and the static infographics in favor of the post- Test, It also found that there are statistically significant differences between the average scores of the study sample students in the pre and post- test of the static infographic production evaluation card and the observation card in favor of the post- test, which indicates that the size of the influence of the independent variable on the dependent variable is significant; This confirms the effectiveness of the experimental treatments that were performed on the experimental group the research sample.

**Keywords:** media education - static infographic.

### المخلص:

هدفت الدراسة إلى الكشف عن أثر برنامج مقترح في التربية الإعلامية علي تنمية مهارات إنتاج الإنفوجرافيك الثابت لدي طلاب المرحلة الثانوية, استخدم البحث الحالي المنهج شبه التجريبي لقياس أثر المتغير المستقل وهو "البرنامج المقترح في التربية الإعلامية" علي المتغير التابع وهو " تنمية مهارات الإنفوجرافيك الثابت" لدي

الطلاب عينة البحث, وتمثلت أدوات الدراسة في (قائمة الأهداف والمحتوى, اختبار تحصيلي في التربية الإعلامية والإنفوجرافيك الثابت, قائمة مهارات إنتاج الإنفوجرافيك الثابت, بطاقة تقييم إنتاج الإنفوجرافيك الثابت, بطاقة ملاحظة أداء مهارات إنتاج الإنفوجرافيك الثابت), وطُبقت الدراسة علي عينة قوامها (٥٠) طالب وطالبة من طلاب المرحلة الثانوية, وتوصلت الدراسة لعدة نتائج أهمها: وجود فروق دالة إحصائياً بين متوسط درجات الطلاب عينة الدراسة في التطبيق القبلي والتطبيق البعدي للاختبار التحصيلي في التربية الإعلامية والإنفوجرافيك الثابت لصالح التطبيق البعدي, كما توصلت إلي وجود فروق دالة إحصائياً بين متوسط درجات الطلاب عينة الدراسة في التطبيق القبلي والتطبيق البعدي لبطاقة تقييم إنتاج الإنفوجرافيك الثابت وبطاقة الملاحظة لصالح التطبيق البعدي, مما يدل على أن حجم تأثير المتغير المستقل على المتغير التابع تأثير كبير؛ وهو ما يؤكد على فاعلية المعالجات التجريبية التي تم إجرائها على المجموعة التجريبية عينة البحث.

الكلمات المفتاحية: التربية الإعلامية- الإنفوجرافيك الثابت.

## Introduction:

The world has witnessed a huge technological revolution and the advancement of visual, audio and print media, and media institutions have had a great impact on individuals and society, and with the emergence of new media and all its tools and applications, this is very important, and with the emergence of the new media with all its tools and applications, which was greatly welcomed by Internet users, this influence has increased with its media content that carries indirect messages and is concerned with excitement and suspense at the expense of objectivity and credibility (Morsi, 2017).

With the acceleration and increase of information and data in the age of the Internet, we are facing an explosion of knowledge and the accumulation and flow of information data ,and statistics to us without stopping in all fields. “Infographic” is to analyze and

simplify this information and transform it in an organized way into information that is easy to understand and read clearly by everyone and in a beautiful, interesting and attractive style in which several elements are mixed (images - graphics - texts - colors). Data journalism is a model for mixing digital data and modern technology, in light of There is a large flow of data, information and reports that are dealt with on the net through the computer, and with to provide in-depth and rapid coverage (Abdul Wahab, Abdel Razek, 2017, 120), but this art must take into account several criteria, the most important of which are credibility, objectivity and data validity, and this is what media education calls for.

### **Study problem and questions:**

The second half of the last century witnessed a great development in the field of information flow, accompanied by a development in the way it was presented and presented, and the press experienced this development like other sciences and arts, due to its nature based on monitoring the movement of the street and developments that occur in various fields, being a mirror that reflects what is going on It revolves around events with extreme accuracy, and this development has been accompanied by the use of computers more in the process of editing and displaying data, information and news materials with illustrations, charts or statistics, giving the audience the required information in an Easily and simply way, and faster than written texts, through a new art Known as "infographic".

With the spread of this journalistic art and the huge amount of infographics in all fields, young people need to develop their abilities to distinguish between correct and incorrect information, and even to provide them with skills, understanding, interpretation and analysis of the contents they receive and distinguishing between harmful content and useful content, the role of media education is not limited to this extent, but And to provide them with skills to produce responsible media content in light of media education standards. From this point of view, it has become necessary to use media education to provide students with the skill

of producing static infographics, In the context of the foregoing, the study problem can be formulated in the following main question What is the effect of a proposed program in media education on developing the skills of producing static infographics among secondary school students? From the main question of the research, a set of sub-questions emerges:

1. What is the knowledge structure of media education and the production of static infographics for secondary school students?
2. What are the skills of producing static infographics that are suitable for high school students?
3. What is the proposed conception in media education to develop the skills of producing constant explosiveness?

### **conceptual framework:**

#### **First: media education:**

Several definitions of media education have emerged in Western and Arab studies and research. Among the most prominent concepts that dealt with media education are the following:

UNESCO defines media education as: "It is that which helps to deal with all means of communication, including printed words, graphics, audio or animation, and enables individuals to acquire and understand the skills of using these means, to communicate with others in their community, ensuring that Individuals learn how to think critically, to analyze and create texts and media, identify their sources, and their political, social, commercial and cultural interests, then interpret these messages and values presented by the media, and choose the appropriate media to respond and communicate their means to society (Fedorov, 2008).

- Kubey (2014) defines it as: "Education with the aim to acquire the ability to construct personal meaning from visual and verbal symbols drawn daily from traditional and digital media is more than just an interpretation of information".

#### **The basis for selecting media education topics:**

1. Scientific: The topics are chosen to be a scientific application of the foundations and components of media education as decided by international organizations specialized in this field.

2. Realism: then selecting topics and addressing them with a realistic view.
3. Balance: where you address topics by remembering their pros and cons.
4. Positivity: to be part of the solution instead of being part of the problem and to instill a sense of responsibility in individuals (Ait Issa, 2016, 12).

**Principles of Media Education:** The Vienna Conference, which was held under the slogan Education for Media and Digital Technology, identified a set of media education principles:

- Media education specializes in dealing with all communication media, including words, printed graphics, sound, and still and moving images, which are presented through any type of technology.

- Enable community members to reach an understanding of the communication media that are used in their community and the way in how these media work, and then enable them to acquire skills in using the media for understanding with others.

- It ensures that individuals learn the following:

- How to analyze and reflect their critical opinions as well as create informative texts.

- Identify the sources of media texts and their political, social, commercial and cultural purposes, as well as the context in which they were mentioned.

Understand and interpret the messages and values that are presented through the media.

- Choosing the appropriate media to communicate and express their messages or stories to ensure their reach to the target audience.

- The conference also emphasizes that the goals of media education should focus on empowering all citizens in every society to exploit their potential (Heba Diop, 2011).

### **Second: The static infographic:**

The concept of data journalism: There are many definitions of data journalism, so we will present the most important ones:

• Defines it (Yildirim, 2016) as: "presenting information within a certain flow so that it contains many images, graphs, shapes, symbols and texts in a logical sequence through preparation for them", as Cifci (2016) defines it as "a visual representation of different information to understand the information complex data and ideas quickly, easily and simply.

**Objectives of data journalism:** The objectives of data journalism can be listed in the following points:

- Organize ideas in a useful way.
- Clarify complex relationships in a visual way.
- Compare information in an efficient manner. (Lamb & Johnson, 2014)
- Working to convert public data and public information into numbers that can be understood.
- Simplifying the information and presenting it in an attractive visual artistic form by using graphs, colors and sizes in the process of processing and clarification (Al Manafi, 2017).

**Infographic design standards:** The process of designing a good infographic requires that the designer be familiar with several skills, see (Davis & David, 2014), (Pretlow, 2014), (Dalton & Design, 2014), (Holma, 2015), (Baqassi, 2018), (Al-Salim, Al-Juffair, 2014), (Shaltout, 2016), (Mahmoud, 2017) that there are a set of criteria that must be followed in order to design a successful and distinctive infographic, which can be summarized in the following points:

- **Choosing the topic:** One idea must be chosen for each design, which must meet several criteria, the most important of which are clarity of purpose of the infographic for the recipient, and the selection of data and information that can be visually represented.
- **Scale:** creating a hierarchy in the elements presented in the infographic helps people to know where the most important information is, and this means determining the size and different treatment of the elements and to contain the main heading, sub-headings and text content.
- **Studying the target audience:** to know the type of data and the design that suits them, and the design should be produced in an

attractive way for easy understanding of the provided data. In addition, the design must be simple and understandable.

- **Accuracy:** is the most important principle, the data in the design should be accurate, up-to-date and presented in an appropriate context, and follow all procedures to ensure the accuracy of other normal data.

- **Compatibility:** It means to ensure that the design can be displayed in various operating systems and multiple browsers, as well as the ability to publish it in social networks, which are the source of the strength of this type of design.

- **Maintaining simplicity and focus:** by monitoring the amount of information provided, it is not too much and is sufficient for the purpose.

- **Maintaining the unity of design:** by initial planning and identifying the main ideas and the most important information.

- **Observing the logical sequence:** what gives importance to the content, as it directs the recipient to what he should see first.

- **Appropriate color and font used:** to choose the appropriate colors for textual and graphic information, as well as backgrounds, and it is preferable to use only one font. The colors should be attractive and static with the idea and purpose of the infographic. Emphasize the most important parts using shapes, arrows, and colors.

- **Validity of information:** ensuring that the data mentioned is correct and current, in addition to being free from spelling and grammatical errors, and documenting references that have been referenced.

### **Infographic design stages:**

**The first stage: Idea:** The generation of ideas is associated with the individual's ability to infer and express him, and ideas are the ones that generate terms, which form the basis for any kind of knowledge, whether it is a kind of science or philosophy.

**The second stage: Search:** We can limit it to several main points and many details branch from it that help to better reach the production of a distinctive infographic (determining the purpose

of the infographic, defining the goals of the infographic, analyzing the target audience, collecting and analyzing information.

**The third stage: Create a scheme and structure for the infographic:** This step is a translation of the research stage, from collecting and analyzing information and data into a structure and a scheme, consisting of the title, main parts, sub-parts, and choosing colors. Where these elements are intended to plan the structure of the infographic based on dividing the information that was previously collected and analyzed into the previous elements so that we have a complete plan for the structure of the infographic before implementation.

**The fourth stage is to identify the tools:** In this stage, the tools that are used in the design of the infographic are determined, and the current research in the design of the infographic is static on the "Adobe Illustrator", which is the first program in program designing infographics for designers, due to its extreme flexibility and ability to give attractive results (Shaltout, 2016).

**The fifth stage: design revision (review stage),** which is the stage of reviewing and verifying all aspects of the infographic.

**Sixth stage: Production:** In this stage, the final design of the "infographic product" is produced to be published and circulated, whether it was printed, animated, or published on the Internet.

**Previous studies:** The studies that dealt with media education and infographics, which are arranged in descending order - from event to oldest - are presented as follows:

**First: Studies that dealt with media education:**

**1. Al-Khaza'elah Study (2020);** The current study aimed to identify the degree to which Al Al-Bait University students possess media education skills in the light of some variables in Jordan. A sample of (420) was chosen in a simple random manner. The researcher used the descriptive survey method, and the study tools were represented in the questionnaire. The study indicated that the degree to which Al al-Bait University students possess media education skills came to a medium degree on the study tool as a whole, and the results of the study also showed the presence of statistically significant differences at the significance

level ( $\alpha = 0.05$ ) due to the gender variable in favor of male students, and the presence of statistically significant differences when The significance level ( $\alpha = 0.05$ ) is due to the college variable and in favor of the scientific colleges.

**2.Hassanein Study (2020);** The research aims to identify the students' use of educational media departments of traditional and digital means of communication and to identify the level of critical consumption of media among them, and the level of personal skills in the field of media education. The researcher used the survey method and combined the quantitative and qualitative study, and applied it to a quota sample of (360) respondents, in addition to a focus group sample that included 8 respondents from teaching assistants and assistant teachers, and the study concluded with several results, including: It was found that there is a statistically significant correlation between the use of newspapers Paper, television, and social networking sites and the level of critical consumption of these means, while no statistically significant relationship was established between radio use, newspaper websites, and critical consumption, and thus the first hypothesis was partially valid.

**3.Ali Study (2020);** The study aims to identify the trends of the academic elite towards the application of media education in Egyptian universities, which is a descriptive study, based on the survey method. The study sample was a sample of (200) individuals from the academic elite in media faculties in Egyptian public and private universities, and the research tools were represented in the questionnaire tool. The results also indicated that there are statistically significant differences between the nature of the academic degree of the elite and their attitudes towards methods of activating the principles of media education among university students.

**4. Schmidt, Hans study (2012),** the study sought to reveal the extent to which media education is used and taught at the university level, through a comparison between the vocabulary of media education in secondary schools and American universities, and the study was used to collect its data on an electronic

questionnaire, and the study sample included ( 409) of university students, and the study concluded: that students are provided with educational content in both stages and focus on the process of using more than production, especially about the use of the Internet and video clips, and that students received media education training in secondary schools use the Internet efficiently and have The ability to analyze the contents presented through it.

**5. Ghosh, S.;Bagchi,A.,&Das study (2015);** The study sought to identify the levels of awareness of media education concepts among students of faculties of media sciences in Australia. The study used the case study method and by using the questionnaire and the constructive interview tool on a sample of (50) students who were randomly selected from the students of the Faculty of Media and Information in the final year at the Australian University of Calcutta. The study showed the high level of awareness of media education among students, and the interview showed the need to pay attention to traditional and new means in developing students' awareness of media education.

## **Second: Studies that dealt with infographics:**

**1. Eltabagh Study (2018);** the study aimed to develop infographic production skills for independent and cognitively accredited educational technology students. The study relied on two approaches, the descriptive approach and the quasi-experimental approach. The study tools consisted of (a questionnaire for students of the exploratory study, a list of criteria for designing smart learning systems environments, a list of skills related to the skills of infographic production ,a List of objectives related to infographic production skills, **the study results concluded:** There are statistically significant differences between the mean scores of experimental group students in the pre and post measurements for both the achievement test and the skill performance observation card related to the infographic production skills among the students of educational technology in favor of the post-measurement.

**2. Abdel Maqsooud Study (2018);** The study sought an in-depth study of infographic science in a way that illustrates its

importance and the extent of its contribution to facilitating the reading of information for some groups of the public. The study relied on descriptive-analytical approach. The study reached a theoretical framing of the infographic. The study identified a set of basic considerations for the success of the infographic, including interest in typographical and graphic elements, icons and their meanings, spaces and spaces.

**3. Siricharoen et all study (2015);** On how to make the infographic effective by studying the aspects and methods that distinguish it, the study also presented a theoretical framing of the nature of the infographic, its types, its most important uses and the most important interactive multimedia in it. The researcher also analyzed a sample of the infographic and concluded the need to pay attention to the components of the infographic and the use of images and colors, as the process of evaluating The infographic is based on the information it provides and its constituent elements.

**4. Dick & Medina study (2012):** The study aimed to measure the effect of producing infographics and charts published in the New York Times printed newspaper (50) models. The study also used the interview tool with infographic designers. The study showed that there has been a significant increase in the publication of infographics for a newspaper in recent years.

### **Objectives of the study:**

The aim of the current research is to reveal the impact of a proposed program in media education on developing the skill of producing static infographics among secondary school students, and several sub-goals are derived from the main objective, which is the following:

1. Preparing a proposed program in media education that helps in developing the cognitive foundations of secondary school students.
2. Determining the skills of producing static infographics within the framework of media education standards in proportion to secondary school students.

## **Hypotheses of study:**

The current research sought to verify the validity of the following hypotheses:

- There are statistically significant differences between the average scores of the study sample students in the pre and post-test of the achievement test for media education and the static infographic in favor of the post- test.
- There are statistically significant differences between the average scores of the study sample students in the pre and post-test of the static infographic production evaluation card in favor of the post- test.
- There are statistically significant differences between the average scores of the study sample students in the pre and post-test of the observation card for the performance of the static infographic skills in favor of the post- test.

## **The limits of the study:**

**The limits of the study are as follows:**

**Objective limits:** represented in media education and the skills of producing static infographics.

**Human limits:** secondary school students in Minya Governorate schools.

**Spatial limits:** an e-learning environment that includes experimental treatment material to be applied to secondary school students in government schools.

**Time limits:** the second semester of the year 2020/2021 AD.

**Research Methodology:** The current research used the quasi-experimental approach to measure the impact of the independent variable, which is the "proposed program in media education", on the dependent variable, which is "developing the skills of constant infographics" among the students in the research sample.

## **Research community and sample:**

The current research community consists of high school students in Minya Governorate schools, and a sample of (50) male and female students from the first and second grades were

selected, who possess the minimum technological competencies from the use of the computer.

Reasons for choosing the sample:

High school students were selected specifically first and second-year students for several reasons, the most important of which are:

- The mental characteristics of secondary school students make them able to comprehend the theoretical foundations of media education and acquire the skills of static infographics.
- First and second grade students were selected because their attendance at schools is large, and third grade students were excluded because their attendance at schools is low.
- This segment is proficient in the use of the Internet due to the provision of tablets, smart boards, and computers by the new education system for high school, and the provision of Internet service in secondary schools.

Experimental design of the research: The current research used the experimental design of the one group to measure the impact of the independent variable “a proposed program in media education” on the dependent variable, which is “developing the skills of production of static infographics” among the students of the research sample.

### **Tools of study:**

**1. List of objectives and content :**(prepared by the researcher): the list of goals and content included three general goals, under each goal a set of behavioral goals, the first goal: providing students with (media education concepts, foundations for selecting its subject, principles of media education, and its skills), the goal The second: to identify the basic concepts associated with the infographic and the stages of its production, the third objective: the ability to produce a static infographic using the program "Adobe illustrator".

**2. An achievement test in media education and static infographics** (prepared by the researcher): The test included (50) questions distributed over the three main objectives, where the number (1) symbolizes the correct answer, and the number (zero) symbolizes the wrong answer, and the following was done to

ensure the validity and reliability of the test:  
 a. **The validity of the test:** The researcher calculated the validity of the test by presenting it to specialists from the disciplines of curricula, teaching methods, media, educational media, and educational technology, which numbered (19) arbitrators, and modifications were made according to the opinions of the arbitrators, so that the tools in their final form are valid for measuring what Made to measure.

Table (1) shows the validity of the internal consistency of the achievement test (n = 20 respondents).

Phrase numbers and correlation coefficients between the score of each test question and the overall test score										
number	1	2	3	4	5	6	7	8	9	10
correlation coefficient	**0.73	**0.74	**0.71	**0.66	**0.51	**0.58	**0.87	**0.67	**0.77	**0.57
number	11	12	13	14	15	16	17	18	19	20
correlation coefficient	**0.67	**0.84	**0.52	**0.71	**0.74	**0.73	**0.58	**0.78	**0.62	**0.59
number	21	22	23	24	25	26	27	28	29	30
correlation coefficient	**0.87	**0.86	**0.86	**0.59	**0.87	**0.86	**0.68	**0.86	**0.87	**0.74
number	31	32	33	34	35	36	37	38	39	40
correlation coefficient	**0.71	**0.67	**0.67	**0.77	**0.51	**0.71	**0.71	**0.56	**0.66	**0.74
number	41	42	43	44	45	46	47	48	49	50
correlation coefficient	**0.73	**0.77	**0.76	**0.70	**0.61	**0.61	**0.81	**0.66	**0.60	**0.70

(\*\*)Correlation is a significant at the (0.01) level

**It is clear from the previous table:** the correlation coefficients between the score of each of the test questions and the total score of the test ranged between (0.51: 0.87), and all of them are statistically significant correlation coefficients at significance levels (0.01); Which indicates the validity of the internal consistency of the test. B. Reliability: The stability of the test was calculated using several methods (Test-Retest method, and Cornbrash's Alpha coefficient), as shown in the following table:

**Table (2): Cornbrash's alpha stability for achievement test phrases (n = 20 respondents).**

<b>Phrase numbers and alpha stability coefficients for the scale after deleting the score of each test question and the stability of the overall test score</b>										
<b>number</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
correlation coefficient	0.711	0.732	0.720	0.732	0.726	0.726	0.736	0.732	0.715	0.740
<b>number</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
correlation coefficient	0.721	0.738	0.740	0.734	0.725	0.721	0.725	0.726	0.715	0.741
<b>number</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>
correlation coefficient	0.729	0.750	0.730	0.729	0.731	0.730	0.726	0.727	0.737	0.728
<b>number</b>	<b>31</b>	<b>32</b>	<b>33</b>	<b>34</b>	<b>35</b>	<b>36</b>	<b>37</b>	<b>38</b>	<b>39</b>	<b>40</b>
correlation coefficient	0.720	0.736	0.715	0.725	0.724	0.727	0.720	0.718	0.721	0.724
<b>number</b>	<b>41</b>	<b>42</b>	<b>43</b>	<b>44</b>	<b>45</b>	<b>46</b>	<b>47</b>	<b>48</b>	<b>49</b>	<b>50</b>
correlation coefficient	0.728	0.731	0.736	0.727	0.733	0.725	0.733	0.726	0.735	0.720
<b>The stability of the overall test score</b>	0.732									

**It is clear from the results of the previous table:** that all the coefficients of alpha stability of the scale after deleting the score of each of the test questions and the stability of the total score of the achievement test was greater than 0.7; which indicates an acceptable value for the reliability of the test.

**3. Evaluation card of Static Infographic production:** It includes (30) assessment items as No. (3) Indicates good skill performance, No. (2) Indicates average skill performance, and No. (1) Indicates that the student did not perform the skill.

**a. Calculating the validity of the card:** The researcher relied on the honesty of the arbitrators systematically, and from a statistical point of view, the self-honesty was calculated as an indicator of the validity of the card by calculating the square root of the value of the reliability coefficient of the card.

**B. Stability:** The stability of the evaluation card was calculated using Cooper's equation to calculate the number of times the arbitrators agreed in the arbitration of the card.

4. List of static infographic production skills (prepared by the researcher): It includes (18) sub-skills, under each sub-skill a number of procedures are included, which were presented to specialists in educational technology, modifications were made, and the list of skills became valid for application.

5. The performance evaluation card for the production skills of the static infographic (prepared by the researcher): The performance note included (20) sub-skills, and (83) procedures for those skills, the performance note was divided into performance and did not lead, No. (2) Refers to the student's performance of the skill, No. (1) Indicates the student's failure to perform the skill

**(A) validity of the observation card:** The researcher relied on the honesty of the arbitrators in a systematic way, and from a statistical point of view, the self-honesty was calculated as an indicator of the validity of the card by calculating the square root of the value of the reliability coefficient of the card, and the value of honesty was (0.93), a value indicating that the observation card enjoyed honesty the appropriate.

**(B) Stability of the observation card:** The stability of the evaluation card was calculated using Cooper's equation to calculate the number of times the arbitrators agreed in the arbitration of the card, and it was found that the average percentage of agreement among the assessors was (86.72%), which indicates the stability of the observation card and its validity for use.

**Second: Building the Experimental Processing Subject:** A proposed program in media education to develop the skills of static infographic production. The construction of the empirical processing subject went through five stages, which are the following:

1. **Analysis stage:** which includes identifying the characteristics of the learners: the researcher was keen to achieve rapprochement between the members of the research sample, as all of them are

second-grade students (first and second-grade students).

2. **Design stage:** This stage is carried out through several steps: formulating the general objectives that represent the general objective of the study, Providing secondary school students with the skills of producing infographics static within the framework of the standards and principles of media education, analyzing educational content, and defining the learning strategy : E-learning strategy, critical thinking strategy, practical field training strategy.

3. **The construction phase:** it includes the preparation of educational materials and media, models for the static infographics adobe illustrator presentations, storage media, also used Training on designing a static infographic.

4. **Implementation stage:** An introductory session was carried out to clarify the objective of the scientific application of the experimental research and the concept of media education and the concept of infographics.

5. **Evaluation stage:** The experimental treatment material was applied to an exploratory sample of the research community (20) male and female students from the secondary stage, other than the original sample, to ensure its ease of use, its relevance to the research group, and the appropriateness of the content, teaching aids and learning strategies with the sample members.

Conducting a search experiment: Conducting a search experiment went through the following steps:

1. Selection of the research sample: The two research groups (exploratory and experimental) were chosen deliberately, as the number of the exploratory research sample was (20) male and female students from the secondary stage, and the number of the experimental research group was (50) male and female students from the secondary stage.

2. Experimental reconnaissance: This step aimed to document the study tools, as well as the experimental treatment material by applying them to the exploratory sample, and the required modifications were made to the experimental treatment material.

3. an introductory session: The researcher conducted an

introductory session to familiarize the students with the general objective of the program, and explain how to deal with the learning environment, and the training timeline.

### Terminology of study:

- **Media education:** In the current research, it means all the concepts, standards, and skills that enable students to consciously deal with the media.
- **Static infographic:** It is intended to transform complex information and data into news or explanatory story using images, graphics, shapes, text and colors.

### Study results and their interpretations:

**First: Verification of the first hypothesis:** There are statistically significant differences between the average scores of the study sample students in the pre and Post-test of the achievement test in media education and the static infographic in favor of Post-test.

Table (3) shows the significance of the difference between the mean scores of the study sample students in the pre and Post-test of the achievement test, media education, and the static infographic.

(n = 50 students)

Effect size	Eta Square	Significance level	"T" value	standard deviation	Average	implementation	total Score	Tool
Big	0.965	0.00	**	1.52	10.00	Before	50	Achievement test
			31.62-	1.97	22.15	After		

It is clear from the previous table: that the results of the application of the pre-test for the media education test and the static infographic show a decrease in the average scores of the research group, which amounted to (10.00), which indicates the weak knowledge of the research sample of the concepts of media education and its theoretical foundations, and their low knowledge of the concepts of the static infographic and its theoretical foundations. , It was also found that there was a statistically significant difference at the level (0.01) between the mean scores

of the study sample students in the pre- test and the post- test of the achievement test in favor of the post- test, where the value of "t" was (31.62), and the effect size was calculated by the "eta square" coefficient. And it was found that the effect size is large, as the value of the Eta square is (0.965), which indicates that the size of the effect of the independent variable on the dependent variable is large; This confirms the effectiveness of the experimental treatments that were performed on the experimental group, the research sample. This result agrees with the study of Shafi et al. (2018); The results of the study revealed that there were statistically significant differences in the mean scores of the cardiac and posttest scores in favor of the post test.

**Second: Verification of the second hypothesis:** There are statistically significant differences between the average scores of the study sample students in the pre and post- test of the static infographic production evaluation card in favor of the post- test.

**Table (4) shows the significance of the difference between the average scores of the study sample students in the pre and post- test of the infographic production evaluation card. (n = 50 students)**

Effect size	Eta Square	Significance level	"T" value	standard deviation	Average	implementation	total Score	Tool
Big	0.991	0.00	65.43-	0.00	30.00	Before	١٠٥	Static Infographic Production Evaluation Card
				4.18	73.25	After		

It is evident from the previous table: that there is a statistically significant difference at the level (0.01) between the average scores of the study sample students in the pre- and post- test of the static infographic production evaluation card in favor of the post- test, where the value of "t" was (65.43), and the size of the effect was calculated by a factor of "Eta square", and it was found that the effect size is large, as the value of Eta square is (0.991), which indicates that the size of the effect of the independent variable on

the dependent variable is large; This confirms the effectiveness of the experimental treatments that were performed on the experimental group, the research sample. This result is static with the results of the study of Al-Ghamdi (2018).

**Third: Verification of the third hypothesis:** There are statistically significant differences between the mean scores of the study sample students in the pre and post- test of the observation card for the performance of the static infographic skills in favor of the post- test.

Table (5) The significance of the difference between the mean scores of the study sample students in the pre and post- test of the observation card for the performance of static infographic skills (n = 50)

Effect size	Eta Square	Significance level	"T" value	standard deviation	Average	implementation	n	Tool
Big	0.986	0.00	51.85-	6.24	18.37	Before	50	Static infographic skills performance observation card
				8.81	96.15	After		

It is evident from the previous table: that there is a statistically significant difference at the level (0.01) between the mean scores of the study sample students in the pre- and post- test of the observation card for the performance of static infographic skills in favor of the post- test, where the value of "t" was (51.58), and the effect size was calculated With the coefficient of "eta-square", and it was found that the effect size is large, as the value of eta-square is (0.986), which indicates that the size of the effect of the independent variable on the dependent variable is large; This confirms the effectiveness of the experimental treatments that were performed on the experimental group, the research sample.

### Summary of results:

- The results of the current research indicate that the results of the pre- test of the achievement test in media education and static infographics lead to a decrease in the average scores of the

research sample, which indicates the poor knowledge of the research sample students with the concepts of media education and the static infographic and the theoretical foundations for both of them, and this is due from the researcher's point of view To the absence of media education curricula within the courses that students study with the absence of the application of media education within secondary schools by the educational media specialist for students while practicing educational media activities.

- While the results of the post- test came to indicate the high average scores of the research sample, which indicates the effectiveness of the training program that was presented to the group after applying the pre-test, using an electronic learning environment, providing computer devices connected to the Internet, and providing educational content in the form of presentations.

- The results also indicated a decrease in the average scores of the students of the research sample in the tribal application of the static infographic production evaluation card, the researcher attributed this to the absence of students' practice of educational media activities inside the school, and the students' lack of skills to produce the infographics static, and the validity of the second hypothesis of the research, which is the existence of a difference Statistically significant at the level (0.01) between the average scores of the study sample students in the pre and post- test of the infographic production evaluation card in favor of the post- test. The researcher returns this to the good training of the students of the research sample on the skills of producing infographics static with the application and the students' production of a static infographic within the framework of education standards The media, which includes credibility and objectivity, ensuring the validity of data and information, observing intellectual property rights, and observing the ethics of new media and electronic publishing, as well as ensuring the standards of designing a static infographic, both formal and technical.

- The results also showed that there was a statistically significant difference at the level (0.01) between the mean scores of the study sample in the pre- test and the post- test of the observation card for the performance of the static infographic skills in favor of the post- test, which confirms the validity and validity of the result of the previous hypothesis by providing students with skills of producing infographics within the framework of Media education standards, meaning that the student can produce a stable infographic that contains media education standards and adheres to the ethics of electronic publishing.

### **Study recommendations:**

- The necessity of including media education in the curricula for the different educational stages (primary – preparatory - secondary) in line with each stage.
- Conducting training workshops for educational media specialists to enhance the concept of media education for them and how to impart it to students.
- Training students on digital media production skills.
- Educating students about the ethics of electronic publishing of any content on social networks.

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