

**The Effectiveness of Institutional and User
Generated Content in spreading
Environmental Awareness among
Egyptian Youth
(A Case study on Global Warming)**



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Abstract:

This study examines media coverage of climate change in Egypt, focusing on both institutional and user-generated content. Specifically, it aims to understand the impact of this coverage on Egyptian youth's perceptions and awareness of global warming and broader environmental issues. Employing semiotic analysis, the research explores visual aids related to global warming news on selected official pages. A survey was administered on a purposive sample of 200 media college students to gauge the level of awareness regarding environmental issues and global warming. Three hypotheses were formulated to identify differences in youth awareness based on institutional and user-generated content. The semiotic analysis reveals a lack of variation in visual aids, resulting in redundancy without effective representation. Survey results emphasize the significance of both institutional and user-generated content in disseminating knowledge about global warming.

Keywords: Environmental Awareness - Global Warming- Semiotic Analysis- Egyptian Youth - User Generated Content

فعالية المحتوى المؤسسي والفردي في نشر الوعي البيئي بين الشباب المصري دراسة حالة عن الاحتباس الحراري

ملخص الدراسة:

تهدف هذه الدراسة إلى فحص التغطية الإعلامية لتغير المناخ في مصر، مع التركيز على كل من المحتوى المؤسسي والمستخدم، وتستهدف خصوصاً فهم تأثير هذه التغطية على إدراك الشباب المصري ووعيهم بالاحتباس الحراري والقضايا البيئية على نطاق أوسع .

استخدمت الدراسة التحليل السيميائي، لبحث الوسائل البصرية المتعلقة بأخبار الاحتباس الحراري على صفحات رسمية تم اختيارها، وتم إجراء مسح على عينة عمدية قوامها 200 طالب جامعي إعلامي لقياس مستوى الوعي فيما يتعلق بالقضايا البيئية والاحتباس الحراري. واختبرت الدراسة ثلاثة فروض لتحديد الاختلافات في وعي الشباب استناداً إلى المحتوى المؤسسي والمحتوى الذي ينشئه المستخدمون. كشفت نتائج التحليل السيميائي عن نقص الاختلاف في الوسائل البصرية، مما يؤدي إلى التكرار دون تمثيل فعال، وأكدت نتائج الدراسات الاستقصائية على أهمية كل من المحتوى المؤسسي والفردي في نشر المعارف المتعلقة بالاحتباس الحراري.

الكلمات المفتاحية: الوعي البيئي - الاحتباس الحراري - التحليل السيميائي - الشباب المصري

Introduction:

Sustainable development and climate action are inextricably linked, representing fundamental aspects crucial to the current and future well-being of humanity. The United Nations has identified climate action as the 13th goal in its sustainability agenda for 2023, emphasizing the urgent need for global efforts to combat climate change and mitigate its impact. In the face of rising temperatures and the escalating challenges of global warming, universal commitments and collaborative endeavors are imperative. This underscores the pivotal role of media in fostering eco-literacy, a key element in sustaining life on Earth.

Extensive research has underscored the significance of social media in environmental issues, playing a pivotal role in shaping the media agenda, fostering environmental awareness, and facilitating rapid information exchange. Social media platforms provide an accessible and expansive medium for content dissemination, contributing to environmental activism by empowering users with a voice and a sense of community.

Consequently, this research endeavors to analyze and compare both institutional and user-generated content related to climate change in Egypt, particularly in the aftermath of hosting the COP 27 conference. The study also aims to investigate the impact of the analyzed content on the perceptions of Egyptian youth, with a specific focus on media college students. Three hypotheses are formulated to discern differences in how respondents evaluate institutional and user-generated content, gauging awareness levels in terms of knowledge, attitude, and behavior concerning global warming.

To achieve these objectives, the research adopts a comprehensive framework, incorporating Roland Barthes's Semiotics Theory. This theory discerns three layers of meaning in an image—denotation, connotation, and mythology—applicable to various visual studies. Additionally, the study employs an environmental awareness measuring instrument to assess participants' knowledge, attitude, and behavior towards global warming.

Utilizing both qualitative and quantitative methods, the research conducts a semiotics analysis of global warming representations in institutional and user-generated content. This involves the examination of images from a purposive sample of news. Simultaneously, a survey is administered to a purposive sample of Egyptian media college students to gauge the effectiveness of the content in shaping youth perceptions and awareness of global warming.

The findings and recommendations of this study are anticipated to contribute valuable insights to both environmental literacy and media engagement practices, shedding light on the effectiveness of visual aids in addressing and covering environmental issues.

Research Problem:

Global warming is a severe task that necessitates concerted effort and public understanding as it poses serious challenges to the environment, businesses, and countries all across the world, as Egypt, particularly after hosting the 27th Conference of the Parties (COP27) in November 2022.

As a key source of information for many people, the media has the potential to play a critical role in distributing knowledge about the importance of this issue and increasing awareness. However, it is uncertain how well the media communicates global warming and equips the public with practical information. This study problem intends to investigate the actual impact of the media on informing people about the seriousness of global warming, as well as its role in raising awareness.

Significance of the study

The value of the research may be seen on both the theoretical and practical levels as below:

Practical Significance:

- a. Environmental Awareness: The study addresses a critical issue - global warming - and examines how different types of content, institutional and user-generated, can impact the level of environmental awareness among Egyptian youth. This has practical implications for designing effective communication strategies to raise awareness about environmental challenges and engage the younger generation in sustainable practices.
- b. Content Strategy: The research can help organizations and institutions in Egypt (and beyond) to formulate better content strategies for environmental campaigns. By understanding how different types of content resonate with youth, stakeholders can tailor their messages to make them more compelling and influential.
- c. Youth Engagement: Engaging youth in environmental issues is crucial for the long-term sustainability of efforts to combat global warming. The study can shed light on how to effectively involve young people in environmental initiatives, empowering them to become advocates for positive change.

Theoretical Significance:

- a. Semiotics Analysis: By using semiotics, the study can delve into the symbols, signs, and meanings embedded in both institutional and user-generated content related to global warming. This theoretical approach can provide insights into how visual and textual elements influence perceptions and attitudes toward environmental issues, adding to the body of knowledge on communication and environmental psychology.

- b. **User-Generated Content:** The research examines the impact of user-generated content alongside institutional content. This aspect is particularly important in the context of the digital age and the rise of social media, where user-generated content plays a significant role in shaping public opinions and behaviors. Understanding its effectiveness in spreading environmental awareness can contribute to media studies and communication theories.
- c. **Youth Perspective:** administering survey on youth allows researchers to capture the unique perspectives and insights of the target audience. This can enrich the understanding of how young people perceive global warming, how they interact with different content types, and what motivates or hinders their engagement in environmental issues.

Review of literature

The literature review encompasses two main themes. Firstly, it examines media coverage of environmental issues, and secondly, it explores the coverage of global warming across various media platforms.

Section one: Media and Environmental Awareness

This section looks at research that analyzed different media platforms in relation to media and environmental awareness and particularly the social networking sites

From a Kenyan viewpoint, **Paul Waititu's¹ (2021)**, *Creating Community Based Environmental Awareness with Social Media*, examines the function of social media in community-based organizations (CBOs) that promote environmental awareness through local education in Kenya. Nine CBOs in Nakuru City were included in a non-probability sample that was purposively chosen to examine environmental-related activities. A total of 98 respondents took part in the online survey, and their responses were gathered and evaluated. The questionnaire was pre-tested in a pilot research with 30 participants from a different environment but with characteristics similar to the study population.

Before being used in the main study, the questionnaire was modified. The use of social media for environmental awareness in CBOs was found to be minimal, but there is potential for its use as a social learning environment for fostering environmental awareness. Participants were required to voluntarily give their informed consent before participating in the survey. Findings showed that in addition to having high levels of environmental awareness, the majority of CBO members were social media users. However, this circumstance did not lead to widespread use of social media to discuss environmental issues. Thus, it may be inferred that social media is not frequently utilized to share environmental issues at the community level in Kenya, despite its popularity as a platform for engagement.

The study's conclusion encourages the use of social media as a tool for community education in CBOs that address environmental issues through capacity building initiatives like mentoring, training, and other forums for engagement.

In a study for **Matara Soad² (2020)** Studying the Media Coverage, Environmental Issues, and Sustainable Development in the UAE, The study examines how much attention both newspapers provide to environmental and sustainable development issues as well as their stances on these topics a quantitative tool was used which is the content analysis that includes all the relevant reports issued by the two newspapers which is Khaleej and Etihad newspapers in particular The study concentrates on those two because of their successful roles in increasing people's un Results indicate that Khaleej Newspaper (56.5%), followed by Etihad (43.5%), has provided a broader coverage of the UAE's international participation in environmental issues and support for sustainable development. understanding of current concerns

Concerning the main results the topic of "supporting sustainable development projects in the field of environment protection" stood at the top of the themes addressed by the report in regard to the UAE's international role in promoting environmental causes and fostering sustainable development. Additionally the subject of "local initiatives and projects for environment protection" came up,

then moved on to a number of other subjects, such as "efforts for the protection of environment and natural resources," "climate and environment change," "workshops for raising awareness of environment preservation," "supporting environmental tourism projects," and "efforts for saving endangered animals and birds."

Also the study suggested that In order to change citizen behavior, it is important to employ innovative and alluring press strategies, and reports should be enhanced with environmental principles and ideals.

And one more study conducted by **Khaloud Abdullah Miliani³** in (2019) focuses on the digital environmental media through social media networks. The study sheds light on digital environmental media through an analytical study of new media, specifically Twitter. It emphasizes the subject of the environment and environmental awareness by monitoring and analyzing the content of the environmental pages and active environmental associations on Twitter in the Kingdom of Saudi Arabia as a model of digital environmental media.

The study relied on the agenda-setting theory and medium enrichment theory.

It utilized observation tools on eight Twitter pages and conducted 50 in-depth interviews with individuals interested in environmental affairs. The main findings reveal a growing interest in the environment by environmental activists on Twitter, but official government environmental pages are scarce, the study also reveals that the lack of exposure to environmental media in the arb world is caused by a lack of socialization and a preference for amusement content over other types of viewing material. Additionally, digital environmental media on Twitter lacks specialized media professionals.

In a study for **Petrus Imam Prawoto Jat and Others (2019)⁴** Tackling the Media Agenda Setting in Strengthening the Environmental Awareness Among Youth, This study used a qualitative design and Data mining was carried out through in-depth interviews (in-depth interviews), observation

and focus group discussions (FGD). Using a purposive sampling technique, observations were made by attempting to gather information from already published media reports both online and offline. The informants for this study were young people between the ages of 11 and 23 who were residents of four former Banyumas Regency residences: Banyumas Regency, Cilacap Regency, Regency, Purbalingga, and Banjarnegara Regency. The respondents' educational levels ranged from those in elementary school to those in high school or an equivalent. Parents come from a variety of backgrounds, including those of government employees, laborers, general employees, business owners, and farmers.

The study concluded that social media is currently teenagers' primary information source and the subject of environmental sustainability is already well-known among young people. Also the news and marketing for charitable causes are the main sources of this awareness. And mainly the Environmental news is preferred over news about politics, society, and the economy. The media, according to almost all respondents, has a significant influence on how the general public, and adolescents in particular, are informed, educated, and persuaded about environmental consciousness. And also According to the study's findings, adolescents are more satisfied with their lives the more environmentally conscious they are.

Another study In the South and Southeast of Brazil by **Eliana Andréa Severo¹ & Others (2019)**⁵ addressing The Influence of Social Networks on Environmental, this study attempts to examine the impact of social networks on Baby Boomers, Generations X, and Y's social responsibility and environmental awareness., a quantitative and descriptive study was used

The findings show that people are favorably influenced in the development of social and environmental awareness when they are exposed to information (videos, photographs, texts) linked to social responsibility and environmental sustainability. Awareness and the Social Responsibility of Generations However, when looking for information on environmental and social issues, members of generation Y provided the lowest means of responses. This is

pertinent to society and education. To encourage activities and knowledge on social and environmental responsibility and to involve Generation Y in sustainable development, organizations, governments, and businesses are needed. According to hypothesis testing, people who are exposed to media about social responsibility and environmental sustainability—such as videos, pictures, and texts—are positively influenced in their development of those attitudes.

Also another study about the pro environmental behavior by **Han, W. McCabe & others (2017)**⁶ that aims to Evaluate user-generated content in social media also this study has management implications for the tourism industry. A qualitative study was applied throughout a questionnaire targeted the individuals with social media access and who travel on a regular basis. The survey was terminated with 1043 Chinese people who accessed the link to the survey. 581 were females and 462 were males. The majority of respondents (82.2%) were between the ages of 18 and 34, and 53.9% had a degree from a college or university.

This study highlights the significance of pro-environmental norms as an extra instrument for comprehending how consumers might be affected beyond routinely studied variables of values and attitudes. Also the Norm Activation Theory and pro-environmental behavioral intentions have been the subject of earlier studies, and this study demonstrated substantial support for their links between the constructs. As a result, travelers who are more environmentally conscious tend to have a larger sense of responsibility and moral obligation towards the environment.

Section Two: Media coverage of global warming

This section examines studies that addressed various media platform analyses related to global warming, whether traditional or digital media. Six research were examined between 2023 and 2013.

A study by **Painter el El (2023)**⁽⁷⁾, sought to examine television programs' coverage of environmental issues. A manual quantitative content analysis for

TV shows regarding the 2021 report by the Intergovernmental Panel on Climate Change (IPCC) on Physical Science was carried. A purposive sample of thirty news programs from twenty channels in Australia, Brazil, Sweden, the United Kingdom, and the United States was selected. The stations in each country consequently were classed depending on their political orientation, with some classified as "center-right" or "center-left" and others as "right-wing." The study results showed that skepticism, defined as efforts to reject the fact of the physical phenomenon of climate change, has largely disappeared from mainstream channels but persists in the sample of right-wing channels in all countries except Brazil as its issue was complicated by the fact that there are three main channels that provide substantial support for the past right-wing government. Results showed that subtypes of skepticism vary along the sample. Though, skepticism about the need for strong regulatory rules or interventions in general, and the impracticality of taking immediate action without elaborating took precedence.

Due to the significance of environmental concerns to Egyptian society, certain media studies have addressed the problem, *as Marwa Shebl (2022)*⁽⁸⁾ study that sought to assess how environmental issues were covered in Egyptian newspapers. The primary frames utilized in discussing environmental issues were identified using framing analysis, which served as the study's fundamental theoretical framework. El-Mesaa, El-Watan, and El Youm El-Sabee were among the Egyptian newspapers represented in the study sample. From April to June 30, 2022, a selection of articles covering environmental issues were chosen for content analysis. Findings indicated that newspapers generally agreed on the importance assigned to climate change and global warming, which ranked first among all environmental subjects emphasizing the negative effects of climate change on the environment. Newspapers gave priority to two basic approaches to resolving environmental issues: launching awareness-raising campaigns and activating media awareness role. Official government and environmental formal institutions constituted major actors in addressing environmental challenges, while others, such as universities, research facilities, and people' role as play actors declined.

Certain studies questioned the role on new media in environmental issues as **Jihan Abdel Hameed study (2022)**⁽⁹⁾ the analyzed YouTube videos about environmental issues, identifying important topics, significant players, and used frames in covering climate change, and assessing users engagement with videos, questioning the significance of new media in environmental issues. From March 2021 to March 2022, all videos containing the keyword "climate change" were included in the study census. Findings showed that Arab satellite networks were the primary video providers, with professional You Tubers coming in third. The primary format was interviews with environmental specialists. However, the findings indicated that few viewers interacted with videos through views, likes, and comments. Environmental subjects were prioritized, with the fourth place going to global warming. The primary theses, such as the effects of environmental issues, global concerns, and addressing climate change, were presented utilising main frameworks. Findings indicated a positive portrayal of governmental attempts to develop environmental solutions in Egyptian channels, but professional you tubers' presentations fluctuated between positivity and pessimism.

A study by **Eileen Culloty el El study (2018)**⁽¹⁰⁾, employed many analysis methodologies to explore the breadth of visual subjects connected with climate change in Irish news media. The theoretical framework for the study was based on Roland Barthes' semiotics of meaning, which can be applied to any text, including visuals. Several methodologies, including content analysis, frame analysis, and audience analysis, were applied. Both content analysis and frame analysis were applied to all articles published between January 2013 and June 2015 that included the words "climate change" anywhere in the text. Photographs related to news stories about climate change in the online version of The Irish Times were subjected to a visual content analysis. A focus group of 15 environmental organization professionals was used to conduct audience analysis. The study concluded that the causes frame was correctly recognized, and there was no difficulty in constructing cause and impact frames because visual references were limited and relied primarily on stock photos. In terms of audience analysis, the

majority of participants discussed their preexisting attitude rather than the descriptive content of specific photos. The study concluded a lack of consensus on a picture's meaning among a very homogeneous community.

A study by **Nitisha Mucha (2017)**⁽¹¹⁾ aimed to analyze tweets about global warming. A sentiment analysis on global warming using Python's random package on Twitter was conducted for a time period of ten years from 2007 to 2017 with a total sample of 5000 tweets For the past ten years. Tweets were categorized to Positive, negative, and neutral attitudes on the data set. Results showed changes in importance given by tweet users to global warming. For instance, in 2007 the sample only referd to 47 tweet about the topic, Tweets have grown significantly in popularity in the years thereafter. In 2009 and 2010, the percentage of people who believed global warming was real was nearly equal to the percentage of people who believed global warming was a hoax. In 2014, the percentage of positive tweets much outnumbered the percentage of negative tweets, however the percentage of positive tweets has begun to decline revealing users identification for the seriousness of the problem. Overall statistics show that the number of people who believe in global warming is greater than the number of persons who believe global warming is a hoax in the provided sample set.

In some research, media problem coverage is compared across nations. For example, *Andreas Schmidta, E., Ivanova, A., & Schäferb M. (2013)*⁽¹²⁾ studied newspaper coverage across 27 nations from 1996 to 2010. Second, it evaluates the media coverage and investigates whether it jives with metrics gauging a nation's importance to climate change and climate policies. Algeria, Australia, Brazil, Canada, China, France, Yemen, and other nations were among the industrialized, emergent, and developing nations were chosen. Study census compiled articles that specifically discuss climate change in major newspapers in chosen nations. The survey demonstrates that a sizeable reporting space is devoted to climate change in newspapers all around the world.. It has been on the news agenda for a very long time and has grown even more significant over time. Though, media coverage of climate change

swings and peaks around particular events in all countries. The results revealed that phrases like "greenhouse effect" and "global warming" were utilised when referring to climate change. In discussions regarding potential dangers and adaptation, the study found significant knowledge gap between countries affected by climate change than other countries.

The following conclusions might be drawn from reviewing relevant literature:

- 1- Studies used the terms "environmental issues," "environmental awareness", "Pro Environmental behavior", "global warming," and "climate change" interchangeably or comprehensively, since global warming was given prominence among environmental issues mentioned in media.
- 2- Concerning methods used, the following conclusions can be drawn:
 - a) The majority of reviewed literatures used quantitative methods, as content analysis and framing analysis in addition to the Survey as a one of the most commonly used tools. This could be related to the necessity to identify the significance of the topic inside media material using accurate numerical data.
 - b) Media studies were concerned with analysis for both written and visual texts. In terms of media texts, numerous platforms such as Twitter, Facebook posts, television programs and News Papers were utilized. In terms of visual texts, photographs accompanying media texts were examined. According to studies, major issues in visual analysis include: having various interpretations and a lack of acceptance of common findings, as well as interpreting images among media users.
 - c) Some other studies depended on the Qualitative tools, like in-depth interviews, focus group discussion and observation in order to address experts opinions and the youth towards the media coverage of the environmental issues and its reflections on some of the pro environmental behavior.

- 3- Purposive sampling preceded all sample types employed in media research, owing to the nature of the investigated media content, which was based around texts related to global warming issues, allowing for a finely focused sample allocation and also purposive sample was used in selecting the Research society for some other researches.
- 4- Surveys were the most frequently employed and applied on purposive samples of young who have access to social media and also Generations X, Y, and Z when evaluating environmental awareness and pro-environmental behaviors.
- 5- Comparative studies were highly regarded in the review, either by comparing the global warming issue in more than one medium within the same country, or between multiple media in different countries, all over a long period of time, or between media text and users' studies and also
- 6- In terms of analysis time frame, research employed a longer time range ranging from five to ten years, which could be for a variety of reasons. First, the extended time line provides a significant sample that can be evaluated, and second, it allows for the detection of differences in coverage intensity and tone.
- 7- Studies agree on the following variables or aspects that influence media coverage of global warming:
 - a) Formal institutions, specifically governments, have an active role in resolving and controlling the global warming issue.
 - b) The impact of media organizations' or text creators' attitudes toward governmental authorities in assessing their role and attributing their responsibility for problem resolution.
 - c) A substantial priority given to the subject of global warming, either by numerical data that suggest a growth in coverage, and user awareness, indicating both media and user knowledge of the problem's over time.
 - d) The occurrence of a global warming knowledge gap among different countries affected by the problem.

- 8- The researches concurred on the impact of social media in raising environmental awareness and encouraging pro-environmental behavior agreed on the below:
- a) It is crucial to use creative press techniques to influence public opinion, and articles should be reinforced with environmental ideas and principles.
 - b) People who are more ecologically aware typically have a greater sense of moral obligation and responsibility towards the environment.
 - c) People are positively impacted in their development of those attitudes by media about social responsibility and environmental sustainability, such as videos, photographs, and texts.
 - d) Teenagers in particular have access to information, education, and persuasion on environmental Issues. The results also show that adolescents are happier with their lives on average the more environmentally conscious they are.
 - e) Concerning studies in the Arab world The key findings show that environmental activists are becoming more interested in the environment on Twitter, but that there are few official government environmental pages. Additionally, there aren't enough specialized media experts covering environmental issues on Twitter.

Theoretical Framework:

The theoretical framework comprehend both Roland Barthe's semiotic theory and the environmental awareness measuring instrument

A) Roland Barthes's Semiotics Theory

Is a fundamental theory of meaning and semiotics established by Roland Barthes' in 1988. This theory could be applied to a variety of texts, including images, gestures, musical sounds, and objects. The theory distinguishes three layers of meaning in an image which are, denotation, connotation, and mythology, which can be used to a range of visual studies. ⁽¹³⁾

Denotation refers to the explicit and widely understandable subject matter represented by a picture. It shows the visual subject in its entirety, with no explanatory frames. When doing a descriptive content analysis, researchers must consider methodological issues such as whether to define the visual subject in isolation or in conjunction with supporting text or subtitles. ⁽¹⁴⁾

The second level of analysis is known as connotation, referring to the subjective thoughts, emotions, or critical values that viewers attach to visual subjects are referred to as. Connotation depends on the presence of denotation, and it is at this level that observers, including scholars, offer different interpretations of meaning. Thus, the use of frame analysis is congruent with connotative meaning. ⁽¹⁵⁾

Finally, mythology refers to the ideological beliefs adopted or normalized by an image. These ideological meanings may not be clear during brief interactions with a picture, necessitating critical examination. This underlines the importance of thorough investigation in revealing and comprehending the legendary characteristics concealed within visual representations. ⁽¹⁶⁾

B) Aspects of environmental awareness measuring instrument

This measuring instrument* aim to asses the Positive environmental level of concern for the environment that is welcoming and comfortable according to three levels, Knowledge about caring for the environment, caring attitude and constant reminders of the environment, and finally behaviors or acts that protect the environment rather than harm it.

The presence of these three signs indicates that community understanding of the environment has grown. Because the three indications must complement and support each other, if one is not met, environmental awareness is still regarded to be lacking.⁽¹⁷⁾

The importance of the theoretical framework to the study: both used theory and model contribute to the study as follows:

1- Semiotic analysis of visual representations of global warming in user-generated and institutional content, utilizing Ronald Barthes theory, analyzing visuals as follows:

- Explanation of explicit visual components.
- Interpreting visual meaning through framing analysis.
- Identifying the ideology represented by visuals

2- The environmental awareness measuring instrument will be utilized to examine participants' pro and anti-environmental aspects across three levels of knowledge, attitude, and behavior.

However, certain changes will be made to basic measuring statements. This customization seeks to test the model's characteristics in relation to environmental concerns relevant to the targeted census, in order to determine their levels of awareness of environmental problems, particularly global warming, in relation to the examined visuals.

Research Design:***Research Objectives:***

This research aims to conduct a comprehensive analysis of the media coverage of climate change in Egypt, encompassing both institutional and user-generated content. The study aims to delineate the influence of such content on the perceptions and awareness levels of Egyptian youth concerning global warming and broader environmental issues.

The research questions are divided into two categories: semiotic analysis, which delves into the visual representation and impact of accompanying images, and participant analysis, which investigates perceptions, awareness, and effectiveness among Egyptian youth regarding global warming and related environmental issues.

Set One: Research questions relevant to semiotic analysis:

1. How was the visual portrayal of global warming conveyed in terms of denotation, connotation, and mythology?
2. What are the basic semantic fields that platforms utilize to create visual representations of global warming issues?
3. What are the similarities and differences in employing visual representations to contribute to global warming challenges across institutional and user generated content?

Set Two: Research question relevant to participants analysis

1. What are Egyptian youth levels of awareness regarding global warming on the three levels of knowledge, attitude, and behavior?
2. How does the effectiveness of institutional content compare to user-generated content in terms of the three levels of raising awareness, among Egyptian youth?

3. What are the suggestions of improving the environmental and global warming content in both institutional and user generated content based on Egyptian youth samples opinion?

Research hypothesis: The study propose the following hypothesis:

Hypothesis (1): There is difference between respondents evaluation of institutional and user generated content in knowledge acquisition about global warming.

Hypothesis (2): there is difference between respondents evaluation of institutional and user generated content in constructing favorable attitude toward media messages concerning global warming.

Hypothesis (3): there is difference between respondents evaluation of institutional and user generated content in constructing intended behavior regarding global warming.

Methodology:

Method: This study is based on the following two methods:

- **Comparative Analysis:** A comparison was conducted on two levels. Firstly, a comparison was made between institutional and user-generated content. Secondly, an examination was carried out to assess the effects of both types of content on respondents.
- **Case Study:** Global warming was employed as a case to evaluate environmental awareness among Egyptian youth.

Data collection tools:

a) Semiotic analysis:

Semiotic analysis, commonly known as semiotics, is a methodical approach to interpreting and comprehending the meanings and symbols found in many types of communication, such as visual pictures, signs, texts, and other forms of representation. It entails deconstructing the components of these communications in order to discover the underlying messages, cultural

implications, and linkages between signs and the meanings they communicate. ⁽¹⁸⁾

Semiotic analysis examines how signs and symbols interact in a specific environment, offering light on how individuals and society generate meaning and transmit ideas via visual and textual forms. ⁽¹⁹⁾

b)Survey:

Surveying is defined as a quantitative data collection tool used to gather information from a sample of individuals to infer characteristics, opinions, or behaviors of a larger population. ⁽²⁰⁾

Population and sample:

-Semiotic analysis population and Sample:

The population targeted for semiotic analysis consists of climate change and global warming awareness images and captions on the official pages of Egyptian newspapers on facebook and environmental awareness pages on the same platform as well.

Sampling procedures:

A.Choosing Facebook as a platform for assessing environmentally significant information in Egypt aligns with the following reasons:

- 1.The platform represents a large and diverse user base. Facebook provides insights into how different demographic groups in Egypt engage with environmental issues.
- 2.The platform's popularity for sharing visual content makes it great for expressing themes as global warming. ⁽²¹⁾

B.A purposive sample of institutional and user generated official pages was selected according to the following criteria:

- 1.Number of followers of the platform.
- 2.Regular content updates
- 3.Emphasis on environmental topics, and utilization of images and captions related to global warming

Accordingly the following sample was selected

1. Newspapers pages: the official facebook page for Al –Ahram, Al-Masry El Youm and El-Sherouk were selected.

2. User generated content: two Egyptian environmental awareness pages on facebook were selected which are future of green Climate change, and Ozone climate change

C. Sample size and duration

A sample of five pictures, with captions, accompanied to news relevant to global warming were selected from each platform. Selected sample ranged from December 2022 to September 2023, preceding Cop 27, and throughout 2023, due to the significant occurrences to climate change in Egypt from heatwaves, floods, dust storms, and rising sea levels ⁽²²⁾.

-Survey population and sample:

The study population focuses on Egyptian youth, as defined by the United Nations, encompassing individuals aged between 15 and 24 years. A subset of this population was specifically chosen from college students within the age range of 17 to 24, with a particular emphasis on those pursuing media studies. The selection of this population was motivated by several factors, including:

1-Expertise in media literacy: students in the media have increased abilities in critically examining news items, ensuring a nuanced assessment.

2-Future Media Practices Influence: understanding media students' replies reveals potential implications for future journalistic practices.

3-Variable Exposure: diverse academic exposure to various information sources enriches the study by capturing a range of viewpoints.

4-Activism Possibility: students studying media may be more motivated to engage in media activism, indicating a possible young involvement in environmental issues.

5-Generation of Technophiles: media students are a tech-savvy group that relies largely on digital channels for information.

Sampling procedures: a non-random purposive sample of 200 students was selected. The purposive sample was established based on the following

criteria:

- Gender
- Diverse academic levels within the college, ensuring a comprehensive representation across different stages of study
- Diverse ownership of media schools

Demographic characteristics of study sample

Tab No. (1)

Characteristics	f	%	
Age	17	9	4.5%
	18	63	31.5%
	19	43	21.5%
	20	40	20%
	21	20	10%
	22	9	4.5%
	23	9	4.5%
	24	2	1%
	28	1	0.5%
	29	1	0.5%
	30	2	1%
35	1	0.5%	
Gender	Male	67	33.5%
	Female	133	66.5%
Educational level	First	125	62.5%
	Second	20	10%
	Third	19	9.5%
	Fourth	36	18%
College	Faculty of Media, Beni Suef University	5	2.5%
	Canadian Institute of Communications Technology (CIC).	127	63.5%
	Faculty of Media, MSA University	6	3%
	Faculty of Language and Communication, Arab Academy for Science, Technology, and Maritime Transport	19	9.5%
	Faculty of Media, Canadian University	1	0.5%
	Others	42	21%

The demographic characteristics of the respondents are presented in the table above, indicating the distribution of participants by gender and age. Notably,

63% of the sample fell within the 18 to 21 age range. Moreover, 66% of the respondents were female. In terms of educational levels, the majority (62.5%) represented the first level, with 10% from the second level and 9.5% from the third level.

Operational definitions:

-Knowledge*: acquired information about environmental concerns and issues as air, water, and pollution, and how political, educational, economic, and governmental institutions influence them.

-Attitude: motivation to actively participate in environmental improvement and protection, a desire to define one's own ideas, and the confidence to make decisions and judgements about environmental matters based on one's moral sense and personal practices.

-Behavior: active participation in environmental problem solving through selected lifestyle activities such as resource conservation, cooperating with environmental regulatory enforcement, and supporting environmentally practices through personal and interpersonal ways.

Study measurements:

A. Semiotic analysis: visual representation, and accompanied captions, will be measured based on the following criteria:

- Denotation: referring to the literal description of the image, including subjects, composition, colors, grounds, Light, shadow,space, and framing.

- Connotation: referring to the feeling, and thoughts, and values that associate with the image.

-Mythology: refers to the ideological views that an image normalizes.

-Semantic field: refers to a collection of signs linked together by their shared meaning or thematic association. ⁽²³⁾

Semantic field will allow us to distinguish the differences in content between tested images through allocating main themes of global warming visual representation.

Results & findings: The following are the study findings:

The study results and findings present semiotic analysis and survey responses in relevance to the two categories of research questions, as well as testing the research hypothesis.

Firstly: Answering research questions

Set one: Research questions relevant to semiotic analysis:

a) Questions regarding the visual portrayal of global warming conveyed in terms of denotation, connotation, and mythology.

A semiotic analysis in terms of denotation, connotation, and mythology was applied to 25 images from various platforms, each having a set of five images as follows:

a) Al- Ahram newspapers:



Image (1)

Denotation: The image is broken into two parts. A bright Earth with blue and green colors, a green tree attached to it, and a light blue and white background

can be found on the right side. The Earth is in brown and yellow tones on the left side, with a barren tree and a yellow background. In both scenarios, a hand is holding the Earth.

Connotation: The right side represents a prospering Earth, whereas the left side represents a deteriorating ecosystem as a result of global warming. The caption introduces the concept that the barren tree and desolate Earth on the left indicate the consequences of climate change.

The caption emphasizes human-caused change accompanied as well with the hand holding the Earth conveying a sense of responsibility for tackling the effects of climate change.

Mythology: The image and the caption as well, reflect global warming concern. The hand that holds the Earth assumes the role of a custodian, attempting to ameliorate the effects of global warming.



Image (2)

Denotation: The image depicts a barren, cracked Earth's surface with dry soil, indicating extreme drought conditions and environmental degradation. A single green leaf stands out in one area, suggesting a small sign of life or

hope amidst the desolation. The United Nations logo is prominently placed within the image.

Connotation: The fractured Earth portrays the devastating effects of global warming, such as droughts and desertification. It symbolizes the devastation caused by climate change on the planet's ecosystems.

The lone green leaf symbolizes perseverance, adaptation, and the prospect of rejuvenation. It represents the urgent need for action to mitigate the effects of climate change and protect the ecosystem.

The UN logo's appearance conveys an official declaration or warning. It connects the global environmental disaster to international diplomacy and collaboration, implying a shared responsibility to address the issue.

Mythology: The image can inspire mythological concepts of survival despite all obstacles.

This image and caption combo employs semiotic aspects to convey the critical information about the impact of global warming on food supplies. It employs powerful symbols to express the criticalness of the situation and the importance of collective action.



Image (3)

Denotation: The image shows a tree separated into two sections, with the right side depicting a tree with brown leaves and dry dirt and the left side depicting a tree with green foliage and fresh green ground.

Trees with brown leaves can be seen in the background, and the sky has a dull yellow tone with some white patches in the centre. The tiny trees on the left side of the image are green, the ground is fresh green, and the sky is blue with white clouds.

The caption is a straightforward statement stating that environmental experts are warning about the probable repercussions of global warming, specifically an increase in some type of unfavorable event

Connotation: The break in the tree represents the divergence in outcomes caused by global warming. The negative impacts are represented by the dark side, while the beneficial outcomes are represented by the green side. The dark foliage and dry dirt on the right indicate decay, devastation, and the harmful impact of global warming on the ecosystem.

On the left side, the green leaves, fresh green ground, and blue sky with white clouds inspire a sense of energy, growth, and happiness. It depicts a world in which efforts to counteract global warming are effective. The dismal yellow and brown tones in the background on the right side imply a lack of energy and a potentially bleak future, but the blue sky on the left side suggests hope and optimism.

The caption's implication emphasizes the seriousness of the warning and the necessity of addressing the issue of global warming. The use of the phrase "environmental scientists" provides credence to the warning and emphasizes the scientific basis for concern. The term "warn" denotes impending danger or undesirable results, with a sense of urgency.

Mythology: The image may be related to the notion of the "Tree of Life" in numerous mythology, in which trees represent the interconnectedness of all life and the balance of nature.

The divided tree could be interpreted as a modern allegory, representing the choice between maintaining the environment (left) and facing environmental devastation (right).

Though, the caption does not make any clear connections to mythology. The

caption analysis did not heavily utilize mythological aspects, instead focusing on expressing a direct warning and encouraging action on the potential effects of global warming.



Image (4)

Denotation: The Earth is surrounded by flames of fire, signifying a heat-related environment. According to the new title, "United Nations warnings of deadly heat are escalating...and experts reveal the repercussions of climate change."

The caption is accompanied by an image of the Earth in flames.

Connotation: The blue area depicts the oceans and landmasses of the Earth, while the yellow section represents severe heat and high temperatures.

The flames represent a crisis, which could be caused by extreme heat, climate change, or environmental unrest.

The contrast between the blue Earth and the blazing flames emphasizes the disparity between the planet's natural state and the pressing situation at hand. "United Nations warnings" imply formal notification about a potentially dangerous situation.

The caption "deadly heat" connotes dangerously high temperatures.

Mythology: The image could suggest mythological concepts of devastation. The description of "deadly heat" and the Earth engulfed in flames associated with fire and devastation.



Image (5)

Denotation: The image depicts a tree divided into two halves, each with its own set of conditions. The background on the right is dominated by vivid yellow and red colors. The leaves on the right-hand tree have died, and the soil is fractured and brown.

The tree on the left is green, with birds fluttering about it. The ground is green, while the background is blue and white.

The caption stated that " A professor of Environmental Studies: The current heat wave is one of the consequences of climate change".

Connotation: The split tree depicts the visible contrast between the effects of climate change.

The right side represents harsh conditions: mortality, aridity, and a loss of

vitality as a result of climate-related problems. The left side represents a healthy, lively environment full with signs of life, stressing the possibility of good transformation.

Colors reinforce the dichotomy by emphasizing negative impacts with warm colors (yellow and red) and good effects with cool colors (blue and green).

The use of the phrase "Professor of Environmental Studies" lends authority to the remark by linking it to expert knowledge. The term "current heat wave" refers to a time of abnormally high temperatures, stressing the issue's urgency. The section "Repercussions of Climate Change" emphasizes the link between the heat wave and broader environmental changes caused by humans

Mythology: The split tree can be associated with mythological notions of balance and dualism. The concept of "repercussion" corresponds to mythical concepts of cause and effect.

b)Al-Masry El-Youm newspaper:



Image (6)

Denotation: The image depicts an archived scene of a group of guys planting trees in a little green spot in a neighborhood. A automobile and a building are included in the setting to provide context for the location. The image's

denotation is a plain picture of people actively engaged in tree planting as a solution to global warming.

Connotation: The sentiments linked with this image are optimistic and action-oriented. Planting trees represents a proactive reaction to the challenges posed by global warming. It expresses a sense of communal involvement, environmental responsibility, and resolve to combat climate change. The little green space in the neighborhood signifies a local effort to address global challenges, implying a belief in the power of grassroots collective action. The existence of an automobile and a building implies the incorporation of sustainable practices into urban surroundings, emphasizing the possibility of good change.

Mythology: The image symbolizes the conviction that individual and community activities may help tackle the global challenge of climate change. The neighborhood's modest green space becomes a symbol of optimism and local solutions. The image may support the myth of human agency in dealing with climate-related concerns by emphasizing the importance of communal efforts in reducing the effects of rising temperatures.



Image (7)

Denotation: The image depicts a dramatic and symbolic depiction of Earth divided into two opposing sections. The Earth is engulfed in crimson flames

on the right side, representing great heat and destruction. The appearance of these flames consuming the world emphasizes the severity of climate change. In dramatic contrast, the left side of the image depicts the Earth in its traditional colors of blue and white, representing the planet's natural state. The consistent black background emphasizes the strong contrast between these two items. The denotation is a striking depiction of climate change's dual impact, with one side indicating disaster and the other, preservation.

Connotation: The associations with this image are powerful and emotive. The right half, which is engulfed in crimson flames, provides a sense of danger and urgency. It represents the disastrous effects of unmanaged climate change, implying massive destruction, loss of life, and environmental degradation. The left side, which features the famous blue and white Earth, represents both the beauty and fragility of our world. It's a sobering reminder of what's at danger if climate change isn't handled. The striking contrast between the two sides shows the possibility for both disaster and preservation, depending on how climate change is addressed. The black background heightens the sense of gravity and the urgency of the situation.

Mythology: The image takes on mythological significance in the wake of recent news reports warning that climate change could kill billions. The depiction of Earth as two halves conveys a myth of choice and consequence. It emphasizes the essential options humanity confronts in dealing with climate change, as well as the potential outcomes. The side engulfed in flames might represent the myth of destruction, a warning of the catastrophic repercussions of unbridled climate change. The side with the intact Earth, on the other hand, represents the myth of preservation, highlighting the importance of worldwide efforts to conserve the planet. The image supports the notion of community responsibility as well as the urgent need for action to avoid disaster situations.



Image (8)

Denotation: The image depicts the classic Egyptian pyramids in a vivid yellow colour, set against a yellow desert backdrop. A beautiful white-blue sky with clouds graces the horizon. The pyramids, desert, sky, and clouds are all aesthetically represented as denotative elements.

Connotation: This image's and caption's implications are rich in symbolism. The use of yellow with the pyramids and desert conjures feelings of heat, aridity, and possibly even fragility. Yellow is frequently connected with warmth, but it is also associated with caution and warning, which may hint to the importance of addressing climate change. The white-blue sky, on the other hand, represents nature's purity and tranquillity, offering a dramatic contrast to the harsh desert environment and the imminent threat to these historic structures. The clouds in the sky can be interpreted as symbols of change, whether in terms of weather patterns or the overall climate.

Mythology: Mythology is derived from the historical and cultural significance of the Egyptian pyramids. These constructions are not simply

architectural marvels, but they also have significant cultural, historical, and mythological significance. They depict ancient Egypt's and its civilization's ongoing legacy. The caption may evoke a sense of grief and loss by linking climate change to these historic landmarks. It implies that the impact of climate change extends beyond environmental concerns to challenge the very essence of human history and culture, emphasizing the interdependence of nature, history, and civilization.



Image (9)

Denotation: In the image, clouds in a blue sky are seen from a bird's eye viewpoint, revealing yellow and green terrain below. According to the caption, these clouds may vanish as a result of climate change.

Connotation: The clouds in the image can stand in for both aesthetic beauty and the world's inherent rhythm. A sense of perspective or separation could be suggested by the overhead view. The green scenery and yellow backdrops could stand in for many climatic conditions and climate-changed environments. A sense of urgency and worry about the possible effects of climate change are added by the caption.

Mythology: clouds were frequently equated with gods and other supernatural beings, so their removal might symbolize a violation of the natural order. The fertility and life energy of the Earth may be symbolized by green landscapes and yellow grounds, maybe evoking creation mythic motifs. The mention of

climate change in the caption relates to current worries about the environment and our transforming planet.



Image (10)

Denotation: The image shows people dressed in white protective suits, wearing masks, blue gloves, protective eyewear, and covering their entire bodies. Some are holding nets and plastic bags. The scene takes place in a green area with a white sky above. The bags they are holding and the flying bats in the surroundings are filled with bats. The caption suggests that climate change will lead to an increase in the spread of new epidemics in the future according to a recent study results.

Connotation: A sense of caution, anxiety, and the need for defense against potential attacks are evoked by the people wearing protective suits and masks. The white sky could stand up for an unsettling atmosphere or a changed surroundings. Perhaps nature and the environment are represented by the green space. The flying bats could be interpreted as either disease-carrying pests or as a warning of unanticipated repercussions. The nets and bags can represent attempts made by people to reduce or contain potential health dangers. The caption emphasizes how climate change and health risks are related.

Mythology: In a symbolic sense, the image may be related to themes from mythology and folklore about how humans must defend themselves from supernatural or natural threats. The protective gear could stand in for a more contemporary version of the armor worn by heroes in heroic tales. The soaring bats may conjure up images of mythical creatures or portents of change. The concept of diseases spreading as a result of climate change may evoke mythical accounts of plagues and pestilence caused by disruptions in the natural order.

c)Al-Sherouk newspaper:



Image (11)

Denotation: The picture depicts a cloudy and rainy scene at a beach in Alexandria, Egypt. The sky is filled with clouds, and the waves in the water are high, crashing onto the shore. There are people standing on the beach, and a young boy in white is stretching his arms out towards the waves. Apartments are visible on the right side of the photo. The caption mentions climate change and the unpredictability of winter weather and rainfall intensity.

Connotation: Cloudy skies and large waves could be interpreted as symbols of unrest or change that relate to the issue of climate change. People on the beach may represent how humans interact with environment as a result of shifting weather patterns. The boy's position may represent hope or a desire to engage with nature. Apartment buildings may indicate urbanization and close proximity of people to their surroundings.

Mythology: Taking a photo in Alexandria might represent the winter weather and the rains as Alexandria is very cold in winter and the sea waves are so high so it is a symbol of coldness in winter. This picture might make you consider the current circumstances of global warming and climate change and how it's unanticipated.



Image (12)

Denotation: The image shows a cracked and barren Earth's surface with dry soil in the foreground. In the background, there's a desert with sand and a few green trees. The end of the image is not clearly visible. The sky above is cloudy and the caption mentions that climate change is causing a projected death toll of 250,000 people between 2030 and 2050, as stated by the Ministry of Health.

Connotation: The fractured Earth and parched soil can stand in for deterioration of the environment and the detrimental effects of climate change on the terrain. The battle for survival in hostile environments may be reflected in the desert and the few green trees. A sense of gloom or uncertainty may be suggested by the gloomy sky. A sense of tragedy and urgency regarding the effects of climate change may be evoked by the death toll estimate in the caption.

Mythology: The few trees could be compared to misconceptions about how vital nature is to life's survival. An indirect message is conveyed through the caption that we are under a great threat that could endanger human existence, invoking the idea of humanity's relationship with nature and the potential for dire consequences.



Image (13)

Denotation: The image portrays the Earth divided into two equal halves by a central tree. The right side features a cloudy sky above a barren, cracked Earth with dry soil in the foreground. The tree on this side is dead, without leaves. On the left side, there's a green surface with a tree that's full of leaves. The sky on this side is clear blue with a bright sun. The caption mentions a climate change committee and an upcoming meeting for the loss and damages committee.

Connotation: The stark difference between two diametrically opposed situations is symbolized by the split Earth. The gloomy sky and barren terrain to the right could represent environmental imbalance, challenges, and devastation. The demise of ecosystems and catastrophic results could be foreshadowed by the dead tree. On the left, the blossoming tree and lush ground radiate vitality, hope, and harmony. The sky's brightness and lightness are optimistic indicators for harmonious coexistence with nature. The title could imply that discussions and actions relating to climate change.

Mythology: The image can be a representation of two distinct mythological circumstances. In contrast, the other side stressed the detrimental and worsened effects of global warming and climate change, providing the idea

that two futures are possible. The first side emphasizes development and reducing the effects of global warming and a healthy, balanced environment.



Image (14)

Denotation: A man's hand holding a tiny ball that resembles the Earth is depicted in the image. The background is black, and there is portrayed fire all around the ball. "The scenarios of climate change: Is the end of humanity near?" reads the caption.

Connotation: It's possible that the hand clutching the globe of Earth represents human power or influence over the world. The fire encircling the ball could stand for catastrophe, crisis, or the pressing problem of climate change. The absence of a background color might convey gloom, urgency, or foreboding. The meaning of the caption may be one of fear, caution, or a demand for action in light of the possible effects of climate change

Mythology: The image conveys the idea that people are one of the primary causes of the world's harm and that they have the potential to preserve the world's existence. The caption conveys the idea that humans' behavior toward the earth will result in their extinction.



Image (15)*

d)Green future page



Image (16)

Denotation: The image consists of graphic elements. In the upper right corner, there is an illustration of the sun. The background is colored orange. In the center of the image, there is an illustration of the Earth. The background for the Earth is depicted as red fire. On the right side of the Earth, there is a temperature measurement device colored in red. To the right of the temperature measurement, there's a quote attributed to the Earth, which says "global warming." The caption below the photo indicates that the deadline for

addressing climate change is approaching, with only 7 years left for humans to prevent global warming.

Connotation: The picture conveys a sense of immediacy. The orange background could stand for warmth or possible danger, while the sun could represent the source of heat and energy. The earth being consumed in red fire might be taken as the Earth being in a grave state due to global warming. The temperature gauge represents the warming temperatures brought on by climate change. The quotation from the Earth humanizes the earth and gives the pressing problem a voice. The caption emphasizes how important the timeframe is and how it is up to people to take action.

Mythology: In mythology, the red fire encircling the Earth can conjure images of annihilation or purifying. The thermometer might represent attempts by humans to gauge and regulate the forces of nature. The quote's representation of the Earth could be compared to mythological beings that provide predictions or cautions. The caption's deadline and sense of urgency may be allusions to myths about approaching disaster.



Image (17)

Denotation: The image portrays a dark scene featuring black chimneys. Each chimney emits flames that merge and rise towards the sky. The sky takes on a dark yellow hue, with dusty clouds forming as a result of the flames. The caption provides

information that the gases contributing to climate change have decreased by 22% in the European Union countries in 2021, following a peak in 2008.

Connotation: The gloomy atmosphere suggested by the dim lighting may represent the unfavorable impacts of industrial activity. The flames might stand in for the pollution produced by industrialization, while the black chimneys could stand in for industrialization. The dusty clouds created by the combining flames may conjure up images of pollution building in the atmosphere. The ominous effects of these emissions could be symbolized by the dark yellow sky. The decrease in gases noted in the caption may be viewed as a step in the right direction toward protecting the environment.

Mythology: On a symbolic level, the picture can resemble themes from mythology that illustrate ruin brought on by human activity. The chimneys could be seen as contemporary representations of factories or industrial activities. It's possible that the flames joining together and generating dusty clouds are reminiscent of mythological tales in which environmental imbalances result in negative outcomes. The gloomy sky could conjure up violent or unbalanced visions of nature from myths. The decrease in emissions may be related to myths about how people try to make peace with



Image (18)

Denotation: The image depicts a young boy with fair skin wearing a red chemise, tightly hugging the trunk of a tree. The background is a blurry composition of green and hints of red, suggesting a forested area. The caption emphasizes the importance of saving forests in the fight against climate change.

Connotation: The boy's clinging of the tree trunk demonstrates concern, connection, and safety. His light complexion could represent innocence or a global awareness for environmental issues. The red chemise can stand for fervor or haste. The blurriness suggests that the focus is on the tree and the boy's action, while the green and red background could represent the natural surroundings. The commentary highlights the crucial part that forest preservation plays in combating climate change by tying it into a larger global issue.

Mythology: In a symbolic sense, the image may be connected to mythological ideas about how people and environment interact. The boy hugging the tree might conjure up images of harmony between people and nature,. Hugging a tree may be a mark of respect for the natural world or a show of protection, recalling myths in which trees are revered as wise or sacred beings. The background forest may conjure up the concept of the primordial forest, a place of enigma and potential change. The caption compares saving trees to heroic efforts for the greater good that involve battling the forces of climate change.



Image (19)

Denotation: The image features a black Methane Gas Venting Pipe. There are orange flames emerging from the outside of the pipe. The background displays a blue sky with blurry clouds. In the middle of the image, there is a caption with a green background that reads, "How to accelerate methane gas leaks from the phenomenon of global warming, methane is 80% worse than carbon dioxide."

Connotation: The dark methane gas venting pipe could stand in for manufacturing processes and gas emissions. The danger and destruction brought on by the release of methane gas could be represented by the orange flames. The emission-affected natural environment could be depicted by the clear blue sky and hazy clouds. The caption's green background could be seen as an indication of environmental sensitivity. The caption's message emphasizes how much more urgent and serious the methane gas problem is than the carbon dioxide problem, highlighting the urgent need for action.

Mythology: On a symbolic level, the image might be understood in light of contemporary environmental myths. The Methane Gas Venting Pipe might be viewed as a piece of contemporary technology with outcomes that have the potential to resemble mythical creatures. It is possible that the flames, which resemble mythical fire, represent the destructive and transformational power of the unleashed gas. The harmony and balance in nature could be evoked by the blue sky and clouds, bringing to mind stories from mythology about the natural world. The content of the caption may be analogous to mythical predictions or warnings about imbalances that cause environmental disaster.



Image (20)

Denotation: The image features a young child dressed in yellow, standing in water. The child is holding onto a tree branch with their hands raised. The child is wet from the water. The background is a blurry green, suggesting a natural environment. The caption, written on a green background, states, "Preparing kids to deal with climate change. The United Nations is calling for making Environmental literacy a mandatory topic in schools from 2025."

Connotation: The small youngster in the photograph can represent the next generation and innocence. The color yellow may stand for optimism, vigor, or hope. The fluidity of nature and the possible effects of climate change may be represented by the water. The child grasping the limb of a tree may represent a link between people and nature, and the child's uplifted hands may represent curiosity or an appeal for assistance. The green backdrop can be a metaphor for growth and nature. The message of the caption emphasizes the significance of educating kids about environmental issues and suggests taking a proactive stance against climate change.

Mythology: The image may conjure up ideas from tales that deal with how people and nature interact in a symbolic environment. The way the youngster interacted with the tree may have been modeled after mythological stories in which trees serve as passageways to other worlds. The caption's mention of the United Nations and its appeal for environmental literacy could be seen as a legendary allegory of unification and group action for a better good

e) Ozone climate change



Image (21)

Denotation:

The Nile River, depicted in blue, has a sufficient water level. The foreground is filled with lovely green grass. Small hills surround the Nile in the background.

Connotation:

The Nile's blue tint represents vigor and life, as water is necessary for survival. The beautiful green grass in the foreground implies fertility and a healthy atmosphere. The presence of little hills may suggest stability and natural beauty.

Mythology:

Because it does not visually reflect any immediate threat or danger, the image of the Nile with a healthy water level may connote a sense of confidence and normalcy.

However, it may be argued that when paired with a news report about the dangers of global warming on the Nile, this image may serve to diminish the gravity of the situation. The visual portrayal does not correspond to the possible seriousness of the problem, which may normalize or trivialize it.



Image (22)

Denotation:

The photograph depicts a rich agricultural area in Egypt, with large swaths of brilliant green fields. A country man is shown in the forefront, wearing a nice

smile and accompanied by his monkey. Another country man is working among lush trees in the image's background.

Connotation:

The connotations linked with this image are numerous and complex. Greenery in abundance represents fertility, prosperity, and agricultural success. It suggests a plentiful crop and a healthy habitat. The happy country man and his monkey create feelings of contentment, simple delights, and a strong connection to the land. Their pleasure implies that agriculture is more than simply a source of income; it is also a source of fulfillment and happiness.

The connotation is apparent and real here, representing a vibrant and wealthy agricultural area, a sense of community, and a peaceful cohabitation between humans and nature.

Mythology:

When viewed in the context of the news headline about ten Egyptian agricultures threatened by global warming, the image creates mythological tension. On the one hand, it depicts agriculture in a scenic and pastoral light, which might be interpreted as a type of myth-making that idealizes the current state. The image offers a sense of stability and achievement, which may normalize or minimize the impending dangers brought by global warming.



Image (23)

Denotation:

The image depicts Earth, which is separated into two distinct parts. The brightly colored half represents a healthy and thriving planet. The opposite half, on the other hand, is shaded and black, representing environmental deterioration and the effects of global warming. Dark purple and black are used to show the surrounding universe. This denotation illustrates the state of the Earth's ecology, with one side flourishing and the other facing darkness and decay.

Connotation:

This image carries significant and thought-provoking connotations. The sharp contrast between Earth's brilliantly colorful and shaded halves underscores the critical nature of the global warming situation. The positive side represents hope, creativity, and the possibility of climate change solutions. The shaded side, on the other hand, conjures up images of environmental risk, the dreadful repercussions of inactivity, and the shadows of climate-related difficulties. The dark cosmic backdrop alludes to the expanse of space and the possibility of Earth's isolation in the face of these difficulties, creating a sense of uncertainty and fragility.

Mythology:

The artwork takes on mythological significance in the light of the news article about scientists developing a solar umbrella to counteract global warming. The dividing of the Earth into two parts represents the binary choice humanity faces regarding its environmental future. The brightly colored side represents the myth of human inventiveness and the quest for climate solutions. It symbolizes hope and creativity as scientists seek to protect the environment. The shaded and black side, on the other hand, represents the fiction of environmental disaster and the necessity of tackling climate change. It serves as a strong warning about the dangers of inaction. The black universe backdrop lends a cosmic dimension to the story, highlighting the challenge's global scope and the need for collaborative action.



Image (24)

Denotation:

The image depicts a quiet environment with a large salt pan in soothing blue tones. Tall, lush green grass surrounds the salt pan in both the foreground and backdrop. This denotation depicts the natural beauty of the salt pan, with its broad, calm waters and lush foliage.

Connotation:

This image has a wide range of implications. Initially, the image conveys a sense of tranquillity and natural grandeur. The calm blue waters imply peace and the untouched beauty of the salt pan ecology. The brilliant green grass represents a robust environment, connoting fertility and vigor. However, when viewed in the context of the news title, which highlights the impending disappearance of 90% of the world's salt pans due to sea level rise, the image takes on a more gloomy tone. The peaceful waterways, once symbols of tranquility, now presage the advancing sea level, stressing the looming threat to this ecology.

Mythology:

The tranquil waters represent natural settings' vulnerability to climate change, supporting the idea of environmental fragility. The image inspires reflection on the importance of addressing global warming in order to conserve ecosystems such as salt pans.

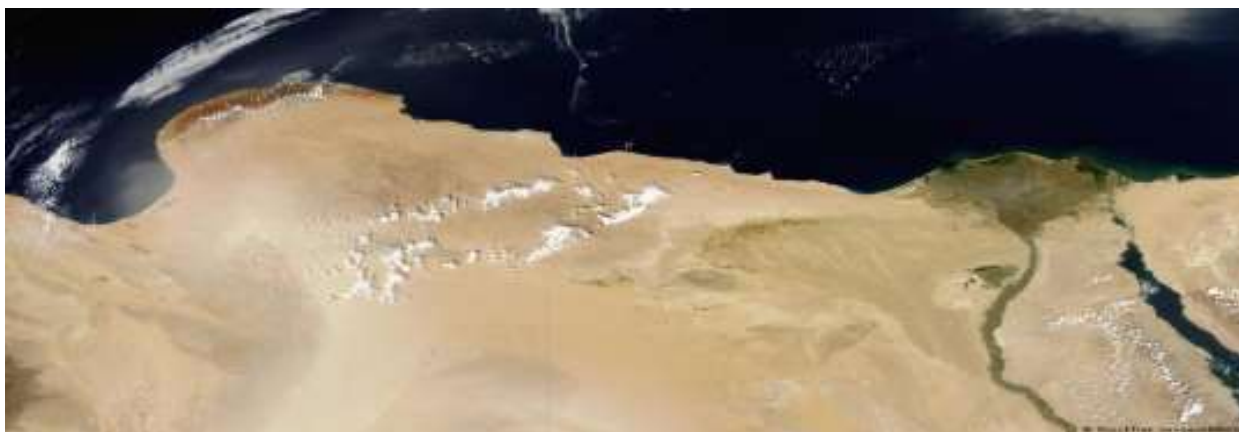


Image (25)

Mythology:

The image depicts a view of Egypt from above, obtained as a Google Maps image. A huge stretch of yellow desert dominates the landscape. The Nile River, which is crucial to agriculture and life in the region, is shown as a slender, flowing green thread cutting through the desert. A section of the Earth is visible in the backdrop, portrayed in a dark blue tint, with small white clouds dotting the atmosphere.

Connotation:

The associations with this image are profound and thoughtful. The huge yellow desert represents Egypt's severe and arid environment, which dominates much of the country's geography. It gives a feeling of environmental challenges as well as the susceptibility of agricultural methods under such circumstances. The narrow green line depicting the Nile River represents the region's lifeline, connoting fertility, nourishment, and the river's crucial role in supporting crops and communities. The dark blue Earth in the

background allude to the larger context of climate change and its global effects, while the presence of clouds allude to the intricate interplay between weather patterns and climate.

Mythology:

The artwork takes on mythological significance in the wake of recent news concerning climate change hurting wheat and corn cultivation in Egypt. The representation of the Nile as a slender green thread in the midst of the vast desert reinforces the myth of the river's life-giving capabilities as well as its key role in Egyptian history and agriculture. The image could be interpreted as a visual metaphor for the fragile balance between nature and human activities. The dark blue Earth and white clouds in the background convey the concept of environmental connection, underlining climate change's global character. It provokes thought on the complicated web of elements that contribute to climate-related challenges, as well as the need for global solutions.

b) Questions regarding the basic semantic fields that platforms utilize to create visual representations of global warming issues:

As for basic semantic fields, it could be listed as follows:

a) Al-Ahram weekly: The following are the dominating semantic field in the newspaper as follows:

- **Attributing responsibilities to global warming issue (2):** This field involves either international organizations or humans, or both, whether by saving earth resources or worsening the effects of global warming on the globe.
- **Exaggerating of future consequences of global warming (2):** This theme is based on scientific studies and experts to demonstrate the deteriorating effects of global warming on the Earth.

- **Showing future catastrophic repercussions of global warming with limited hope (2):** This theme is founded on contrast, stressing on the future repercussions of climate change, such as droughts and desertification. The exception comes with a little prospect of re-establishing the ecosystem balance in relation to assigning obligations to involved parties.

b) Al-Masry El Youm: The following are the dominating semantic field in selected facebook page as follows:

- **Discussing the remedies that could lessen the consequences of global warming (1):** by revealing citizen efforts to actively combat the implications of global warming through activities such as planting trees and increasing green spaces.
- **Showing future catastrophic repercussions of global warming with limited hope (1):** This area was provided by contrasting the future disastrous consequences of global warming with the continuity of earth preservation nature.
- **Exaggeration of future global warming repercussions (3):** by presenting the domestic future consequences of climate change on Egyptian legacy, international climate changes and major health concerns.

c) Al Shrouk Online NewsPaper: The following are the dominating semantic field in the newspaper as follows:

- **Exaggerating of future consequences of global warming (2):** This theme is based on scientific studies and experts to demonstrate the catastrophic effects of global warming on human survival,
- **Discussing the remedies that could lessen the consequences of global warming(1):** by revealing governmental and intuitional efforts to actively combat the implications of global warming
- **Attributing responsibilities to global warming issue (1):** through the relevance between human responsibilities in expected future scenarios either of prosperity or major consequences of natural crisis.

- **Current climate change major consequences (1):** through highlighting recent effects of the crisis on climate, and seasonal balance.

d) Green Future page: the following are the basic semantic fields used by the newspaper:

- **Exaggerating of future consequences of global warming (2):** based on scientific studies, warnings that threaten human, and natural resources existence were raised.
- **Discussing the remedies that could lessen the consequences of global warming (2):** through examples and nations efforts that help in confronting the crisis, and future scenarios to help upcoming generations in facing the crisis.
- **Explaining the causes of climate change issues (1):** through practices that cause and increase the crisis.

e) Ozone climate change: The following are the dominating semantic field in selected facebook page:

- **Manifesting affluence (3):** through Nile nourishment and the surrounding green environment, which asserted on current well-being and strengthened current situations.
- **Contrast between alternative scenarios (1):** demonstrate the differences between prosperity on Earth and disastrous capabilities across.
- **Implicit dangers (1):** This field was discovered by showing the repercussions of climate change through the influence of desertification and the deterioration of prosperity with exception.

c) Questions regarding the similarities and differences in employing visual representations to contribute to global warming challenges across institutional and user generated content:

Certain characteristics were replicated in platform visual representation, as follows:

- 1- Newspapers and environmental awareness pages both used a set number

of archived images. Certain images were replicated in the same platform, or even in various ones. Images poor quality was detected among images used in various platforms.

- 2- There is a large irrelevance between visuals and news, which reduces the importance and impact of images in stating and interpreting the environmental risks of global warming to the audience. Images were utilized as a visual necessity to accompany news rather than as an instrumental use to add impact to news highlighting the massive impacts of global warming.
- 3- Institutional platforms, as for the three newspapers, showed similarities in semantic field used specifically, as exaggerating of future consequences of global warming, Discussing the remedies that could lessen the consequences of global warming, and Attributing responsibilities to global warming issue.
- 4- The official pages of platforms dealing with environmental issues did not completely utilize images. Semantic field analysis revealed a use of fields that denigrated the future consequences of global warming, necessitating a reconsideration of using images that relate to news, adding an additional value to news through the selection of photos that arouse followers' curiosity and attention, especially since news was structured on the future consequences of global warming while images did not.

As for differences between platforms, they could be listed as below:

- 1- The semantic field used varied widely across platforms, specifically between user generated platforms. While Green future was concerned with semantic field that focused on causes and future effects with implication to major consequences of the crisis, Ozone climate change semantic field lessened from the effect of the problem, strengthening on current prosperity.
- 2- In comparison to other platforms, Al-Masry El-Youm was preoccupied with domestic initiatives to combat global warming.

Secondly: Research question relevant to participants analysis*

a) Egyptian youth levels of awareness regarding global warming on the three levels of knowledge, attitude, and behavior:

-Level of Knowledge: as for the level of knowledge regarding environmental issues, survey results showed the following:

a) *As for important environmental issues in Egypt*, 64% of respondents cited air pollution as a major problem. Second, with 31.5% of respondents water scarcity is acknowledged as a major environmental threat.

b) *Regarding Familiarity with the concept of climate change*, Seventy-three percent of the respondents said they were either familiar with the notion or very familiar with it. Of all those surveyed, 33% said they were quite familiar with climate change, and 40% said they were familiar with it.

However, 17% of the participants stated that they are unable to recognize climate change, suggesting a vague or inadequate comprehension of the idea. Furthermore, 2% of respondents said they knew nothing about climate change, and 8% said they were unfamiliar with it at all.

c) According to the findings, the majority of respondents appear to be somewhat familiar with the idea of climate change. Nonetheless, a significant proportion of participants either lack comprehension of climate change or are unfamiliar with it. This emphasizes the necessity of additional education and awareness-raising efforts to guarantee that a larger population is knowledgeable of the problem of climate change.

d) Regarding the *proper identification of global warming concept*, **respondents' perceptions on global warming are examined in this schedule. The majority 61% identified that human activity is to blame for the rise in the Earth's surface average temperature. Significantly more 41.5% think it's a decrease in the planet's average surface temperature brought on by climatic shifts. Smaller percentages of**

* For survey tabulation, please refer to Appendix Number 1.

respondents indicated other impressions, such as an increase in sea levels owing to iceberg melting and the atmosphere cooling as a result of industrial emissions.

This demonstrates how different people have different perspectives and misconceptions about the idea of global warming.

e)As for *global warming reasons*, 67% of the respondents thought that human actions like deforestation and the use of fossil fuels were the primary causes of global warming. Twenty-five percent blame natural processes, and fifty-seven percent say that human activity and natural processes work together.

This suggests that several respondents to the poll were unsure or lacked expertise. Investigating the origins of this ambiguity in more detail and clearing up any misunderstandings or knowledge gaps on the causes of global warming could be beneficial.

-Attitude towards active participation in actions that confront global warming: *as for active participation in environmental activities*, While 7% stated they were very likely and actively engaged, the majority 23% stated they were very unlikely to participate. Significantly, 28% of respondents said they would be at least somewhat likely to engage occasionally.

This suggests that there may be a lack of drive or enthusiasm to take an active role in climate change-related projects. It's important to note, though, that 7% of respondents indicated they were highly likely to be actively involved, suggesting that there is a subset of people who are actively taking action in response to climate change.

-Behavior to lessen the effect of global warming: *regarding respondents' individual efforts to lessen harmful environmental effects*. The most often mentioned practices were using public transit 29.5%, recycling and cutting waste (34.5%), and energy conservation at home 53.5%.

This implies that the respondents are more likely to engage in these particular behaviors, demonstrating a degree of environmental consciousness and personal accountability for reducing environmental harm.

B-Respondents' evaluation of the effectiveness of institutional and user-generated content in terms of the three levels of raising awareness:

Compared to Image (B), which was chosen by 36.5% of respondents, Image (A) was chosen by the majority of respondents 63.5%, suggesting that it had greater visual appeal or resonance with the audience. This preference for Image (A) can indicate that some visual components or representations work better to draw in viewers and convey the message about climate change.

As for respondents attitude towards the effectiveness of institutional and user-generated content in terms of the three levels of raising awareness, the content helps people understand the risks associated with global warming (rated 4.28 on a scale of 1–8), raises awareness of the issue's seriousness (rated 4.21), and encourages people to adopt climate-friendly behaviors (rated 4.13). The information shows that increasing knowledge and comprehension of global warming can benefit from both user-generated and institutional content. Respondents assessed the content's effectiveness at motivating people to adopt climate-friendly practices, raising awareness of the issue, and educating them about the dangers of global warming as being moderately effective.

This implies that both types of content have a role to play in educating and engaging individuals regarding global warming.

c) Suggestions of improving the environmental and global warming content: as for suggestions for better environmental issues coverage in Egyptian media results were as follows:

-Regarding topics that should be the top priority in addressing climate change in Egyptian media switching to renewable energy sources" was

the topic with the highest percentage of support with a total of 55.5%, with 62% of respondents thinking it is an important matter, "making stronger rules to protect the environment". Additionally, "raising public awareness and education about climate change" was strongly supported, with 56.5% of respondents citing the significance of raising public awareness of climate change and educating the people.

This implies that the respondents firmly think that the main strategy for combating climate change should be switching to renewable energy sources, and also that respondents generally agree that stronger laws and policies are necessary to protect the environment.

-As for suggestions for engaging youth in news about global warming, "Including real-life examples" was the recommendation that garnered the most amount of support, coming in at 64.5%, while 59.5% recommended "Using visual aids (e.g., infographics, videos)".

This suggests that the respondents think that using real-world examples to illustrate how global warming affects society is a good approach to get young people interested in the subject, and implies that using visual aids to teach children about global warming can help them pay attention and comprehend the topic better.

- As for respondents' perspectives about the best strategies to ensure the credibility of the content about global warming, 78% indicated that "Providing references and citations" was the plan that garnered the most support, while 56.5% perceived that "Including expert opinions" could be effective.

This suggests that the respondents believe that mentioning and referring credible sources is essential to proving the authenticity of content about global warming.

-Regarding ways that the content can encourage pro-environmental behavior among the youth, "Highlight the positive impact of individual actions" was the strategy that garnered the most support, with 40.5% of the vote, while

offering actionable advice and direction might encourage young people to adopt pro-environmental behaviors, as indicated by the 53% of respondents who supported the method of "Providing practical tips and guidance."

Secondly: Testing research hypothesis

This section tests the hypotheses put forth by the researchers concerning discrepancies in how respondents evaluate the effectiveness of both institutional and user-generated content.

H₁: Respondents differ in their acquired knowledge about Global warming according to shown content type (institutional and user-generated)

Tab No. (2) Respondent's differences in their acquired knowledge about Global warming according to shown content type (institutional and user-generated)

Variable	Content type	N	M	SD	t	df	Sig.
knowledge about Global warming	Institutional generated content	127	4.38	0.616	2.814	282	0.005
	User-generated content	73	4.10	0.785			

According to the previous hypothesis Respondents differ in their acquired knowledge about Global warming according to shown content type (institutional and user-generated)

As it suggests that there is a difference in the acquired knowledge about global warming based on the type of content shown to the respondents (institutional and user-generated). The statistical analysis conducted using an independent samples t-test revealed that the mean knowledge score for respondents exposed to institutional-generated content (M = 4.38, SD = 0.616) was significantly higher than those exposed to user-generated content (M = 4.10, SD = 0.785). The t-value of 2.814 with 282 degrees of freedom and a p-value of 0.005 indicates a statistically significant difference.

As a result, the first hypothesis was confirmed and approved, demonstrating statistically significant differences between respondents'

acquired knowledge about global warming varies based on the type of content shown to them.

H₂: Respondents differ in their attitudes towards Global warming according to shown content type (institutional and user-generated)

Tab No. (3)

Respondent's differences in their attitudes towards Global warming according to shown content type (institutional and user-generated)

Variable	Content type	N	M	SD	t	df	Sig.
Attitudes towards Global warming	Institutional generated content	127	4.17	0.927	0.875	282	0.382
	User-generated content	73	4.05	0.911			

According to the previously proposed predictions, respondents' opinions regarding global warming would vary depending on the type of content displayed (institutional and user-generated).

Given that it suggests that respondents' opinions regarding global warming change depending on the kind of content they were exposed to (institutional and user-generated). According to the findings of the independent samples t-test, respondents who were exposed to user-created content (M = 4.05, SD = 0.911) and those who were exposed to institutionally generated content (M = 4.17, SD = 0.927) did not significantly differ in their attitudes. According to the t-value of 0.875 with 282 degrees of freedom and the p-value of 0.382, there is no statistically significant difference found.

Consequently, second hypothesis was declined, suggesting that respondents' attitude regarding global issues were not considerably impacted by the kind of content displayed.

H₃: Respondents differ in taking intended behavior in confronting Global warming according to shown content type (institutional and user-generated)

Tab No. (4)

Respondent's differences in their intended behavior in confronting Global warming according to shown content type (institutional and user-generated)

Variable	Content type	N	M	SD	t	df	Sig.
Awareness of Global warming	Institutional generated content	127	8.315	1.378	0.209	282	0.834
	User-generated content	73	8.274	1.250			

Based on the previous hypothesis results, Respondents differ in their behavior of Global warming according to shown content type (institutional and user-generated)

As the hypothesis suggests that there is a difference in the awareness of global warming based on the type of content shown to the respondents (institutional and user-generated). The results of the independent samples t-test showed that there was no significant difference in behavior between respondents exposed to institutional-generated content (M = 8.315, SD = 1.378) and those exposed to user-generated content (M = 8.274, SD = 1.250). The t-value of 0.209 with 282 degrees of freedom and a p-value of 0.834 suggests that the difference observed is not statistically significant. Therefore, this hypotheses is not supported, indicating that the type of content shown did not significantly influence respondents' awareness of global warming.

Consequently, third hypothesis was declined, showing that respondents' behavior regarding global issues was not impacted by the kind of content displayed.

Conclusion:

-Results showed consistency between the semantic field used and respondents' knowledge regarding the priority given to human factors in contributing to the problem of global warming.

-As for the three levels of awareness from knowledge, attitude, and behavior, the following was concluded:

a) Respondents perceived climate change as a critical issue, where they gave it priority in the third place among the most critical environmental issues in Egypt.

b) Results showed an adequate level of knowledge through the consistent results showed between familiarity with the concept and choosing the appropriate definition. Still, the study showed a significant dissemination of misconception among the sample regarding the concept.

c) Results showed inconsistency between knowledge acquired about global warming and attitude towards active participation in climate change supporting activities.

d) results were inconsistent between behavioral actions taken to confront environmental problems, that were multiple and diversified, and respondents' attitude that showed a lack of enthusiasm in environmental activities.

This could be due to several reasons shown through study results, due to the spread of misconceptions about global warming, to differences between behavioral engagement in confronting environmental issues on both individual and societal levels.

e) Respondents' results regarding using visual aids resonate with semiotic analysis results that indicate the repetition of aids used and the usage of aids as mandatory factors in news with adding value.

d) Results show that including real-life examples in news, providing practical tips and guidance, and encouraging a sense of collective responsibility, given priority by respondents, could be a possible solution that helps connectivity between the level of awareness of respondents from knowledge to a favorable attitude by getting the concept of global warming confrontation familiar, and favorable behavior which exceeds individual to societal levels.

B) *In conclusion, Semiotic analysis, rooted in Roland Barthes's Semiotics Theory, revealed the constraints in the use of visual aids when covering global warming news, whether in institutional or user-generated content. The limitations were particularly evident in types predominantly structured around still images. The meaning conveyed by these aids often centered on exaggerating the problem and its future consequences. Moreover, there was a lack of variation in aids used, resulting in redundancy without providing functional interpretations to represent the news effectively.*

According to the *aspects of environmental awareness measuring instrument*, Egyptian youth, show a basic understanding of environmental issues, particularly global warming. They recognize the importance of individual actions to mitigate environmental impacts and are aware of Egypt's environmental challenges. The study underscores the significance of both institutional and user-generated content in disseminating knowledge about global warming, aiding comprehension, raising awareness, and promoting climate-friendly practices.

Nevertheless, there is room for improvement in engaging youth in climate change initiatives. Initiatives should focus on encouraging more active participation and implementing targeted educational campaigns to enhance knowledge and awareness among Egyptian youth about climate change and its causes.

Recommendations: study suggests the follows:

Environmental Literacy and Media Engagement recommendations:

- Promote environmental literacy among media college students in Egypt.
- Conduct extensive workshops in colleges to orient students with environmental issues.
- Recognize the crucial role of media students in environmental surveillance.

News coverage and visual aids usage recommendations:

- Enhance the role of news in global warming coverage by integrating visually compelling elements as:
 - Utilize before-and-after visual comparisons, time-lapse videos, to showcase environmental changes and their consequences on local communities.
 - Use data-driven visualizations (e.g., graphs, charts, interactive maps) to effectively convey complex climate change patterns and scientific findings.
 - Include satellite imagery, temperature graphs, and simulations to provide tangible representations of environmental impacts.
 - Utilize infographics explaining greenhouse gas emissions, sea level rise, and biodiversity loss to simplify intricate scientific concepts for broader audience comprehension.
- Collaborate with environmental experts to create informative and visually appealing segments, enhancing the credibility and effectiveness of news coverage on climate change.

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Appendix (1): Survey Tabulation:

Tab No. (5)
Familiarity with the concept of climate change

	f	%
Very familiar	66	33%
Familiar	80	40%
Cannot identify	34	17%
Not familiar	16	8%
Not familiar at all	4	2%
Total	200	100%

Tab No. (6)
The perceived concept of global warming (n=200)

The perceived concept	f	%
An increase in the Earth's surface's average temperature brought on by human activity.	122	61%
A drop in the planet's average surface temperature as a result of climatic changes.	83	41.5%
The atmosphere's cooling as a result of industrial pollutants.	58	29%
An increase in sea levels brought on by iceberg melting.	67	33.5%
I don't know	8	4%

Tab No. (7)
The causes of global warming (n=200)

The causes	f	%
Human activities (e.g., burning fossil fuels, deforestation)	134	67%
Natural processes (e.g., solar radiation, volcanic activity)	41	20.5%
Combination of both human activities and natural processes	115	57.5%
Others(Mention)	7	3.5%
I don't know	2	1%

Tab No. (8)
Engaging in climate change supporting activities

Engaging	f	%
Very likely, I actively participate	14	7%
Somewhat likely, I occasionally participate	56	28%
Neutral/Undecided	40	20%
Somewhat unlikely, I rarely participate	44	22%
Very unlikely, I do not participate	46	23%
Total	200	100%

Tab No. (9)
The personal actions taken to reduce negative environmental impacts (n=200)

The personal actions	f	%
Using public transportation	59	29.5%
Conserving energy at home	107	53.5%
Recycling and reducing waste	69	34.5%
Eating a plant-based diet	40	20%
Participating in local environmental initiatives	43	21.5%
Educating others about global warming	80	40%
Donating to environmental organizations	39	19.5%
Others	3	1.5%
I don't take any actions	16	8%

Tab No. (10)
Engaging in climate change supporting activities

Engaging	f	%
Image (A)	127	63.5%
Image (B)	73	36.5%
Total	200	100%

Tab No. (11)

Evaluation of the effectiveness of institutional and user-generated content in terms of the three levels of raising awareness

Statements	Stance	Strongly Agree	Agree	Cannot decide	Disagree	Strongly disagree	Mean	RI
Helps in understanding the risks of the issue of global warming	f	80	98	19	3	-	4.28	85.5%
	%	40%	49%	9.5%	1.5%	-		
It increases awareness of the seriousness of the issue of global warming	f	71	102	24	3	-	4.21	84.1%
	%	35.5%	51%	12%	1.5%	-		
It raises awareness levels about the issue of global warming	f	67	93	34	4	2	4.10	81.9%
	%	33.5%	46.5%	17%	2%	1.0%		
It motivates me to adopt positive environmentally-friendly behaviors to mitigate the phenomenon of global warming	f	83	74	31	10	2	4.13	82.6%
	%	41.5%	37%	15.5%	5%	1%		

Tab No. (12)

The topics should be the top priority in addressing climate change in Egyptian media (n=200)

The topics	f	%
Switching to renewable energy sources	111	55.5%
Supporting better farming and land practices for the environment	76	38%
Encouraging transportation choices that are good for the environment	74	37%
Making stronger rules to protect the environment	124	62%
Raising public awareness and education about climate change	113	56.5%
Others	7	3.5%

Tab No. (13)**The suggestions for engaging youth in news about global warming (n=200)**

The suggestions	f	%
Use visual aids (e.g., infographics, videos)	119	59.5%
Include real-life examples	129	64.5%
Making comparisons between developing and developed countries	61	30.5%
Simplify complex scientific concepts	116	58%
Others	6	3%

Tab No. (14)**The best strategies to ensure the credibility of the content about global warming (n=200)**

The best strategies	f	%
Provide references and citations	156	78%
Include diverse perspectives of the issue	71	35.5%
Include expert opinions	113	56.5%
Others	6	3%

Tab No. (15)**The ways that the content can encourage pro-environmental behavior among the youth (n=200)**

The ways	f	%
Highlight the positive impact of individual actions	81	40.5%
Provide practical tips and guidance	106	53%
Encourage a sense of collective responsibility	117	58.5%
Highlight the future negative consequences	79	39.5%
Explain current negative impacts on peoples' life	98	49%
Others	6	3%