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Middle East

Journal of Public Relations Research Middle East

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Effects of the Digital Literacy Intervention among University Students: A Semi Experimental Perspective at the Social Media Platform

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Effects of the Digital Literacy Intervention among University Students: A Semi Experimental Perspective at the Social Media Platform

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Abstract

This study is considered an exploratory effort in revealing impact of the digital literacy intervention among the university's students. It is methodologically based on a semi-experimental approach. The current paper tends to investigate effects of the digital literacy intervention on students' perceptions of the digital media literacy dimensions at social media platform. In this regard, three digital literacy intervening sessions were designed according to Eshet conceptual comprehensive model of digital literacy (2004). During these sessions, students were subjected to a certain set of interventions that included: photo-visual literacy, reproduction literacy, branching literacy, information literacy and socio-emotional literacy. Intervening sessions were assigned according to a set of guidelines. Ouirdi, Segers and Henderickx model of social media Taxonomy (2014) of users, content and function was employed as well. Results clearly indicated that there was a disparate need for a new perspective of digital literacy according to more functional approaches. Findings intelligibly revealed the immediate need for photo-visual digital literacy in terms of realizing and discerning the intended meanings of hostile posts. Results also shed the light on the national security concept, which was essentially crystallized in terms of approaching digital literacy intervention. Moreover, ideological and technological aspects were highly recommended in order to create an effective digital literacy intervention. Results also showed the importance of equipping students with a set of competencies required for fully committed participation in a digital environment. Therefore, promoting social media competent dimensions at higher education is considered an emerging step. Consequently, the performed study results indicated that incorporating and developing digital literacy dimensions at the Egyptian higher education is entirely essential.

Keywords: Digital literacy dimensions - Digital literacy intervention - The Eshet conceptual model - Social media Taxonomy.

Introduction:

The use of mobile devices, tablets mobiles, electronic devices and digital texts are dynamically in presence. A huge tremendous shift in digital practices have been rapidly hosted, with a greater sense of worrying from parents and educators (Reyna, Jorge; Hanham, Jose & Meier, Peter, 2018: 36-52) (Buckingham, David, 2007: 43-55).

Living in an interconnected world with an extending development numbers of fake news and anti-state rumors, where video sharing services, social software and web 2.0 applications, requires mastering new sorts of competent dimensions (Reyna, Jorge; Hanham, Jose & Meier, Peter, 2018: 36-52).

The long-established, traditional concept of being literate has meant being able to read and write. However, in the 21st century, being literate requires being competent with digital media platforms in terms of possessing an advanced, critical and most sophisticated dimensions (Reyna, Jorge; Hanham, Jose & Meier, Peter, 2018: 36-52). In this regard, Weiss (2017) defined digital literacy as:

"A set of competencies required for full participation in a knowledge society, It includes knowledge, dimensions, and behaviors involving the effective   use   of   digital   devices   such   as smart phones, tablets, laptops and desktop PCs for purposes of communication, expression, collaboration, and advocacy" (Weiss, Dovi, 2017: www).

The notion of "literacy" has been limited in terms of information literacy, trustworthy and bias, other critical perspective as social diversity, ideological, pedagogic, emotional and critical aspects of literacy practices have been disregarded (Buckingham, David, 2007: 43-55).

Concurrently, living in an increasingly interconnected world requires mastering new kind of dimensions to fulfill the cognitive, technical and emotional dimensions, in addition to support the sociological needs in the emergence of the digital communication.

Therefore, the current paper tends to investigate the effects of the digital literacy intervention on students' perceptions of the five digital media literacy dimensions at social media platform.

This was applied by demonstrating a set of competent guidelines in accordance with the following aspects:

1. The format and guidelines which are demonstrated at the social media platform via Ouirdi, Segers and Henderickx model.

2. The content, ideological and technological aspects that are majorly explained within the framework of the Eshet conceptual comprehensive

model of the five major digital dimensions: photo-visual, reproduction, branching, information, and socio-emotional dimensions.

The essential core in this academic effort is to identify the effect of students' perception of the five digital media literacy dimensions pre-and post-intervention.

This paper will start by reviewing the relevant literature; underpinning conceptual comprehensive models will be briefly explained. Then, methodological criteria will be systematically identified. Finally, results, discussions and conclusions will be highlighted.

The importance of the study:

The significance of this study stems from several considerations:

First: It may draw attention to the social media platforms which are considered presently a major source of news and information (El Ouirdi, Mariam; El Ouirdi, Asma; Segers, Jesse & Henderickx, Erik, 201: 107–126). In this regard, Egypt was increasingly considered at the highest rank on the internet world wide annual growth users, according to the digital world report 2018.
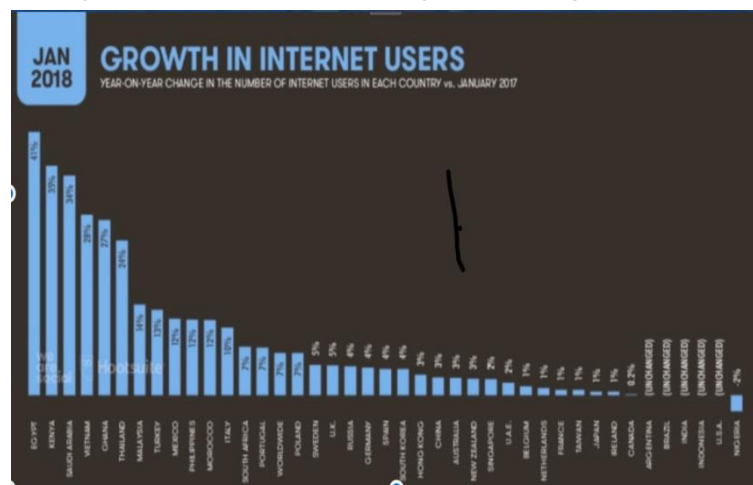
Figure (1)
The growth of the internet users 2018
(report of the Growth of the internet users, 2018: www).

Second: Using the social media platforms is highly considered a critical issue, due to the online abusing, the online bullying, the online crimes and the decreasing of individual productivity (Karpinski, Kirschner, Ozer, Mellott, & Ochwo, 2013) (Madianou, M & Miller, D, 2013: Pp. 169–187). Therefore, promoting social media competent dimensions in education is considered an emerging step.

Third: As a matter of fact, living in an increasingly interconnected world with an expanding growth of fake news and anti-state rumors requires mastering new kind of digital literacy dimensions, however, the Egyptian experience of the pedagogy related to digital literacy is still at the

developmental stages (Radi, Duaa Mohammad, 2019: 89-106) (Hassan, Ahmad Gamal, 2015: 89) (Mahmoud, Hala Sameer, 2018: 77) (Baker, Menna Mohsen, 2019: 56).

Fourth: Applying different functional approaches of digital literacy are considered an emerging necessity (Saputra, Meidi, 2020: 156) (Reyna, Hanham, Meier, 2018: 36-52) (Buckingham, 2007: 43-55).

Literature Review:

The digital media literacy platform has been questioned by academic researchers as follows:

- Digital literacy at the international scope of literatures.

- Digital literacy at the Egyptian scope of literatures.

1-Digital literacy at the international scope of literatures

Study of Meidi Saputra (2020), entitled "Social Media and Digital Citizenship: The Urgency of Digital Literacy in The Middle of a Disrupted Society Era" (Saputra, Meidi, 2020: 156)

This paper shed the light on the desperate needs for digital literacy as an intermediated educational perspective. The author theoretically highlighted the rapid growth of the fast advancement of technology and communication which had developed a new world order with great impacts of the citizens' lives. The emergence of social media has automatically developed the concept of digital citizenship; however, the spread of black campaigns, hate speech, false news, heated arguments towards each other got to become a common issue. Then he discussed the issue of digital citizenship with great emphasis of the citizens' unpreparedness in facing an era of disruption. Therefore, digital literacy is considered an emerging necessity.

Study of Liv Lofthus, Kenneth Silseth (2019), entitled "Students Choosing Digital Sources: Studying Students' Information Literacy in Group Work With Tablets, E-Learning and Digital Media" (Liv Lofthus, Kenneth Silseth, 2019: 284-300)

This study has investigated digital literacy and students' use of digital sources in a social studies project. Considering how students choose digital video sources when doing group work with tablets. The data contains of videos of group work. A socio cultural perspective on learning is employed in analyzing student interaction. The results show that students do not discuss digital sources only in terms of the formal criteria for digital literacy, but in relation to their perception of how the video sources are presented, which expanded to digital literacy skills in a greater perspective.

Study of Linda Laidlaw, Joanne O'Mara, Suzanna So Har Wong (2019), entitled "This is Your Brain on Devices': Media Accounts of Young Children's Use of Digital Technologies and Implications for Parents and Teachers" (Laidlaw, L.; Joanne A O'Mara; Wong, S. S., 2019: www)

The objective of this paper is to emphasize on children and digital technologies. The main goal is to discover children's changing literacy practices and the emergence of mobile devices on popular media. The authors collected popular media articles over this time period of five years (2013–2018), looking for the ways in which children and digital technologies were represented.   Finally, the authors presented the implications of popular media accounts in relation to informing parent and to develop schools' curriculum.

Study of Jorge Reyna, Jose Hanham, Peter Meier (2018) entitled "The Internet Explosion, Digital Media Principles and Implications to Communicate Effectively in the Digital Space" (Reyna, Jorge; Hanham, Jose & Meier, Peter, 2018: 36-52)

This paper derived from two previous research works on both digital media literacy framework and the taxonomy of digital media types within an educational perspective. It asserts the significance of digital media fundamentals to evolve an effective communication in the digital environment. This paper based on theoretical perspective. Its results showed that there was a disparate need of a new perspective of digital literacy according to the conceptual and functional skills.

Reyna, Jose Hanham, Peter Charles Meier (2018), entitled "A Framework for Digital Media Literacies for Teaching and Learning in Higher Education" (Reyna, Jorge; Hanham, Jose & Meier, Peter, 2018: 176-190)

This study proposes a framework of digital media literacies in higher education. Students are required to complete assessment tasks that involve the production of effective digital artifacts. This requires a certain set of technical, audio-visual, behavioral, critical and social skills within the framework of three primarily, interdependent approaches: conceptual, functional and audio-visual. Podcasting, digital stories, animations, video and blended media were heavily employed. In this connection, the three dominant approaches were crystallized by providing students with series examples and implications.

Study of Simeon Yates, John Kirby, Eleanor Lockley (2015) entitled "Differences and Inequalities in Relation to Class and Age Sociological Research Online" (Yates, Simeon; Kirby, John & Lockley, Eleanor, 2015: 1-21)

This article explores how both class and age as two major social variables can vary on digitally literacy. This paper derived from the OfCom Media Literacy 2013 survey. The Uk national perspective of digital media

use has been taken into account. In this connection, age and demographics changes were crucial social variables. The article was considered to act as an empirical reference further debate around the links between both age and class and digital media use. The paper presents the effects across, between and within age and class categories. A factor analysis of the OfCom data identified five main areas of digital media use, while a cluster analysis based on the factors identified seven main 'User Types'. In conclusion, the paper notes that age still acts as the principle illustrative variable for overall use in general and some specific types of use in particular, but that class also autonomously acts to explain various patterns of digital media use. As a result, both class and age features primarily affect the UK policy of digital access and use.

Study of Sora Park, Eun-mee Kim, Eun-Yeong Na (2014), entitled "Online Activities, Digital Media Literacy, and Networked Individualism of Korean Youth" (Park, Sora; Kim, Eun-mee & Na, Eun-Yeong, 2014: 829-849)

This study aimed to find out the link between networked individualism, digital media literacy, and young people's perception of their social capital. Social capital means the ways they connect to others and perceive their own social connectedness. The results show that Youth online activities and digital skills influence their own social capital. Moreover, networked individualism was higher in those who frequently occupied in online activities and who showed greater skills. Integrating to multiple, diverse networks and possessing various connections were positively correlated to their own online social capital.

Study of Sara Pereira, Luís Pereira (2013), entitled "Digital Media in Primary Schools: Literacy or Technology? Analyzing Government and Media Discourses" (Pereira, Sara & Pereira, Luís, 2013: 316-341)

This article examines the political and the media discourses within media literacy framework, concerning the "Magalhães" Which is a Portuguese governmental program responsible for delivering a laptop to all primary school children. The main goal of this study is to analyze the press coverage as well as the development of the initiative with special focus on critical media literacy framework, in order to recognize the dominant public discourses and to find out what the media selects for the debate in the public sphere. The finding indicates that the press framed a negative perspective of that program, so that, the public opinions have been negatively accepted. An overall, results reveal that the technological objectives were the predominant objectives, rather than the media literacy objectives.

Study of Eshet and Chajut (2010), entitled "You Can Teach Old Dogs New Tricks: The Factors That Affect Changes over Time in Digital Literacy" (Eshet, Y. & Chajut, E., 2010: 173-181)

This study attempts to observe life-long changes in digital literacy skills. It has investigated whether changes in digital literacy skills, among the same participants, are due to age or the experience related factors. Results show the gap between younger and older participants, in terms of experience and technical control, was closed, However, a wide gap has been discovered in terms of creativity and critical thinking. Moreover, they found that the ability to navigate and use digital environments does not guarantee a smart user.

Study of David Buckingham (2007), entitled "Digital Media Literacies: Rethinking Media Education in the Age of the Internet" (Buckingham, David., 2007: 43-55)

This article highlights several perspectives in digital media literacy and the emergence of the digital environment. Firstly, it argues that the notion of "literacy" has been limited in terms of information literacy, reliability and bias. Other critical perspective, as social diversity of literacy practices, has been neglected. Secondly, it considers the difficulties in distinguishing among the digital literacy approach adopted by media educators and other more instrumental, expressive social approaches. Thirdly, the author highlights the importance of establishing the four key concepts that are: representation, language, production and audience. Finding indicates that digital literacy needs to be seen as a part of a broader reconceptualisation of literacy. It proposes a broader approach which recognizes the social, ideological, pedagogic and critical aspects. It considers the importance of students' collaborative productions in terms of promoting digital literacy.

Study of York Ester-Alkli, and Yair Amichai-Hamburger (2004), entitled "Experiments in Digital Literacy" (Eshet-Alkalai, Y., & Amichai-Hamburger, Y., 2004: 81)

This study explored the application of the Eshet conceptual comprehensive model of five major digital skills: photo-visual skills, reproduction skills, branching skills, information skills and socio-emotional. This has been applied among different groups of scholars. Results clearly indicate that the younger students found to be more literate than the older ones, in terms of photo-visual and branching literacy tasks, however the older students performed better than younger students in terms of reproduction and information literacy tasks. Research results provided educators and software developers with useful and effective digital literacy guidelines to develop an effective digital communication.

Secondly: Digital literacy at the Egyptian scope of literatures

Study of Mohammed Rafatt Tulba (2019), entitled "The Relationship Between The Practice of School Journalism and The Development of Leadership Behavior Among Students in The Preparatory Stage" (Tolba, Mohamed Raafat, 2019: 22-79)

This study is considered an exploratory study; the main research target was to investigate the relationship between the practice of school journalism and the development of leadership behavior among students at the preparatory stage. A survey was conducted on the preparatory boys and girls' state schools. Results clearly indicated that there were limited understanding in practicing school journalism, in terms of providing contents, and accessing various sources.

Study of Duaa Mohammad Radi (2019), entitled "The Effect of Multimedia Design on Improving Children Media Literacy Skills in Dealing with Digital Media: Semi-experimental Study among Students of Preparatory Stage" (Radi, Duaa Mohammad, 2019: 98)

The current study aims to reveal the impact of multimedia design in terms of empowering children media education skills. It is underpinned with the cognitive theory of multimedia learning. A semi-experimental study is conducted among students of the preparatory stage. A proposal model was designed in order to empower students' digital literacy. Research results have shown improvements of students' digital skills. Moreover, this study provided educators with useful and effective proposed model of digital literacy.

Study of Amrita Abd Elhameed (2019), entitled "The Evaluation of Media Literacy Effects on The Level of Analytical and Critical Skills of New Media Messages in Facebook: (Qualitive Study on The Age of 18 to 22)" (Abd Elhameed, Amrita, 2019: 13-49)

The study aimed to investigate the digital literacy awareness among the university students. A survey was conducted at different sorts of educational system in higher education, applying to Helwan University, 6th of October University, Misr University for Science and Technology, and Nile University. The theoretical and the practical sector of education were considered intermediated variables. An overall, results reveal that students derived from the theoretical sector tended more likely to adopt a new digital literacy awareness more than their counterparts at the practical sector. It was also found that there was a desperate need for digital literacy at the Egyptian perspective.

Study of Mohammed Ramadan, El Kanin" (2019), entitled "Different Effects of Digital Media Literacy on Teenagers" (El Kanin, Mohammed Ramadan, 2019: 17-90)

This study was an attempt to answer this main question: What are the different effects of digital media literacy intervention on teenagers? In this regard, an experimental study was conducted to investigate the effectiveness of a proposed program of the digital media literacy on teenagers. Acquisition of the digital media literacy skills was the main concern. Results clearly indicated that a great level of digital literacy skills was scored. However, an overall, results reveal that digital literacy implementation is entirely essential at the Egyptian experiences.

Study of Menna Mohsen Baker (2019), entitled "The Effectiveness of Using Live broadcast Technology through Social Networks in Providing the Students of Educational Media some Media Skills" (Mohsen Baker, Menna, 2019: 16-45)

This study was an exploratory study to identify the effectiveness of live broadcast technology through social networks in providing students with digital literacy skills. A selected sample of university students was examined. This study was methodologically based on semi-experimental method. Results intelligibly indicated the following aspects: Familiarizing users with "direct broadcast technology"- Empowering students with new skills in terms of effectively usage of live transmission over networks. Finally, significant differences were founded prior and post intervention.

Study of Hala Sameer Mahmoud (2018), entitled "The Role of The Means of Communication in Forming the Concept of Media Education in Egyptian Schools" (Mahmoud, Hala Sameer, 2018: 12-88)

This study aimed to investigate the awareness dimensions of media literacy among students, teachers, and directors. It is considered an exploratory research effort. The qualitative methods were heavily applied. In-Depth interviews were conducted with a sample of directors and secondary state schools teachers. Moreover, in-depth group discussions were applied on a sample of high school students at state schools. The study showed that the majority of directors expressed a distinctive knowledge in terms of media literacy, however, most of the results came out that there is no inclusion of media literacy in the school curricula. The striking result is determined in showing a lowest level of awareness of media literacy.

Study of Ahmad Gamal Hassan (2015), entitled "Media Literacy Education about The Contents of Social Network Sites: A Proposed Model for The Development of Social Responsibility for University Student" (Ahmad Gamal Hassan, 2015: 15-67)

This research paper seeks to answer the question of "what is the impact of media literacy model within the framework of social responsibility at a social media platform?" This research has been applied in higher education institutions. The research was conducted on a sample of 32 students from the second year department of education at Mina University. The proposed model of media education limited to understand, analyze, critique, evaluate and assess the implication of social networking sites such as Facebook, Twitter, YouTube, and SoundCloud. Two research methods have been employed; the first one was the analytical descriptive method, and the second one was the semi-experimental method. The research finding demonstrated a significant model in media education. Moreover, there was a statistically significant difference at the level of 0.01 prior and post intervention.

Study of Basyouny (2013), entitled "Assessing the Acquisitioned Skills of Media Literacy Intervention: A Meta-Analysis Perspective" (Basyouny, Marwa, 2011: 9-39)

This study is considered as an exploratory effort in researching a reasonable body of research studies in primary media literacy intervention, which is dimensioned according to media–centered, user-centered, and socio-protectionist approaches. It is methodologically based on the meta-analysis research method. The previous quantitative research studies will be systematically provided. An outline specifying the media literacy intervention studies according to the effect size and acquisitioned skills will be provided. The aspects of traditional and digital Bloom's taxonomy, when applicable, were tailored as a paradigm in order to facilitate media literacy acquisitioned skills in an adjustable educational framework. The present meta-analysis correlates and articulates the studies' agendas, approaches, and theoretical foundations. Furthermore, conclusions and recommendations will be highlighted. As a matter of fact, the contribution to knowledge in this research paper is considered to be the merging of previous aspects as an attempt to enrich the Arab experience.

Commentary on literature review:

As can be seen, the previous foreign literatures have employed several perspectives and approaches in digital media literacy, with specific emphasize on notions, skills, life-long changes and age demographics changes. Other points were highlighted as networked individualism, social capital, UK national policy on digital access and use, digital artifacts and finally the Portuguese governmental objectives.

In conclusion, various types of platforms were excessively navigated including: research approaches, theoretical models, research designs, techniques, and methodologies.

Concerning the Egyptian studies, there was a special concern with the effectiveness of a proposed program of digital media literacy, within the framework of social responsibility and direct broadcasting Technology and other aspects.

Three research methods have been heavenly employed; the first one was the analytical descriptive method, the second one was the semi-experimental method, while the third one was the comparative method. Surveys, depth-interviews, depth group discussion, Meta analysis were also employed. Moreover, students in various educational stages, teachers, educational directors, media literacy interventions were examined.

Results clearly indicated that there was limited understanding in practicing digital literacy, in terms of having an awareness, providing contents, accessing various sources. It was also found that there was a desperate need for applying digital literacy at the Egyptian perspective. An overall, results reveal that digital literacy implementation is entirely essential at the Egyptian educational sectors.

Accordingly, the current study is beneficially employing specific research techniques including: research questions, methodology, theoretical framework, sample selection and criteria.

The current semi-experimental research aims to investigate the impact of the digital literacy intervention at social media platform among university's students. This was applied by examining the effects of the digital literacy intervention on students' perceptions of the five digital media literacy dimensions (photo-visual, reproduction, branching, information, and socio-emotional) when dealing with social media platforms. El Ouirdi, Segers, and Henderickx (2014) of social media taxonomy, and Eshet conceptual comprehensive model of the five major digital skills (2004) were heavily employed.

The Theoretical Framework:

This paper derived from two theoretical models which are as follows: El Ouirdi, Segers, and Henderickx (2014) of social media taxonomy, and Eshet conceptual comprehensive model of the five major digital skills (2002), (2004), (2010).

1- El Ouirdi, Segers, and Henderickx Model (El Ouirdi, Mariam; El Ouirdi, Asma; Segers, Jesse & Henderickx, Erik. 2014: 107–126) classified social media channels within a unique practical perspective. This model has based on the Lasswell's act of communication (1948). They activated the Lasswellian model to classify the social media platform within the three-dimensional cube which is user (who and whom), content (what) and function (why).

Lasswellian model (1948) highlighted the questions of who says what "to whom", "in which channel", "with what effects". In this connection "who" indicates to the communicator who produces the message, "what "refers to the message itself, "in which channel" refers to the medium, however,"with what effect" highlights the messages' consequences. (Steinberg, 2007: 67)

In this regard, a new component of "why" was added, to measure the functional perspective of the communication digital processes within the social media platform.

El Ouirdi, Segers, and Henderickx (2014) employed the basic lazwellan model in an advanced and functional perspective. Distinguishing the lines between initiators and recipients of communication on the social media platforms gives a practical and obvious perspective which is compatible with social media platforms.

This can be illustrated as follows:

First: "who" and "whom" refers to a wide range of initiators and recipients (pro-comers) in an interactional process within the framework of Micro, Meso, and Macro levels of social media usages. In this regard, Micro refers to individual perspective of the social media, while the Meso level by organizational perspective, however, the Macro level describes the governmental perspective.

Second: "What" refers to the entire diverse of the digital content. In this regards, five digital types of content formats, which are text, video, image, audio, and games, are highlighted. This can be termed as-user-generated content.

Third: "in which Channel" refers to social media as a set web-based platform built on Web 2.0.

Fourth: "with what effect" which has been changed by Holsti's (O.R. Holsti, 1968: 596–692) by adding the code of "why", however El Ouirdi, Segers, and Henderickx (2014) formulated the code of "why" within the social media platform by emphasizing on a functional perspective. This can be explained by highlighting the purpose of the social media's multi level process of communication (S. Steinberg, 2007: 89)**.** In another perspective, adding the "why" code highlights the personal, social usages and gratifications such as sharing, collaborating, networking, or geo-locating.
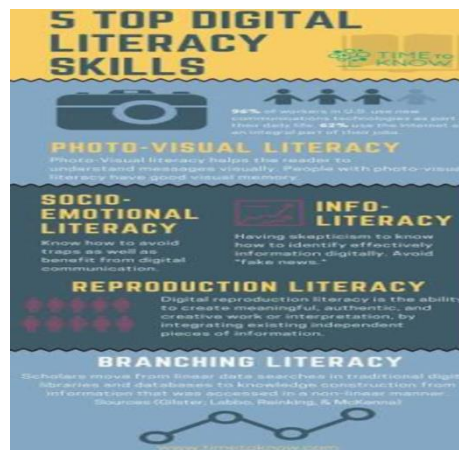
Figure (2)
Social Media Taxonomy

Source: Ouirdi , Segers, and Henderickx (2014)

As can be seen in Figure (2), Ouirdi, Segers, and Henderickx (2014) model classified social media within three dominant multi level approaches which are users (who and whom), content (what) and function (why).

2- Eshet, Amichai and Hamburger, (2004) (Eshet, Y., & Amichai-Hamburger, Y., 2004: 425-434) provided the field of digital literacy with the most comprehensive conceptual model. This model has been classified into five major digital dimensions which are: photo-visual, reproduction, branching, information, and socio-emotional (Eshet, Y., 2012: 108) (Snyder, I., 2007: Pp. 394-415) (Figure 3). This can be explained as follows:

Figure (3)
The Eshet model for Digital Literacy Skills
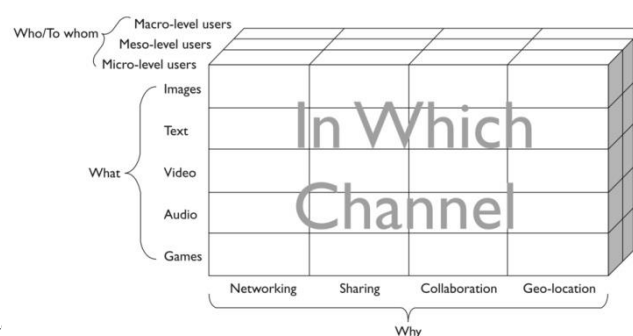
Photo-visu

Photo-visual literacy dimension is considered one of the most influential methods of communication. It can be crystallized as a worldwide language (www.youtube.com). It means "using vision to think" (Tuft, E.R., 1990: 104). In another perspective, the photo-visual literacy dimension is the competency of reading, understanding and realizing the overt and covert meaning and instructions that are presented in a visual- graphic messages (Shneiderman, 1998: 89). Photo-visual literacy is a dominant factor of all

modes of communication. It can be demonstrated as the ability to recognize the visual language as follows (Weiss, Dovi, 2017: www):

− Translating the abstract image into reality in terms of object or felling or actions (www.nzdl.org).

− Interpreting the information presented in a visual- graphic digital form (Infographic Workforce uryCent st21).

− Reading instructions from visual-graphic messages. In this regard, children's modern computer games are considered the most perfect examples.

− Negotiating of the meaning presented in a visual- graphic digital forms (7digitalliteracy.blogspot.com).

− Decoding visual message fluently (Weiss, Dovi, 2017: www).

Reproduction literacy:

Reproduction literacy means the competence to create a meaningful digital production based on the visual art. Digital reproduction dimension provides users with opportunities to manipulate and mastering the pre-existing digital form (texts, visuals, and audio pieces) (Eshet Y. & Amichai-Hamburger, Y., 2004:425-434). In this particular concern, David Buckingham (Buckingham, David, 2007: 43-55) shed the light on the importance of students collaborative productions in terms of promoting and enhancing their digital literacy dimensions. Reproduction literacy dimension can be outlined by activating the following perspectives:

− Rewriting and editing the pre-existing digital form to produce a new, meaningful version.

− Rearrangement and reproducing of the pre-existing digital form.

− Using the existing digital version (text, image, audio, and create a new vision or new interpretation) (7digitalliteracy.blogspot.com).

− Enhancing creativity and critical thinking.

− Empowering the personal innovativeness (Eshet, Y. & Chajut E., 2010: 173-181).

Branching literacy:

Branching digital literacy means the competence of establishing knowledge from non-ordinary, hyper- textual navigation in the digital space (Weiss, Dovi., :108). The main purpose of this particulate dimension is overcoming the traditional matters of getting lost while navigation and getting disoriented in constructing knowledge in the hypermedia platforms (Lee, J.J. & Hsu, Y., 2002: 1000–1001).

Branching literacy dimension can be facilities according to the following perspectives:

- Possessing technical, control of massive digital complex internet knowledge (Eshet, Y. & Amichai-Hamburger, 2004: 425-434) (Weiss, Dovi, 2017: www).
- Possessing cognitive control of massive digital online knowledge presented in non-liner approaches (Burnett, K. & McKinley, E.G., 1998: 425-434).
- Enhancing users to build meaningful understandable knowledge (Zins, C., 2000: 173-181) (Weiss, Dovi, 2017: www).

Information literacy:

Information literacy means the competence dimensions of effectively, locating, evaluating, and using of the needed information (Association of College & Research Libraries, 2017: www) (Eshet, Y. & Chajut E., 2010: 173-181). It is considered as an essential cornerstone for our own social and economic well-being (Toth, M., 2016: www). In an increasingly complex information society with a rapid growth proliferation of available information from a various reputable and unrepeatable source of information, information literacy dimensions require possessing an information dimension. Recently, using the artificial neural networks leads to the developments of deep fake which have reaped worldwide attention for their uses in terms of hoaxes, fake news, revenge porn, and pornographic science (McTavish, Marianne, 2009: 3–28).

In this connection, Banks (2018) referred to the terrifying relationship between deep fakes and the future of pornography (Banks, Alec., 2018: www). Information literacy dimensions can be outlined by activating the following perspectives:

- Recognizing when information is needed to be evaluated.
- Activating "skepticism" as a critical cognitive approach (Eshet, Y. & Amichal, Y., 2004: 421-427).
- Assessing information efficiency and effectively (Eshet, Y. & Chajut, E., 2010: 173-181).
- Evaluating information critically and competency (Eshet-Alkalai, Y., 2004: 93-106).
- Using information accurately and creatively (Weiss, Davis, 2017: www).
- Sorting out false information (7digitalliteracy.blogspot.com).
- Using information ethically and legally.
- Activating the users' knowledge base and value system.
- Highlighting the Essences of skepticism of the online information (Weiss, Davis, 2017: www).

Socio-emotional literacy:

Nowadays, internet plays an essential role in our life including social life, work and leisure time (Hamburger, Y.A., & Ben-Artzi, E., 2000: Pp.441-449). It leads to being presented online, having various functions as socializing, collaborating, or simply consuming content (El Ouirdi, Mariam; El Ouirdi, Asma; Segers, Jesse & Henderickx, Erik, 107–126). Putnam (2000), Sora Park, Eun-mee Kim, Eun-Yeong Na (2014), Hamburger, Y., & Hayat (2011) emphasized on network and social life (Park, Sora; Kim, Eun-mee, & Na, Eun-Yeong, 2014: 829-849). They have argued that the internet has a negative impact in our society and more particularly that it has led to significance networked-individualism and loneliness (Amichai-Hamburger, Y. & Hayat, Z., 2011: 585-589).

In this regard, socio- emotional literacy dimension is considered the highest and most sophisticated dimension among the digital modern dimensions (7digitalliteracy.blogspot.com). It entails mainly sociological and emotional aspects of work in cyberspace (Weiss, Dovi, 2017: www). It requires users who relatively possess specific analytical dimensions, such as information literacy, photo-visual literacy, and it also requires a kind of maturity (Amichai-Hamburger, Y., 2002: 425-434).

Socio-emotional literacy dimension can be outlined by activating the following perspectives:

– Filtering and classifying a wide range of information images provided by digital era (Weiss, Dovi, 2017: www).

– Understanding and copping of being safe online (Eshet, Y. & Chajut, E., 2010: 173-181).

– Possessing emotional recognition dimensions.

– Obtaining an overt instructional training in order to avoid internet trap (Eshet, Y. & Amichal, Y., 2004: 421-427).

The research problem:

Based on relevant research literatures, there was a self-evident deficiency at the Egyptian digital literacy experience. Accordingly, there is a desperate need for applying digital literacy competences at the Egyptian perspectives.

The current semi-experimental research aims to investigate the empirical measurement of the impact of the digital literacy intervention at social media platform among university's students.

This was applied by examining the effects of the digital literacy intervention on students' perceptions of the five digital media literacy dimensions (photo-visual, reproduction, branching, information, and socio-emotional dimensions) pre-and post-intervention.

Rates of using social media, rates of content production on social media sites, gender and socioeconomic status (SES) are statically examined as intermediated variables.

The research goals:

The present semi-experimental study aims to investigate the effects of the digital literacy intervention on students' perceptions of the five digital media literacy dimensions at social media platform.

A number of sub-goals can be illustrated as follows:

− Examining the effects of the digital literacy intervention on the intervening group respondents' perceptions of the five digital media literacy dimensions.

− Determining the intervening group respondents' using rates of social media sites.

− Investigating the intervening group respondents' content production rates for social media sites.

− Examining the effect of the five digital literacy dimensions on the respondents' perception of the digital dimensions pre and post- the intervention.

− Investigating the relationship between the intervening group respondents' demographic characteristics and their perception of the digital literacy dimensions.

− Investigating the relationship between the intervening group respondents' using of social media sites and producing contents for these sites on one hand and their perception of the digital literacy dimensions on the other hand.

The research questions:

Research questions provide the direction to the study and guide the researcher to focus on the core objective of research. Three central questions will be experimentally answered as follows:

− How were the intervening group respondents' perceptions of the five digital literacy dimensions affected by the intervention?

− Is there a significant relationship between the students' demographic characteristics (gender and socio-economic status) and their perception of the digital literacy dimensions?

− Is there a significant relationship between the intervening group respondents' using of social media sites and producing contents for these sites on one hand and their perception of the digital literacy dimensions on the other hand?

The research hypotheses:

Hypotheses have been outlined as follows:

H1: The intervening group respondents' perception of the five digital literacy dimensions increased with significant differences after the digital literacy intervention more than before.

H2: There was a statistically significant positive correlation between the digital literacy dimensions in the pre-and post-intervention.

H3: There were significant differences between the intervening group respondents in terms of benefiting from the digital literacy intervention according to gender and socio-economic status.

H4: There were significant differences between the intervening group respondents in terms of benefiting from the digital literacy intervention according to the level of their usage of social media sites and their production rates for these sites.

H5: The bilateral interaction between the demographic characteristics of the intervening group respondents (gender and socio-economic status), and the level of each of social media sites usage and content production for these sites had a significant effect on their perception of the five digital literacy dimensions after the digital literacy intervention.

The research definitions:

Digital media literacy:

It can be framed as set of competencies required for full participation in a knowledge society (Weiss, Dovi, 2017: www). In this regard, it comprises the five major digital dimensions (photo-visual, reproduction, branching, socio-emotional, and information dimensions).

Social media competence (SMC):

This refers to an individual's competences to use social media efficiency and effectively as a means to send messages, engage with others, and encourage conversation and participation in a community (Alber, J. M.; Bernhardt, J. M.; Stellefson, M.; Weiler, R. M.; Anderson-Lewis, C.; Miller, M. D., & MacInnes, J., 2014: 221–221).

Social-emotional digital literacy:

In this connection, social-emotional digital literacy means being safe online (Eshet, Y. & Chajut. E., 2010: 173-181).

Information literacy:

In this particular concern, information literacy means achieving the following points:

− Recognizing when information is needed to be evaluated.

- Activating "skepticism" as a critical cognitive approach (Eshet, Y. & Amichal, Y., 2004: 421-427).

- Assessing information efficiency and effectively (Eshet, Y. & Chajut. E., 2010: 173-181) (Eshet-Alkalai, Y., 2004: 93-106).

Reproduction digital literacy:

In this perspective, reproduction digital literacy means highlighting the importance of creating a meaningful digital production based on the existing digital form (texts, visuals, and audio pieces) (Eshet, Y. & Amichai-Hamburger, Y., 2004: 425-434).

Photo-visual digital literacy:

In this particular concern, photo-visual digital literacy means recognizing and interpreting the information presented in a visual- graphic digital form (Weiss, Dovi, 2017: www).

Branching digital literacy:

In this particular concern, branching digital literacy means enhancing users to build a meaningful understandable knowledge (Zins, C., 2000: 173-181) (Weiss, Dovi, 2017: www).

Anti-social media platforms:

In this context, the study is applied to the Muslim Brotherhood facebook pages and YouTube channels.

State National Security:

It is the state ability to protect its internal and external security, achieve the highest dimension of comprehensive development, ensure its progress, and face crises, threats or challenges, thus contributing to the implementation of its development and national goals. In this regard, the study is applied on the social, economic and political areas of the national security.

Ideological aspect:

It explains the code of "what" in terms of norms, attitudes, and values. Ideology circulates via social media (Silvestri, Lisa, 2016: 27-42).

Technological aspect:

It implies more than knowing how to manipulate a particular medium, it refers to the means of enabling people to analyze, evaluate and create messages (Silvestri, Lisa, 2016: 27-42).

The research variables:

1-Independent variables:

The proposed model of digital literacy intervention for social media competences is according to the five digital literacy dimensions.

2-Dependent variables:

The development of the effect of the five digital literacy dimensions.

3-Intermediate variables:

− Demographic variables: gender and socioeconomic status (SES).

− Students' using rates of social media sites.

− Students' producing rates of contents on social media sites.

The research methods:

Three main methods were applied as follows:

- The first one is the analytical descriptive method:

This method is a statistical method that is used to search and summarize historical data in order to identify patterns. It has been designed to obtain information concerning specific phenomenon (www.slideshare.net). Other systematic elements are also included, such as: data gathering instruments, data categorization, intervening group identification, scientific procedure, analyzing, data interpretations and recommendation (www.pathways.cu.edu.eg). This approach had been applying here in order to specify related digital literacy dimensions to enhance student social media competences.

- The second one is the comparative method:

Comparative method is a specific technique of demonstrably investigating ability to examine, compare and contrast variables (Finifter, Ada W., 1993: 79-96). This method had been employed to examine the effect of the students' digital media literacy dimensions in the pre-and post- intervention.

- The third one is the semi-experimental method:

This method is a systematic and scientific approach in searching and manipulating one or more variables, controlling and measuring any change in other variables (Abdullah, Moataz Sayed & Abdel-Latif Mohamed Khalifa, 2001: 81). This method has truly tested hypotheses concerning cause-and-effect relationships. It represents the most valid approach to the solution of educational problems (Gay, L. R., 1992: 298).

In this regard, this method has been used to measure the effects of the digital media literacy intervention among university' students in order to enhance the Egyptian students' social media perceptions.

The research intervening group:

The university students had been chosen as an intervening group framework. In this regard, youth are considered a vital age-group, with an important role to play on today's society, and the future. Moreover, they are usually being the main target of the anti-state social media propaganda than any other age-group. Other reasons have been taking into account, such as availability, easily to organized and accessed. In addition to the homogeneity in terms of backgrounds, cognitive frames and ages which comparatively control other intermediate variables.

Special consideration was given to students at mass communication faculty in order to develop a responsible attitude in terms of improving their understanding to counter the anti-state social media rumors and to develop their social media consumption and production.

The study intervening group:

This study was conducted on an available intervening group included the entire student population enrolled in the first year of the English section at the faculty of Mass Communication, Beni-suif University, who numbered (32) students. The students are sharing similar characteristics which have a potential effect on their digital dimensions, such as age, educational level, academic specialization and place of residence. For the gender and socio-economic status, the study intervening group is distributed as shown in the table number (1).

Researcher has ensured that the students have no experience with digital media literacy. This has been checked by engaging into a discussion group in a workshop at their educational setting.

Other procedures were used to ensure the students' possessing of satisfaction technological competences in terms of using the world web effectively. In this regard, students were asked to prepare number of assignments during delivering of the course of social psychology of mass communication.

The researcher shows the demographic composition of the study intervening group according to their gender and socioeconomic status in the following table:

Table (1)
Distribution of the respondents according to their gender and socioeconomic status

	N	%
The gender		
Male	7	21.9
Female	25	78.1
The socio-economic status		
Low	6	18.75
Intermediate	13	40.6
High	13	40.6
Total	32	100.0

Regarding to the demographic composition of the study intervening group, table (1) shows the distribution of the intervening group according to their gender; as can be seen, females account for (78,1%), while males account for (21,9%). The distribution of the intervening group according to the variable of the socioeconomic status is illustrated also; the intermediate and high status come in the first place by (40.6%), followed by the low status (18.75%).

In the light of the above, it is evident that the number of females is more than males and the number of students with low economic and social status is less than others; the statistical treatment took this into account, bearing in mind the small size of the study intervening group (as an semi-experimental study), to reduce the effect of variation.

The research procedure:

Firstly, pre-and post-intervention measurements (questionnaires) were conducted among university students according to the Eshet conceptual comprehensive model of the five major digital literacy dimensions (photo-visual, reproduction, branching, information and socio-emotional).

Digital literacy intervention was designed according to a set of guidelines of the Eshet conceptual comprehensive model of the five major digital literacy dimensions.

These guidelines were determined according to a pilot study conducted on (12) students enrolled in the first year of the Arabic section at the faculty of Mass Communication, Beni-suif University. An equal number of males and females took part in three discussion sessions, each session included

four students. All of them responded positively and were able to clearly articulate the intended purpose of the survey.

Accordingly, the results were as follows:

- Facebook and You tube were the most favorited social media platforms.

- Four essentials topics of digital literacy were heavily promoted. They considered with e- safety, cultural and social understanding, effective communication and critical thinking and evaluation.

- National security and anti-state rumors were considered the students' main interests and concerns at the social media platforms.

The final version of both questionnaire and intervening sessions were examined by a group of five experts in terms of checking the face validity. Accordingly, minor adjustments of formatting and contents were made for both of them.

Finally, the last versions were finalized with instrument measures on 3 dimensions, Likert-type basis, where included as: 1 means disagree, 2 means neutral, 3 means agree.

Secondly, all participants were asked to complete the pre-test questionnaire which was considered as a measurement of variable of interests. Immediately, after the pre-test questionnaire was completed, participants in the intervening group received the digital media literacy intervention.

Thirdly: The intervention sessions were heavily employed the Eshet conceptual comprehensive model of the five major digital literacy scales (photo-visual, reproduction, branching, information, and socio-emotional). An interactive discussion on national security, anti-states rumors, and how those are framed at the social media anti-state platforms were applied.

An interactive power point presentation, that includes text, video, image, audio, and games, was employed within the framework of Ouirdi, Segers and Henderickx model of social media taxonomy, which includes a three-dimensional cube of user, content format, and functions. Time for question and discussion was also incorporated into each intervention session in order to promote engagements and participation.

Finally, post-test was administrated on the same day, by asking the intervening group to answer identical questionnaire items of the previous one.

The research place and time:

This study was carried out at Tuesday on the 3 Ed December 2019, just before the first semester exams. It was conducted in student lecture halls.

The intervening sessions have been delivered by the researcher, and four media students who were obtained training course in digital literacy delivered by the researcher. Three consecutive class periods were used; each class period was approximately (60) minutes in duration.

The research design:

The study has relied on the classic semi-experimental design (pre/post-measurement design). The study group was subjected to the post-measurement after attending three digital literacy intervention sessions for three hours.

The research method:

Questionnaire tool has been used to gather the required information. It has designed according to the Eshet measurable study variables of the five major digital literacy dimensions. The study intervening group was asked to answer the questionnaire before attending the semi-experimental sessions (as a pre-measurement), then a post-measurement was administrated on the same day after the semi-experimental sessions (as a post-measurement). A group of arbitrators in the fields of psychology, media and specific education look at the questionnaire to ascertain whether it is comprehensive and be able to gather the required information to achieve the study objectives[1]. The researcher amended the questionnaire according to the arbitrators' comments.

The intervening session (semi-experimental sessions):

Media literacy interventions are substantially conceptualized as an educational program intended primarily to cultivate a critical, autonomous perspective, (David Buckingham, 2007: 43-55). In this regard, the semi-experimental study was conducted through three consecutive sessions; the first

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[1] Arbitrators:

1. **Prof. Hassan Ali Hassan**, Professor at Radio and Television Department, Faculty of mass communication, Suez University.

2. **Prof. Seham Hanfy,** Professor of Curricula and Teaching Methods, Faculty of Education, Beni Suef University.

3. **Prof. Hanan Juneid**, Professor at the Department of Public Relations and Advertising, and the vice dean for community service and environmental development, Faculty of Mass Communication, Cairo University

4. **Prof.Barakat abd elArizona,** Professor at Radio and Television Department, Faculty of mass communication, Cairo University.

5. **Prof. Ashraf Abdel-Maghith**, Professor at the Department of Public Relations and Advertising, Faculty of mass communication, Cairo University.

6. **Dr. Nisreen Hussam El-Din**, Assistant Professor at the Department of Journalism, Faculty of Mass Communication, Beni Suef University

7. **Dr Ehab Talaat**, Counselor at Nasser Higher Military Academy.

semi-experimental one was designed to provide the intervening group with additional identifying information on the Egyptian national security and the threats surrounding the country, in addition to information on the social media platforms mechanisms as one of the tools of fourth generation wars. It also explained the impact of systematic propaganda uses through social media platforms on the Egyptian national security. While the second and the third semi-experimental sessions aimed to present digital literacy dimensions applying to the anti-state online platforms via Facebook, electronic applications used to activate means of self-protection and information verification were introduced.

Table (2)
The intervening sessions outlines

Digital literacy dimensions	Sessions' Objects	Application	Criteria
Social-emotional digital literacy	Online Etiquette	(Electronic application) (Facebook)	ElOuirdi, Segers & Henderickx Model (2014) + guidelines
Information literacy digital literacy	Fake news Rumors	(Electronic application) (Internet sites) (Facebook)	ElOuirdi, Segers& Henderickx Model (2014) + guidelines+ Technological Aspect
Photo-visual digital literacy	Anti-state social media propaganda	(Facebook) (Youtube)	ElOuirdi, Segers & Henderickx model (2014) + Ideological and Technological Aspect
Branching digital literacy	Positive navigation	Official pages and websites	Guidelines
Reproduction digital literacy	Countering Rumors and fake news	(Facebook)	Guidelines

As shown in Table (2), the four axes of digital literacy have been activated to raise the students' perceptions according to the following order:

First: digital emotional-social literacy dimension

This dimension concerns with means of protection and electronic security, in addition to the applications that target breaking the personal security and violating privacy. It also concerns with presenting the mechanisms of safe handling through the rational digital citizenship means.

In this context, a number of electronic applications that activate means of self-protection have been introduced.

Second: information literacy dimension

Intervening groups of false news and malicious rumors through suspicious or unsuspicious media platforms were displayed. The technological aspect was presented to verify information. Verification applications of information, photos and electronic pages were presented, as well as electronic applications that activate means of self-protection.

Third: photo-visual literacy dimension

This dimension has been activated on the basis of the previous dimension (information literacy dimension). In this context, the ideological aspect has been used to define the anti-state ideology that affects the Egyptian national security, and discern the intended meanings of the hostile posts (Silvestri, Lisa. 2016: 27-42). Consequently, the respondents could understand the latent or overt underlying meanings of Facebook posts and YouTube channel pages, in a way that would enable them to recognize the sources of anti-Egyptian propaganda and how this propaganda has been displayed directly or indirectly through news, ironic posts and other memes, by revealing its ideological biases.

This has been applied through displaying the Facebook pages of "Al-Jazeera", "The brotherhood's network", "Meem magazine" and "Al-Araby Al-gadeed", In addition to the YouTube channel pages of "Mekameleen", "Al-Hewar", "Al-Sharq", as well as some posts and hidden memes that disseminate anti-Egyptian propaganda.

Fourth: branching digital literacy dimension

This dimension concerns with the degree of capacity to produce knowledge, investigate information, retrieve of information, and search rationally through the internet and social platforms. It has been activated on the basis of the previous one (photo-visual literacy dimension). Mechanisms of collecting information and realities through the secure and official online platforms have been applied to verify the malicious information, and refute the rumors with a view to produce responsible contents later. This has been applied to the pages of the ministries and their official speakers, in addition to the reports issued by the cabinet presidency media center which clarify the facts and respond to the rumors.

Fifth: reproduction literacy dimension

In this context, the previous dimension (branching digital literacy) has been activated to produce posts containing new texts, videos or audios responsible for refuting counter-propaganda via Facebook to implement the information verification outputs through information literacy dimensions. In

this regard, the researcher gave the intervening group a set of positive constructive examples on producing posts.

The five dimensions of digital literacy and the accompanying applications have been presented according to the following methodology:

1. The dimensional cube of social media taxonomy was applied as a form of (who and whom) users, what (content), why (content).

2. Using the ideological and technological aspects in introducing the electronic applications and explaining the ideology that drives the anti-state propaganda, and adversely affects the Egyptian national security.

The research scales:

1.The scale of socioeconomic status:

This scale is based on three questions; the first one consists of 5 degrees, the second one consists of 4 degrees, and the third one consists of 2 degrees. Consequently, the outcome of this scale consists of 9 degrees (11: 3) divided into three levels as follows:

- Low level (from 3: 5 degrees).

- Intermediate level (from 6: 8 degrees).

- High level (from 9:11 degrees)

The Cronbach's alpha correlation coefficient was (0.693); it was a reliable high stability value. The factor analysis test assured the validity of the used terms. The saturation level of the common covariance values of this scale ranged between (0.664: 0.716).

2.The scale of intensive using of social media:

This scale is based on two questions, the first one consists of 3 phrases, and the second consists of 4 phrases. Consequently, the outcome of this scale consists of 6 grades (2: 7), which are divided into three levels as follows:

- Low level (from 2: 3 degrees).

- Intermediate level (from 4: 5 degrees).

- High level (from 6: 7 degrees)

The Cronbach's alpha correlation coefficient was (0.763); it was a reliable high stability value. The factor analysis test assured the validity of the used terms. The saturation level of the common covariance values of this scale ranged between (0.684: 0.776).

3.The scale of intensive producing of social media content:

This scale is based on two questions, the first one consists of 3 phrases, and the second consists of 4 phrases. Consequently, the outcome of this

scale consists of 6 grades (2: 7), which are divided into three levels as follows:

- Low level (from 2: 3 degrees).

- Intermediate level (from 4: 5 degrees).

- High level (from 6: 7 degrees)

The Cronbach's alpha correlation coefficient was (0.713); it was a reliable high stability value. The factor analysis test assured the validity of the used terms. The saturation level of the common covariance values of this scale ranged between (0.659: 0.733).

4.The scale of social-emotional digital literacy:

This scale is based on a question consisting of (12) phrases. The answer to each phrase is estimated as follows: agreed= 1, neutral= zero, disagreed= -1. Consequently, the outcome of this scale consists of 25 degrees (-12: 12) divided into three levels as follows:

- Low level (from -12: -4 degrees).

- Intermediate level (from -3: 3 degrees).

- High level (from 4:12 degrees)

The Cronbach's alpha correlation coefficient was (0.667); it was a reliable high stability value. The factor analysis test assured the validity of the used terms. The saturation level of the common covariance values of this scale ranged between (0.604: 0.699).

5.The scale of information literacy:

This scale is based on a question consisting of (12) phrases. The answer to each phrase is estimated as follows: agreed= 1, neutral= zero, disagreed= -1. Consequently, the outcome of this scale consists of 25 degrees (-12: 12) divided into three levels as follows:

- Low level (from -12: -4 degrees).

- Intermediate level (from -3:3 degrees).

- High level (from 4:12 degrees)

The Cronbach's alpha correlation coefficient was (0.763); it was a reliable high stability value. The factor analysis test assured the validity of the used terms. The saturation level of the common covariance values of this scale ranged between (0.684: 0.776).

6.The scale of photo-visual literacy:

This scale is based on a question consisting of (12) phrases. The answer to each phrase is estimated as follows: agreed= 1, neutral= zero, disagreed=

-1. Consequently, the outcome of this scale consists of 25 degrees (-12: 12) divided into three levels as follows:

- Low level (from -12: -4 degrees).

- Intermediate level (from -3:3 degrees).

- High level (from 4:12 degrees)

The Cronbach's alpha correlation coefficient was (0.763); it was a reliable high stability value. The factor analysis test assured the validity of the used terms. The saturation level of the common covariance values of this scale ranged between (0.684: 0.776).

7.The scale of reproduction literacy:

This scale is based on a question consisting of (12) phrases. The answer to each statement is estimated as follows: agreed= 1, neutral= zero, disagreed= -1. Consequently, the outcome of this scale consists of 25 degrees (-12: 12) divided into three levels as follows:

- Low level (from -12: -4 degrees).

- Intermediate level (from -3:3 degrees).

- High level (from 4:12 degrees)

The Cronbach's alpha correlation coefficient was (0.767); it was a reliable high stability value. The factor analysis test assured the validity of the used terms. The saturation level of the common covariance values of this scale ranged between (0.684: 0.776).

8.The scale of branching literacy:

This scale is based on a question consisting of (12) phrases. The answer to each phrase is estimated as follows: agreed= 1, neutral= zero, disagreed= -1. Consequently, the outcome of this scale consists of 25 degrees (-12: 12) divided into three levels as follows:

- Low level (from -12: -4 degrees).

- Intermediate level (from -3:3 degrees).

- High level (from 4:12 degrees)

The Cronbach's alpha correlation coefficient was (0.665); it was a reliable high stability value. The factor analysis test assured the validity of the used terms. The saturation level of the common covariance values of this scale ranged between (0.604: 0.699).

Statistical data processing:

− The simple frequencies and percentages of responses on all the items of digital dimensions scale.

− The arithmetic mean and standard deviation of the quantitative values that reflect the participants' responses to the entire digital dimensions scale and its five sub-dimensions.

− Two Indecent intervening groups T. Test to compare between the respondents according to gender (male & female) regarding the score on the entire digital dimensions scale and its sub-dimensions.

− Two paired intervening groups T. Test to compare between the mean scores on the digital dimensions scale in the pre- and post-intervention measurement for each of the intervening group.

− One way Anova test to determine the existence of statistically significant differences among the study groups according to the socio-economic status, the rate of social media usage and the level of production for social media sites, as each variable include three dimensions (low, medium, and high).

− General linear model (GLM) with estimating the effect size through the value of Eta Square and its significance; the effect of the bilateral interaction between the demographic characteristics (gender & socio-economic status) is investigated in relation to the rate of each of social media sites usage and content production for these sites, in order to determine the effect of these interactions in the score on the digital dimensions scale after the digital literacy intervention.

The dimension of significance approved in this study:

The researcher has adopted a level of significance of (0.05), to determine whether the differences are statistically significant. The statistical tests results have been accepted at a confidence level of (95%) or more, at a significance level of (0.05) or less.

The semi-experimental study results:

The results that were found through the intervening group could lead to answer the study questions and verify its hypotheses. The results include the following:

− The level of the intervening group respondents' social media usage.

− The level of the intervening group respondents' content production for social media sites.

− The mean scores of the intervening group respondents' on the digital literacy dimensions according to the pre-intervention measurement.

- The mean scores of the intervening group respondents' on the digital literacy scales according to the post- intervention measurement.

- The significance of the differences between the mean scores of the intervening group respondents' according to the pre-and post- intervention measurement.

- In presenting the results, each of the variables of gender and socio-economic status will be taken into account.

First: the dimension of social media usage

From the view of this study, and according to the identified criteria for the **level** of social media sites usage, the analysis of the data revealed that three quarters of the respondents use these sites at high rates, as shown in the following table:

Table (3)
The distribution of the respondents according to their level of social media usage

The level of social media usage	N	%
Low	2	6.25
Intermediate	6	18.75
High	24	75.0
Total	32	100.0

Second: The level of content production for social media sites

As opposed to the previous table which shows the high level of using social media sites, the analyzing data shows a low level of content production for these sites as shown in the following table:

Table (4)
The distribution of the intervening group according to the level of producing content for social media sites

The level of producing content	N	%
Low	25	78
Intermediate	5	15.7
High	2	6.3
Total	32	100.0

Third: The mean scores of the intervening group respondents' on the digital literacy scales according to the pre- intervention measurement.

The intervening group scores of the five digital literacy dimensions in the pre-intervention measurement came with a mean of (87.4) and a standard deviation of (5.9). This mean value constituted (48.3%) of the maximum score of the scale which ranges from (60) to (180).

The mean scores of the intervening group in the pre-intervention measurement are shown in the following table:

Table (5)

The significance of the differences among the intervening group according to the pre-intervention measurement

The intervening group		N	The mean	The standard deviation	Statistics	
					Coefficient	Sig.
The gender	Males Females	7 25	82.6 88.8	2.9 5.8	T= 2.6	0.012
The socio-economic status	Low Intermediate High	6 13 13	88.9 86.7 87.5	8.6 5.4 5.4	F.= 0.3	0.8
The intervening group		32	87.4	5.9		

This table reveals that there were significant differences between males and females in the measurement of the five digital literacy dimensions in favor of females (M= 88.8) compared to males (M= 82.6). This difference between the two values was statistically significant (p <0.05). Regarding the socio-economic status, there were no significant differences among the intervening group concerning the digital literacy dimensions in the pre-intervention measurement (p> 0.05), so there were no differences owing to the socio-economic status concerning the digital literacy dimensions before the intervention.

Fourth: The mean scores of the intervening group respondents' on the digital literacy scales according to the post- intervention measurement.

The intervening group scores in the post-intervention measurement came with a mean of (144.5) and a standard deviation of (14.6). This mean value constituted (80.3%) of the digital literacy dimensions' scale maximum score (180). The scores of the intervening groups in the post-intervention measurement are shown in the following table:

Table (6)
The significance of differences among the intervening group in the post-intervention measurement

The intervening group		N	The mean	The standard deviation	Statistics	
					coefficient	Sig.
The gender	Males	7	156.4	3	T=2.7	0.01
	Females	25	142.2	15		
The socio-economic status	Low	6	147.7	12.6	f.=0.9	0.4
	Intermediate	13	140.3	16.8		
	High	13	147.2	13.2		
The intervening group		32	144.5	14.6		

This table reveals the high mean score of males in the post-intervention measurement compared to females; males achieved a mean of (156.4), compared to (142.2) for females. These differences were significant and weren't owing to chance (p <0.05); after the intervention, the level of digital dimensions increased for both genders; this increase was more pronounced among males than among females. Regarding the socio-economic status, the table also shows the high mean scores of the three groups in the post-intervention measurement, but there were no significant differences between them regarding the digital dimensions (p> 0.05).

All the previous results were at the level of the entire digital dimensions, while the next tables show the results of the five dimensions of the digital literacy, as follows:

Table (7)
The intervening group score means on the digital literacy dimensions' scale pre-and post-intervention measurement

Digital literacy	Pre- measurement		Post- measurement	
	M	STD	M	STD
Social - Emotional	16	1.7	29.8	4.8
Information	17.2	2.5	29.5	3.1
Photo- visual	17.1	2.2	27.3	4.1
Reproduction	17.1	2.1	28.6	1.8
Branching	20.1	2.6	29.4	3.7
Total Digital literacy	87.4	6	144.5	14.7

As illustrated above, the mean scores of the post-intervention measurement are more than the mean scores of the pre-intervention measurement; regarding the Social-emotional dimension, the mean score of its post-intervention measurement reached to (29,8) compared to (16) in the pre-intervention measurement. This result is applied to all the other dimensions, it is a significant increase and isn't caused by chance ($p<0.05$).

Fifth: The significance of the differences between the mean scores of the intervening group respondents' according to the pre-and post-intervention measurement.

This includes investigating the significant differences in the pre-and post-intervention measurement regarding the five dimensions of the digital literacy (social emotional, information, photo-visual, reproduction, and branching) as follows:

1-The social-emotional digital literacy dimension:

The analysis reveals that the intervening group mean score in the pre-intervention measurement is (16) with standard deviation (1.7), while the intervening group mean score in the post intervention measurement reached to (29, 8) with a standard deviation of (4.8). This is a significant difference, is not attributable to the chance ($p<0.05$), meaning that the program has a positive effect regarding increasing the positive social emotional dimension for the respondents at the entire intervening group and the sub-cluster levels in regards to the gender and the socio-economic status.

Table (8)
The significance of the differences between pre- and post-intervention measurement of
social-emotional digital literacy dimension

The intervening group		N	Pre-measurement		Post-measurement		Statistics	
			M	STD	M	STD	T	Sig.
The gender	Males Females	7 25	16.1 16	0.7 1.9	33.6 28.8	1.6 1.9	2.4 4.3	0.02 0.001
The socio-economic status	Low Intermediate High	6 13 13	17.3 16.2 15.2	2.1 1.4 1.3	30 28.5 31.2	4.3 5.5 4.3	2.2 3.2 3.2	0.02 0.001 0.001
The intervening group		32	16	1.7	29.8	4.8	5	0.001
The intervening group		**N**	**Pre-measurement**		**Post-measurement**		**Statistics**	
			M	STD	M	STD	T	Sig.
The gender	Males Females	7 25	16.1 16	0.7 1.9	33.6 28.8	1.6 1.9	2.4 4.3	0.02 0.001
The socio-economic status	Low Intermediate High	6 13 13	17.3 16.2 15.2	2.1 1.4 1.3	30 28.5 31.2	4.3 5.5 4.3	2.2 3.2 3.2	0.02 0.001 0.001
The intervening group		32	16	1.7	29.8	4.8	5	0.001

As illustrated above, there is a high mean score on the scale of the social emotional dimension in the post-intervention measurement with significant differences comparing to the pre-intervention measurement. This is applied to the entire intervening group when it comes to the gender and the socio-economic status ($p < 0.05$); regarding the gender, the table shows the high mean score of males in the post-intervention measurement ($M = 33.6$) compared to the pre-intervention measurement ($M = 16.1$).

Concerning the variable of the socio-economic status, the table clarifies the high mean score on the scale of the post-intervention measurement for the three groups (low, medium, high) from (17.3), (16.2) and (15.2) to (30), (28.5) and (31.2) respectively.

2-The information digital literacy dimension:

Table (9)

The significance of the differences between pre- and post-intervention measurement of information digital literacy dimension

The intervening group		N	Pre-measurement		Post-measurement		Statistics	
			M	SD	M	SD	T	Sig.
The gender	Males Females	7 25	15.4 17.6	1.8 2.5	30.3 29.2	1.8 3.3	2.4 4.3	0.02 0.001
The socio-economic status	Low Intermediate High	6 13 13	15.7 17 18	1.6 1.9 3.1	28.7 28.8 30.5	3.1 2.7 3.3	2.2 3.2 3.2	0.03 0.001 0.001
The intervening group		32	17.2	2.5	29.5	3.1	5	0.001

This table shows the high mean score on the information literacy scale in the post-intervention measurement with statistically significant differences from the mean score in the pre-intervention measurement. This was applied to the entire intervening group according to the gender and the socio-economic status variables (p <0.05); The mean score for males in the post-intervention measurement (M = 30.3) is higher than it was in the pre-intervention measurement (M = 15.4), and the mean score for females in the post-intervention measurement (M = 29.2) is higher than it was in the pre-intervention measurement (M = 17.6).

According to the socio-economic variable, the table shows the high mean score on the scale in the post intervention measurement of the three groups; theses scores were (15.7), (17), and (18) for the low, medium and high dimensions respectively, while increased to (30.5), (28.8), and (28.7), for each of them respectively.

3-The photo-visual digital literacy dimension:

Table (10)

The significance of the differences between pre- and post-intervention measurement of photo-visual digital literacy dimension

The intervening group		N	Pre-measurement		Post-measurement		Statistics	
			M	STD	M	STD	T	Sig.
The gender	Males Females	7 25	15.4 17.5	1.2 2.2	30.4 26.4	1.5 4.2	2.4 4.3	0.02 0.001
The socio-economic status	Low Intermediate High	6 13 13	16.2 16.7 17.8	3 1.5 2.4	29.8 26.3 27.1	2 5.4 3	2.2 3.1 3.2	0.03 0.002 0.001
The intervening group		32	17.1	2.2	27.3	4.1	4.8	0.001

The mean score on the information literacy scale in the post-intervention measurement was high with statistically significant differences comparing to the mean score in pre-intervention measurement. This was applied to the entire intervening group in terms of gender and socio-economic status variables (P <0.05); the males mean score in the post intervention measurement (M = 30.3) was higher than it was in the pre-intervention measurement (m = 15.4). The females mean score in the post intervention measurement (M = 29.2) was higher than it was in the pre-intervention measurement (m = 17.6).

According to the socio-economic variable, the table shows the high mean score on the scale in the post-intervention measurement; the mean scores of these groups in the pre-intervention measurement were (15.7), (17), and (18) for the low, medium and high dimensions respectively, while reached to (30.5), (28.8), and (28.7) for each of them in the post-intervention measurement, respectively.

4-The reproduction digital literacy dimension:

Table (11)

The significance of the differences between pre- and post-intervention measurement of reproduction digital literacy dimension

The intervening group		N	Pre-measurement		Post-measurement		Statistics	
			M	STD	M	STD	T	Sig.
The gender	Males Females	7 25	16.7 17.2	1.1 2.3	29.3 28.4	1.6 1.8	2.4 4.4	0.02 0.001
The socio-economic status	Low Intermediate High	6 13 13	19.3 16.7 16.5	2.7 1.8 1.3	29.5 28.5 28.1	1.6 2.1 1.6	2.2 3.2 3.2	0.03 0.001 0.001
The intervening group		32	17.1	2.1	28.6	1.8	5	0.001

The mean score on the reproduction scale in the post-intervention measurement was high with statistically significant differences comparing to the mean score in pre-intervention measurement. This was applied to the entire intervening group in terms of gender and socio-economic status variables ($P < 0.05$); the males mean score in the post intervention measurement (M = 29.3) was higher than it was in the pre-intervention measurement (m = 16.7). The females mean score in the post intervention measurement (M = 28.4) was higher than it was in the pre-intervention measurement (m = 17.2).

According to the socio-economic variable, the table shows the high mean score on the scale in the post-intervention measurement; the mean scores of these groups in the pre-intervention measurement were (19.3), (16.7), and (16.5) for the low, medium and high dimensions respectively, while reached to (28.1), (28.5), and (29.5) for each of them in the post-intervention measurement, respectively.

5-The branching literacy dimension:

Table (12)
The significance of the differences between pre- and post-intervention measurement of branching literacy dimension

The intervening group		N	Pre-measurement		Post-measurement		Statistics	
			M	STD	M	STD	T	Sig.
The gender	Males Females	7 25	19 20.4	1.7 2.7	33 28.4	2.1 3.4	2.4 4.4	0.02 0.001
The socio-economic status	Low Intermediate High	6 13 13	20.3 20.2 20	3.2 2.3 2.8	30 28.2 30.3	4.8 3.4 3.2	2.2 3.2 3.2	0.03 0.001 0.001
The intervening group		32	20.1	2.6	29.4	3.7	4.9	0.001

The mean score on the Branching scale in the post-intervention measurement was high with statistically significant differences comparing to the mean score in pre-intervention measurement. This was applied to the entire intervening group in terms of gender and socio-economic status variables (P <0.05); the males mean score in the post intervention measurement (M = 33) was higher than it was in the pre-intervention measurement (m = 19). The females mean score in the post intervention measurement (M = 28.4) was higher than it was in the pre-intervention measurement (m = 20.4).

According to the socio-economic variable, the table shows the high mean score on the scale in the post-intervention measurement; the mean scores of these groups in the pre-intervention measurement were (20.3), (20.2), and (20) for the low, medium and high dimensions respectively, while reached to (30.3), (28.2), and (30) for each of them in the post-intervention measurement, respectively.

6- The Total Digital literacy:

The intervening group mean score in the pre-intervention measurement is (87.4) with a standard deviation of (6), while the intervening group mean score in the post-intervention measurement is (144.5) with a standard deviation of (14.7).

Table (13)
The significance of the differences between pre- and post-intervention measurement of total digital literacy dimensions

The intervening group		N	Pre-measurement		Post-measurement		Statistics	
			M	**STD**	**M**	**STD**	**T**	**Sig.**
The gender	Males Females	7 25	82.5 88.7	3 5.8	156.4 141.2	13 15	2.4 4.4	0.02 0.001
The socio-economic status	Low Intermediate High	6 13 13	88.8 88.7 87.5	8.6 5.4 5.4	147.3 140.3 147.2	12.7 16.8 13.2	2.2 3.2 3.1	0.02 0.001 0.001
The intervening group		32	87.4	6	144.5	14.7	4.9	0.001

It is clear from the above that the mean score in the pre-intervention measurement is more than that it was in the post-intervention measurement (p≤0.02). This means that the digital literacy intervention has a positive effect on the entire intervening group's digital dimensions

The value of the differences between the pre-and post-intervention measurement are ranging from (51.6) to (79.3), the positive effect reaches its maximum among the males, as the differences between the mean score of the pre-and post-intervention measurement is (79.3), while drop to (52.5) among the females, meaning that the intervention has led to increasing the digital dimensions among the two genders leaving a greater effect on the males.

This is the same result according to the socio-economic status; the mean of its scores in the post-intervention measurement increases with significant differences comparing to the pre-intervention measurement for all the groups.

The study hypothesis:

First hypothesis: The intervening group respondents' perception of the five digital literacy dimensions increased with significant differences after the digital literacy intervention more than before.

To confirm the validity of this hypothesis, the T. test was used to compare between the means of the variables of one group as follows:

Table (14)
The significance of the differences between the intervening group mean scores on the
scale of digital literacy dimensions in the pre- and post-intervention measurement

Digital literacy dimensions	Pre-measurement		Post-measurement		Statistics	
	Mean	STD	Mean	STD	T	Sig.
Social - Emotional	16	1.7	29.8	4.8	5	0.001
Information	17.2	2.5	29.5	3.1	5	0.001
Photo- visual	17.1	2.2	27.3	4.1	4.8	0.001
Reproduction	17.1	2.1	28.6	1.8	5	0.001
Branching	20.1	2.6	29.4	3.7	4.9	0.001
Total Digital literacy	87.4	6	144.5	14.7	4.9	0.001

The previous data indicates to:

− There were statistically significant differences between the pre-and post-measurements for social- emotional dimension; the value of T= 5, it was significant at a significance level of (0.001), in favor of the post-intervention measurement, as the arithmetic mean was (29.8) vs. (16) in the pre-intervention measurement.

− There were statistically significant differences between the pre-and post-measurements for the information dimension; the value of T= 5, it was significant at a significance level of (0.001), in favor of the post-intervention measurement, as the arithmetic mean was (29.5) vs. (17.2) in the pre-intervention measurement.

− There were statistically significant differences between the pre-and post-measurements for the Photo- visual dimension; the value of T= 4.8, it was significant at a significance level of (0.001), in favor of the post-intervention measurement, as the arithmetic mean was (27.5) vs. (17.1) in the pre-intervention measurement.

− There were statistically significant differences between the pre-and post-measurements for the reproduction dimension; the value of T= 5, it was significant at a significance level of (0.001), in favor of the post-intervention measurement, as the arithmetic mean was (28.6) vs. (17.1) in the pre-intervention measurement.

− There were statistically significant differences between the pre-and post-measurements for the branching dimension; the value of T= 4.9, it was significant at a significance level of (0.001), in favor of the post-intervention

measurement, as the arithmetic mean was (29.4) vs. (20.1) in the pre-intervention measurement.

– There were statistically significant differences between the pre-and post-measurements for the total digital literacy dimensions; the value of T= 4.9, it was significant at a significance level of (0.001), in favor of the post-intervention measurement, as the arithmetic mean was (144.5) vs. (87.4) in the pre-intervention measurement.

As a result of the foregoing, this hypothesis which stated that the intervening group respondents' perception of the five digital literacy dimensions increased with significant differences after the digital literacy intervention more than before was accepted.

2- The second hypothesis: There was a statistically significant positive correlation between the digital literacy dimensions in the pre-and post-intervention.

This hypothesis meant that the more digital literacy dimensions were in the pre-intervention measurement, the more they were in the post-intervention measurement. To confirm this, Pearson correlation was used to determine the value and the attitude of the correlation between the intervening group scores on the digital dimensions scale according to the pre-and post-intervention measurement as follows:

Table (15)
The correlation between the digital literacy dimensions in the pre-and post-intervention measurement

Digital Literacy dimensions	R	Sig.
Social - Emotional	0.29	0.09
Information	0.23	0.2
Photo- visual	0.27	0.13
Reproduction	0.23	0.225
Branching	0.047	0.047
Total Digital literacy dimensions	0.011	0.9

The previous data indicates to:

– There wasn't a statistically significant correlation between the pre-and post-intervention measurement according to the social-emotional literacy dimension; the Pearson correlation coefficient was (0.29), it wasn't significant at a significance level of (0.09).

– There wasn't a statistically significant correlation between the pre-and post-intervention measurement according to the information literacy dimension;

the Pearson correlation coefficient was (0.23), it wasn't significant at significance level of (0.20).

− There wasn't a statistically significant correlation between the pre-and post-intervention measurement according to the Photo- visual literacy dimension; the Pearson correlation coefficient was (0.27), it wasn't significant at a significance level of (0.13).

− There wasn't a statistically significant correlation between the pre-and post-measurement according to the reproduction literacy dimension; the Pearson correlation coefficient was (0.23), it wasn't significant at a significance level of (0.225).

− There wasn't a statistically significant correlation between the pre-and post-intervention measurement according to the branching literacy dimension; the Pearson correlation coefficient was (0.047), it wasn't significant at a significance level of (0.047). It was a positive correlation; the branching literacy dimension became high in the post-intervention measurement as long as it was high in the pre-intervention measurement.

− There wasn't a statistically significant correlation between the pre-and post-intervention measurement according to the total digital literacy dimensions; the Pearson correlation coefficient was (0.11), it wasn't significant at a significance level of (0.90).

As a consequence of the above, the hypothesis which stated that there was a statistically significant positive correlation between the digital literacy dimensions in the pre-and post-intervention was rejected.

3- The third hypothesis: There were significant differences between the intervening group respondents in terms of benefiting from the digital literacy intervention according to gender and socio-economic status.

− The obtained benefit was calculated through the difference between the pre- and post-intervention measurement; the respondents' mean scores in the post-intervention measurement reaches to (144.5), while drops to (87.4) in the pre-intervention measurement, so the difference is (144.5 – 87.4 = 57.1).

− To verify this hypothesis, the significance of the differences of this value was determined according to the gender and the socio-economic status of the intervening group using the two paired intervening groups T. test.

− One way ANOVA was used to analyze the significance of the differences among the intervening group according to the gender and the socio-economic status as follows:

Table (16)
The significance of the differences among the intervening group according to the gender
and the socio-economic status concerning the obtained benefit

The intervening group		N	M	STD	Statistics	Sig.
The gender	Males Females	7 25	73.8 52.4	4.3 14.6	T.= 3.8	0.001
The socio-economic status	Low Intermediate High	6 13 13	58.8 53.6 59.8	16.8 18.1 13.4	F.=0.519	0.6
The intervening group		32	57.1	15.8		

The previous data indicates to the following:

– There were statistically significant differences between males and females
in terms of benefiting from the digital literacy intervention; the value of T=
3.8, it was significant at a significance level of (0.001), in favor of males,
with an arithmetic mean of 73.8 versus 52.4 for females.

– There were no statistically significant differences between the different
economic dimensions (low- medium- high) in terms of benefiting from the
digital literacy intervention, the value of F= 0.519, it wasn't significant at a
significance level of (0.6).

   As a result of the foregoing, this hypothesis was accepted partially; there
were significant differences between the intervening group respondents in
term of benefiting from the digital literacy intervention according to the
gender, while there were no significant differences between the intervening
group respondents in term of benefiting from the digital literacy intervention
according to the socio-economic status.

**4- The fourth hypothesis: There were significant differences between
the intervening group respondents in terms of benefiting from the
digital literacy intervention according to the level of their usage of
social media sites and their production rates for these sites.**

   To verify this hypothesis, One Way ANOVA was used to investigate the
significant differences among the intervening group in terms of the value
indicating the obtained benefit from the digital literacy intervention
according to the rate of each of social media sites usage and content
production for these sites. This result is shown in the following table:

Table (17)
The significance of the differences among the intervening group concerning the
obtained benefit from the digital literacy intervention according to the rate of social
media sites usage and content production for these sites

	The intervening group	N	M	STD	Statistics	Sig.
The rate of social media sites usage	Low Intermediate High	2 6 24	53 52.7 58.4	9.8 15.9 17.8	F.=0.39	0.7
The rate of content production for social media sites	Low Intermediate High	25 5 2	57.3 52.8 65.5	15.1 22.6 6.4	F.=0.451	0.6
The intervening group		32	57.1			

The previous data indicated to:

– There were no statistically significant differences between the rate of respondents' usage of social media sites (low- medium- high) and their benefiting from the digital literacy intervention, the value of F= 0.39, it wasn't significant at a significance level of (0.7).

– There were no statistically significant differences between the rate of respondents' production of content for social media sites (low- medium- high) and their benefiting from the digital literacy intervention, the value of F= 0.451, it wasn't significant at a significance level of (0.6).

As a result of the foregoing, this hypothesis which stated that there were significant differences between the intervening group respondents in terms of benefiting from the digital literacy intervention according to the level of their usage of social media sites and their production rates for these sites was rejected.

5- Fifth hypothesis: The bilateral interaction between the demographic characteristics (gender and socio-economic status), and the dimension of each of social media sites usage and content production for these sites had a significant effect on the digital dimensions after the digital literacy intervention.

For this hypothesis, a general linear model (GLM) was used to estimate the size of the effect through the value of Eta Square and its significance. The researcher has investigated the effect of the bilateral interaction between the following items:

– The level of social media usage and the gender.

－ The level of social media usage and the socio-economic status.

－ The level of content production for social media sites and the gender.

－ The level of content production for social media sites and the socio-economic status.

The researcher investigated the effect of these interactions in the score on the digital literacy scale after the digital literacy intervention as follows:

Table (18)

The effect of the bilateral interaction between the variables in the score on the digital literacy dimensions scale after the digital literacy intervention

The bilateral interaction	Sum of square	Mean of square	DF	F. value	Sig.	Size of effect
The usage dimension × the gender	-	-	-	-	-	-
The usage dimension × the socio-economic status	82.9	41.4	2	017	0.54	0.04
The content production dimension × the gender	-	-	-	-	-	-
The content production dimension × the socio-economic status	627.2	313.6	2	1.5	0.2	0.10

As noted in the table above, the bilateral interactions of the gender variable has been excluded automatically due to the small number of the males. The other interactions between the level of usage and the socio-economic status and between the level of content production and the socio-economic status are statistically insignificant, as they do not affect the intervening group scores on the scale of digital dimensions in the post-intervention measurement.

Therefore the researcher rejected the hypothesis which stated that The bilateral interaction between the demographic characteristics of the intervening group respondents (gender and socio-economic status), and the level of each of social media sites usage and content production for these sites had a significant effect on their perception of the five digital literacy dimensions after the digital literacy intervention.

The main results of the study:

The rapid development of social media had given birth to a new common phenomenon, such as black campaigns, hate speech, false news, and the anti-state rumors through the social media platforms. Therefore, digital literacy is considered as an emerging necessity in terms of mastering new approaches of knowledge to fulfill the cognitive, technical, emotional, and sociological needs in the emergence of the digital environment (Reyna, J; Hanham, J.& Meier, P., 2018**:** 36-52) (Buckingham, D., 2007 : 43-55) (Saputra, M., 2020**:**156).

The Arab researchers' effort in this field is at a very early period; however, the term media literacy has been introduced by Muhamed Abd Abdel Hameed (1995), Mahmoud Abdel Ghany(1998), Hassan Khalil (2000), Marwa Basyouny (2001), Muhamad Fouad (2002), Abdel Rheem Darwish (2003),(2007), Manal Abu Al Hassan (2004), Tareq Al Saedy (2004), Gada Hussam Al Dean, Marwa Basyouny (2009), Saleh Salamah (2009), Marwa Basyouny (2011), And Rasha Abd Allateef (2011).

In this regard, this study is considered a preliminary effort in assessing the impact of the digital literacy intervention. The study aims to investigate the effects of the digital literacy intervention on students' perceptions of the five digital media literacy dimensions at social media platform, by Examining the effects of the digital literacy intervention on the intervening group respondents' perceptions of the five digital media literacy dimensions, investigating the intervening group respondents' using rates of social media sites, Investigating the intervening group respondents' content production rates on social media sites, examining the effect of the five digital literacy dimensions on the respondents' perception of the digital literacy dimensions pre and post-intervention, Investigating the relationship between intervening group respondents' demographic characteristics and their perception of the digital literacy dimensions, as well as examining the relationship between the intervening group respondents' using of social media sites and producing contents for these sites on one hand and their perception of the digital literacy dimensions on the other hand.

The study was applied on an available intervening group of (32) university students after being exposed to three digital intervening sessions which have been designed according to Ouirdi, Segers Henderickx model of social media taxonomy and classification (2014), and the Eshet conceptual comprehensive model of digital literacy dimensions. These sessions were aimed to improve the students' perceptions of the five digital literacy dimensions.

Main results of the study:

1)Females account for (78,1%), while males account for (21,9%), however, the distribution of the experimental study intervening group according to the

variable of the socioeconomic status has shown that the intermediate states comes at the first place by (40.6%), followed by the high status (40.6%), then the low status ranks the lowest by (18.75%).

2) The rate of using social media platforms was entirely high, while the rate of producing posts was relatively low at (78%). These results were in line with Hassan (2015), Sameer (2018), Baker (2019), Abd Elhameed (2019), Buckingham (2007), and Tulba (2019). Therefore, students at the intervening group were considered lightly users-generated participants.

Regarding the pre-intervention measurement, the study concluded that:

1) The arithmetic mean of branching literacy dimension was considered at the highest dimension at (20.1); this indicated to their ability to collect information, transform it into knowledge, and establish knowledge from non-ordinary, hyper- textual navigation. This is consistent with Lofthus, Silseth (2019), Sara Pereira, Luís Pereira (2013) who revealed that the technological objectives were the predominant objectives, rather than the media literacy objectives. This indicates to the technological passion of the young people, as well as their possession of the new media vocabulary. This was shown through the pre-intervention measurement of the ability to access to information, retrieval of information, storing and employing this information.

2) The arithmetic mean of information literacy dimension was highly reached at (17.2). This can be interpreted by considering the students' thirst for understanding the mechanisms of information verification to counter the recent threats of the Egyptian national security. This indicates to the young people awareness of the surrounding political and media environment in the presence of anti-Egyptian media.

3) The arithmetic mean of both photo-visual literacy and reproduction literacy dimensions were found at (17.1). This can be considered as a deeper and cumulative progressive trend in the digital literacy. This result was proved by the study of Sahar Khalifa Salem & Radhi Rashid Hassan (2018) which referred to the importance of saturating students with media competencies by teaching them how digital media work, the dimensions of digital media, the underlying meanings of these social network posts, as well as the importance of producing media contents through the social networks. However, this result was contradicted by Eshet, Yand Chajut E (2010), Eshet, Y., & Amichai-Hamburger, Y. (2004), Eshet-Alkalai (2004) where both reproduction literacy and photo-visual literacy spearheaded the list of digital dimensions. This can be explained in the light of the diverse cultural environments of these studies. Also, digital literacy program is not incorporated into the Egyptian curriculum, as the Egyptian experience of the pedagogy related to digital literacy is at the developmental stages (Radi, D., 2019: 67) (Hassan, A., 2015: 89) (Mahmoud, H., 2018: 48) (Baker, M., 2019: 78).

4) The arithmetic mean of the social emotional dimension, which numbered

(16), was the lowest according to the pre-intervention measurement, this indicated to the importance of activating social emotional literacy dimension. Using the social media platforms is highly evaluated as a critical issue, due to the online abusing, the online bullying, the online crimes and the reduction of individual productivity (Madianou, M. & Miller, D., 2013: 169–187). As a result, promoting social media competent dimensions in education is considered an emerging step. In this connection, this result was supported by the studies of Safori (2020), Sora Park, Eun-mee Kim, Eun-Yeong Na (2014), and David Buckingham (2007).

Regarding the post-intervention measurement, the study concluded that:

– The arithmetic means of social-emotional digital literacy dimension was highly indicated at (29.8), followed by the information literacy dimension which was found at (29.5), followed by the branching digital literacy dimension at (29.4), then the reproduction digital literacy dimension was existed at (28.6), and finally the photo-visual literacy dimension at (27.3). Such a sequence is also supported by Eshet, Yand Chajut E (2010), Eshet, Y., & Amichai-Hamburger, Y. (2004), Eshet-Alkalai (2004), and Silvestri (2015). However, it differs from the photo-visual literacy dimension. This can be explained within the framework of cultural differences.

– **This referred to the importance of the state cultural environment in the interest in the digital literacy intervention and media education through the following principles:**

a) The effect of the anti-state satellite channels on the Egyptian national security and their role in exporting the culture of impotence, spreading rumors and misleading news.

b) The role of digital literacy and media education in raising the public awareness by refuting the psychological operations and propaganda methods of the anti-state satellite channels discourse, which contributes to the formation of a general national awareness to face the effects of the anti-state media on the Egyptian national security.

c) The threat posed by the anti-state powers which targeted at the destabilization of the nation strategic borders, in addition to the threats of the exacerbation of the Renaissance Dam crisis and the Turkish intervention in Libya[1].

d) The increase of media campaigns against Egypt, especially through the social media wars. In this context, "David Rage" and "Rob Worthington", the leaders of the British international company of public relations "Project Associates", revealed that the Brotherhood's organization used the international public relations companies to disseminate the effective propaganda and interact with the European and American media, particularly around the Egyptian state issues (Ayman Hasona, 2014: www).

5) The importance and effectiveness of digital literacy intervention; this was

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[1] A strategic journal issued by the directorate of the Emirates armed forces counseling.

proved by Nathanson, (2003), Byrne, Linz, Daniel. and Potter, W. James, (2008), Hobbs, (1996), Reyna, Hanham, Meier (2018), Buckingham (2007), Duaa Mohammad Radi (2019), Amira, Abd Elhameed (2019), Mohammed Ramadan, El Kanin (2019), Menna Mohsen Baker (2019), and Ahmad Gamal Hassan (2015).

Regarding the study hypothesis, the study concluded the following:

1) Accepting the hypothesis which stated that "the intervening group respondents' perception of the five digital literacy dimensions increased with significant differences after the digital literacy intervention more than before"; The study revealed that the intervening group respondents' perception of the digital dimensions increase with significant differences after receiving the digital literacy intervention more than before.

2) Rejecting the hypothesis that stated that "there was a statistically significant positive correlation between the digital literacy dimensions in the pre-and post-intervention"; The study revealed that there isn't a statistically significant positive direct correlation between the intervening group respondents' perception of digital literacy dimensions in the pre and post measurements. This finding is supported by Basyouny (2011) who assess the acquisitioned dimensions of Media Literacy Intervention within a Meta-Analysis Perspective. In this regard, results indicated that there was a significant effect between the control and the intervening groups in terms of media knowledge, cognitive, practical, transferable acquisitioned dimensions. It was also proved by Nathanson (2003), Webb, T., Martin, K., Afifi, A., Kraus, J. (2009), Byrne, Linz, Daniel. and Potter, W. James (2008), Meidi Saputra (2020), Reyna, Jose Hanham, Peter Meier (2018), Menna Mohsen Baker (2019), Ahmad Gamal Hassan (2015), and Basyouny (2011).

3) Partly accepting the hypothesis which stated that "there were significant differences between the intervening group respondents in term of benefiting from the digital literacy intervention according to the gender, while there were no significant differences between the intervening group respondents in term of benefiting from the digital literacy intervention according to the socio-economic status"; The study revealed that there were significant differences between the intervening group groups in terms of benefiting from the digital literacy intervention according to gender, while there were no significant differences between the intervening group groups in terms of benefiting from the digital literacy intervention according to the socio-economic status. This was consistent with the studies of El Kanin (2019), Radi (2019), and Abd Elhameed (2019).

4) Rejecting the hypothesis that stated that "there were significant differences between the intervening group respondents in terms of benefiting from the digital literacy intervention according to the level of their usage of social media sites and their production rates for these sites"; the study showed that

there were no significant differences between the intervening group in terms of benefiting from the digital literacy program, according to the rate of using social media sites and producing contents for these sites. This was consistent with the study of El Kanin (2019) which assured that there was no correlation between the behavioral effects of media education and each of the means of usage, the number of visits and the duration of usage.

5)The study also rejected the hypothesis which stated that "the bilateral interaction between the demographic characteristics of the intervening group respondents (gender and socio-economic status), and the level of each of social media sites usage and content production for these sites had a significant effect on their perception of the five digital literacy dimensions after the digital literacy intervention. This was inconsistent with the studies of El Kanin (2019), Radi (2019), and Abd Elhameed (2019).

Based on the previous results, the researcher assured the following:

1)The importance of the national security was essentially crystallized in terms of approaching digital literacy, especially within a cultural environment that is not aware of the importance of digital literacy and within a political environment that is marred by conflict, where modern wars took place through traditional media platforms and social networks.

Ideological and technological aspects were highlighted in terms of achieving success of digital literacy intervention and raising awareness. In this regard ideological aspect explains thoroughly the code of "what" in terms of El Ouirdi, Segers, and Henderickx (2014) of social media taxonomy, however, technological aspect refers to the means of enabling people to analyze, evaluate and create messages (Abd Elhameed, Amrita, 2019: 27-42). This implied at the Eshet conceptual comprehensive model of digital literacy.

2)The immediate need for digital literacy, especially through the photo-visual digital literacy, in the most difficult and sensitive areas which demand accumulated dimensions in order to understand the visual contents, the hidden meanings, and the counter ideologies of political movements. This is proved by Tuft, E.R. (1990), Shneiderman (1998), Weiss (2017), and Silvestri (2015).

3)The Egyptian experiences of the pedagogies related to digital literacy are still in the developmental stages. Thus, the application of the digital literacy intervention session at the Egyptian higher education experience is entirely essential as can be alarmed by Hassan (2015), Sameer (2018), Baker (2019), Abd Elhameed (2019), Tulba (2019), Radi (2019), Silvestri (2015), Basyouny (2001), Basyouny (2005), and Basyouny (2011).

4)There was a desperate need of a new perspective of digital literacy according to conceptual and more functional dimensions. This requires mastering new approaches of knowledge to fulfill the cognitive, technical emotional, support sociological needs in the emergence of the digital environment. This is proved by Reyna, Hanham, Meier (2018), and

Buckingham (2007).

The study recommendations:

− Carrying out systematic studies applying to the students of Mass Communication.

− The dissemination of digital literacy and applying it in all the educational dimensions.

− Developing training courses on digital literacy through cultural and educational institutions.

Future studies:

Future research could include larger intervening group population, using advanced perspectives, approaching cognitive, practical and transferable intended learning outcomes. Furthermore, longitudinal studies are quite essentials in terms of digital literacy developments. Future research should also focus on the assessment of such interventions and use different designs at various social media platforms.

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