Media in information dissemination: A study of how the pandemic changed communication behaviours of students at King Saud University

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Abstract

This study aims to identify emerging dimensions of communication behavior after the Covid-19 pandemic from the media education perspective. The study applied a survey method to test the relationships between the variables of media use before and after the pandemic, the critical consumption, and the critical prosumption (production and consumption) of the media messages on a sample of male (117) and female (94) Saudi students. Results of the study showed that the average use of media among the respondents is (2.68 out of 4). This average increases significantly in the case of new media applications in the wake of the Covid-19 pandemic, but the levels of exposure to traditional media does not show any change. The scale of critical consumption among the respondents changed from (3.49 out of 4) to (3.05 out of 4). The following statistical tests confirm the respondents' difference in the consumption and prosumption levels according to the Grade Point Average (G.P.A.), implying that a directly proportional relationship is at work between new media use and critical consumption and prosumption levels. Meanwhile, the relationship between exposure to traditional media and critical consumption is rather weak. The correlation is not significant in the case of the prosumption scale. The study concluded that the increase in critical consumption is offset by an increase in critical prosumption. However, the findings call for more research on the effect of intervening variables.

Keywords: Communication behaviors; COVID-19 pandemic; critical prosumption, media consumption; media education.

Introduction:

With the significantly increased interest in the role of media in education during and after the Covid-19 pandemic, initiatives and campaigns began in different regions of the world to support distance education. Therefore, combat information disinformation, ensure safety on the Internet. It also enhances skills of critical production and consumption of communication messages. This included online campaigns initiated by UNESCO in cooperation with other international bodies to combat misinformation, conspiracy theories and discrimination, and to promote best communication practices in the face of the Covid-19 crisis.

Given that "the impact of disinformation and misinformation in this context is potentially more dangerous as it is a driver of the crisis itself", another pandemic besides Covid-19 which the world faced was what UNESCO aptly called the "*disinfodemic*" (UNESCO, May 2020; UNESCO, Sep 2020). In order to arm themselves against this, people needed to acquire media and information literacy skills and competencies which are amongst the first defensive measures required in the face of the misinformation pandemic.

In cooperation with the Ministry of Education in Croatia, UNICEF launched a campaign to support distance education, identify misinformation and ensure safety on the Internet (UNICEF, May 2020). Also, in partnership with the South Korean Ministry of Education, UNESCO prepared a guide for student activities in media education from home during the lockdown period (UNESCO, 2020). A representative survey of California parents to unearth their experiences with COVID-19 and media literacy was also conducted by the Center for Media Literacy in California (2020). Most parents reported according to Medialit, (2020) that "few efforts were made to teach children to think critically around media messages addressing the COVID pandemic" (p.4). They expressed the dire need of media literacy education for their children! These parents also voiced the belief that critical thinking and acquiring the ability to access, analyze, evaluate, create and participate with media messages was essential in the circumstances.

After the Covid-19 pandemic, media studies have tended to focus on the psychological and social effects of new media on the public. Some of the salient features of these are: (i) the public attitudes towards the role of new media and health awareness campaigns during the crisis; (ii) the impact of the reliance by the masses on official media platforms in social networks during the pandemic; (iii) the extent of the role of social media in managing the crisis, achieving adaptation and developing information awareness among the public during the lockdown period; (iv) the impact of the preceding on family relationships; (v) the level of confidence in health information spread via the media and social networks; (vi) the cognitive, emotional and behavioral effects (Al-Dihani, 2021; Al-Masawi, 2020; Mahmoud, 2020; Matbouli, 2020; Mohmed, 2021; Shaheen, 2021; Suleiman, 2021). Also, media studies have addressed the spread of misinformation, conspiracy theories and fear of the pandemic in social networks, which in turn established that there were many manifestations of fears during the lockdown period, such as fear of infection, fear of using health facilities, fear of running out of essential home commodities and fear of the unknown about the pandemic (Sarfo & Ansah, 2020). Other studies have dealt with the impact of the COVID-19 pandemic on e-learning and distance learning in the media field (Abdel Khaleq, 2020; Aljaid & Al-Elasdoudy, 2021; Badr & El-Magrabi, 2020; Salem, 2020).

Literature review

New media literacy was the focused by many scholars (Chen et al., 2011; Lee et al, 2015; Lin *et al.*, 2013). Chen et al., (2011) proposed a

framework for that consists of four dimensions: (1) functional consuming; (2) functional prosuming; (3) critical consuming; and (4) critical prosuming. The study has revealed that new media literacy can be considered as "two continuums from consuming to prosuming literacy and from functional to critical literacy", and the features of new media require users to become "critical prosumers" (Chen, *et al.*, 2011, pp.85-86). Furthermore, Lin *et al.*, (2013) revised the Chen et al., (2011) framework by adding ten indicators to the four dimensions:

• Consuming and understanding skills to the first dimension.

• Prosuming, distribution and production skills to the second dimension.

• Analysis, synthesis, and evaluation to the third dimension.

• Participation and creation to the fourth dimension, which is critical prosuming.

At this point, Lee and his colleagues developed an instrument to measure youth's New Media Literacy with operational definitions and measurement scales, employing three categories:

• The independence type of measure refers to the extent to which a person can perform a task without help from others.

• The agreement type refers to the extent to which individuals agree or disagree to a set of statements that measure comprehension and analysis skills.

• The frequency type of measure refers to how often the individuals engaged in a certain activity related to the skills of distribution, participation and creativity (Lee et al, 2015, p. 87).

Having applied methodological steps and statistical tests, Koc and Barut (2016) suggested a scale of new media literacy among university students in Turkey with 35 items across the four dimensions. Also, Bahnasy (2019) dealt with measuring digital media literacy skills through 13 statements across the three dimensions: content access, analysis and evaluation, content production, among social networks users in Egypt. Results have shown that these skills increase the ability to verify fake news, while there was no effect of content production skills on the respondents' ability of verification. This means that network users are still dealing with digital education from a consumer perspective instead of turning into a productive user who plays a more positive role in spreading awareness and exposing fake news.

Other studies tested the relationship between the level of critical consumption, and personal skills in media education, (e.g., Abdulai et al., 2021; Algahtani, 2020; Hasnain, 2020; Korany, 2020). Hasnain (2020), used a nine-statement scale to divide respondents according to their answers into three categories viz., low critical consumption, medium critical consumption, high critical consumption, concluding that a significant correlation existed between the use of newspapers, television and social networks and the level of critical consumption. Furthermore, Korany (2020) examined digital education skills for university students within the distance education experience in light of the COVID-19 pandemic. The study showed that there were no differences between males and females or between public and private university students in acquiring various digital education skills. Likely, Hazaea and Algahtani (2020) suggested a measure of digital online media literacy competences, consisting of four dimensions, including 36 statements, in order to identify the levels of access to English-speaking digital media, levels of awareness of its contents, assessment and production. Results of the study showed that students had a high degree of media literacy skills, and there were no significant differences between males and females.

In the field of health, Abdulai et al. (2021) examined the digital literacy of lay consumers of online COVID-19-related information in Ghana, based on the eHealth Literacy Scale, which included eight items for measuring participants' self-reported skills at finding, appraising, and using health information available on the internet to make health-related decisions. Levels of the scale varied according to age and gender as females and the elderly scored low on the scale compared to males and young respondents.

Focusing on importance of digital literacy in the process of confronting the stress during COVID-19 Pandemic, Bosanac and Luic (2021) examined levels of life satisfaction and levels of stress, anxiety and depression associated with the pandemic, especially with the vast amount of information available, imposed by the media, often filled with falsehoods and and intimidation. Results showed a significant frequency correlation between the of information search and the lack of trust in the search results, concluding that digital and ehealth literacy enabled society to search for information efficiently, maintained a critical vision and an open mind to improve mental health. The digital health literacy (DHL) scale has also been used by Patil et al. (2021) to explore whether COVID-19-related information access, attitudes, and behaviors were associated with digital health literacy among college students in the United States. They found that demographic variables did not affect the differences between the respondents, only disability status varied by digital health literacy: those with a disability of any type reported lower DHL.

From these reviews, it is clear that the research efforts continued in attempts to develop measures of media literacy skills in its various aspects, and the researchers accomplished an important scientific accumulation in this field. This study seeks to benefit from that in testing the relationship between certain variables related to communication behavior before and after the COVID-19 pandemic such as: media usage, critical consumption and production of media messages.

Research Gap

A review of previous literature has established that there is an increasing public interest in media education during the Covid-19 pandemic, which has cast a shadow over the lives of all people, but the academic interest in this topic was not at the desirable level. As a result, a number of important research questions have emerged about the impact of the pandemic on people's communications behavior on the one hand, and the effect of that behavior on their media literacy skills that needed answers.

Therefore, this study aims to fill this research gap by identifying the relationship between changing levels of use and exposure to traditional and new media after the Covid-19 pandemic on the one hand, and changing levels of critical production and consumption of communication messages on the other hand, and applying this to a sample of media students, given that this category is more interested in acquiring media production and critical consumption skills.

Research Questions

The study revolves around the following research questions:

1. What are the levels of traditional and new media exposure and usage in general?

2. What are the levels of exposure, use and participation before and after the COVID-19 pandemic?

3. What are the levels of change in usage and exposure motives before and after the COVID-19 pandemic?

4. What are the levels of media messages critical consumption?

5. What are the levels of media messages critical prosumption (production and consumption)?

Hypotheses

The following hypotheses are targeted to be tested in this study:

• Respondents differ significantly in the levels of use to critical consumption and critical presumption according to the variables (gender/ age / academic level / and Grade Point Average (G. P. A.).

• There is a significant correlation between the level of exposure to traditional media/ use of new media, and the levels of critical consumption and prosumption.

• There is a significant correlation between the change in the level of use after the pandemic and the levels of critical consumption and prosumption, the more they use, the higher levels of critical consumption and presumption they acquired.

• There is a significant correlation between the levels of critical consumption and the level of critical presumption.

Methods

The current study has applied the survey approach using the questionnaire tool to collect data from the participants. The field study was applied to a sample of students from the Media Department of King Saud University in the first half of September 2021. The total number of participants was 243 male and female students during the period 1-15 September 2021. They constructed the intake class sampling. They are all belong to a relative cultural background; and the majority of them (90%) with an age range of 18-24. The sample included in the analysis was 211 respondents, representing (86.8%) of the participants. 32 respondents (13.2%) were excluded whose answers were not accurate based on the "attention test question", which is, for this statement choose the answer (rarely). The questionnaire as formed on google form and the link was sent to the students of the thirty classes of primary, intermediate, advanced levels, undergraduate and graduate studies.

The current study adapted a scale for critical consumption and production of media messages based on the previous studies, consisting of 20 statements (10 statements) that measure critical consumption and (10 statements) that measure critical prosumption. The scale and questionnaire were presented to five experts, and some statements were changed according to their suggestions. Thus, the questionnaire included three main scales:

• The scale of traditional and new media exposure and usage.

• The scale of critical consumption.

• The scale of critical prosumption, in addition to the demographic data of the respondents.

Reliability of the questionnaire was checked using Cronbach's Alpha which was conducted on an exploratory sample of 30 respondents before the application of the scale. The level of reliability was (0.864), for (51 phrases) included in the questionnaire, which is an acceptable level for the reliability of the questionnaire. Then, the internal consistency of the items was calculated by using Pearson Correlation between each statement and the total score of the axis that it belonged to. Results confirmed the internal consistency was good at the level of (p < 0.05). In the quadrilateral scale (always, sometimes, rarely, never) the length of the category was calculated = (the highest value - the lowest value) / number of alternatives, so the length of the category in the quadrilateral scale = (4-1)/4= 0.75, and the length of the category in the triple scale = (3-1) / 3 = 0.66

Data Analysis and Results

Data were analyzed using SPSS 23rd version. No only descriptive analysis, but also inferential analyses was obtained to answer the research questions and hypotheses. The results in Table (1) below indicate the distribution of the respondents according to the variables of gender, age, academic level and the Grade Point

Average (G.P.A.). Male comprises (55.5%) while female (44.5%) of the participants. The great number of participants are in the age level 18-24. They distributed among different levels. They got GPG average (40.3 & 52.1).

		Ν	%
	Male	117	55.5
Gender	Female	94	44.5
	18 - 24	191	90.5
Age	25 - 30	17	8.1
	+30	3	1.4
	1^{st} -3 rd	37	17.5
Academic	4^{th} - 6^{th}	81	38.4
Level	7 th -8 th	72	34.1
	Postgraduate	21	10.0
	2.00 - 2.74	2	0.9
Grade Point Average (G. P.	2.75 - 3.74	14	6.6
Average (G. P. A.).	3.75 - 4.49	85	40.3
	4.50-5.00	110	52.1

Table 1. Demographic characteristics of the respondents.

Results in Table 2 below have shown the levels of traditional and new media exposure and usage. The weighted mean, which associates the value with its weight, has been used. If the weight (always) = 4, the weight (sometimes) = 3, and so on.

	Al	ways	Som	netimes]	Rarely	y Never		lever The weighted		
	N	%	N	%	N	%	N	%	mean		
WhatsApp	156	73.9	48	22.7	7	3.3	00	00	3.71	.52	Always
Snapchat	154	73.0	42	19.9	12	5.7	3	1.4	3.64	.66	Always
Twitter	126	59.7	54	25.6	28	13.3	3	1.4	3.44	.77	Always
YouTube	106	50.2	72	34.1	29	13.7	4	1.9	3.33	.78	Always

Table 2. Levels of traditional and new media exposure and usage

Instagram	94	44.5	64	30.3	49	23.2	4	1.9	3.18	.85	Sometimes
Websites	74	35.1	80	37.9	41	19.4	16	7.6	3.00	.92	Sometimes
Blackboard	51	24.2	91	43.1	51	24.2	18	8.5	2.83	.89	Sometimes
TikTok	86	40.8	46	21.8	28	13.3	51	24.2	2.80	1.21	Sometimes
Zoom	19	9.0	76	36.0	87	41.2	29	13.7	2.40	.84	Rarely
TV	29	13.7	58	27.5	83	39.3	41	19.4	2.36	.95	Rarely
Radio	12	5.7	27	12.8	66	31.3	106	50.2	1.74	.89	Never
Clubhouse	3	1.4	13	6.2	21	10.0	174	82.5	1.27	.64	Never
Facebook	2	.9	3	1.4	26	12.3	180	85.3	1.18	.48	Never
The level of r	The level of new media usage										times
The level of t	raditio	nal med		2.05	Rarel	у					
The level of t	raditio	2.68	Some	times							

Data in Table 2 show that the average of overall usage scale was (2.68 out of 4), which falls within the category (sometimes), but this average rises to (2.80) in the case of using new media applications, and decreases to (2.05) in the case of traditional media. WhatsApp, Snapchat, Twitter topped the list, Radio scored lowest averages of exposure, and the lowest usage averages were scored by Clubhouse, and Facebook. As for the levels of use or exposure after the Covid-19 pandemic, the results summarized in Table 3 indicate that the general average is (2.35 out of 3), which means that media use increased after the pandemic. In the forefront were the communication applications used in distance education viz., Blackboard and Zoom, followed by Twitter, YouTube, and TikTok.

Table 3. Levels of traditional	and new media exposure	e and usage after the	COVID-19 pandemic
Tuble 5. Bereis of multimental	and new means exposition	and asage agree the	covie is panacine

	increa after pande	ased the emic	No cl	hange	decreased after the pandemic		The weighted mean	S.D.	
	N	%	N	%	N	%			
Blackboard	151	71.6	53	25.1	7	3.3	2.68	.53	increased after the pandemic
Zoom	143	67.8	61	28.9	7	3.3	2.64	.54	increased after the pandemic
Twitter	123	58.3	74	35.1	14	6.6	2.52	.62	increased after the pandemic
YouTube	116	55.0	86	40.8	9	4.3	2.51	.58	increased after the pandemic
TikTok	111	52.6	93	44.1	7	3.3	2.49	.56	increased after the pandemic

Snapchat	121	57.3	73	34.6	17	8.1	2.49	.64	increased after the pandemic
WhatsApp	104	49.3	87	41.2	20	9.5	2.40	.66	increased after the pandemic
Websites	93	44.1	100	47.4	18	8.5	2.36	.63	increased after the pandemic
Instagram	90	42.7	98	46.4	23	10.9	2.32	.66	No change
TV	64	30.3	128	60.7	19	9.0	2.21	.59	No change
Clubhouse	22	10.4	174	82.5	15	7.1	2.03	.42	No change
Facebook	8	3.8	197	93.4	6	2.8	2.01	.26	No change
Radio	10	4.7	175	82.9	26	12.3	1.92	.41	No change
The level of r	new me	edia usa	ge afte	r the pa	ndemi	ic	2.40	increa pande	ased after the emic
The level of t	nal med	e pandemic	2.07	No ch	nange				
The levels of after the pane	traditi lemic	onal an	2.35	increased after the pandemic					

Generally, the levels of new media usage increased after the pandemic, while levels of exposure to traditional media did not change. With regard to the levels of personal participation in social media accounts after the Covid-19 pandemic are shown in Table. 4, although 50% of the respondents stated that they Table 4 Levels of participatio did not change, approximately 43% indicated that their participation increased after the pandemic, compared to only less than 8% whose participation was lesser after the pandemic.

able, 4. Levels of participation in social media after the panaemi	able,	4.	Levels	of	participation	in	social	media	after	the	pandemi
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	Ν	%	The	weighted	S.D.
			mean		
Increased after the pandemic	90	42.7			
No change	105	49.8			
Decreased after the pandemic	16	7.6	2.35		.62
Total	211	100			

Regarding the motives of use and exposure before and after the pandemic, results have shown (Table 5) that the 'searching for information and news' motive was stronger after the pandemic among 73% of the respondents, as well as entertainment, education and skills enhancement motives for approximately 61% of the respondents, while the mean value of the 'Communication with acquaintances and friends' motive indicates no significant change before and after the pandemic.

Motives	Strong after pande	ger the emic	No c	hange	Wea after pand	ker the lemic	The weighte d mean	S. D.	
	N	%	N	%	N	%			
Searching for information and news	154	73.0	36	17.1	21	10. 0	2.63	.66	Stronger after the pandemic
Entertainment	128	60.7	48	22.7	35	16. 6	2.44	.76	Stronger after the pandemic
Education and skills increase	128	60.7	45	21.3	38	18. 0	2.43	.78	Stronger after the pandemic
Communicate with acquaintances and friends	109	51.7	53	25.1	49	23. 2	2.28	.82	No change

Table 5. Levels of change in usage and exposure motives after the pandemic

Table 6 shows the levels of critical consumption of media messages among the respondents through ten dimensions measured by the scale's statements. The general average of all respondents on the scale as a whole was (3.49 out of 4). According to their answers, the skill of "distinguishing among the different functions of media" has ranked first, followed by the skill of "determining whether or not media contents contain an advertising message", then the skill of "ability to protect oneself from the risks and negative influences of traditional and new media".

Itoms	Always		Sometimes		Rarely			Never	The	۶D	
items	N	%	N	%	Ν	%	Ν	%	d mean	S.D.	
Distinguishing among the different functions of media	17 4	82. 5	30	14.2	6	2.8	1	.5	3.79	.50	1
Determining whether or not media contents contain an advertising message	16 5	78. 2	41	19.4	4	1.9	1	.5	3.75	.50	2
The ability to protect oneself from the risks and negative influences of traditional and new media	14 8	70. 1	56	26.5	6	2.8	1	.5	3.66	.56	3
Compare news and information across different media	13 9	65. 9	51	24.2	18	8.5	3	1.4	3.55	.71	4

Table 6. Level	s of media	messages critical	consumption
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Analyze positive and negative effects of media contents on individuals	12 4	58. 8	74	35.1	10	4.7	3	1.4	3.51	.66	5
Assess media in terms of credibility, reliability, objectivity, and accuracy	11 0	52. 1	88	41.7	11	5.2	2	.9	3.45	.64	6
Benefit from media messages to express my personal opinion	10 7	50. 7	73	34.6	24	11.4	7	3.3	3.33	.81	7
Classify media messages based on their producers, types, purposes and so on	95	45. 0	86	40.8	26	12.3	4	1.9	3.29	.75	8
Evaluate media in terms of legal and ethical rules (copyright, human rights, etc.)	96	45. 5	83	39.3	26	12.3	6	2.8	3.27	.79	9
Easily determine the accuracy of media messages	81	38. 4	10 6	50.2	21	10.0	3	1.4	3.26	.69	10
The overall average								verage	3.49		

In the scale of critical prosumption, ten dimensions were used as shown in Table 7. The overall average of the respondents in the scale as a whole was (3.05 out of 4), as "Create media contents that in accordance with ethical and legal rules" has ranked first, followed by "Collaborate and interact with diverse media users to achieve a common goal" and then, the skill of "Developing original textual and visual media contents".

Items	А	lways	Som	netime s	I	Rarely		Never	The weighte	S. D.	
	N	%	N	%	N	%	N	%	d mean		
Create media contents that in accordance with ethical and legal rules	15 8	74.9	42	19.9	6	2.8	5	2.4	3.67	.65	1
Collaborate and interact with diverse media users to achieve a common goal	98	46.4	77	36.5	27	12.8	9	4.3	3.25	.84	2
Developoriginaltextualandvisualmediacontents(videos, web pages)	97	46.0	62	29.4	30	14.2	22	10.4	3.11	1.0 1	3

Table 7. Levels of media messages critical prosumption

Conduct discussions to inform or guide people .in the media	90	42.7	67	31.8	37	17.5	17	8.1	3.09	.96	4
Present my real personal online identity	95	45.0	58	27.5	33	15.6	25	11.8	3.06	1.0 4	5
Influence others' opinions by participating to social media	59	28.0	10 9	51.7	30	14.2	13	6.2	3.01	.82	6
Produce media content that respects different opinions and privacy	83	39.3	67	31.8	33	15.6	28	13.3	2.97	1.0 4	7
Participate in the media by reviewing new issues from different angles (social, economic)	69	32.7	74	35.1	48	22.7	20	9.5	2.91	.96	8
design media content that reflects critical thinking about specific issues	63	29.9	67	31.8	47	22.3	34	16.1	2.75	1.0 5	9
produce media content that offers alternative options to what is popular	63	29.9	64	30.3	43	20.4	41	19.4	2.71	1.0 9	1 0
					T	he over	all av	verage	3.05		

The respondents were classified into three main categories in the two scales as follows in Table 8:

• A category with high levels of critical consumption or production; the means of their answers in all the scale items tend to be (always).

• The intermediate levels, the means of their answers in all items tend to be (sometimes).

• The lower levels, whose response means on all scale statements tend to be (rarely or never).

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1 aoic 0.	Distribution	of respondents	io criticat	consumption	unu	prosumption
		<i>v i</i>		1		1 1

	Critical Consumption		Critical Prosumption		
	Ν	%	Ν	%	
High levels	163	77.3	88	41.7	
Intermediate levels	39	18.5	83	39.3	
Lower levels	9	4.3	40	19.0	

Total	211	100	211	100
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The results indicate that 77.3% of the respondents were in the higher levels category on the critical consumption scale, compared to only 41.7% on the critical prosumption scale.

Testing hypotheses

• **H1**: Respondents differ significantly in the levels of use, critical consumption and

critical presumption according to the variables (gender / age / academic level / Grade Point Average (G. P. A.).

The Independent Samples T test was used to examine the difference between the means according to the gender variable. Results in Table 9 have shown that there were no significant differences between males and females in the three scales used in the study.

		Ν	Mean	Std. Deviation	t-test value	Sig. (2-tailed)	
Critical Consumption	Male	117	3.50	.47	.633	.527	
	Female	94	3.46	.38			
Critical	Male	117	3.12	.65	1.676	.095	
Prosumption	Female	94	2.97	.62			
Usage	Male	117	2.68	.37	205	.837	
	Female	94	2.69	.30			

1 able 9. 1-value Results according to gende	Table 9.	T-value Results	according to	gender
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To identify the significance of difference between the means according to the variables of age, academic level and the Grade Point Average, ANOVA test was used in the case of usage and critical consumption scales (Tables 10 and 11). The results of Homogeneity of Variances test were: (Levene Statistic: usage = .006 sig.= .994, critical consumption = .208 sig.=.812) The Kruskal-Wallis Test was used in the case of the Critical Prosumption Scale (Table No. 12) as a non-parametric test due to the lack of homogeneity condition (Levene Statistic: 4.788 sig.=.009**).

		Sum of Squares	df	Mean Square	F	Sig.	
	Between Groups	.208	2	.104			
Age	Within Groups	23.578	208	.113	.916	.402	
	Total	23.785	210				
Academic	Between Groups	1.126	3	.375	3.428	.018*	
level	Within Groups	22.660	207	.109			

	Total	23.785	210			
	Between Groups	.291	3	.097		
G.P.A.	Within Groups	23.494	207	.113	.856	.465
	Total	23.785	210			

* p < .05

The results of one-way ANOVA analysis, as Table 10, exhibits have shown that the differences between respondents in media use were statistically significant at a level less than 0.05 (P < 0.05) according to the variable of "academic level". There was not significant differences in the case of the variables of age and

grade point average. In order to identify the source of variance among the (academic level) categories, the LSD Post Hoc Test was used, which indicated that the (first-third levels) were the source of variance, their average of media use was (2.55 out of 4), which is less than the others at a significance level of less than 0.05

Table 11. ANC	VA results of critica	l consumption a	ccording to (Age,	Academic level, and G.P.A)
			0 0	

		Sum of Squares	Df	Mean Square	F	Sig.
	Between Groups	.803	2	.401		
Age	Within Groups	37.835	208	.182	2.206	.113
	Total	38.637	210			
Academic level	Between Groups	.794	3	.265		
	Within Groups	37.843	207	.183	1.448	.230
	Total	38.637	210			
	Between Groups	1.982	3	.661		
G.P.A.	Within Groups	36.655	207	.177	3.732	.012*
	Total	38.637	210			

* p < .05

Results in Table 11. have shown that the differences between respondents in media messages critical consumption were statistically significant at a level less than 0.05 (P < 0.05) according to the variable of "Grade Point Average", not significant in the case of the variables of age and academic level. To identify the source of variance among the (G.P.A.)

categories, the LSD Post Hoc Test was used, which indicated that the (weakest G.P.A) respondents were the source of variance, their critical consumption average was (2.60 out of 4), which is less than the others at a significance level of less than 0.05.

Variables		N	Mean Rank	Asymp. Sig.	
Age	18 - 24	191	104.52		
	25 - 30	17	125.50	356	
	+30	3	89.83	.330	
	Total	211			
Academic level	1 st -3 rd	37	105.69	+	
	4 th -6 th	81	98.77	-	
	7 th -8 th	72	110.51	.478	
	Postgraduate	21	118.98		
	Total	211		_	
G.P.A.	2.00 - 2.74	2	17.75		
	2.75 - 3.74	14	131.79	*.019	
	3.75 - 4.49	85	114.01		
	4.50-5.00	110	98.13		
	Total	211		1	

Table 12.	Kruskal-Wallis	Results of	critical	prosumption	according to	(Age,	Academic	level,	, and
				G.P.A)					

* p < .05

The Kruskal Wallis Test, as presented in Table 12, confirmed that there were no significant differences according to the variable of age or the academic level in the Critical Prosumption, while the differences were significant at a level of less than 0.05 in the case of (Grade Point Average). To identify the source of variance, the study applied the Mann-Whitney Test, which indicated that the mean of those with a low-Grade Point Average got a lower mean (1.95 out of 4) in the critical Prosumption scale, which is less than the others at a significance level of less than 0.05.

In general, the statistical tests of the first hypothesis have indicated that it is partially accepted, as the respondents differ in the levels of media usage according to the academic level, and they differ in the levels of critical consumption and prosumption according to the Grade Point Average.

• **H2**: There is a significant correlation between the level of exposure to traditional media/ use of new media, and the levels of critical consumption and prosumption.

To identify the relationship between the respondents' scores on the scales of media usage/exposure and their scores in the critical consumption and prosumption scales, the Bivariate Correlation Test presented in Table 13 was used to measure the strength and direction of the relationship between two variables.



 Table 13. Bivariate Correlation Results between the levels of media exposure/use, and the levels of critical consumption and prosumption

** Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

In the case of new media usage, the Pearson Correlation value was 0.324 and 0.338, which means a medium positive correlation at the 0.01 level between usage and critical consumption/prosumption, meaning that a direct correlation exists between the use of new media platforms, and critical consumption and presumption and vice versa.

As for the traditional media exposure, the results of Pearson Correlation indicate that the correlation was significant but weak (0.159) at a level of less than 0.05, with critical consumption, the correlation was not significant in the case of critical prosumption.

• **H3**: There is a significant correlation between the change in the level of use after the pandemic and the levels of critical consumption and prosumption, the more they have used after the pandemic, the highest levels of critical consumption and presumption they have got.

Bivariate Correlation was used (Table 14) to examine the strength and direction of the relationship between the use/exposure after the pandemic and the levels of critical consumption and presumption.

Table 14. E	Bivariate Corre	lation Results betwe	en the levels o	of media exposure/	'use <mark>after t</mark>	he
	pandemic,	and the critical const	umption and p	resumption levels		

Traditional Media	New Media Usage after the pandemic	Critical Consumption	Critical Prosumption
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.**Correlation is significant at the 0.01 level (2-tailed).

.*Correlation is significant at the 0.05 level (2-tailed).

The value of Pearson Correlation was significant only in the case of new media use (0.172, and 0.187), which is a weak positive correlation with statistical significance at a level of less than 0.05 in the case of the critical consumption scale, and a level of less than 0.01 in the case of the critical prosumption scale, meaning that the more they have used new media platforms after the pandemic, the higher the levels of critical consumption and presumption they have got and vice versa. In the case of traditional media exposure, the results of the Pearson Correlation indicate that the correlation was not significant in the two scales.

• **H4**: There is a significant correlation between the levels of critical consumption and the level of critical presumption.

To measure the strength and direction of the relationship between the two variables, Bivariate Correlation (table 14) has confirmed that this hypothesis is accepted. Pearson Correlation (0.570) indicates a statistically

significant medium-positive relationship at the level of less than 0.01, meaning that the more they have got the critical consumption skills, the more critical presumption skills they have got and vice versa.

Discussion and conclusions

This study has shown that the average of overall media usage among the respondents was (2.68 out of 4). This average rises in the case of use of new media applications, and decreases in the case of traditional media use where WhatsApp, Snapchat, Twitter topped the list. Generally, the media use has increased after the Covid-19 pandemic, especially for the communication applications used in distance education (Blackboard and Zoom), followed by general use applications (Twitter, YouTube and TikTok) while the levels of exposure to traditional media did not change after the pandemic. The (searching for information and news) motive was the strongest motive after the pandemic, followed by the motives of (entertainment, education and skills increase). These findings coincide which found direct impact on virtual learning on media due to Covid-19 (Abdel Khaleq, 2020; Aljaid & Al-Elasdoudy, 2021; Badr & El-Magrabi, 2020; Salem, 2020).

As for the scale of media messages critical consumption, the mean was (3.49 out of 4) compared to (3.05 out of 4) in the scale of critical prosumption (production and consumption). 77.3% of the respondents were in highest level category of critical the consumption, compared to only 41.7% on the scale of critical prosumption. This result is consistent with some studies (e.g., Bahnasy, 2019) which confirmed that network users still deal with digital media education from the consumer perspective and have not yet switched to the productive user, who plays a more positive role in spreading awareness and exposing fake news.

Test of the hypotheses confirmed the differences among respondents in the levels of media use according to the academic level. They differ in the levels of critical consumption and prosumption according to the Grade Point Average.

The gender variable was not influential in this study. There were no significant differences between male and female university students in acquiring different skills of digital media education, productive skills for audio-visual and printed materials, communication skills with colleagues and teamwork, and management of web pages. In this, the current study replicates the results of Hazaea and Alqahtani (2020) and Korany (2020) in which there was no significant differences between male and female in the use of digital media. However, other studies in Health Literacy have reported the levels of the eHealth literacy scale vary according to age and gender. Abdulai et al., (2021) reported that female and elderly reported low if compared with male and youth. This might be due to the study including multiple categories of the public, and not being limited to the students. This confirms the findings of Patil et al. (2021) on college students' behaviors and attitudes towards the Covid-19 pandemic through the digital literacy scale, revealing that demographic variables (gender and age) were not influential, except for the "disability" variable.

Results of the current study have shown that the (traditional/new) variable was clearly influential in testing the hypotheses, the more students have used new media platforms, the higher the levels of critical consumption and prosumption they have got and vice versa. Meanwhile, there was a weak relationship between traditional media

This study reinforces some of the previous findings. Hasneen, (2020) reported that the correlation between the use of some traditional and social media and the level of critical consumption is statistically significant.

The correlation between use and levels of critical production still needs more research efforts to specifically identify the role of intervening variables and factors that may strengthen or weaken such a relation. If the increase of the critical consumption levels is offset by an increase in critical production, as indicated by the results, this does not make us certain about the effect of other mediating variables. We need more research, especially on the critical production and consumption (prosumption), as the highest level targeted by digital media education.

Recommendation

Based on its findings, the study recommends the following:

1. Students enrolled in media studies may be sensitized to the central role that all media platforms have acquired in the post-pandemic times.

2. Media studies curriculum should include findings on the effects of media on the masses during the pandemic to emphasize the serious repercussions that dis- and misinformation can bring in the offing.

3. Media apps and platforms such as YouTube and Twitter, so far limited to general, nonacademic use, may be adopted for educational purposes given their high popularity amongst the youth.

4. General public should be warned through information campaigns against allowing popular media to influence their decision making in critical times such as those of the pandemic.

Limitations

This study should be interpreted within the context of its limitations. The first limitation is the self-reporting nature of online surveys may have influenced respondents to respond inaccurately, even though the online survey tool has been adopted in this field by many previous studies.

Another major limitation is the relatively small sample of mass communication college students from one university in Saudi Arabia. It is hoped that future research to extend to other user categories, regions and contexts.

References

- [1] Abdel Khaleq, Y., (2020). Mechanisms for measuring the general mood towards (distance education) on Twitter during the Covid-19 pandemic. *The Journal of Public Relations and Advertising Research*, 20, 1-29 <u>https://dx.doi.org/10.21608/sjocs.2020.</u> 159901
- [2] Abdulai, A. F., Tiffere, A. H., Adam, F., & Kabanunye, M. M. (2021). COVID-19 information-related digital literacy among online health consumers in a lowincome country. *International journal* of medical informatics, 145, 104322 <u>https://doi.org/10.1016/j.ijmedinf.2020.</u> 104322
- [3] AL-Dihani, T., (2021) Kuwaiti youth's reliance on the Ministry of Health account information during the Covid-19 crisis and their evaluation of its credibility. *The Journal of Public Relations and Advertising Research*, 21, 49-81. <u>https://doi.org/10.21608/sjocs.2021.17</u>7759
- [4] ALjaid, B., Elasdoudy, N., (2021) .The impact of the Corona pandemic on the employment of electronic education in colleges, institutes, and departments of media and public relations. *The Journal of Public Relations and Advertising Research*, 21, 83-126 https://dx.doi.org/10.21608/sjocs.2021. 177756
- [5] Al-Masawi, M., (2020). Saudi audience attitudes towards new media role in health awareness-raising: a field study on the

healthy crisis of Covid-19. *The Journal of Public Relations and Advertising* Research, 20, 141-197 https://dx.doi.org/10.21608/sjocs.2020. 159719

- [6] Badr, H., & El Magrabi, S. (2020). Faculty Perceptions in Egyptian universities of distance learning during Covid-19 crisis. *The Egyptian Journal of Media Research*, 72, 55-99. <u>https://doi.org/10.21608/ejsc.2020.13835</u> <u>0</u>
- Bahnasy, M. (2019). The mechanisms of social network users to check for fake news. *The Egyptian Journal of Media Research*, 68, 565-614. <u>https://doi.org/10.21608/ejsc.2019.868</u> <u>86</u>
- [8] Bosanac, D., & Luic, L. (2021). Importance of digital literacy in the process of confronting the stress during COVID-19 Pandemic. *Studies in health technology and informatics*, 28(1), 1041–1045. https://doi.org/10.3233/SHTI210343
- [9] Center for Media Literacy. (2020, October) COVID 19: Shaking up Education and Family Life. Retrieved from <u>https://www.medialit.org/sites/default/f</u> <u>iles/connections/Media%20Literacy%20</u> October.pdf
- [10] Chen, D. T., Wu, J., & Wang, Y. M. (2011). Unpacking new media literacy. Journal on Systemics, Cybernetics and Informatics, 9(2) 84–88.
- [11] Hasneen, H. (2020). Evaluating the efficiency of practicing media literacy skills among students in educational media departments. *The Egyptian Journal of Media Research*, 7(1), 235-296. https://

doi.org/10.21608/ejsc.2020.126746

[12] Hazaea, A. N., & Alqahtani, A. A. J. (2020). Competences in digital online media literacy: Towards convergence with emergency remote EFL learning. *International Journal of Media and Information Literacy*, 5(2), 164-175.

https://doi.org/10.13187/IJMIL.2020.2. 164

[13] Koc, M., & Barut T. E., (2016). Development and validation of New Media Literacy Scale (NMLS) for university students. *Computers in Human Behavior*, *6*(3), 834-843.

https://doi.org/10.1016/j.chb.2016.06.0 35

- [14] Korany, H., (2020). Measuring Digital literacy skills of mass communication students in Egyptian universities during the online learning process through covid-19 pandemic. The *Egyptian Journal of Media Research*, 7(3, 387-427. https://dx.doi.org/10.21608/ejsc.2020.1 38402
- [15] Lee, L., Chen, D. T., Li, J. Y., & Lin, T. B. (2015). Understanding new media literacy: The ` development of a measuring instrument. *Computers and Education*, 8(5), 84-93. https://doi.org/10.1016/j.compedu.2 015.02.006
- [16] Lin, T.-B., Li, J.-Y., Deng, F., & Lee, L.
 (2013). Understanding new media literacy: An explorative theoretical framework. *Educational Technology & Society*, *16*(4), 160-170
- [17] Mahmoud, C., (2020). The role of social networks in pursuing the adjustment of the Egyptian public with the quarantine during Covid-19 pandemic, *The Journal of Public Relations and Advertising Research*, 20, 499-555. <u>https://doi.org/10.21608/sjocs.2020.15</u>9716
- [18] Matbouli, D., (2020). The role of social media networks in managing the Corona crisis "Covid 19" and its impact on the Egyptian audience. *The Journal of Radio and Television Research*, 20, 281-367. https://dx.doi.org/10.21608/ejsrt.2020.1 56214
- [19] Mohmed, Z., (2021). The impact of reliance on Saudi official media platforms on Twitter on the knowledge and behaviors of the public towards the Corona pandemic. *Journal of Mass Communication Research "JMCR"*, 57(1), 229-282. https://dx.doi.org/10.21608/jsb.2021.16 0344
- [20] Patil, U., Kostareva, U., Hadley, M., Manganello, J. A., Okan, O., Dadaczynski, K., 'Massey, P. M., Agner, J., & Sentell, T. (2021). Health literacy, digital health literacy, and COVID-19 Pandemic attitudes and behaviors in

U.S. College Students: Implications for interventions. *International Journal of Environmental Research and Public Health*, 18(6), 3301. https://doi.org/10.3390/iierph18063301

- [21] Salem, D., (2020). Evaluation of faculty members in the field of media of the quality of the educational process in higher education in light the covid-19 pandemic. *Egyptian Journal of Public Opinion Research*, 19(4), 1-79. https://dx.doi.org/10.21608/joa.2020.14 7781
- [22] Sarfo, J. O., & Ansah, E. W. (2020). Fear experiences of social media users in Ghana during the COVID-19 pandemic-lockdown: An online survey. *International Journal of Media and Information Literacy*, 5(2), 199-204. https://doi.org/10.13187/IJMIL.2020.2. 199
- [23] Shaheen, (2021). Egyptian Duaa. audience perceptions of social media networks and its role in developing their information awareness about the Coronavirus (COVID-19) Pandemic. Egyptian Journal of Public Opinion Research, 20(1), 335-369. https://dx.doi.org/10.21608/joa.2021.15 6937
- [24] Suleiman, A., (2021). Misinformation on Egyptian Press Websites and social media and its psychological and social effects on the Egyptian public in application to the Corona crisis 2019 (Covid-19). *The Egyptian Journal of Media Research*, 7(4), 119-167. https://dx.doi.org/10.21608/ejsc.2021.154 454
- [25] UNESCO. (2020) 12 Media Literacy Activities for students at home during COVID-19 school closures, Retrieved from <u>http://www.unesco.org/new/fileadmin/</u> <u>MULTIMEDIA/HQ/NATCOM/pdf/Twel</u> <u>v</u>
 a Media Literacy Activities for Stud

<u>e_Media_Literacy_Activities_for_Stud</u> ents_At_Home_Du.pdf

[26] UNICEF. (2020, May) AEM and UNICEF's campaign to support distance learning, disinformation identification and online safety. Retrieved from

https://www.unicef.org/croatia/en/press -releases/increased-interest-media-

literacy-during-covid-19-pandemic

- [27] UNESCO. (2020, May7). Stop COVID-19 disinformation at the root with media and information literacy. Retrieved from .<u>https://en.unesco.org/news/stopcovid-19- disinformation-root-mediaand-information-literacy</u>
- [28] UNESCO. (2020, May8). UNESCO produced graphics on media and information literacy to counter disinformation on COVID-19. Retrieved from

https://iite.unesco.org/news/unescoproduced-graphics-on-mil-to-counterdisinformation-on-covid-19 /

[29] UNESCO. (2020, September) UNESCO launched a series of resources to counter COVID- 19 conspiracy theories. Retrieved from <u>https://iite.unesco.org/news/unesco-</u> launched-a-series-of-resources-to-

counter-covid-19-conspiracy-theories/