Nursing Students' Perceptions towards the Implementation of Web 2.0 Tools in Education

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Abstract: Background: *Web 2.0 is not only just an application of technology but it's an attitude.The use of Web 2.0 tools (wiki's, blogs, RSS feed, social networks, podcast etc.) can support innovative teaching methods and is associated with concepts like communities of practice, syndicated content, learning as a creative activity, peer-to-peer learning, creation of personal learning environments, and non-formal education which support nursing student to influence community and support health promotion strategies.*
Aims: *This study aims to investigate nursing students' level of usage, preference, perceived effectiveness, perceived challenges, suggestions to improve the implementation of implementation of Web 2.0 tools in nursing education.*
Design: *An exploratory descriptive research design was followed to carry out the study.*
Subjects: *By using simple randomization a total number of 485 undergraduate students and 61 post graduate student were selected.*
Tools: *Four tools were used. It was in two version either online (softcopy) or in hardcopy. Tool I, personal and academic profile assessment questionnaire, tool II, students' frequency of use and level of preference of Web 2.0 tools assessment questionnaire, tool III, student's perception towards the effectiveness of Web 0.2 tools in education assessment questionnaire, and tool IV, challenges and obstacles in the application of Web 0.2 tools assessment questionnaire.*
Results: *The findings of the present study revealed that the students frequently use Facebook followed by YouTube. Other tools were used in lesser extent. Web 2 tools helped the student to find related knowledge and information for learning and it encourage them to communicate more with their classmates and it enhance their creativity and imagination, increased their confidence. Intellectual property rights, the risk of data security, lack of some teachers' skills with technology, high cost of educational technologies and poor quality and significance of the shared knowledge are Web 0.2 challenges. Finally, the students' suggestions include conducting of training programs, e-learning should be included in all the curricula, improve the internet band width, and the privacy in using Web technologies should be, conduct awareness campaign and training by the university on Web 2.0 application in teaching and learning.*
Recommendations: *Developing comprehensive coordination and cooperation protocol between the universities, General Information Authority, Information, research and internet sector at the governmental information services and other different sectors of the community to raise community awareness and training about Web 0.2 tools.*
Key Words: *Web 0.2 tools, student's perception*

I.   Introduction

In 21st century, technology has become the knowledge transfer highway in most countries and in all sciences. As part of this, schools and other educational institutions which are supposed to prepare students to live in a knowledge society need to consider Information, Communication, and Technology (ICT) integration in their curriculum **(Ghavifekr, Afshari&Amla Salleh, 2015)**.Combination of Information, Communication, and Technology in education denotes to the use of computer-founded communication that are integrated in the daily educational activities in combination with students' dailyworld, planning, and training activities to face the demands of the digital era. According to **Cassim, K. M., &Obono, S. E. (2011)**, over the last three decades rapid progress has arisen in ICT. Particularly in the last decade, the growth in prominence of social media and Web 2.0 technologies had a melodramatic impact globally on how people communicate (**Nakayima, J. K.**

(2011). Social media platforms such as Facebook, Twitter, LinkedIn, and Google plus have the potential to become important disruptive technologies for building pioneering models of management education. **(Okello-Obura, Constant and Ssekitto, Francis, 2015)**.

The learning environment today has changed the psychology of learning. New learners need an education focused and almost vocational. They want to learn by doing, or at least experimenting in parallel with their reading and lectures **Chokri, B. 2012**. Furthermore, the attractiveness of new social and digital technologies is their immediacy, reach and flexibility. Alongside any discussion could be guided initially by a staff but be managed by students and monitored and supported by the institution itself **(Cormode, G. &Krisnamurthy, B.,2008)**.

Web 2.0 is not only a just application of technology but it's an attitude. That is why it was prudent to find out whether university students are aware of some of the Web 2.0 technologies that they can use in teaching and learning. However, the understanding of what constitute Web 2.0 and use in higher education is critical (**Halverson, E R 2011**). The internet has revolutionized the concept of information and its use, access and management. Ten years ago, finding information was a lengthy, complicated process (**Munguatosha, G M., Muyinda, P B. & Lubega, J T. 2011**). Today, not only do individuals and computers produce thousands of gigabytes of information a minute, but this information is also networked collectively, which further increases the amount of information produced. Unlike Web 1.0, which was akin to a source or means of communicating information, Web 2.0 provides a way to create information, and consequently knowledge. **(Cormode, G. &Krisnamurthy, B. 2008)**. Web 2.0 is an emergent key driver changing learning paradigms at academic institutions. According to **O'Reilly, T. 2005**. besides technology, Web 2.0 challenges intellectual property and transform consumers into active users creating and curating knowledge.

The use of Web 2.0 tools (wiki's, blogs, RSS feed, social networks, podcast etc.) can support innovative teaching methods and isassociated with concepts like communities of practice, syndicated content, learning as a creative activity, peer-to-peer learning, creation of personal learning environments, and non-formal education **(Rice, A. 2011)**. In addition, Web 2.0 tools give power to the user/learner. Web 2.0 applications rely on user-generated content and interactivity **(O'Reilly 2005)**. This means that students have control over the content and over the choices that they make in relation to what is preserved and what is discarded **(Rice, A. 2011)**. Students can upload videos in the target of content or make blog posts. Rather than just passively using the Web to source information, Web 2.0 allows learners to contribute in this cloud, through five main features, as collaboration, creativity, control, community and conversation **(Tusubira, F F. 2007)**. With Web 2.0, the emphasis is on participating, doing and experiencing rather than knowing what or where(**Tyagi, S. 2012**).

The literature review revealed Web 2.0 tools support nursing faculty-students communication and prepare students and graduates to work in the current new era of technology rich healthcare environment. The uses of Web 2.0 tools have relevance to nursing in that they are widespread in the educational and healthcare environments. Nursing faculty now are shifting to be more up to date, advanced and more knowledgeable about the complex and changing world of technology and its ability to prepare students for the world in which they will work later **(Parmar S, Siwach AK, 2016, Rice, A. 2011, Tusubira, F F. 2007 and Tyagi, S. 2012)**.

Community health nurses' competency level in the field of technology is one of the nursing specialties in applying web 2.0 in their field in relation to community health and obtain the necessary information to implement evidence-based practice (EBP) to the whole population in the outpatient clinic and to reach them in their home. Web 2.0 tools would help the nursing students in future careers and jobs; therefore, a new task of educational programs is to support in acquiring such competencies along with other subject-related skills. Furthermore, using Web 2.0 tools in community health nursing help to transfer a thousand of information to the community just by one press, that help to enhance health promotion, not only among individual but all over the community. The nursing profession must be prepared for demands associated with the rapid advancement of technology in health care(**Parmar S, Siwach AK, 2016, and Karunasena, A., Deng, H., and Zhang, X. 2012, and Schlenkrich, L., and Sewry, D. 2012**).

Aims of the study:
The current study aims to:
1- Investigate nursing students' level of usage of Web 2.0 tools in nursing education.
2- Determine the level of student's preference ofWeb 2.0 tools in nursing education.
3- Assess the student's perceived effectiveness, and perceived challengesWeb 2.0 tools in nursing education.
4- Identify the student's suggestions to improve the implementation of Web 2.0 tools in nursing education.
Research questions:
1. How frequently the nursing students use Web 2.0 tools?
2. What is the level of Web 2.0 tools preference among nursing students?
3. How do students perceive both effectiveness or challenges and threats of Web 2.0 tools implementation?
4. What are the students' suggestions to improve the implementation of Web 2.0 tools in education?

Operational definition of Web 2.0:

For the purpose of this study, Web 2.0 was defined as technology, software, and internet which allow users to share, create, collaborate and/or publish Web-based content.

II. Materials & Method

Materials:

Research design:

An exploratory descriptive research design was followed to carry out the study.

Setting

The study was carried out at Faculty of Nursing Damanhour University Egypt.

Subjects

A total number of 485 undergraduate and 61 post graduate nursing students enrolled in the academic year 2018-2019 Faculty of Nursing- DamanhourUniversity during the second term were included in the study.They were included in the study according to the following sampling and statistical tips:

- **Undergraduate students:**

According to Epi Info 7 sample size estimation program using the following parameter:

1- Population size (1231 students)

2- Expected frequency (50%)

3- Margin of error (5%)

4- Confidence co. efficient (99%)

5- Minimum sample size (443 students)

The total sample size was 485 undergraduate students. By using simple random technique, the students were selected from the previously selected setting according to the following table (Table I);

Table (I) Sample Size Estimation Table

Student's grade/level	Total number of students /grade or level during the academic year 2018-2019	Proposed sample size	Actual selected sample
First year	242	(242×443) ÷1231=87	89
Second year	329	(329×443) ÷ 1231=118	120
Third year	340	(340×443) ÷ 1231=122	124
Fourth year	420	(420×443) ÷ 1231=151	152
Total	**1231**	**443**	**485**

- **Postgraduate students:**

All postgraduate students who accepted to participate in the study who enrolled in the academic year 2018-2019 were invited to engage through online survey link total number were 61 students (master, doctorate students).

Tool for data collection:

In order to fulfill the aim and answer the research questions of the study four tools were used. The tool was developed by the researchers after thorough and detailed search. It wasused in two version either online (softcopy) or in hardcopy according to the preference of the study participants. (Akhilesh K.S. 2016, Akhilesh K.S. 2016, and Ghavifekr, S. &Rosdy, W.A.W. 2015).

Tool I: Personal and Academic Profile Assessment Questionnaire:

It was developed by the researchers to identify basic students' personnel and academic data such as: age, gender, place of residence, academic year, internet access, devices connected to internet, presence or absence of university e-mail.

Tool II: Students' Frequency of Use and Level of Preference of Web 2.0 Tools Assessment Questionnaire:

This is a self-reportquestionnaire, that was developed by the researchers to determine the extent of usage of these tools as well as the level of preference of the students towards these tools. It consisted of three parts:

Part I: Students' Frequency of Usage of Web 2.0 Tools; to determine the extent of usage of Web 2.0 tools. It comprised a list of the following 14 Web 2.0 tools with a simple description of each; Face-book, YouTube, Twitter, E-mail, Wikis, Blogs, LinkedIn, Google Maps, Podcasts, Instant messaging, Social bookmarking, Moblogging, Video blogging, and Flickr. Students responses is described using a 4-pointLikert scale ranged from 0 to 4; (3=Frequently =, 2= Occasionally, 1= Rarely, 0=not used). The total score of frequency of usage was ranged from 0 to 42.

PartII:Students' Preference of Web 2.0 Tools; to determine the level of preference of the previous 14 Web 2.0 tools in studying or in leisure time.Students responses is on a 4-point Likert scale ranged from 1 to 4;

(3=highly prefer, 2=moderately prefer, 1=slightly prefer, 0=not prefer). The total score of the students' preferences was ranged from 0 to 42.

Part III: Students' Perceived Skill Level of Using Web 2.0 Tools Assessment Questionnaire;it used to assess the extent of skill level of using Web 2.0 tools. The studentswere asked to respond to 10-point self-reflection skill level assessment, it was divided into three levels scale from 4-6 correspond lowest level of skill, 7-8 for moderate skill level and 9-10 for high level.

Tool III: Student's PerceptionTowards the Effectiveness of Web 2.0Tools in Education Assessment Questionnaire:

This tool was used to determine the effectiveness of Web 2.0 tools as perceived by the students. It includes 14 statements, such as using Web 0.2 tools: will help me to find related knowledge and information for learning,enhance my creativity and imagination, and encourage me to communicate more with my classmates. The response to those items were scored on a 5 –points Likert scale (0 = strongly disagree, 1= disagree, 2= neutral, 3= agree and 4= strongly agree.), negatively stated statements were reversed in scoring (4 = strongly disagree, 3= disagree, 2= neutral, 1= agree and 0= strongly agree.). Additionally, an open-ended question regarding students' suggestions to improve the implementation of Web 2.0 tools in education was included.

Tool IV: Challenges and Obstacles in the Application of Web 0.2 Tools Assessment Questionnaire:

It includes 14 statements, such as, poor technological infrastructure, the absence of the personal touch associated with classroom lessons, and risk of students' privacy while using these tools. The response to those items were scored on a 5 –points Likert scale (4 = strongly disagree, 3= disagree, 2= neutral, 1= agree and 0= strongly agree.), negatively stated statements were reversed in scoring(0 = strongly disagree, 1= disagree, 2= neutral, 3= agree and 4= strongly agree.).

Methods

● **Administrative process:**

Permission to conduct the study was obtained from the dean of the Faculty of Nursing; Damanhour University and the head of each scientific department after explaining the purpose of the study.

● **Study tools:**

The tools were developed by researchers after an in-depth review of the related recent relevant literature and was sent to expert in the field of education and community health nursing to check content validity. Necessary few modifications were carried out accordingly. Cronbach alpha coefficient was used to test the tool II,III, and tool IV reliability; tool II(r=0.819), tool III (r=0.858), and tool IV (r=0.881) which means that the results of the Cronbach's alpha test indicating that the three tools were 80 % reliable.

● **Pilot study:**

Pilot study was conducted by the researcher to test the clarity and applicability of the tools on 80 students (20 students from each academic level) they were selected randomly from the practical rotation groups from different academic years at the Faculty. According to the results of the pilot study all required suggestion was taking into consideration and as suggested by the students of the pilot test "to allow the research participants a training workshops on applications of Web 2.0 tools". So, this promise was mentioned after the aim of the study in the questionnaires.

● **Field work:**

- Data were collected by the researchers over a period of two months from March 2019 to May 2019.
- Data was collected by the researchers, using the questionnaire method (Hard copy), and or using google forms that is an online survey software that to create and run professional online surveys. The survey was administered/sent to the users via Facebook through the special Facebook page for each academic specialty, or email or WhatsApp application. The link was sent to each responsible person in clinical nursing rotation in each academic year to facilitate contact with the students. Also, the hard copy was disseminated to student in free time during clinical day according to schedule of every academic year. While,regarding topostgraduate, soft copy was sent to them through either WhatsApp or email address.
- Subjects of each of the four academic years were asked to answer the questionnaire sheets, students were asked to take their time and give their response as best as they can, because honest and truthful answers are a must to get accurate findings. They were also instructed, that one answer is only required and not to leave any item without answer.
- The duration of time to complete filling of the questionnaire sheets by every student ranged from 20 to 30 minutes.

- **Statistical Analysis of the Data:**
- The collected data were coded and analyzed by using the International Business Machine - Statistical Package for Social Sciences (IBM-SPSS version 25).
- Data was tabulated and presented using various of tests: frequency, calculation of the mean, standard deviation, andANOVA test were used in the analysis.
-     The level of significance selected for this study was p value equal to or less than 0.05.

- **Ethical considerations:**
- The researchers explained the purpose of the study to all students; consequently, written informed consent was obtained from each of them.
- A statement was written in the cover page of the questionnaire to assure students that their responses on the questionnaires would be kept confidential and objectives of research also.
- The right to refuse to participate or withdraw from the study was emphasized after reassuring students that their response would have no impact on their grades. Data Anonymity and confidentiality were considered.

III. Results

Table (1) showed that the majority (91.8%) of the post-graduate students were female, compared to less than three quarters of under-graduate students. More than two thirds (68.9%) of post-graduate students were single, whereas the majority (91.5%) of the under-graduate students were single. In relation to the academic year of the under-graduate students, more than one third (38.1%) of them were at third academic year, while around one quarter were at the second and fourth academic year (22.9% and 24.5% respectively). Slightly less than half (49.2%) of the post-graduate students used smartphone to access internet compared to around one tenth (13.1%) who used laptop, whereas more than one third (37.7%) of them used both laptop and smartphone. Additionally, nearly three quarters (75.5%) of the under-graduate students used smartphone to access internet compared to less than one tenth who used laptop only and laptop and smartphone (8.9% and 7.4% respectively), whereas the minority (3.7%)of them used tablet. In relation to the place of connecting to the internet, the majority of the post-graduate and under-graduate students connected to the internet at their home (96.7% and 94.2% respectively). Slightly more than two fifths (42.6%) of the post-graduate students have university e-mail compared to the minority (3.9%) of the under-graduate students. Finally, the majority of the post-graduate and under-graduate students have private e-mail (95.1% and 84.7% respectively).

Table (1) Distribution of the Studied Students' According to Their Socio-Demographic Characteristics and Their Access to the Internet:

Variable	Post-graduate(n.61)		Under-graduate (n.485)	
	No.	%	No.	%
Sex				
Male	5	8.2	142	29.3
Female	56	91.8	343	70.7
Marital status				
Single	42	68.9	444	91.5
Married	19	31.1	41	8.5
Academic year				
First			89	18.3
Second			120	24.7
Third			124	25.6
Fourth			152	31.4
Which of these devices do you have access				
Laptop	8	13.1	36	7.4
Smartphone	30	49.2	366	75.5
laptop &smartphone	23	37.7	43	8.9
Tablet	0	0.0	18	3.7
Neither	0	0.0	22	4.5
Place of connecting to internet				
At home	59	96.7	457	94.2
Cyber	2	3.3	28	5.8
Do you have university email				
Yes	26	42.6	19	3.9
No	35	57.4	466	96.1
Do you have private email				
Yes	58	95.1	411	84.7
No	3	4.9	74	15.3

Table (2) portrayed that the majority (82.0%) of the post-graduate students frequently use Facebook followed by less than three quarters (73.8%) who frequently used YouTube. Whereas, more than three quarters (77.5%) of the under-graduate students frequently use Facebook followed by three fifths (60.6%) who frequently used YouTube. Twitter was used frequently by less than one quarter (24.6%) of the post-graduate students, compared to around tenth (14.2%) of the under-graduate students. E-mail and wikis were used by about one third of the post-graduate students with the same percentage for both (32.8%), compared to less than one fifth (17.7%) of the under-graduate students who used e-mail frequently and less than tenth (8.9%) who used wikis frequently. Furthermore, Blogs and micro blogs and Linked In where used frequently by around one quarter of the post-graduate students (26.2% and 29.5% respectively), compared to the minority of under-graduate students who frequently used Blogs and micro blogs and Linked In (5.8% and 6.2 % respectively). Google Maps was frequently used by more than one third (36.1%) of the post-graduate students compared to nearly one quarter (24.9%) of the under-graduate students. Podcasts was frequently used by more than one quarter (26.2%) of the post-graduate students compared to only 5.2% of the under-graduate students. Slightly more than two fifths of the post-graduate students were used Instant messaging and Social book marking frequently (42.6% and 41.0% respectively), compared to around one tenth of the under-graduate students (14.6% and 11.5% respectively). Around one quarter of the post-graduate students were frequently used Mo blogging, Blogging or Video blogging and Flicker (26.2%, 23.0% and 21.3% respectively), compared to less than one tenth of the under-graduate students (7.4%, 12.2% and 5.2% respectively).

Table (2) Distribution of The Studied Students' According to Their Frequency of Usage of Web 2.0 Tools in Learning

Web 2.0 technologies types	Post-graduate Students' Frequency of Usage of Web 2.0 Tools in learning (n.61)								Under-graduate Students' Frequency of Usage of Web 2.0 Tools in learning (n.485)							
	Not used		Rarely used		Occasionally used		Frequently used		Not used		Rarely used		Occasionally used		Frequently used	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Facebook	1	1.6	2	3.3	8	13.1	50	82.0	17	3.5	33	6.8	59	12.2	376	77.5
YouTube	1	1.6	0	0.0	15	24.6	45	73.8	41	8.5	54	11.1	96	19.8	294	60.6
Twitter	18	29.5	1	1.6	27	44.3	15	24.6	303	62.5	74	15.3	39	8.0	69	14.2
Email	7	11.5	11	18.0	23	37.7	20	32.8	183	37.7	126	26.0	90	18.6	86	17.7
Wikis	16	26.2	4	6.6	21	34.4	20	32.8	345	71.1	59	12.2	38	7.8	43	8.9
Blogs and micro blogs	17	27.9	7	11.5	21	34.4	16	26.2	377	77.7	57	11.8	23	4.7	28	5.8
LinkedIn	17	27.9	3	4.9	23	37.7	18	29.5	340	70.1	66	13.6	49	10.1	30	6.2
Google Maps	10	16.4	7	11.5	22	36.1	22	36.1	178	36.7	82	16.9	104	21.4	121	24.9
Podcasts	18	29.5	6	9.8	21	34.4	16	26.2	340	70.1	64	13.2	56	11.5	25	5.2
Instant messaging	8	13.1	10	16.4	17	27.9	26	42.6	241	49.7	83	17.1	90	18.6	71	14.6
Social book marking	12	19.7	4	6.6	20	32.8	25	41.0	260	53.6	87	17.9	82	16.9	56	11.5
Mo blogging	15	24.6	9	14.8	21	34.4	16	26.2	330	68.0	60	12.4	59	12.2	36	7.4
Blogging or Video blogging	17	27.9	5	8.2	25	41.0	14	23.0	296	61.0	85	17.5	45	9.3	59	12.2
Flicker	22	36.1	5	8.2	21	34.4	13	21.3	345	71.1	67	13.8	48	9.9	25	5.2

Table (3) showed that the majority of post-graduate students and under-graduate students highly preferring Facebook use (83.6% and 90.1% respectively). Twitter was highly preferred by 55.7% of post-graduate students compared to 26.6% of the under-graduate students. In contrast YouTube was not preferred at all by more than half of the post-graduate and under-graduate students (55.7% and 69.1%). E-mail use was highly preferred by less than one fifth (16.4%) of the post-graduate students, compared to around one third (33.8%) of the under-graduate students. More than half (59.0%) of the post-graduate students didn't prefer Wikis compared to 80% of the under-graduate students. Moreover, 67.2% of the post-graduate students didn't prefer Blogs and micro blogs, Podcasts, and Blogging or Video blogging with the same percentage, followed by more than two thirds who didn't prefer LinkedIn, Mo blogging, and Flicker use (65.6 and 72.1%, and 77.0% respectively). In these regards, the majority of the under-graduate students didn't prefer Blogs and micro blogs, Social book marking, LinkedIn, Blogging or Video blogging, Podcasts, Mo blogging and Flicker (84.3%, 84.5%, 87.4%, 88.9%, 89.3%, 90.7% and 94.0% respectively). In contrast Instant messaging was highly preferred by 18.0% of the post-graduate students, compared to 11.8% of the under-graduate students. Furthermore, Google Maps where highly preferred by more than one quarter (28.0%) of the under-graduate students compared to the minority (8.2%) of post-graduate students.

Table (3) Distribution of The Studied Students' According to Their Preference of Usage of Web 2.0 Tools in Learning

Web 2.0 technologies types	Post-graduate Students' Preference (n.61)								Under-graduate Students' Preference (n.485)							
	Not prefer / no use		Slightly prefer/ monthly use		Moderately prefer / weekly use		Highly prefer / daily use		Not prefer / no use		Slightly prefer/ monthly use		Moderately prefer / weekly use		Highly prefer / daily use	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Facebook	1	1.6	0	0.0	9	14.8	51	83.6	40	8.2	0	0.0	8	1.6	437	90.1
YouTube	34	55.7	14	23.0	9	14.8	4	6.6	64	13.2	0	0.0	23	4.7	398	82.1
Twitter	2	3.3	6	9.8	19	31.1	34	55.7	335	69.1	0	0.0	21	4.3	129	26.6
Email	14	23.0	16	26.2	21	34.4	10	16.4	291	60.0	0	0.0	30	6.2	164	33.8
Wikis	36	59.0	9	14.8	13	21.3	3	4.9	388	80.0	0	0.0	20	4.1	77	15.9
Blogs and micro blogs	41	67.2	10	16.4	8	13.1	2	3.3	409	84.3	0	0.0	21	4.3	55	11.3
LinkedIn	40	65.6	11	18.0	9	14.8	1	1.6	424	87.4	0	0.0	14	2.9	47	9.7
Google Maps	23	37.7	14	23.0	19	31.1	5	8.2	282	58.1	0	0.0	67	13.8	136	28.0
Podcasts	41	67.2	12	19.7	7	11.5	1	1.6	433	89.3	0	0.0	12	2.5	40	8.2
Instant messaging	26	42.6	14	23.0	10	16.4	11	18.0	385	79.4	30	6.2	13	2.7	57	11.8
Social book marking	33	54.1	17	27.9	7	11.5	4	6.6	410	84.5	23	4.7	15	3.1	37	7.6
Mo blogging	44	72.1	9	14.8	7	11.5	1	1.6	440	90.7	15	3.1	2	.4	28	5.8
Blogging or Video blogging	41	67.2	10	16.4	7	11.5	3	4.9	431	88.9	21	4.3	4	.8	29	6.0
Flicker	47	77.0	7	11.5	7	11.5	0	0.0	456	94.0	0	0.0	2	.4	27	5.6

Table (4) portrayed that less than three quarters (72.1%) of the post-graduate students was highly skillful in using Facebook, compared to the majority (87.2%) of the under-graduate students. Additionally, more than half (54.1%) of the post-graduate students was highly skillful in using YouTube, compared to the majority (80.6%) of the under-graduate students. In contrast, more than half (60.7%) of the post-graduate students were low skillful in using Twitter compared to 69.1% of the under-graduate students. Furthermore, more than one fifth (21.3%) of the post-graduate students were highly skillful in using e-mail compared to 33.2% of the under-graduate students. Around one tenth of the under-graduate students were highly skillful in using Wikis, Blogs and micro blogs and LinkedIn (15.9%, 11.1%, and 9.5% respectively) compared to the minority of post-graduate students (1.6%, 1.6%, and 4.9% respectively).

Furthermore, less than one quarter (23.0%) of the post-graduate students were highly skillful in using Instant messaging compared to around one tenth (11.5%) of the under-graduate students. Whereas, more than one quarter (27.8%) of the under-graduate students were highly skillful in using Google Maps compared to 14.8% of the post-graduate students. In contrast, the majority of under-graduate and post-graduate students were unskillful in using podcasts (89.3% and 80.3% respectively). The majority of the under-graduate students were unskillful in using Social book marking and Blogging or Video blogging followed by Mo blogging and Flicker (84.5%, 89.1%, 90.7% and 94.2% respectively), compared to 67.2% and 82.0%, 80.3% and 82% of the post-graduate students respectively.

Table (4) Distribution of The Studied Students' According to Their Skill level of Usage of Web 2.0 Tools in Learning

Web 2.0 technologies types	Post-graduate Students' skills level (n.61)						Under-graduate Students' skills level (n.485)							
	4-6 Lowest		7-8 Moderate		9-10 High		No use		4-6 Lowest		7-8 Moderate		9-10 high	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Facebook	2	3.3	15	24.6	44	72.1	40	8.2	0	0.0	22	4.5	423	87.2
YouTube	5	8.2	23	37.7	33	54.1	64	13.2	3	.6	27	5.6	391	80.6
Twitter	37	60.7	20	32.8	4	6.6	335	69.1	0	0.0	24	4.9	126	26.0
Email	18	29.5	30	49.2	13	21.3	291	60.0	0	0.0	33	6.8	161	33.2
Wikis	42	68.9	18	29.5	1	1.6	388	80.0	1	.2	19	3.9	77	15.9
Blogs and micro blogs	51	83.6	9	14.8	1	1.6	409	84.3	0	0.0	22	4.5	54	11.1
LinkedIn	45	73.8	13	21.3	3	4.9	424	87.4	0	0.0	15	3.1	46	9.5
Google Maps	29	47.5	23	37.7	9	14.8	282	58.1	0	0.0	68	14.0	135	27.8
Podcasts	49	80.3	10	16.4	2	3.3	433	89.3	0	0.0	13	2.7	39	8.0
Instant messaging	34	55.7	13	21.3	14	23.0	385	79.4	30	6.2	14	2.9	56	11.5
Social book marking	41	67.2	15	24.6	5	8.2	410	84.5	24	4.9	14	2.9	37	7.6
Mo blogging	49	80.3	10	16.4	2	3.3	440	90.7	15	3.1	2	.4	28	5.8

Web 2.0 technologies types	Post-graduate Students' skills level (n.61)						Under-graduate Students' skills level (n.485)							
	4-6 Lowest		7-8 Moderate		9-10 High		No use		4-6 Lowest		7-8 Moderate		9-10 high	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Blogging or Video blogging	50	82.0	6	9.8	5	8.2	432	89.1	21	4.3	4	.8	28	5.8
Flicker	50	82.0	11	18.0	0	0.0	457	94.2	0	0.0	1	.2	27	5.6

Table (5) showed the students' perception towards the effectiveness of Web 0.2 tools. More than half of the post-graduate students strongly agreed that Web 2 tools helped him/ her to find related knowledge and information for learning and it encourage them to communicate more with their classmates (54.1%) with the same percentage for both. Moreover, more than two fifths (41.0) of them strongly agreed that with the use of web tools it has become easy to publish one's work (may be through blog). The same percentage (37.7%)strongly agreed that Web 2 tools enhance their creativity and imagination, helped them to learn more effectively, enable them to express ideas and thoughts better, provide potential for increased access and exposure to quality information and promote active and engaging lessons. Additionally, less than one third of them added that they strongly agreed that Web 2 tools increased their confidence to participate actively in the class, it important means of informal education and it have combination of solitary and social interaction (31.1%, 31.1% and 29.5% respectively).

This table also portrayed the under-graduate students' perception towards the effectiveness of Web 0.2 tools, where around two fifth of under-graduate students strongly agreed that Web 2 tools encouraged them to communicate more with their classmates, helped them to find related knowledge and information for learning, helped them to learn more effectively, and enhance their creativity and imagination (46.8%, 44.7%, 40.0% and 37.1% respectively). Moreover, around one third of them strongly agreed that Web 2 tools increased their confidence to participate actively in the class and enabled them to express ideas and thoughts better (34.8% and 33.2% respectively). Finally, more than one quarter of them strongly agreed that Web 2 tools is an important means of informal education it increased their confidence to participate actively in the class, they become more behaved and under control with the use of these tools, it is the best learning experience for them and it provide potential for increased access and exposure to quality information (28.7%, 27.6%, 26.8%, 26.8% and 26.4% respectively).

Table (5) Distribution of The Studied Students' According to Their Perception Towards the Effectiveness of Web 0.2 Tools

Using Web 0.2 tools: will	Post-graduate students' Perception (n.61)										Under-graduate students' Perception (n.485)									
	Strongly disagree		Disagree		Neutral		Agree		Strongly agree		Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Help me to find related knowledge and information for learning.	1	1.6	0	0.0	1	1.6	26	42.6	33	54.1	17	3.5	24	4.9	25	5.2	202	41.6	217	44.7
Encourage me to communicate more with my classmates.	2	3.3	3	4.9	5	8.2	18	29.5	33	54.1	16	3.3	9	1.9	34	7.0	199	41.0	227	46.8
With the use of Webtools, it has become easy to publish one's work (may be through blog)	1	1.6	2	3.3	8	13.1	25	41.0	25	41.0	21	4.3	71	14.6	55	11.3	184	37.9	154	31.8
Enhance my creativity and imagination	1	1.6	2	3.3	2	3.3	33	54.1	23	37.7	18	3.7	43	8.9	29	6.0	215	44.3	180	37.1
Helped me learn more effectively.	1	1.6	1	1.6	3	4.9	33	54.1	23	37.7	28	5.8	38	7.8	36	7.4	189	39.0	194	40.0
Enable me to express ideas and thoughts better.	1	1.6	3	4.9	8	13.1	26	42.6	23	37.7	27	5.6	35	7.2	66	13.6	196	40.4	161	33.2
Provide potential for increased access and exposure to quality information	1	1.6	0	0.0	8	13.1	29	47.5	23	37.7	19	3.9	45	9.3	77	15.9	216	44.5	128	26.4
Promote active and engaging lessons	1	1.6	2	3.3	8	13.1	27	44.3	23	37.7	19	3.9	58	12.0	72	14.8	202	41.6	134	27.6
Increase my confidence to participate actively in the class.	2	3.3	4	6.6	7	11.5	29	47.5	19	31.1	26	5.4	34	7.0	62	12.8	194	40.0	169	34.8
Important means of informal education	1	1.6	1	1.6	4	6.6	36	59.0	19	31.1	22	4.5	50	10.3	73	15.1	201	41.4	139	28.7
Have combination of solitary and social interaction	4	6.6	0	0.0	7	11.5	32	52.5	18	29.5	21	4.3	53	10.9	92	19.0	209	43.1	110	22.7
We become more behaved and under control with the use of these tools	5	8.2	8	13.1	8	13.1	25	41.0	15	24.6	29	6.0	60	12.4	101	20.8	165	34.0	130	26.8
For me it is the best learning experience	2	3.3	5	8.2	13	21.3	26	42.6	15	24.6	24	4.9	71	14.6	74	15.3	186	38.4	130	26.8
Working toward mastery rather than the test	1	1.6	7	11.5	12	19.7	29	47.5	12	19.7	27	5.6	60	12.4	108	22.3	172	35.5	115	23.7

Table (6) portrayed the mean percent score of student's frequency, preference and skill levels of Using of Web 2.0 Tools in Learning, where the post-graduate students have higher mean frequency of use of Web 2.0 tools percent score than the under-graduate with a mean of 62.1±27.1 and 32.9±21.2 respectively. Moreover, the post-graduate students have slightly higher mean of their preference of use of Web 2.0 tools percent score than the under-graduate with a mean of 32.9±19.6 and 27.3±21.5 respectively. Finally, the post-graduate students have higher mean of their skill level of use of Web 2.0 tools percent score than the under-graduate with a mean of 52.3±11.6 and 27.1±21.3 respectively

Table (6) Students' Mean of Frequency, Preference and Skills Levels of Using of Web 2.0 Tools in Learning

Variables	Maximum allowed scores	Post-graduate		Under-graduate	
		Mean ± SD	Mean % ± SD	Mean ± SD	Mean % ± SD
Students' Frequency of Web 2.0 tools usage	42	26.0±11.3	62.1±27.1	13.8±8.9	32.9±21.2
Students' Preference of Web 2.0 tools usage	42	13.8±8.2	32.9±19.6	11.4±9.0	27.3±21.5
Students' Skills level of Web 2.0 tools usage	42	22.0±4.8	52.3±11.6	11.4±8.9	27.1±21.3

Table (7) showed that there is a significant relation between the post-graduate student's device that has internet access, and their frequency of Web 2.0 tools use, preference and skill level mean (F:3.259, P:0.046; F:4.809, P:0.012; F:4.695, P:0.013 respectively). There is a significant relation between the post-graduate student's owning of private mail and their frequency of Web 2.0 tools use mean (F: 11.101, P: 0.001). Furthermore, there is a significant relation between the under-graduate student's sex, marital status, academic level, device they have to access internet, place of connecting to the internet and private mail and their frequency of Web 2.0 tools use, preference and skill level mean (F:57.389, P:<0.001; F:19.357,P:<0.001; F:19.355,P:<0.001; F:21.182, P:<0.001; F:10.511,P:0.001; F:10.405, P:0.001; F:3.490, P:0.016; F:4.027, P:0.008; F:3.901, P:0.009; F:19.8, P:0.001; F:22.597, P:<0.001; F:23.054, P:<0.001; F:11.470, P:0.001; F: 7.890, P:0.005; F:8.243,P:0.004; F:34.855, P:<0.001; and F:22.005,F:21.820 respectively).

Table (7) Association between The Students' Frequency of Web 2.0 Tools Usage, Preference, Skills Level and Their Socio-Demographic Characteristics and Their Access to The Internet

Variable	Post-graduate (n.61)						Under-graduate (n.485)					
	Frequency of Web 2.0 tools usage		Preference of Web 2.0 tools usage		Skills level of Web 2.0 tools usage		Frequency of Web 2.0 tools usage		Preference of Web 2.0 tools usage		Skills level of Web 2.0 tools usage	
	Mean %±SD	Test of sig.	Mean %±SD	Test of sig.	Mean %±SD	Test of sig.	Mean %±SD	Test of sig.	Mean %±SD	Test of sig.	Mean %±SD	Test of sig.
Sex												
Male	79.0±17.1	F:2.158 P:0.147	38.5±12.7	F:0.450 P:0.505	54.2±7.7	F:0.144 P:0.705	43.7±21.2	F:57.389 P:<0.001*	33.9±22.6	F:19.357 P:<0.001*	33.6±22.4	F:19.355 P:<0.001*
Female	60.6±27.4		32.3±20.1		52.2±11.9		28.5±19.6		24.6±20.5		24.4±20.3	
Marital status												
Single	62.9±27.0	F:0.112 P:0.739	31.7±19.5	F:0.465 P:0.468	51.4±11.4	F:0.820 P:0.369	34.2±21.2	F:21.182 P:<0.001*	28.3±21.4	F:10.511 P:0.001*	28.1±21.2	F:10.405 P:0.001*
Married	60.4±27.9		35.4±20.1		54.3±12.0		18.6±15.4		17.0±20.2		16.9±20.2	
Academic year												
First							35.6±18.7	F:3.490 P:0.016*	29.7±19.4	F:4.027 P:0.008*	29.0±18.2	F:3.901 P:0.009*
Second							36.8±18.3		30.0±19.8		29.9±19.5	
Third							32.5±20.9		28.5±21.9		28.4±22.0	
Fourth							28.4±24.6		21.5±22.9		21.4±22.8	
Which of these devices do you have access												
Laptop	40.1±33.4	F:3.259 P:0.046*	19.9±9.8	F:4.809 P:0.012*	46.7±5.8	F:4.695 P:0.013*	47.9±29.6	F:19.8 P:0.001*	48.4±32.1	F:22.597 P:<0.001*	48.2±32.2	F:23.054 P:<0.001*
Smartphone	65.9±26.1		29.8±19.9		49.7±10.9		29.9±18.1		37.3±19.8		37.3±19.8	
laptop &smartphone	64.8±23.3		41.4±18.6		57.7±12.1		51.0±19.3		24.0±17.7		23.8±17.3	
Tablet							39.1±27.3		11.6±19.2		11.6±19.2	
Neither							18.1±27.3		41.5±24.0		41.2±24.2	
Place of connecting to internet												
At home	61.6±27.4	F:0.649 P:0.424	32.7±19.9	F:0.085 P:0.772	52.4±11.7	F:0.021 P:0.884	33.7±20.4	F:11.470 P:0.001*	28.0±21.0	F:7.890 P:0.005*	27.8±20.8	F:8.243 P:0.004*
Cyber	77.3±8.4		36.9±8.4		51.1±8.4				16.3±26.7		15.9±26.5	
Have university email												
Yes	59.8±27.5	F:0.308 P:0.581	36.9±21.4	P:2.002 P:0.162	54.3±11.7	F:1.372 P:0.246	26.1±14.5	F: 2.011 P:0.157	18.7±7.9	F:3.134 P:0.077	18.4±7.6	F:3.323 P:0.069
No	63.8±27.0		29.8±17.8		50.8±11.4		33.2±21.4		27.7±21.9		27.5±21.6	
Have private email												

Variable	Post-graduate (n.61)						Under-graduate (n.485)					
	Frequency of Web 2.0 tools usage		Preference of Web 2.0 tools usage		Skills level of Web 2.0 tools usage		Frequency of Web 2.0 tools usage		Preference of Web 2.0 tools usage		Skills level of Web 2.0 tools usage	
Yes	64.5±25.4	F:11.101	33.9±19.4	F:3.481	52.9±11.5	F:2.982	35.2±20.4	F:34.855	29.2±20.4	F:22.005	29.0±20.2	F:21.820
No	15.0±8.3	P:0.001*	12.6±9.0	P:0.067	41.2±4.9	P:0.089	19.9±20.8	P:<0.001*	16.7±24.5	P:<0.001*	16.6±24.5	P:<0.001*

F: ANOVA Test   **P: P value of ANOVA Test**   ***:** **Significant at P value <0.05**

Table (8) presented the challenges facing Web 2.0 tools users according to the student's opinion, where more than half of the post-graduate students agreed that Intellectual property rights is a challenge and the risk of data security is a challenge (59.0% and 52.5% respectively). Additionally, more than two fifths of them agreed that the challenges facing them where the absence of the personal touch associated with classroom lessons, maintaining balance between the necessary conventional part of education, and technology, the risk of students' privacy while using these tools, denied access, lack of some teachers' skills with technology, unwanted attention from others and high cost of educational technologies (47.5%, 47.5%, 47.5%, 45.9%, 44.3%, 44.3% and 42.6% respectively). The same table also presented the under-graduate students' opinion regarding the challenges facing Web 2.0 tools users. Around two fifths of the under-graduate students agreed that high cost of educational technologies and the absence of the personal touch associated with classroom lessons is challenge (40.2% and 39.4% respectively). Finally, around one third of them agreed that the following are challenges, intellectual property rights, unwanted attention from others, the risk of students' privacy while using these tools, the risk of data security, denied access, and poor quality and significance of the shared knowledge (36.9%, 35.1%, 34.2%, 33.4%, 32.4% and 30.7% respectively).

Table (8) Distribution of The Studied Students' According to Their Opinion Regarding the Challenges and Threats of Using Web 0.2 Tools Integration in Learning

Challenges	Post-graduate students' point of view (n.61)										Under-graduate students' point of view (n.485)									
	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Strongly Agree		Agree		Neutral		Disagree		Strongly disagree	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1. Intellectual property rights is a challenge	12	19.7	36	59.0	8	13.1	5	8.2	0	0.0	113	23.3	179	36.9	101	20.8	72	14.8	20	4.1
2. Risk of data security	16	26.2	32	52.5	10	16.4	2	3.3	1	1.6	132	27.2	162	33.4	79	16.3	71	14.6	41	8.5
3. The absence of the personal touch associated with classroom lessons	16	26.2	29	47.5	8	13.1	8	13.1	0	0.0	97	20.0	191	39.4	86	17.7	83	17.1	28	5.8
4. Important challenge is to maintain the balance between the necessary conventional part of education, and technology	19	31.1	29	47.5	9	14.8	4	6.6	0	0.0	0	0.0	160	33.0	117	24.1	55	11.3	153	31.5
5. Risk of students' privacy while using these tools.	15	24.6	29	47.5	12	19.7	2	3.3	3	4.9	108	22.3	166	34.2	102	21.0	78	16.1	31	6.4
6. Risk faced is access denied	12	19.7	28	45.9	17	27.9	2	3.3	2	3.3	93	19.2	157	32.4	93	19.2	104	21.4	38	7.8

Challenges	Post-graduate students' point of view (n.61)										Under-graduate students' point of view (n.485)									
	Strongly agree		Agree		Neutral		Disagree		Strongly disagree		Strongly Agree		Agree		Neutral		Disagree		Strongly disagree	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
7. Lack of some teachers' skills with technology	14	23.0	27	44.3	13	21.3	5	8.2	2	3.3	126	26.0	122	25.2	89	18.4	108	22.3	40	8.2
8. Unwanted attention from others	13	21.3	27	44.3	15	24.6	4	6.6	2	3.3	114	23.5	170	35.1	89	18.4	73	15.1	39	8.0
9. High cost of educational technologies	13	21.3	26	42.6	13	21.3	5	8.2	4	6.6	97	20.0	195	40.2	62	12.8	103	21.2	28	5.8
10. Poor technological infrastructure	10	16.4	22	36.1	20	32.8	9	14.8	0	0.0	0	0.0	135	27.8	167	34.4	69	14.2	114	23.5
11. Poor quality and significance of the shared knowledge	9	14.8	20	32.8	19	31.1	12	19.7	1	1.6	102	21.0	149	30.7	75	15.5	126	26.0	33	6.8

Table (9) showed the students' suggestions and strategies towards promoting application of Web 2.0 technologies. Vast majority of the post graduate students suggested that it is important to provide training programs to enhance information technology skills , e-learning should be included in all the curricula, it is important to provide adequate information technology facilities, the university should improve on the internet band width, and the privacy in using Web technologies should be included in the policy, provide steady supply of electricity and the Web 2.0 technology usage policy should be in position to ban using the pornographic Websites (98.4%, 98.4%, 96.7%, 96.7% , 96.7%, 95.1% and 95.1% respectively).

Furthermore, the majority of them added that it should be made compulsory for all academic staff in all faculties of nursing to teach using Web 2.0 technologies, conduct awareness campaign and training by the university on Web 2.0 application in teaching and learning, the university should recruit adequate information technology staff to deal with the increasing number of students, increase awareness and use of Web 2.0 technologies for teaching and learning in the university, Web 2.0 technologies should be strictly for education purposes, **t**he government should find ways of making the internet cheaper, every student should have a right to information technology services at low or no cost, and it is important to provide means to help students who do not want to be followed up on social media (93.4%, 93.4%, 93.4%, 91.8%, 91.8%, 90.2%, 88.5%, and 83.6% respectively).

Moreover, more than three quarters of the under-graduate students suggested training programs to enhance information technology skills, the government should find ways of making the internet cheaper, every student should have a right to information technology services at low or no cost, the privacy in using Web technologies should be included in the policy, the university should recruit adequate information technology staff to deal with the increasing number of students, provide means to help students who do not want to be followed up on social media, increase awareness and use of Web 2.0 technologies for teaching and learning in the university, provide adequate information technology facilities, and conduct awareness campaign and training by the University on Web 2.0 application in teaching and learning (86.2%, 82.9%, 81.6%, 79.8%, 79.8%, 79.6%, 77.9%, 77.3%, and 77.1% respectively).

Table (9) Distribution of The Studied Students' According to Their Suggestions and Strategies Towards Promoting Application of Web 2.0 Technologies

Suggestions	Post-graduate students' suggestions (n.61)		Under-graduate students' suggestions (n.485)	
	No.	%	No.	%
1. Training programs to enhance ICT skills	60	98.4	418	86.2
2. E-learning should be included in all the curricula	60	98.4	360	74.2
3. Provide adequate information technology facilities	59	96.7	375	77.3
4. The University should improve on the	59	96.7	361	74.4

Suggestions	Post-graduate students' suggestions (n.61)		Under-graduate students' suggestions (n.485)	
	No.	%	No.	%
internet band width				
5. The privacy in using Web technologies should be included in the Policy	59	96.7	387	79.8
6. Provide steady supply of electricity	58	95.1	366	75.5
7. The Web 2.0 technology usage policy should be in position to ban using the pornographic Websites.	58	95.1	373	76.9
8. Should be made compulsory for all academic staff in all faculties of nursing to teach using Web 2.0 Technologies	57	93.4	347	71.5
9. Awareness campaign and training by the University on Web 2.0 application in teaching and learning	57	93.4	374	77.1
10. The University should recruit adequate information technology staff to deal with the increasing number of students	57	93.4	387	79.8
11. Increase awareness and Use of Web 2.0 technologies for teaching and learning in the University.	56	91.8	378	77.9
12. Web 2.0 technologies should be strictly for education purposes	56	91.8	359	74.0
13. The government should find ways of making the internet Cheaper	55	90.2	402	82.9
14. Every student should have a right to information technology services at low or no cost	54	88.5	396	81.6
15. Provide means to help students who do not want to be followed up on social media	51	83.6	386	79.6

IV. Discussion:

Nowadays, using internet is mandatory either for nursing students or their clients at different community and health facility settings. Inorder to disseminate a healthy message for public/ patients , nursing students need to be trained to use internet, Web 2.0 tools provide a good chance to do, so that nursing students who have access to such tools and skillful to use it can help their clients. In the current study the vast majority of postgraduate students and less than three quarters of undergraduate students were female. According to accessed devices, the present study reported that half of postgraduate student and three quarters of undergraduate students used smartphone. This result may beattributed to the rate of females' enrollment in nursing colleges is higher than that of male. This result supported with the study performed by **Birks, Hartin, Woods, Emmanuel &Hitchins, 2016** titled in Students' perceptions of the use of e-portfolios in nursing and midwifery education, who found that the majority of respondents were female and more than two thirds of them used smartphones.

According to the place of connection to internet, the current study showed that the almost all of postgraduate students and undergraduate students had internet connection at home. These results may due to internet access is available in most governorate via home phone or mobile networks. This results goes in line with the study performed by **Bashir, Mahmood & Shafique, 2016** titled in Internet use among university students: a survey in University of the Punjab, Lahore, who found that the results revealed that, majority of the students have their own PCs/Lap-tops and accessed internet at homes. Also, these results supported with the study performed by **Erdogdu&Erdogdu, 2015** titled in the impact of access to ICT, student background and school/home environment on academic success of students in Turkey.

Regarding having university email, slightly more than half of postgraduate students and the almost all of undergraduate students hadn't university email. On the other hand, the most of postgraduate students and the majority of undergraduate students had private email. These results may due to lack of awareness of students either have or activate the university official e mail or the benefit of having university email. In contrast the study performed by **Carbonell, Chamarro, Oberst, Rodrigo &Prades, 2018** titled in Problematic use of the internet and smartphones in university students, who reported that more than half of university students had official university email. On the other hand, these results supported with the study performed by **Mowatt, Gordon, Santosh & Jones, 2018** titled in computer vision syndrome and ergonomic practices among undergraduate university students, who reported that more than two thirds of university students not dependent on the university email and using private email.

Regarding to Usage of Web 2.0 Tools in Learning, the current study revealed that more than three quarters of postgraduate students and undergraduate students frequently using Facebook as tools in learning. Also, less than three quarters and less than two thirds of postgraduate and undergraduate students, respectively used YouTube as tool in learning. These results may due to the simple features of both facebook and youtube

with just a few clicks. In addition, it is considered the most recommended to use by friends and others. These results are inconsistent with the study performed by **Atroszko et al., 2018** titled in Facebook addiction among Polish undergraduate students: Validity of measurement and relationship with personality and well-being, who detected that the majority of student using Facebook for recreation only. On the other hand, these results supported with the study performed by **Spinnner, Grohmann, Eismann&Kounev, 2019** titled in Online model learning for self-aware computing infrastructures, who detected that more than half of university students using Facebook and YouTube as tools in learning.

Regarding to Their Preference of Usage of Web 2.0 Tools in Learning, this study revealed that overwhelming majority of postgraduate students and undergraduate students highly preferred using Facebook. This result may due to it is the most famous social networking sites and its application is one of the easiest applications ever and it has many languages as Arabic and English. This result consistent with the previously mentioned study of**Atroszko et al., 2018** who detected that the majority of student preferred using Facebook.

Regarding to Their Preference of Usage of Web 2.0 Tools in Learning, this study revealed that around two thirds of postgraduate students and the majority of undergraduate students did not prefer using Blogs & micro blogs and LinkedIn. These results may due to difficult to deal with these applications because of the complexity of its features and sometimes need an official email and not available with Arabic language. These results supported with the study performed by **Stokes et al., 2019** titled in Using Facebook and LinkedIn to recruit nurses for an online survey, who reported that the vast majority of students did not prefer using LinkedIn. On the other hand, this result inconsistent with the study performed by **Brown & Pederson, 2019** titled in LinkedIn to classroom community: assessing classroom community on the basis of social media usage, who found that slight less than half of nurses' students using LinkedIn.

Regarding Skill level of Usage of Web 2.0 Tools in Learning, this study revealed that less than three quarters and more than half of postgraduate students had high skill level regarding using Facebook and YouTube, respectively. While, overwhelming majority of postgraduate students did not use blogging or video blogging and flicker. These results may due to Facebook and YouTube applications more available, most common between students, but video blogging has many unsolved problems, not available. These results go online with the study performed by **Korhonen, Ruhalahti&Veermans, 2019** titled in the online learning process and scaffolding in student teachers' personal learning environments, who found that almost all of postgraduate students used Facebook and YouTube for online learning.

As for Skill level of Usage of Web 2.0 Tools in Learning, this study revealed that overwhelming majority of undergraduate students had high skill level regarding using Facebook and YouTube, respectively. While, vast majority of undergraduate students did not use blogging or video blogging and flicker. This result inconsistent with the study performed by **Aljawarneh, 2019** titled in Reviewing and exploring innovative ubiquitous learning tools in higher education, who reported that around two thirds of undergraduate students had high skills level regarding using official and private email.

According to Students' Frequency of Web 2.0Tools usage, the results of current study showed that the mean scores of postgraduate studentswere 62.1±27.1. While, mean scores of undergraduate students was 32.9±21.2. These results may be due to graduate students use e-learning more commonly than undergraduate students especially during the preparation of scientific thesis as they communicate with their supervisors via online media. These results supported with the study performed by **Dommett, 2019** titled in Understanding student use of twitter and online forums in higher education, who found that mean scores of postgraduate students regarding frequency using of online learning higher than mean scores of under-graduate students. Also, this result supported with the study performed by **Price et al., 2018** titled Nursing students use of social media within education: Results of a survey.

According to Students' Preference of Web 2.0Tools usage, the results of current study showed that the mean scores of postgraduate students was 32.9±19.6. While, mean scores of undergraduate students was 27.3±21.5. These results may be due to the benefits of using it to save time,effort, and its availability and easy to use. These results consistent with the study performed by **Narayanaswami et al., 2015** titled in the impact of social media on dissemination and implementation of clinical practice guidelines: a longitudinal observational study, who reported that mean scores of postgraduate studentswere 35.4±13.30. Also, these results are inconsistent with the study performed by **Lopez & Cleary, 2018** titled in Using Social Media in Nursing Education: An Emerging Teaching Tool, who found that mean scores of undergraduate students as the same with the mean scores of postgraduate.

According to Students' skills level of Web 2.0Tools usage, the results of current study showed that the mean scores of postgraduate students was 52.3±11.6. While, mean scores of undergraduate students was 27.1±21.3. These results may be due to repeated use of post graduate students these tools resulting from the urgency need to use these tools and have more experience than undergraduate students. These results go online with the study performed by **Spencer & Hussey, 2015** titled in Knowledge Networks in Nursing, who detected that mean scores of postgraduate students higher than undergraduate students. Also, supported with the study

performed by **Curran et al., 2017** titled in Assessment digital, social, and mobile technologies in health professional education.

Regarding the relation between studied variable, the current study revealed that there was significant relation between students' device that has internet access, and their frequency of Web 2.0 tools use, preference and skill level mean. This results disagree with the study performed by **Page, Meehan-Andrews, Weerakkody, Hughes &Rathner, 2017** titled in Student perceptions and learning outcomes of blended learning in a massive first-year core physiology for allied health subjects, who reported that there was no significant relation between devices of internet access and their frequency uses of internet at education process. On the other hand, these results accepted by the study performed by **Lallet al., 2019** titled in Influences on the implementation of mobile learning for medical and nursing education, who found that there was significance relation at p. level <0.01.

Moreover, the current study revealed that there was a significant relation between the under-graduatestudent's sex, marital status, academic level, device they have to access internet, place of connecting to the internet and private mail and their frequency of Web 2.0 tools use, preference and skill level mean. These results supported with the study performed by **McNally, Frey &Crossan, 2017** titled in Nurse manager and student nurse perceptions of the use of personal smartphones or tablets and the adjunct applications, who found that there was significance relation between students' characteristics and preference of Web tools. Also, supported with the study performed by **Birks, Hartin, Woods, Emmanuel &Hitchins, 2016** titled in Students' perceptions of the use of e-portfolios in nursing and midwifery education.

Regarding the relation between studied variable, the current study revealed that there was no relation between sex and marital status of post graduate students and their frequency of Web 2.0 tools use, preference and skill level mean. These results inconsistent with the study performed by **McNally, Frey &Crossan, 2017** titled in Nurse manager and student nurse perceptions of the use of personal smartphones or tablets and the adjunct applications, who found that there was significance relation between students' characteristics and preference of Web tools.

According to post graduate students opinion regarding the challenges and threats of using Web 0.2 tools integration in learning, the current study revealed that more than half of them agreed with that the intellectual property rights is a challenge, risk of data security and slight less than half agreed with that absence of the personal touch associated with classroom lessons, important challenge is to maintain the balance between the necessary conventional part of education and risk of students' privacy while using these tools. These results are indicators oflack of intensive training courses on e-learning and orientation courses on how to use the internet safely and how to protect private data. These results inconsistent with the study performed by **García-Morales, Martín-Rojas & Garde-Sánchez, 2019** titled in How to Encourage Social Entrepreneurship Action? Using Web 2.0 Technologies in Higher Education Institutions, who found that only one third of studied student agree with present challenges during e-learning.

According to undergraduate students' opinion regarding the challenges and threats of using Web 0.2 tools integration in learning, the current study revealed that more than one third agreed with that intellectual property rights is a challenge, the absence of the personal touch associated with classroom lessons and High cost of educational technologies as threats. These results indicate lack of preparation of students to deal with these tools safely. These results disagreed with the study performed by **Hamidi &Chavoshi, 2018** titled in Analysis of the essential factors for the adoption of mobile learning in higher education, who found that slightly more than half faced challenges and difficulties during using Web 2 tools.

Regarding to students' suggestions and strategies towards promoting application of Web 2.0 technologies, the current study reported that almost all of post graduate students suggested training programs to enhance ICT skills and e-learning should be included in all the curricula and the majority of undergraduate students suggested Training programs to enhance ICT skills and The government should find ways of making the internet Cheaper. This results supported with the study performed by **Abrahim, Mir, Suhara& Sato, 2018** titled in Exploring Academic use of online social networking sites (SNS) for language learning: Japanese students' perceptions and attitudes towards Facebook, who found that the vast majority of studied students suggested training programs and reduce the cost of e-learning.

Finally, as observed from different studies that highlight that the Web 2.0 tools are valuable tools that enhance and affect teaching and learning process, so both ofnurses in health workforce and nurse educators have to kept in touch with such tools, in order to use it effectively and gain its benefits in providing appropriate client's care in the community and thereby provide a high quality services and be ready to grasp their customer attention everywhere either nationally or internationally .

V.   Conclusion
The current study concluded that:

The majority of the post-graduate students frequently use Facebook followed by less than three quarters who frequently used YouTube. Whereas, more than three quarters of the under-graduate students frequently use

Facebook followed by less than two third who frequently used YouTube. Twitter, E-mail, Wikis, Blogs and micro blogs, LinkedIn, Google Maps, Instant messaging, Social book marking, Mo blogging, Blogging or Video blogging and Flicker where used in lesser extent by post-graduate students and under-graduate students.The mean percent score of student's frequency, preference and skill levels of Using of Web 2.0 Tools in Learning revealed that the post-graduate students have higher mean frequency of use of Web 2.0 tools percent score than the under-graduate, the post-graduate students have slightly higher mean of their preference of use of Web 2.0 tools percent score than the under-graduate, the post-graduate students have higher mean of their skill level of use of Web 2.0 tools than the under-graduate.

More than half of the post-graduate students strongly agreed that Web 2 tools helped him/ her to find related knowledge and information for learning and it encourage them to communicate more with their classmates. Moreover, more than two fifths of them strongly agreed that with the use of Web tools it has become easy to publish one's work (may be through blog) and they strongly agreed that Web 2 tools enhance their creativity and imagination, helped them to learn more effectively, enable them to express ideas and thoughts better, provide potential for increased access and exposure to quality information and promote active and engaging lessons. Additionally, less than one third of them added that they strongly agreed that Web 2 tools increased their confidence to participate actively in the class, it important means of informal education and it have combination of solitary and social interaction.

Regarding Web 0.2 challenges, the students agreed that intellectual property rights, the risk of data security, absence of the personal touch associated with classroom lessons, maintaining balance between the necessary conventional part of education, and technology, the risk of students' privacy while using these tools, denied access, lack of some teachers' skills with technology, unwanted attention from others, high cost of educational technologies and poor quality and significance of the shared knowledge are Web 0.2 challenges. Finally, the students' suggestions and strategies towards promoting application of Web 2.0 technologies include conducting of training programs, e-learning should be included in all the curricula, improve the internet band width, and the privacy in using Web technologies should be included in the policy, provide steady supply of electricity and the Web 2.0 technology usage policy should be in position to ban using the pornographic Websites. It should be made compulsory for all academic staff in all faculties of nursing to teach using Web 2.0 technologies, conduct awareness campaign and training by the university on Web 2.0 application in teaching and learning.

VI.   Recommendations

Based on the results of the present study, the following recommendations are suggested:

1- Developing comprehensive coordination and cooperation protocol between the Universities, General Information Authority, Information, research and internet sector at the governmental information services and other different sectors of the community to raise community awareness about Web 0.2 tools.
2- Encouraging the mass media to highlight Benefits of using Web 0.2 tools in learning among youth.
3- Enforce and implement the use of Web tools in students and client education at different community and health service settings.
4- Further researches on Web generations tools and the internet of things in education and practiceare needed.

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