Scientific Issues Treated in the Websites of Jordanian Universities
Analytical study

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Abstract: With the spread of Internet the information is becoming available any time anywhere that produces a large quantity of information available to the user in an easy manner. This huge volume of information available is produced at the cost of information quality. The websites is considered the first interface from which the user can obtain the information, it is an information system that collects and distributes the information. This paper presents a survey of the content of Jordanian universities websites, the goal of this research is to explore how the universities websites can handle the scientific events like conferences, seminars….etc., to identify if the wide spread of information has influenced in the quality of content of Jordanian universities websites. And to show if the university website reflects the universities mission and objectives. Our research were based on the methodology of survey using content analysis style for 14 universities private and governmental, the questionnaire were composed on 21 variables that includes units and categories of analysis able to measure what is found, where is reviewed by a set of specialists reviewers. Our results show that there is a high competition between universities in making the university website more attractive for the user without taking in consideration the scientific content of the site.

Keywords: Information quality, media richness, public sphere, website quality, information system, information distribution, university website.

I. INTRODUCTION

The internet and web technologies have created a new methods for obtaining, collecting and distributing the information in all the areas of our live. The World Wide Web (WWW) today provides all kind of information for anyone, anywhere, and it adds a new dimensions to selecting resources.

The quantity of information available today has influenced on the quality of information, which led to the emergence of information selection. That means, selecting the source from which obtain a good information. But, what does mean a good information? A good information is characterized by its utility, accuracy, reliability, and novelty.

Education and educational institution are one field that are affected by information revolution, in particular in information quality, and the way of obtaining the information. The availability of Internet has facilitated the way of obtaining the information, and the website today is becoming a necessity to any activity, or organization to obtain information about it or to communicate with the people who are involved. Website is defined as a set of pages on the Internet related to each other that contains information about particular subject, published by a single person or organization. There are many issues handled by the website in the new communication environment and media that change frequently. These sites differ from each other by the degree of content richness and its technical characteristics including the services offered to the users. Most of the previous studies in our country were concentrated on handling the political and economic issues or social and entertaining events without taking in consideration the scientific issues handled in the universities web sites considering it as pillar for society development

Today, a website of an institution or university is considered the gateway to information and services provided by the university. It is the first interface by which students interacts and from which people obtain information and perspective about the university. An effective website keep a good balance between end user expectations, goods and the mission of the university. As the end user expectations from the website always are increased, it is essentially to improve the system quality and information quality of the website. Based on Delone and McLean information system success model [5],[6],[7], [4], the system quality and information quality of any information system contributes in the success of the system. The universities as considered as the organization that relays on its success based on the information quality and system quality of his website. The

university website is becoming important system for local students and foreigner students, researchers, people who are interested in knowing the courses studied in the university, scientific activities, location, and it helps also in making a comparison between universities to choose the best one based on some criteria.

II.   Problem definition

The introduction of Internet in all our live aspects has changed the way of interacting with the information. The mechanism used to getting the information is changed, the quantity of information available has grown up dramatically and people now want to obtain the information only by click. For that, organizing the information is becoming an important issues that can facilitate the information gathering or can obstacle the obtaining of information. University website has becoming a necessity to distribute information about the university around the world and is becoming the first interface for students, academics, parents to obtain information about the university. Before the spreading of Internet, people to get information about the university they must visit its physical location in the working hours only. Today, visiting the physical location of the university is time consuming and people can obtain the information they need from the website any time. All that has changed the way of designing the website from system that is based on texts, images to more attractive site that uses different media to illustrate the university structure and activities to attract more people. However, all that influences on the information quality. Information system is defined as a system that collects, processes, stores and distribute the information and it have five components are people, software, hardware, data, and communication links. People are the most important part in the system because they are the part that enters the data to the system and the part that receives the data from the system. University website is considered as information system that collects data from users and distributes data to the user, but which kind of information is distributed? Does the university website realize their objectives? Does the objectives of the university website has changed due to the spread of information and the competition between universities?

A university website must be informative and must provide services for students, users, parents, in addition the access to these services must be easy. That means, building the university website for different purposes are fast distribution, availability of information any time, facilitate the reaching of information and attracting more people, in addition to express the university mission and objectives for any person who search about it intentionally or accidentally. For all that,   the target and role of university website is changed from scholar website that is based on text to informative website that is based on image and multimedia in addition to text.

In this paper, we are interested in making an analytical study of the websites of Jordanian universities based on Delone and McLean model (D &M) [5],[6],[7], and in particular studying the scientific issues treated in the website of Jordanian universities. In this paper, we are interested only in analyzing the information quality in the websites by studying the nature of scientific issues handled in these websites. Figure.1, represents how we will apply the D & M model in our analysis According to research for European expectations report published by Montgomery & Doetjes [10], more than 50% of students in USA choose higher education institution based on its website. This percentage is increased for foreigner students because they haven't the possibility to visit the university campus aboard before applying.
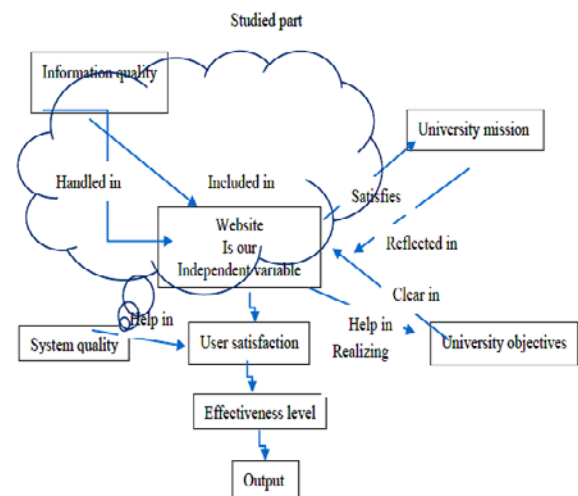

Figure.1: D&M model

That means, the website of a university is becoming an important thing in the student decision making and in the university success. For that building a successful university website is process of measuring, adjusting and experience. It starts by answering on an important question "what do I want the visitors to know when visiting my site?" from this question vary the goal of university website. A recent study by Tucciarone [17], find that students relay on information from college website in evaluating the institution. The most common information sought by the students was majors, cost, and ranking of school, size and location. That means, students are less interested in the scientific activity of the university, but maybe researchers, professors, parents are interested in it. The problem studied in this research can be defined as studying the characteristics of scientific issues most handled, and most updated in the universities Jordanian

websites, from the point of view of information quality and the techniques of information displaying.

III.   Contribution

This research will answer on the following questions regarding to information quality on the websites of Jordanian universities, what kind of information presented, handled in the website of the universities studied? How they are handled? It is easy to retrieve information from the site? Is the information updated, accurate, timeline? What are the media used to present the information?

IV.   Theoretical approach

The work in this research is based on the following three approaches: the Delone and McLean approach [5], [6], media richness [2], [3], and the structural transformation of public sphere (Habermas, 1962). This research is one of the descriptive studies, that explores and analysis the content of the websites, by preparing a questionnaire that is composed on 21 variables from the units and categories of analysis, that describe and observe the nature of problems studied in 14 universities governmental and private, where is used the surveying approach during 6 months and more from the beginning of the study in (2/2017- 10/2017), in addition is used the HOLSTI equation (where the stability analysis is 0.94).

- D&M model: the updated Delone and McLean model states that the information system success is based on six dimensions, three are proposed and studied in the original D&M model that are: system quality, information quality, and user satisfaction and the other three exported from Shannon and Weaver model [13], that are technical level of communication links that includes, accuracy, and efficiency of the communication system that produces information. The semantic level that represents the success of information in conveying the intended meaning. The effectiveness level that studies the effects of information on the receiver. Considering that, we are interested in studying the websites of Jordanian universities from the point of view of user, for that we are interested in the individual impact of the D&M model that is represented in system quality that is measured in term of functionality, reliability, data quality, portability, integration that are important measures used in evaluating the website in general. Information quality that is tested in term of accuracy, timeliness, completeness, relevance and consistency. All these measures are tested and analyzed in our paper and discussed later in the result section.

- The second approach on which our research is based is media richness theory [2],[3], that argues that certain media are better able to transmit information,

"rich" media is considered which makes user communicate more quickly and can solve any ambiguous understanding or equivocal message, such media avoid user providing too much information and it is more appropriate for reducing uncertainty. This theory is based on four factors influenced the richer media are: the capability for immediate feedback, the capability to transmit multiple cues, language variety, and the capability of the media to have a personal focus. Media richness theory has been widely applied in varied field, and current studies such as distance education environment [14], mobile learning [9], and website design [15].

- Public sphere can be defined in conceptual manner as the place between private individual and governmental authorities where people can meet and have critical debates, where people can get information, raise ideas, formation of opinion, get feedback, participate and involved in all socio-cultural activities. The area where people are free to share his opinion publically. The notion of "public sphere" began evolving during the "renaissance" in Western Europe. Jurgen Habermas in 1962, in his book "the structural transformation of public" argues that the emergence of mass media made public more passive and the dominant political character of participation got swapped by entertainment and commercialism. In the light of electronic mass media Habermas argues that information started to be "offered" to the people in a nice package and the formidable line between fact and fiction often got blurred. When compared the print media in term of impactful, electronic media often seen to win hands down. So, people did not get the power to disagree or come up with arguments but only be passive. And that is the main reason behind our work in this paper, is to observe and analyze the nature of information offered (by the university) and gathered (by the interested people), and what role the people that visits the websites of Jordanian universities will play? we will try to walk with the motion of this approach to see how the use of new media, different media has changed the public sphere motion represented by the behavior of people on the Internet and specially on the websites from interactive to passive and how websites (cyberspace) goal has changed from the real meaning of public sphere to be biased toward commercialism.

V.   Related works and discussion

Universities are organizations that perform a key role within contemporary societies by educating large proportions of the population and generation knowledge.

Internet information services are developed everywhere, such services include content generation and functionality support that have to be modeled in a consistency way. Services need to be personalized in order to be acceptable for any user. Personalization of information, information content and information representation playing the major success factor of information services. In communication theory, the information is an output of an information system or is the message in a communication system. Based on Shannon and Weaver (1949) approach the output of an information system can be measured in three levels are: technical level that represents the system quality, the semantic level that represents the information quality, effectiveness level that represented by the receiver or the end user including use of information system, user satisfaction, individual impact and organizational impact [13]. Few years ago, the website for any company or organization were considered a way of spending money, today with the development of the Internet the website is becoming a necessity. To answer on defining the main purpose of a website, a survey presented in [1], classify the main purpose of website in only two classes are to provide information and to promote and market web organization. Figure.2, show the percentage of goals achieved in website of an organization. In [11], the goal of high education (defined as university level education) is to enable individuals to develop their capabilities, to grow intellectually and to contribute to society and achieve personal fulfillment. In addition, to increase knowledge that in turn taking the education to the next level on learning new things. This definition reveal the importance of university website that manifests in attracting new students, in evaluating the quality of courses and in addition to provide all the information about courses and to ensure that the higher education institution maintain a basic level of quality. In [11], is explained that the university website must satisfy the university commercial interests and must provide non-commercial information that is needs of its student and faculty. In [16], is presented the criteria for the development of effective university website, where the effectiveness of this communication medium between students and university is examined, the work presented in [16] tries to investigate if the use of universities' web resources provides an effective and pragmatic interface between themselves and their users.
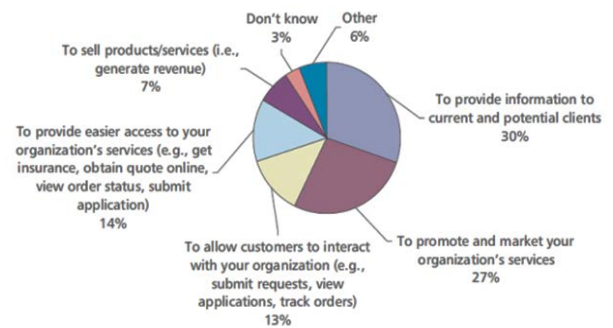
Graph 9 — Which one of the following goals best describes what your organization considers the main purpose of its Web site?

Figure.2: website objectives and purpose

Considering that a university is a business and the students are the customers but not traditional customer, the university business has different target market with different needs. The paper examines university website from the prospective of postgraduate student to determine whether these sites provide students with relevant and accurate information or not. A set of criteria were used to evaluate the information presented in the studied universities (8 South Africa universities websites) are interactivity, accuracy, timelines, financial information, student experience. Results show that 43.3% of the sampling studied consider the university website the most important location from where they obtain information about the university, 26.7% are interested in the performance of the site (fast download), and 58% rated the information presented in the site as relevant. The survey is conducted on a sample of students in different levels give some recommendations about the university website like information security, accuracy, relevance, and website design. In [12], is studied the role of university websites in student decisions to consider and attend any specific university, the paper tries to emphasis the results obtained by previous work [17], that founds that students relay on information from college websites in evaluation the institution, the most common information sought by the student was courses, cost, ranking of school, size and location. In [12], is studying in addition another criteria like gender, experience, frequency of use, age for graduate and undergraduate students. The results presented in this paper show differences between previous results obtained by others worked on the same field like [17], table.1 show the differences in the results obtained by Tucciarone in [17], and Schimmel in [12]. In (Yetkinel, 2017), is studied the effects of new media, social media in education. The basic idea is that, in the digitization age the education is transformed as the public sphere, where the role of academic is transformed from a basic educator to more of a guide showing the way for a better education.

Table .1: comparison between results obtained by Tucciarone and Schimmel

Results obtained by Tucciarone	Results obtained by Schimmel
The importance of website in the selection of university vary by gender	Not depend on gender
Those people with high experience on Internet are different from those with less experience	No difference between people with high experience or not
People with frequently of use of on-line sites place greater weight on the site	There is a difference of importance of website between people with frequency of use of on-line site and other people
Age : older persons place less importance on the website	There are some difference importance of website between students from 17-22 years to 31 and up

The results show that people are divided between whose consider the positive effects of new media (social media) in education and whose consider the negative effects. The main important results of this work is that the emergency of electronic media having a greater impact on the public sphere making them passive participants. In particular, these important results is the main purpose behind our work is to analyze does people that frequently uses website of Jordanian Universities becoming passive people accept all that is introduced in the site or they have some role in the information quality in the website? The results analysis of our work will answer on this question.

VI.   Results and results analysis

We have observed the websites of 14 Jordanian universities (governmental and private universities) chosen distributed between north, center and south of the Jordan. In each site is analyzed more than one webpage (home page, research page, and other pages). Our analysis is directed toward the content and structure of these websites. From the point of view of structure is analyzed the number of web page icons, the type of multimedia used, the structure of website (home page, dropdown list ….) the area dedicated for text and images , the number of colors used in the page. And from the content point of view is analyzed the number of problems treated in the page, the nature of problem studied and handled, the scientific field of the problem, the area dedicated for the representation of scientific issues , the capability for immediate feedback, relevance of treatment , timeliness, capability of media to have personal focus, the rich of information. Table .2, shows the distribution of the frequency of handling the scientific issues in the sites studied.

Table.2: the distribution of frequencies of scientific issues handled in the websites of Jordanian universities.

Websites of Jordanian universities	frequencies	Percentage %
www.ju.edu.jo	44	11.8
www.yu.edu.jo	61	16.4
www.just.edu.jo	39	10.5
www.jadara.edu.jo	27	7.3
www.philadelphia.edu.jo	26	7
www.uop.edu.jo	24	6.5
www.inu.edu.jo	22	5.9
www.aabu.edu.jo	22	5.9
www.zuj.edu.jo	20	5.4
www.bau.edu.jo	20	5.4
www.asu.edu.jo	19	5.1
www.hu.edu.jo	19	5.1
www.jpu.edu.jo	15	4
www.mutah.edu.jo	14	3.8
Total	372	100

From table .2, it is evident that the first three sites (governmental) have a high frequency of handling the scientific issues. However the next three sites (private) have an acceptable frequency. This difference between universities in the frequency of handling scientific issues can be explained as follow:

There is a competition between governmental and private universities in offering a special services to students and people who use the websites are represented in the following points:

- The diversity in majors studied in the universities is reflected on the website regarding to the scientific activities
- From the technical point of view , a variety of multimedia is used in presenting the scientific issues
- The number of websites is increased due to the increasing in the number of universities
- The technical, economic, managerial, and human resources of Jordanian universities all these factors influence in the variation of the way of treating scientific issues on the sites.

A.   Structure analysis results:
- *The number of home page icons:*

Table .3, show that most of the sites use "11" icons and more in the home page that is referred to the following:

−   The high number of services offered from the governmental or private universities that is represented in the number of icons in the home page

−   There is no university that is specified in a single field

−   The website administrator uses the experimental approach from the adding , removing and merging icons

−   The website administrator believes that more is the home page icons more rich is the website

−   Most of the websites administrators and the companies that are responsible on website design

concentrate on the design without taking importance to the content quality (information quality). The Mean is about (3.604), and standard deviation (1.3367)

- *Type of multimedia used in the home page*

The media richness theory suggests that some type of multimedia give a rich to the communication more than the others, because may reflect more sensations.

Table .3: the frequencies of the number of icons in the home page of universities websites

The number of icons	Frequencies	Percentage %
Less than 5 icons	34	9.1
5-7 icons	42	11.3
7-9 icons	104	28.0
9-11 icons	49	13.2
More than 11 icons	143	38.4
Total	372	100

Table .4, show that the hyperlinks, and texts are the most media used in the websites studied, however the other media like animated images , sound, and videos are less used in these sites. And a few sites that use more than one media at the same time for the same issue where the capability to transmit multiple cue. That is referred to the technical capabilities used in designing the site. The Mean is about (4.6425), standard deviation (3.3459).

- *The structure of home page*

The dropdown list is the most way used in designing the websites of the sites studied then the icons that link to the administrator departments and topics headlines, in addition to the presence of marque line that presents news about the university (table .5). The mean is about (3.118), and standard deviation is (1.7550).

Table.4: the frequencies of multimedia used in the websites studied

type of multimedia used	Frequencies	Percentage %
Texts	123	33.1
Images	57	15.3
videos	9	2.4
Animated images	4	1.1
Sounds	10	2.7
Hyperlinks	152	40.9
Two media or more	17	4.6
total	272	100

- *The area dedicated to text in comparison to images:*

Table .6, show that in most of the websites studied the area dedicated to texts are more than that dedicated to images in particular in the treatment of scientific issues.

Table.5: the frequencies in the home page structure

The design of home page	frequencies	Percentage %
Dropdown list	88	23.7
Topics headlines	65	17.5
Administrative departments icons	74	19.9
One scientific issue	70	18.8
Marque line	28	7.5
Two scientific issue	29	7.8
Three scientific issues and more	18	4.8
Total	372	100

That is referred to the media aspects of the event when it is necessary to mention the name of the sponsors of activities, the people that participate in the activity and the kind of activity, more than concentrate on the activity in itself. The mean is about (1.946) and standard deviation is (0.6856)

Table.6: the area of the textual part in comparison to the illustrated part

The textual part vs illustrated part	Frequencies	Percentage %
Textual part similar to illustrated one	91	24.5
Textual part is more than illustrated one	210	56.5
Textual part is less than illustrated one	71	19.1
Total	372	100

- *The colors used in the website:*

Table.7, show the website designer concentrate on attracting the attention of the visitor by using three colors or less to work on visual attraction to the user, however few websites that uses more than three colors . The mean about (2.338), standard deviation is (0.5671)

Table.7: the distribution of colors in the websites studied

Number of colors	Frequencies	Percentage %
One color only	18	4.8
Two colors	210	56.5
Three colors or more	144	38.7
Total	372	100

B. 6.2: Content analysis

The main goal of this research is to analyzing how the websites studied handles the scientific issues that means analyzing the content of the website. The websites studied was analyzed from the point of view of number of scientific issues in the home page, the types of activities handled (conferences, seminars, scientific meetings, workshop, training courses…….), the scientific fields interested in these issues, how is relevant these issues in the site and that is depend on how is the space dedicated for the problem on the site, how is presented these issues (interactive, informative), how many rows is dedicated

for these issues that also reflect its relevance and other criteria will presented in the following results.

- *The number of scientific issues in the home page :*

Table. 8, shows that about 32.8% of websites studied handle in the home page three issues, 22.7 % handle only one argument and 18.8 % handles more than 4 issues in the home page, that is due to the variety in the specialization of the website administrator and it depends also on the mission and view of the university administration. The mean is about (2.957), standard deviation is (1.3249).

- *Scientific issues template handled in the sites*

Table .9, shows that the interest in the sites studied were concentrated on conference, training, seminars. That is depend on the scientific activity of the university and the directions of the university administration to present such activities to perform specific tasks. The mean is about (4.489), standard deviation is (3.0578).

Table.8: the frequencies of number of scientific issues handles in the websites studied

Number of scientific issue	Frequencies	Percentage %
One argument	77	20.7
Two arguments	46	12.4
Three arguments	122	32.8
Four arguments	70	18.8
More than four argumenta	57	15.3
Total	372	100

- *Scientific issues content handled in the websites studied:*

Table .10, indicates the dominance of medical issues handled on the websites (12.1%), the engineering issues (11.8%) then the linguistics, management, in addition to the other activities in law, history, geography, mathematics, ….. And other fields that depends on the variety and differentiation in specialties between the universities, the differences in interest between organizations, students, faculties, and the degree of students activity. And it depends on the number of students, researchers to satisfy their objectives. The mean is about (6.825), standard deviation is (4.4936).

- *The area dedicated for scientific issues*

Table.11, shows that the area dedicated for scientific issues in the websites studied is in general moderate (42.5%) in considering to the rest of the website content, some websites dedicated a small area (31.5%) and some others dedicated large area (26.1%) that means they are interested in the structure on the expense of the content, except some sites that are interested in the conferences and activities that take places in the university.

Table.9: the nature of scientific information handled in the websites studied

Content	Frequencies	Percentage %
Medical sciences	45	12.1
Engineering sciences	44	11.8
Scientific seminars	31	8.3
Press and media	19	5.1
Physics & chemistry	22	5.9
Mathematics	28	7.5
Management	30	8.1
Law	23	6.2
Linguistics	31	8.3
History	16	4.3
Geography	8	2.2
Social sciences	8	2.2
Religious issues	19	5.1
Educational issues	25	6.7
Economic issues	23	6.2
Total	372	100

Table.10: the frequencies of content of scientific issues handled in the websites studied

Studying the area dedicated for scientific issues reflect its relevance for the website content. The mean is about (1.946), and standard deviation is (0,7575).

Kind of activity	Frequencies	Percentage %
Conferences	86	23.1
Seminars	43	11.6
Scientific sessions	43	11.3
Scientific meeting	32	8.6
Specialized scientific training	50	13.4
Workshops	23	6.2
Scientific competitions	14	3.8
Social and cultural activities	16	4.3
Graduation party	30	8.1
Activity varies	36	9.7
Total	372	100

- *The capability for immediate feedback :*

Table.12, shows that most of the scientific issues studied are in nature of informative information and

Table.11: the frequencies of the area dedicated for scientific issues in the websites studied

The area	Frequencies	Percentage %
limited area	117	31.5
Moderate area	158	42.5
Large area	97	26.0
Total	372	100

Table.12: the frequencies of the nature of media materials handled in the websites studied

The nature of media material	Frequencies	Percentage %
Informative information	246	66.2
Opinion information	44	11.8
Both (informative and opinion)	82	22.0
Total	372	100

Not interactive information that means the capability to obtain an immediate feedback is not permitted in some sites due to lack in technical competencies or the administrators are not interested in obtain feedback about the events that happens in the university they only interested in informing the students, the visitors about this events, in this case people becoming only passive visitors. However, some site allows the user to express his opinion in some particular events (active visitors). The mean is about (1.559), and the standard deviation is (0.8301).

- *The number of rows dedicated for scientific issues handled in the website:*

How many space is dedicated to express the events indicate its relevance to the university. Table.13, shows that, the number of rows dedicated for the scientific issues are limited and that is related to the dominance of the average area on the large area, the mean is about (1.983) and the standard deviation is about (1.0304).

Table.13: the frequencies of number of rows used for handling the scientific issues

The number of rows	frequencies	Percentage %
Less than 5 rows	153	41.1
From 5 to less than 10 rows	112	30.1
From 10 rows to less than 15 rows	74	19.9
From 15 to less than 20 rows	26	7
20 rows and more	7	1.9
total	372	100

- *Treatment quality frequencies as reflected in the websites studied :*

Table.14 shows that, most of the scientific issues handled in the websites were treated in a superficial manner, and only 26.01% of the problems studied were treated in a deeply manner, that means the administrators of the websites and the manager give less importance on this issues at the expense on the design of the website to be

attracted to more people. The mean is about (1.293), the standard deviation is about (0.4899).

Table.14: the frequencies of quality of treatments of scientific issues in the website studied:

Treatment quality	Frequencies	Percentage %
Superficial	269	72.3
Moderate depth	97	26.1
Deep treatment	6	1.6
Total	372	100

- *The duration of scientific issues on the website (timeliness):*

One of the parameters used in analyzing the quality of website is the novelty of the information presented on the site. All the information must be timeliness in particular the scientific issues. Our survey shows that most of the problems studied in the websites of the universities studied stay on the site for a time more than two months, three months, more than one month that means this information is not updated frequently where in some sites the scientific issues presented on the site are dated two years ago (table 15). The mean is about (4.137), standard deviation is about (1.0200).

Table.15: the frequencies of duration of problem on the website

Duration	Frequencies	Percentage %
Few days	2	0.5
One week	29	7.8
One month	72	19.4
Two months	82	22.0
More than two months	187	50.3
Total	372	100

- *Frequencies based on kind of people that are involved in the scientific event:*

Our results in table.16, shows that in all these activities the administrators, or the managers concentrate on managerial and public people and not on academic or faculty members nor students. The mean is about (4.061), standard deviation is about (1.5998).

Table 16, shows the capability of media to have personal focus were only 17.2% is focused on students, 15.9 % on faculty staff and 18.3% on academics that are people who are most interested in the site and the information quality on the site, because in some way represent them , and they are the people who most used for the site.

- *The length of title for the scientific issues handled in the website :*

The ability to express the main idea in few word reflect the professional skill in editing and releasing a media material, for that the length of title for scientific issues handled in the site reflect the interest of site administrator in presenting the event in a professional manner, were in most of the scientific issues were used title with more than 5 words as in table 17. The mean is about (2.432), standard deviation is about (0.6715).

Table.17: the frequencies of the number of words that constitute the title of scientific issues.

Table.16: frequencies of kind of persons involved in the scientific activities on the websites studied.

	Frequencies	Percentage %
Expert persons	13	3.5
Public people	53	14.2
Managerial people	91	24.5
Academics	68	18.3
Faculty staff	59	15.9
Students	64	17.2
Other people	24	6.5
Total	372	100

The presence of hyperlinks on the site indicates the richness of information in the site, and that is the same for the scientific issues, that means the presence of hyperlinks associated with the text about the scientific issues means the richness and information and its relevance to the content of the site. Our survey shows that, most of the events presented in the websites of the universities studied were without hyperlinks that decreases the important of events, and only 40.9% of the media material were followed by a hyperlinks, that is presented in table 18. The mean is about (1.408), standard deviation is about (0.4922).

- *The presence of images/ number of images associated to the scientific issues in the websites studied:*

Another important media as hyperlinks is the image that personalize the events, and express the impression on the event to the visitor and attract the attention of people, most of the new website designer concentrate in his work on the images that help visitor in participate and feel the importance of event. Most of the scientific issues presented on the websites studied were associated with an image (always one image) specially that presented on the home page, were some issues that are presented on the home page were not associated with image (39.5%), see table 19. The mean for the presence of an image is about (1.604),

Number of words	Frequencies	Percentage %
Three words and less	38	10.2
From three to five words	135	36.3
More than five words	199	53.5
Total	372	100

- *The use of hyperlinks for the scientific issues treated on the website*

standard deviation (0.4895). The mean for the number of images is about (2.669), standard deviation is about (1.2398).

Table.18: the frequencies of presence of hyperlinks in the websites studied

The presence of hyperlinks	Frequencies	Percentage %
No hyperlink	220	59.1
There are a hyperlink	152	40.9
Total	372	100

Table .19: the presence of images/ number of images associated to the scientific issues on the website.

Presence of image			Number of images		
	Frequencies	Percentage %	Number of images	Frequencies	Percentage %
There is an images	225	60.5	One image	97	26.1
No images	147	39.5	Two images	76	20.4
Total	372	100	Three images and more	52	14.0
			No images	147	39.5
			total	372	100

Our results shows that most of the images associated with the scientific issues were bilateral, trilogy in percentage for both (34.4%) that is referred to the interest on the design nor on the content . the mean is(4.072), standard deviation (1.7872).

- *The orientation in presenting and introducing the scientific issues in the websites studied:*

Our survey shows that orientation in presenting the scientific issues on these sites were positive in most of the cases and in some cases were neutral, table 20 shows that 78,2% of sites present the event in positive point of view and that in the scope of presenting a positive image about the university and his activities . The mean is (2.782), standard deviation is about (0.4132).

Table.20: the orientation in presenting scientific issues on the websites studied

Orientation	Frequencies	Percentage %
Neutral	81	21.8
Positive	291	78.2
Total	372	100

Our survey shows that there no presence of some negative orientation about the events presented in the websites of the Jordanian universities studied.

7. Conclusion and future works :

In this research we have analyzed the content of Jordanian universities websites, in particular the scientific issues handled in the websites studied. Our idea was to study how the availability of information has changed the websites content from scientific content that represents the university and their objectives to more commercial site that is based on using different multimedia to attract the visitors. The main goal of university website is to be the interface by which the students can communicate with the university employees (interactive) and from which they can obtain the needed information. Our results show that the site administrators are not conscious about the site goal, they are interested in the site design at the expanse of the site content. And that is presented in the structure of the home page of the sites studied were it is used a high frequency of hyperlinks about 40% (governmental and private). The frequency of animated image were lower than the frequency of static images as is shown in table .14. From table 12, it is shown that most of the sites studied were informative that means the site consider the visitor as passive visitor that read only the information without interaction or presenting his opinion. In addition, our results shows that the information presented on the site (scientific issues) are not updated were in some sites is presented information about a conference two years ago from the time of collecting information for this research, that indicates that the administrator are not interested in the scientific issues that represents the university but they are interested in presenting structural view of the university like external spaces, social activities, interaction with social events. Our work in this research were based on making a

survey for the websites of the most of Jordanian universities distributed from North to South without taking in consideration the differences between universities in size, location , governmental or private, or the differences in the number of students and specializations. Our future work will be making a comparison between the Jordanian universities and some of the universities in the Middle East from the point of view of scientific issues handled on the websites, and from the variety of site languages.

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