

The Use of Hashtags to Boost and Retrieve posts

Hanadi Buarki

Department of Library and Information Science, College of Basic Education, Ardeya, Kuwait.
Hj.buarki@paaet.edu.kw

Bashaer Alkhateib

Department of Library and Information Science, College of Basic Education, Ardeya, Kuwait.



Copyright © 2016 by **Hanadi Buarki, Bashaer Alkhateib**. This work is made available under the terms of the Creative Commons Attribution 4.0 International License:
<http://creativecommons.org/licenses/by/4.0>

Abstract:

Hashtags are used intensively to convey a message, start a conversation and follow a topic of interest. The aim of this research is to find out why people use hashtags as a medium of information dissemination in events and how they use them. Instagram has been chosen as a social media tool, as most Kuwaiti individuals (research sample) have been described to use it on hourly bases.

The research purposes to answer the question of “can hashtags be used as a medium of information dissemination and retrieval in social media apps such as Instagram?” Hashtags were assigned and followed to track any related posts designated to a workshop. The related posts were retrieved and coded to present a complete analytical context analysis of qualitative data, whereas quantitative data was collected from social networks analysis tools. In addition, a quantitative question was included to estimate quantitatively the participants’ engagement of hashtags during the event.

Gathered data generated that 74 (46%) had used the workshop’s designated hashtags to share posts during and after the event. The retrieval of the hashtags on Instagram has declined, indicating their use for a certain period/event; Google search engine retrieved the maximum results since it already retrieved any post related to the hashtags searched from any social media tool or app.

It was found that a hashtag would be common when it is extensively used with the other associated descriptors and that its use depends on: its popularity, followers of the account posting it and its time survival. It was found that the use of hashtags connects people of same interests and allows them to network into one discussion through social media tools such as Instagram. The research, moreover, summarises the processes and experiences of hard work that social media has made easier, providing around the clock free feedback and exchange of ideas, knowledge and concerns of involvement to promote and organize an event.

Keywords: hashtags, Instagram, Kuwait, retrieval, social media.

Background

Researchers, students, and the public; everyone is publishing content by using different social media apps to connect and share ideas. Social media is available for free and needs a device and an Internet connection. Contents of social media, on the other hand, need to be published

to reach people of similar interests. It is then organised and retrieved for later use and dissemination and that is the reason that hashtags are used. They are used deliberately to retrieve information and sometimes just to follow the trend. They use them because their followers have posted content through social media refereeing to a certain hashtag. Others would invent hashtags out of nowhere to stay “cool” or to gain attention.

Huang, Thornton and Efthimiadis (2010) defined a hashtag as the specific name for a tag in Twitter. Its name is derived from the symbol "#", also known as a hash mark. When a hashtag is created it needs to be publicised, so that the information it is conveying is disseminated. A hashtag is used to “enhance topical access”, repost a post, follow experts, track certain hashtags of their own interest, allow expansion of query by using standardised keywords and organising results of searches into groups (Efron, 2010 and Efron 2011). A hashtag provides links to the same topic of interest. Hashtags are used to retrieve and classify images. Hashtags are also used as filters for outlining the scope of research projects (Highfield & Leaver 2014). Chris Messina, a former Google designer, was the first to adopt the hashtag in 2007 (the “pound” symbol) in Twitter. It was used to create "groups". The hashtag that was denied by Twitter is today a feature of making it unusable with its adaptation (Unknown author, 2013). The term hashtag will be used to represent the terms “keywords” and “tags” throughout this research.

Literature review

Social media/networking is an enabler of informal learning (Razmerita, Kirchner, & Sudzina 2009). Maness (2006) stated that social networks are being a very promising and embracing technology. Social networking could enable users not only to interact but also to share and change resources dynamically in an electronic medium. Hashtagging in social networks essentially enables users to create subject headings for their posts at hand (Shanhi 2006). Hashtagging is essentially Web 2.0 because it allows patrons to add and change not only content (data), but content describing content (metadata). For example as in Instagram or Flickr where users hashtag images, it simply makes lateral searching easier (Maness 2006).

A study indicated the use of Instagram as a social, business and advertising tool. It was applied at libraries to share the library’s brand and to connect with students, faculty members and other libraries in order to have followers and likes, by choosing the right content and publishing it to engage users. Instagram was used to network and communicate libraries by sharing their activities, services and joining “the larger Instagram community” (Tekulve & Kelly 2013). In another research, Instagram was used to record users’ daily lives and this was shared with their friends. This was tested through large-scale quantitative analysis of Instagram users and their pictures. It was found that Instagram’s properties are different from other popular social media such as Twitter, users posted once a week and they like to share their locations with friends (Manikonda, Hu & Kambhampati 2014).

Another research described Instagram as the best tool to market a product or service; helped people connecting internationally; gathered people of the same interest (at least those who like photography). Beside of its advantage of being free of charge, the research discussed that although Instagram has proven to be widely used among the young, it still faces disadvantages such as its users having fake identities. This in turn affects its use as a marketing tool (Huey & Yazdanifard 2014).

Although the literature discusses the use of social apps and presents their usefulness, research has not argued the use of hashtags as a means to retrieve information and how information is disseminated through these tools and if it was easy to search for and for how long it will be made available through such medium. Therefore, this paper aims to fulfil this gap in the literature.

Methodology

Both qualitative and quantitative methods were applied. A quantitative question was included at the end of a user needs assessment and use survey (was used to assess the participants' skills level by the workshop organisers¹) asking the participants if they have used the designated workshop hashtags or not. This would estimate quantitatively the participants' engagement of the hashtags use during the event. Analytical analysis was applied and statistics of quantitative data was collected from social network analysis tools. Gathered data generated the participants' demographic information (such as gender and location) and posts (images and comments). The workshop's designated hashtags were checked regularly during the event and up to ten months after the event. The posts that included the hashtag were retrieved, recorded and coded to present a complete analysis of qualitative data. Related content analysis of posts was coded using primary themes, where appropriate, studied and checked to present complete analysis and in order to obtain conclusions.

Research sample

The research participants were emailed to assign and follow the hashtags before, during and after the workshop. Information about the event was posted through social media two months before the event. Any post that included the workshop-designated hashtags was retrieved to track potential participants and to encourage them to register. As the workshop started all the workshop attendees were asked to answer one quantitative question. The question was included within the workshop's evaluation form to follow-up the participants' first involvements into the use of hashtags and then to collect related research data. Participants that have participated in the workshop were 160. They could be divided into three groups; 104 faculty members, 30 students and 26 organisers (6 faculty members and 20 students). They were asked if they had used the workshop's designated hashtags to share images and information during the event; 74 (46%) replied that they did, 77 (48%) did not and 9 (6%) did not answer. This sums the research representative sample that has posted using the hashtags to 46% (excluding the presenters and organisers) see Figure 1.

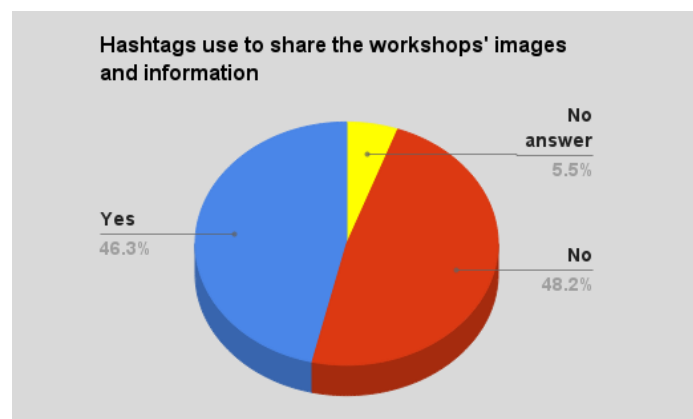


Figure 1 Hashtags users

¹ This is beyond the scope of this research.

Data collection and analysis

Data collection started from April 2015 to January 2016. Any posts displayed in Instagram with the hashtags #gafesummit, #gafesummit2015, #gafesummitkuwait, #googleineducation and #googleineducationkuwait was collected through several hashtags tracking/retrieval² analysis³ systems to follow up the hashtags use.

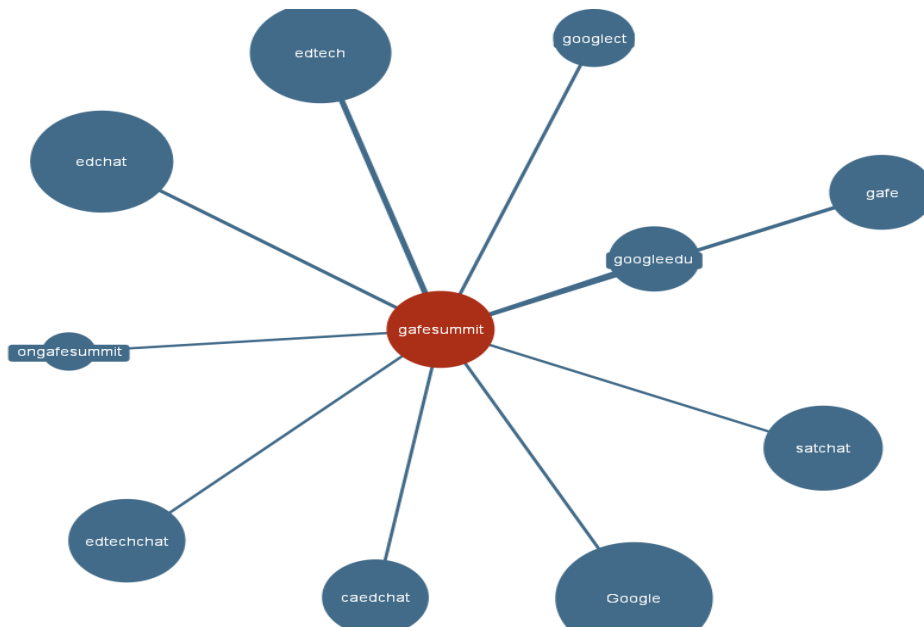


Figure 2 #gafesummit top 10 terms related

In selecting the posts for analysis, any related posts that had the designated hashtags #gafesummit #gafesummit2015 #gafesummitkuwait, #googleineducation, #googleineducationkuwait were chosen and their location (location of post) was checked. The researchers also carefully examined the related posts to collect associated content as follows.

Location

The workshop was organised and held in Kuwait and the presenters were from the United States of America. This might indicate that the posts of participants would be mainly from these two countries. However, an analysis of the location of the posts on Instagram revealed similar data in addition to other locations. Each of the participants that have posted using the designated hashtags was traced for location. Table 1 illustrates the hashtags and the countries of posts. It is obvious that the United States and Kuwait have the higher percentages of the locations of posts of the workshop provider (United States) and the venue (Kuwait). However, participants may choose not to show the location of their post since it is optional in Instagram. This, in turn, may not indicate other locations of posts.

² <http://websta.me/>, <https://www.hashtracking.com/>, <http://www.talkwalker.com/>, <http://hashtagify.me/>, Google web, and Google images.

³ https://minter.io, <http://www.tagsleuth.com/>, <https://www.hashtracking.com/>, and <http://www.talkwalker.com/>.

Table 1 Location of posts by designated hashtags

Hashtag	Countries of post	%
gafesummit	The United States	75%
	Australia	7%
	Brazil	5%
	Canada	4%
	Singapore	3%
	New Zealand	3%
	Kuwait	2%
	The United Arab Emirates	1%
gafesummit2015	The United States	40%
	Kuwait	30%
	Brazil	10%
	Canada	10%
	Australia	10%
googleineducation	The United States	100%
gafesummitkuwait	Kuwait	60%
	The United States	40%
googleineducationkuwait	Kuwait	100%

Hashtags

The hashtags designated (#gafesummit, #gafesummit2015, #gafesummitkuwait, #googleineducation and #googleineducationkuwait) were listed at the back of the participants' badges. However, most of them did not realise the importance and/or did not know what a hashtag is until it was explained several times to them. The hashtags were then searched and all the related images were collected and grouped.

The search of the hashtags (#gafesummit #gafesummit2015 #gafesummitkuwait, #googleineducation, #googleineducationkuwait) retrieved 3583 posts. Comparing the retrieval of the hashtags and posts related, Table 2, was intended in two folds; to track the hashtag in terms of posts change, to associate the results retrieved and to compare the retrieving systems used. Table 2 displays the use of the retrieval tools (Instagram, WEBSTA, Talkwalker and Minter.io.) and the number of times each hashtag was used. Google search engine was also used as a retrieval tool to compliment the search.

Table 2 comparison of retrieval system tools used

Retrieval tool	#Hashtag	Posts
Instagram Date retrieved: 20 April 2015	gafesummit	2269
	gafesummit2015	104
	gafesummitkuwait	51
	googleineducation	16
	googleineducationkuwait	78
Total of posts		2518
Retrieval tool	#Hashtag	Posts
WEBSTA Date retrieved: 12 June 2015	gafesummit	2502
	gafesummit2015	113
	gafesummitkuwait	54
	googleineducation	36
	googleineducationkuwait	80
Total of posts		2785
Retrieval tool	#Hashtag	Posts
Talkwalker Date retrieved: 15 July 2015	gafesummit	2670
	gafesummit2015	133
	gafesummitkuwait	54
	googleineducation	38
	googleineducationkuwait	91
Total of posts		2986
Retrieval tool	#Hashtag	Posts
Minter.io Date retrieved: 10 Oct 2015	gafesummit	3075
	gafesummit2015	143
	gafesummitkuwait	54
	googleineducation	41
	googleineducationkuwait	91
Total of posts		3404
Retrieval tool	#Hashtag	Posts (web search results)
Google search engine Date retrieved: 12 June 2015	gafesummit	33.200
	gafesummit2015	230
	gafesummitkuwait	112
	googleineducation	378
	googleineducationkuwait	35
Total of posts		33,955
Retrieval tool	#Hashtag	Posts (web search results)
Google search engine Date retrieved: 31 Jan, 2016	gafesummit	50.200
	gafesummit2015	552
	gafesummitkuwait	127
	googleineducation	1.550
	googleineducationkuwait	78
Total of posts		52.507

Furthermore, the 60 comments were thematically examined for content analysis of the data associated with the hashtags and some were translated from Arabic into English. Any unrelated comment to the conference theme was not included. The analysis has revealed the following themes and data.

Associated descriptors

The content analysis of the related hashtags revealed the use of 41 descriptors/keyword (nine were deleted for repetition). The Arabic descriptors were translated. Each of the hashtags retrieved about 9-13 associated descriptor/keyword, see Table 3.

Table 3 Hashtags associated with workshop designated hashtags

Hashtag designated	Associated hashtags
gafesummit	1. Google
	2. edtech
	3. gafesummit2015
	4. googleineducationkuwait
	5. breakoutedu
	6. edtechtteam
	7. gafesummitkuwait
	8. gafe
	9. (creativity) ابداع
gafesummit2015	10. googleineducationkuwait
	11. gafesummitkuwait
	12. kuwaitpaaet
	13. (development) تنمية
	14. (distinction) تميز
	15. (tdevelopment self) تنمية ذاتية
	16. (improvement) تطوير
	17. (human development) تنمية بشرية
gafesummitkuwait	18. gafesummit
	19. gafesummit2015
	20. kuwait
	21. travelling
	22. travel
	23. paaet
	24. middleeastern
	25. middleeast
	26. asia
	27. (workshops) ورش
28. repost	
googleineducation	29. googlekci
	30. googlesummit
	31. iteachtoo
	32. edtech
	33. teachersfollowteachers
	34. magicmoment
	35. scavengerhunt
	36. tools

Hashtag designated	Associated hashtags
	37. smart
googleineducationkuwait	38. gafesummit
	39. gafesummit2015
	40. gafesummitkuwait
	41. kuwaitpaet
	42. training
	43. (distinction) تميز
	44. (courses) دورات
	45. (change) تغيير
	46. (creativity) ابداع
	47. kuwaitcity
	48. traveling
	49. travelphotography
	50. kuwaitwatertowers

A search of any of the above hashtags, Table 3, and their associated descriptors would retrieve the posts it was associated with and/or the subject/information of interest. Thus, when searching a hashtag it is advised to search other descriptors related using hashtag analytical tools.

Comments

The participants were asked to choose images and hashtag them. They were instructed to comment as they wish and stress how the experience has positively (or otherwise negatively) affected them to participate. Instagram, however, does not have character constraints on the length of comments (such as Twitter's limit to 140 characters). This has allowed participants to comment without restrictions.

The users' comments revealed their commitment to the material of the workshop. As one participant commented: "Google apps for education encourages instant collaborations and interaction through innovative technological ways of teaching". It reflected their gain of experience as one female organiser participant commented: "The scavenger hunt was the highlight of my #gafesummitkuwait experience, I really enjoyed it".

As for the presenters, they felt delighted to deliver the workshop and commented: "this is such an honour for us!". They had the opportunity to know a "mixture of traditions, customs and principles of the old and new to teach generations". Furthermore, they felt "...extremely fortunate to have met so many amazing educators," and thought of them as "... a fantastic group of educators!".

The students commented that they were encouraged to participate "working and preparing for the workshop", they posted that "participating in the workshop was a treat from our teacher...thank you for your continuous support" and when followers asked about the workshop they replied they "had the GAFE (Google Applications For Education) summit in Kuwait and it was fun to be part of it".

The presenters also commented on the student organisers' outstanding achievements. They thought, "The video (demonstrated during the opening) that your (the) students made was excellent!!" and believed that "One of the highlights of day two of the workshop was working

with a group of 45 students #scavengerhunt designed around #google #tools”.

Overall all the participants had positive comments about the workshop. It is apparent that users on Instagram share their opinions, emotions and attitude with the related comments and image by using the assigned hashtags. They give interpretations and reviews of experiences and get more followers, likes and comment from people of same interest.

Recommendations and Conclusion

The research summarises the processes and experiences of hard work that social media has made easier, providing around the clock free feedback and exchange of ideas and concerns of involvement to promote and organise a workshop. The workshop was a collaborative experience among the expertise (sessions panel and organisers) and the students and a motivating practice for the participating audience (faculty and students).

Instagram was used as a media and social tool. It eased the process of generating the idea, broadcasting the event and attracting participants. It improved the procedures of registering and contacting the right audience to promote the workshop. Moreover, the research participants interacted with one another; the faculty met other peers and students got acquainted. From students’ viewpoint, Instagram is “easy” to use and that “anyone could use it”.

The research being totally unfunded, urged the researchers to use open access articles, free analysis and social media tools that have helped in achieving its aim and objectives and has reached the following conclusions and recommendations:

- 74 (46%) participants took part in the research by using the hashtags #gafesummit, #gafesummit2015, #gafesummitkuwait, #googleineducation and #googleineducationkuwait.
- A hashtag retrieves related posts; tracks an event; a tool to crawl over related images; develops a network of subject related professionals. The hashtags used retrieved 50 associated descriptors, a search of these descriptors retrieves the workshop related posts and followers of the same interest.
- It was difficult to qualify search results of a hashtag because hashtags are not standardised and cannot be filtered by relevance or popularity this is in line with what Karimkhani (2014) has found. Thus, it is recommended to more control the use of hashtags by using the best match of hashtags (keyword) a platform provides.
- Instagram users were encouraged to post images and comment on them, share their opinions, emotions and attitudes with the related posts by using the assigned hashtags thus sharing the same content. Contributing their interpretations and experiences to people of same interest. The students were able to interact through imagery, making it a means of communication regardless of language barriers.

In conclusion, retrieving data from Instagram by the use of hashtags complements information search and retrieval results but does not set it as a way of a single independent posting and retrieval system. When posting, searching and retrieving hashtags it is recommended that multi search retrieval systems, social media tools and search engines should be consulted to boost and retrieve information not depending on a solo system or tool. Future research is recommended in search for a multi retrieval social media and search engine tool that standardises the use of hashtags and will retrieve information from all different platforms.

References

- Karimkhani, C., Connett, J., Boyers, L., Quest, T., & Dellavalle, R. P. (2014). Dermatology on Instagram. *Dermatology online journal*, 20(7).
- Efron, M. (2010). Hashtag retrieval in a microblogging environment. *Proceedings of the 33rd international ACM SIGIR conference on Research and development in information retrieval*. ACM.
- Efron, M. (2011). Information search and retrieval in microblogs. *Journal of the American Society for Information Science and Technology*, 62(6), 996-1008.
- Highfield, T., & Leaver, T. (2014). A methodology for mapping Instagram hashtags. *First Monday*, 20(1).
- Huang, J., Thornton, K. M., & Efthimiadis, E. N. (2010). Conversational tagging in twitter. *Proceedings of the 21st ACM conference on Hypertext and hypermedia*. ACM.
- Huey, L. & Yazdanifard, R. (2014). How Instagram can be used as a tool in social network ... Retrieved October 3, 2015, from http://www.academia.edu/8365558/How_Instagram_can_be_used_as_a_tool_in_social_network_marketing.
- Manikonda, L., Hu, Y., & Kambhampati, S. (2014). Analysing user activities, demographics, social network structure and user-generated content on Instagram. *arXiv preprint arXiv:1410.8099*.
- Tekulve, N., & Kelly, K. (2013). Worth 1,000 words: Using Instagram to engage library users.