

# **EDUC60610 Research in Digital Technologies, Communication and Education – Literature Review**

***The use of micro-blogging in Education,  
Healthcare and Undergraduate Medical  
Education***

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## Social media, Micro-blogging and Twitter

Social media and user-generated content is now being used as a huge source of information. A term which came to our attention in 2005 (Kaplan, Haenlein, 2010), social media is fundamentally various types of media (text, video, photos) that is freely available and created by you and I – the end-user. Web 2.0 forms the ideological and technological foundation of these sites (Kaplan, Haenlein, 2010) and has evolved from the more static top down Web 1.0 websites.

Micro-blogging usually comes under the term of Social Media in most literature. Twitter is by far the most popular micro-blogging site and allows registered users to send messages publicly (by default) or restricted to just their “followers”. The length of a message is limited to 140 characters. Twitter has 645 million registered users (Twitter, 2014).

A hashtag # is used before a word (with no spaces) to categorise a tweet. By clicking on a hashtag one can see any other tweets with that word included. If a word becomes popular within Twitter it can start to trend, trends can be specified by location.

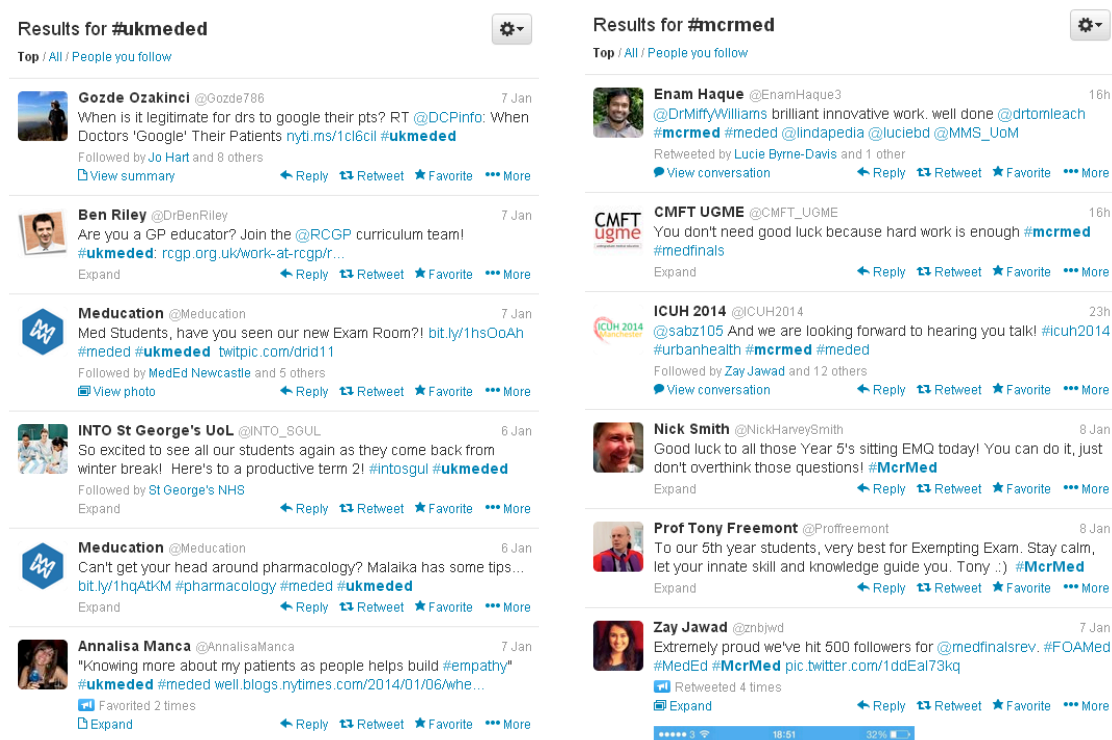


Figure 1 - Examples of Twitter hashtags: #ukmeded and #mcrmed

## **Who uses twitter?**

There are numerous examples and supporting literature to explain why many organisations, businesses, charities, agencies and public figures have joined Twitter, albeit mainly for promotion purposes, advertising, customer service and affiliation. But there is limited research as to who (in society) adopts the technology and in turn why they do. Research has shown (Hargittai & Litt, 2011) that race and ethnicity contribute to adoption although in the context of this review I did not feel the need to explore this further.

## **Micro-blogging in education**

There is no doubt micro-blogging is being used by educationalists in a lot of academic areas. Researchers use it as a tool to communicate to their students and colleagues (Ebner et al. 2010) and Domizi (2013) concludes that it is useful for sharing both academic and personal information. Although in this specific research the numbers are very small, it remains encouraging as the students involved were enrolled on a course relating to pedagogy and course design.

Other studies have concluded that if a technology, like Twitter is positively seen by students and is enjoyable, the adaptability of using it in education can be successful (Saeed & Sinnapan, 2011). There are no firm conclusions however, on how Twitter can be used pedagogically and again, the study involves a small number of students.

As with a lot of technology, the context is massively dependant on the successfulness of its application in education. There are no reasons why Twitter should and will be used in education, and even more importantly that it will be successful just because it is popular. Twitter can be advantageous in some subject areas but in others it could have disadvantages. If teachers want to utilise linear applicative learning, Twitter can be better than the traditional methods of homework and discussions in-class (Kassens-noor, 2012). This study has its limitations, as suggested by the author, once again the size of the study, but also no conclusions are actually drawn as to whether the students' knowledge or retention was improved and fairly general conclusions were shared relating to the sheer popularity of the technology.

A more in depth literature review of micro-blogging in Education (Gao et al. 2012) drew similar inconclusive outcomes; this was due to the differing contexts, small sample sizes and quality. Once again however, it is suggested that there are "immense opportunities to extend learning beyond the classrooms and blur the line between formal and informal learning." (Gao et al. 2012).

Another interesting area that is raised in the literature is the changes to the relationship between teacher and student when micro-blogging is used, and how the credibility of said teacher may or may not improve by the use of the technology. Traditionally the relationship between a student and teacher has built up over time and this is sometimes improved by disclosing personal information (Hosek & Thompson, 2009). With the use of Twitter, this activity

can be quicker and can facilitate an improvement in the student's perception of the teacher as well as increasing trust (Johnson, 2011).

What I have described above is a type of process-orientated learning and there are other examples of how this can relate to Twitter. Students' learning becomes more visible when made publicly online, a teacher can comment and change the direction of the learning, and other students can pick up on this too (Ebner et al. August 2010).

Informal learning is happening using this technology when students and teachers communicate; social interactions take place which are an important part of the cognitive process one goes through when learning. With Twitter, students can use the tool as they wish. Unlike other communication methods, there are no restrictions and the speed of feedback from other students or teachers allows a connection, informally and formally, in turn improving student motivation (Ebner et al. August 2010).

The Ebner (Ebner et al. August 2010) study reveals two clear conclusions, although the micro-blogging tool used in this research was not Twitter, the tool had exactly the same usability and functionality. Again the sample was fairly small at 32 students but the amount of statistical data presented and analysed shows a deeper reflection and in my opinion a much higher quality piece of research than many others. Alongside this and to add more credibility to the author, Ebner has conducted numerous other studies in this area that are relevant but not discussed in detail in this paper (Ebner & Maurer, 2008, Ebner & Schiefner, 2008, Ebner et al. August 2010, Ebner et al. 2010).

The discoveries introduced have been made by others too (Dunlap & Lowenthal, 2009) as well as the ability for Twitter to enhance social presence within an online course, which I have also briefly discussed and will come back to later. I have also concluded that Twitter cannot be used for all instructional situations, and although the technology is freely available on a networked PC it is expected that students would use the technology on their mobile devices which could incur a cost, it is also time consuming and it can distract students away from the actual point (Grosbeck & Holotescu, 2008).

## **Micro-blogging in healthcare**

Although sometimes lagging when it comes to the adoption of technology, parts of the healthcare industry seem to have embraced the use of social media, mainly through better communication to improve quality (Hawn, 2009). Although this paper comes from the US a lot of the basic principles remain the same here in the UK. The reality is, patients are changing the way they access their own care and the use of social media technologies, Twitter is one way they are doing this. Patients are updating their micro-blogs and receiving guidance and encouragement from friends and followers (Hawn, 2009).

Clinicians themselves are using Twitter to promote better clinical practice (Prasad, 2013) and the technology allows clinicians to capture huge conversations in most areas of clinical practice. The numbers too back up the literature; the British Medical Journal in the UK has 103,016 followers,

BBC Health News 615,314, the Nursing Times 43,746, NHS England 21,666, NHS Choices 111,449 and most NHS organisations have a Twitter account promoting health and clinical practice. Clinicians are also using Twitter to promote the benefits of social media itself (Hawn, 2009).

All the elements discussed so far highlight improved patient empowerment. Not only are patients communicating more directly with their clinicians, they are also communicating with others with similar diagnoses and caregivers too are included in the conversation (Hawn 2009, Prasad, 2013).

Twitter is used extensively across the world at healthcare conferences, and by using hashtags organisers can disseminate information and communicate with colleagues. The benefits of this are not only for those attending the conference but also those who are not. There is research to show an increase in the number of interactions at a conference (McKendrick, Cumming & Lee, 2012) and the benefits of such are discussed, however, the details are not described and there is no definitive data or explanation of the benefits to the participants in this particular study or within any I have found. In fact it was concluded by Ebner et al. that a Twitter stream at a particular conference had limited usefulness in regards to participants who were not attending (Ebner, Mühlburger & Schaffert, 2010).

Of course there is evidence to suggest there are many disadvantages of using micro-blogging in healthcare; we cannot look any further than patient privacy, ethicality and practicality.

A lot of the research does highlight these disadvantages whilst offering recommendations – patient privacy is a key conclusion. Understandably, both patient privacy and confidentiality should be preserved and permission should be sought if posts are made online (Boulos, Maramba & Wheeler, 2006). Users should also be aware that even though the term private may seem secure, when online it is often not the case. Extra care must be taken and users should be aware that whatever they post online can remain there indefinitely (Prasad, 2013). There is no evidence in these two articles or the others I have investigated to suggest that patient privacy issues are being sacrificed to a great extent, although the media does highlight the small number of incidents that have happened.

There is also an argument to say that just because patients use Twitter this shouldn't necessarily mean clinicians should follow suit. Due to the large amount of people using the technology the difference in access to healthcare information could increase dramatically between one individual and another. The digital divide is also a factor as older generations tend to not use such technology (DeCamp & Cunningham, 2013).

Most of the literature I have investigated discusses the clinicians' role in the 'online relationship' between them and patients and how professional and ethical awareness is noted. There is strong evidence to suggest that there is disagreement amongst clinicians that communicating with patients online is in fact ethically unacceptable (Bosslet, Torke & Hickman et al. 2011). This study is a considerably detailed piece of work, again conducted in the US, the participants and sample is particularly appropriate in my review. But a drawback of the study as with a lot of studies involving medical professionals is the low response rate, it does however pay particular

attention to the high usage of social media amongst medical students which is particularly relevant in the final part of this review.

Unfortunately for the clinicians in the UK there is also disagreement and a lack of clear guidance as to whether he or she should separate their personal and professional accounts on Twitter which has therefore resulted in clinicians choosing not to participate at all, and this will continue until it becomes normal amongst their peers (DeCamp & Cunningham, 2013). This is a valid conclusion to this paper although as far as I'm aware there is no actual evidence to suggest this.

The practicality of using Twitter may seem an unlikely disadvantage but put into the healthcare context we can discuss a number of potential areas of concern. The content that clinicians post online can negatively affect how much they themselves are trusted, the organisation they work for and the profession as a whole, which could of course reflect badly on their reputation and career progression (Prasad, 2013).

## **Micro-blogging in Undergraduate Medical Education**

The vast majority of medical students are part of the millennial generation. "The millennial learner is reliant on technology to gain knowledge" (Bahner et al, p1, 2012). Essentially, Twitter allows undergraduate medical students access to more information than they realise, it is not only used to publish information but to digest and take information in.

Interestingly, a study by Sandars and Schoter (2007) identified a high level of familiarity with the technology in 637 medical students; it however concluded that there was, at the time, limited value in relation to Medical Education. An important point is made though - increased training in the technology is required for this to improve. I think it is important to bear in mind the timing of this study however, as I have discussed the growth and popularity since then as being extraordinary so the training needs may have now been reduced to the number of students engaging with the technology.

A later study by Sandars, Homerm Pell & Crocker (2010) revealed that a higher percentage of students use the technology – as much as 70% and a conclusion was drawn which I feel is very important. The use of Twitter should be integrated into current curricula and more importantly with their virtual learning environment.

There are successful examples of Twitter being used in medical education (Bahner et al, 2012, Cartledge, Miller, Phillips, 2013, DeCamp & Cunningham, 2013, Weberg, 2009,) with student feedback often more positive than negative. It is important to note that in the first of these cases a curriculum specifically for Twitter was created and used as a supplementary course. The others, whilst not as rigorous pedagogically, were still deemed to be a success by users.

There is no shortage of UK guidance and policy on the area of social media, 'Doctors' use of social media' (GMC 2013) being one example of this, although one US paper suggests that not enough Medical Schools have a social media policy or that it is not 'freely' available online (Kind et. Al, 2010). Guides produced by clinical colleagues are becoming more relevant, two of

interest (DeCamp & Cunningham, 2013 and Forgie, Duff & Ross, 2013) outline similar suggestions: connection, engagement, informing, challenging, leading, reflecting, learning, sharing and inspiring are all words used that can be linked when Twitter is used, it is noted that the authors are all medical educators.

I believe Twitter is the only adaptable social media technology in which a learner has full control of their own learning and in my opinion it is the most obvious social media technology that can be linked successfully to medical education, especially if we draw on the conclusions made above. Forgie et al describe in one of their twelve tips: “There are many opinions and ideas about Twitter and very few studies examining appropriate ways and times to use it in any type of university level education (including medical education).” (Forgie et al. P 12, 2012) Although this may seem obvious, users must analyse and evaluate as to whether the information presented before them is worth consuming and more importantly if they can trust it. (Forgie, Duff & Ross, 2013)

I discussed the disadvantages of using Twitter in healthcare earlier and most of the issues are just as relevant if not more when it comes to medical education; professionalism is one in particular I feel is worth highlighting. There is literature to suggest that there is no conclusive evidence to suggest any major problems with this (Cartledge, Miller, Phillips, 2013), it should be noted that this is a high quality large sample literature review and again with suitable training and improved awareness I agree this should not be an issue.

This review has raised many questions for me personally but the one I would like to present is this: Can micro-blogging improve the connection between Manchester Medical Students and the University of Manchester Medical School?

***By submitting I confirm that this assessment is my own work. Michael Masterman***

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