

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

***Pilot study - the use of micro-blogging (Twitter)  
in Undergraduate Medical Education at  
Manchester Medical School***

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## **Background**

Medical Education in Manchester is both an innovative and challenging area of education. Students are introduced to complex physiology in somewhat difficult situations and contexts, and in most cases removed from the actual institution they originally joined at the start of their course. The MBChB course at Manchester is five years long and for the last three years students are placed within one of four base hospitals; Central Manchester University Hospitals Foundation Trust (my place of work), Salford Royal, South Manchester and Preston. Even though geographically they may not seem too far from the main University campus (Stopford Building, Oxford Road) there is a common feeling that students do not feel connected to the School and thus feel isolated and 'just another number'. The issue is regularly raised in student feedback and evaluation including the National Student Survey (NSS).

Some work has been undertaken to try and rectify this but the results are yet to be published. One solution was to give all Manchester Medical students in the base hospitals (Years 3, 4 and 5) a Apple iPad tablets at the start of the 2013/14 academic year with specific Medical School related content and applications.

Twitter has a number of affordances, especially in Education. Twitter is positively seen by students and is enjoyable, thus the adaptability of using it in education can be successful (Saeed & Sinnapan, 2011). Having used Twitter in a personal capacity and becoming more familiar with both the advantages and disadvantages I wanted to explore the possibility of using it within the Medical Education field I work in.

The use of Twitter in Medicine is still emerging but there is research to suggest that there are some successful examples (Bahner et al, 2012, Cartledge, Miller, DeCamp & Cunningham, 2013, Weberg, 2009) this leads to a number of questions from my perspective and although there is some evidence to suggest that the technology can be used as part of a Medical course curriculum I'm yet to be convinced that this is more beneficial than another appropriate learning environment.

I do however, feel that the technology may offer an appropriate means of communication and to some extent enable an opportunity for an improved connection to the Medical School and key academic staff, as well as providing opportunities for students to connect with peers and colleagues.

The Medical School has a presence on Twitter, as do the clinical Head of Undergraduate Education, a number of other academic staff, key tutors and a large number of students across all five years. How they use the technology does vary dramatically. Trying to understand this and their perception of the technology is of interest to my employer, the Medical School, Hospitals where students are based and professional bodies like the General Medical Council and the International Association for Medical Education (AMEE).

My personal association and use of the technology has of course been a major driver in developing this idea and on the back of this I created a specific Undergraduate Medical

Education at Central Manchester Foundation Trust ([www.twitter.com/cmft\\_ugme](https://www.twitter.com/cmft_ugme)) Twitter account to gauge the amount of interaction with students and health professionals. The account now has 591 followers and has enabled a number of conversations and opportunities to engage with a varied amount of people. These have included students, health professionals, NHS and University staff.

The popularity of certain hashtags has also raised questions for me. #FOAMed for example is a Free Open Access Medical education hashtag that has enabled a huge amount of discussion and resource across the world and has brought together senior clinical colleagues with their peers and there are some examples of student engagement too. #UKMeded enables collaboration for specific UK based medical education discussion and provided me with a connection to a number of innovative educators, those of which I have not been able gain access to prior to the use of the tool.

These affordances and a deep literature review resulted in a number of potential research questions:

- Should Twitter be used in Undergraduate Medical Education?
- Can Twitter improve communication within Undergraduate Medical Education?
- Can Twitter improve the connection between Manchester Medical students and the school?
- Can Twitter be used to facilitate case based discussions in a positive way?

## Research methods & instruments

My research method was a questionnaire, with my instrument being an electronic questionnaire. The questionnaire was distributed to nineteen colleagues who work within the undergraduate medical education department at Central Manchester University Hospitals Foundation Trust, the questionnaire gathered 15 responses (78% response rate). The questionnaire can be viewed here: <http://goo.gl/MdlxKU>

The choice of a questionnaire was a simple one – in terms of practicality, the proposed dissertation data will need to come from a whole range of students who are based across the four hospital sites and in order to capture this I propose to use the eForm application that **all** Manchester Medical students are familiar with and have used (this is a bespoke piece of software that has been developed for MMS). In order to do this I needed to present the questions for my pilot study in a ‘normal’ online questionnaire, I could then distribute this to colleagues who do not have access to the iPad eForm technology. An example of an eForm is provided below:

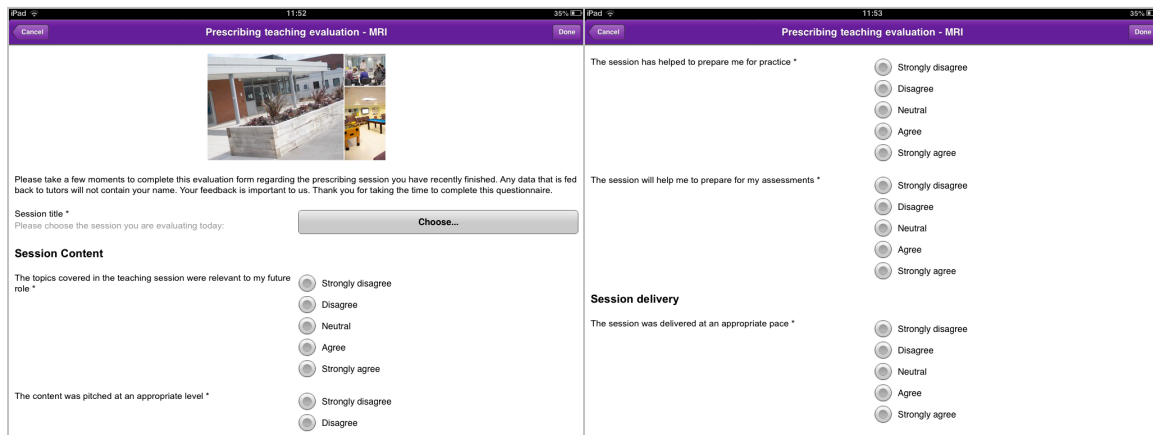


Figure 1 – Example of eForm that will be used in larger data capture

Even though this is a pilot study, I believe the participants are still important here. Colleagues work with Medical students on a day-to-day basis and provide expert knowledge and experience and give important context to questions I raise. The suggestion is made that a large number of undergraduate medical students and potentially tutors would be surveyed in future which would provide a considerable amount of research data. At the very least a number of students from each of the hospital sites would provide an appropriate sample in a future study.

Medical students are regularly required to complete a number of lengthy questionnaires throughout their time on the course; from portfolio type activities, to evaluation and assessment (see above example). There is an understanding that students’ maybe ‘over surveyed’ and this provides me and others with a challenge when trying to get a positive and worthwhile sample. I wanted to present a questionnaire that is fairly quick and easy to complete whilst collecting useful and meaningful data. By providing an introductory note and where

possible keeping free text to a minimum, I would like to think that this offers a different type of questionnaire experience.

The design of my questionnaire was an important process, whilst asking specific questions about the use of Twitter in a specific context I wanted to understand the levels of understanding and knowledge of the tool. The questionnaire has two sections; the aim of part 1 of the questionnaire was to obtain information on participants' awareness of Twitter and to try and understand their level of understanding in terms of using the tool and its features.

Part 2 is asking more specific questions in relation to the use of twitter in Education and Undergraduate Medical Education it will hopefully provide some insight into the ways in which people think the technology could and should be used, whilst understanding the potential barriers faced when using such an innovative technology.

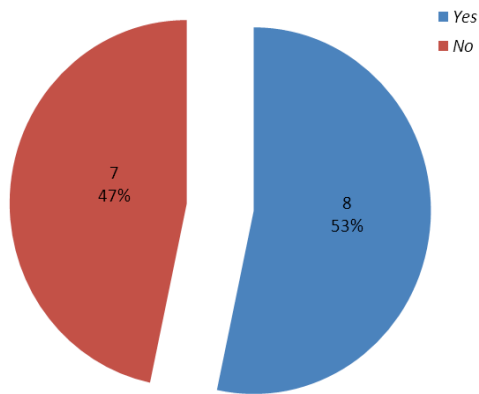
I have made a conscious decision to make all but one of the questions compulsory to answer to ensure all participants complete the questionnaire in full. The final comments question is not compulsory as I don't think it's appropriate for a participant to be expected to complete this when they may have no or little knowledge around the subject.

My overall aim for the questionnaire is to gain an initial understanding of the awareness of Twitter amongst the responders - how much they know about certain aspects of how the technology is used whilst also trying to understand both perceptions and beliefs around the affordances of the technology, specifically related to Medical Education but also to compare this to other areas of education. I hope this comparison can provide me with more areas of exploration and indeed a general understanding as to whether the technology can be used in this specific context.

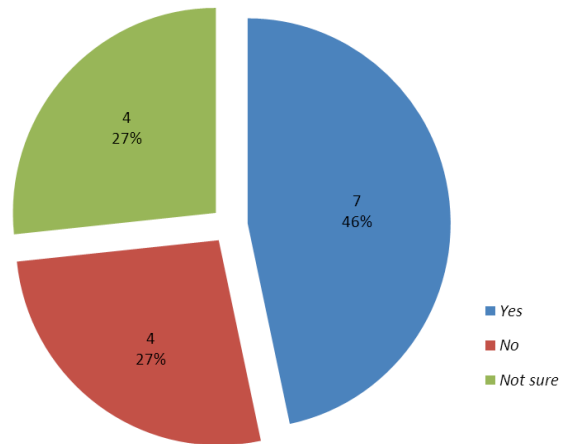
## Results and discussion

My analysis starts by trying to understand the level of knowledge about the technology. The results provide an overview and some important conclusions. I will be presenting the results by using mainly descriptive statistics.

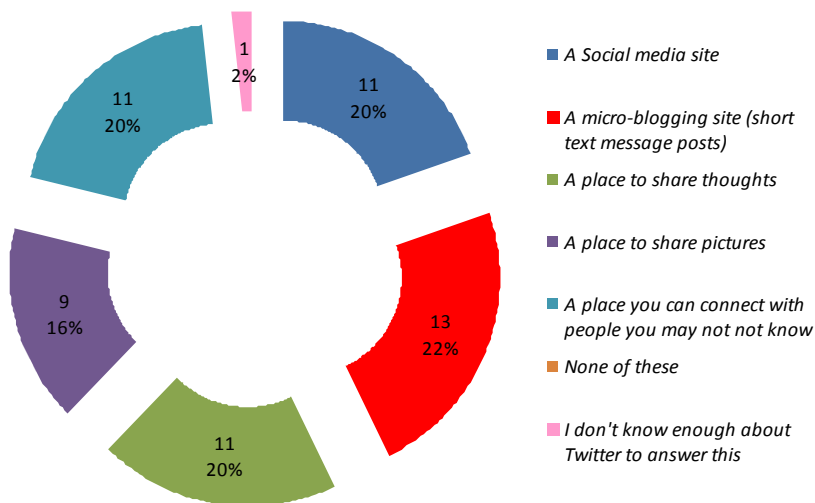
Do you have a Twitter account?



Do you have to have a Twitter account to look at other peoples Tweets?



What is Twitter?



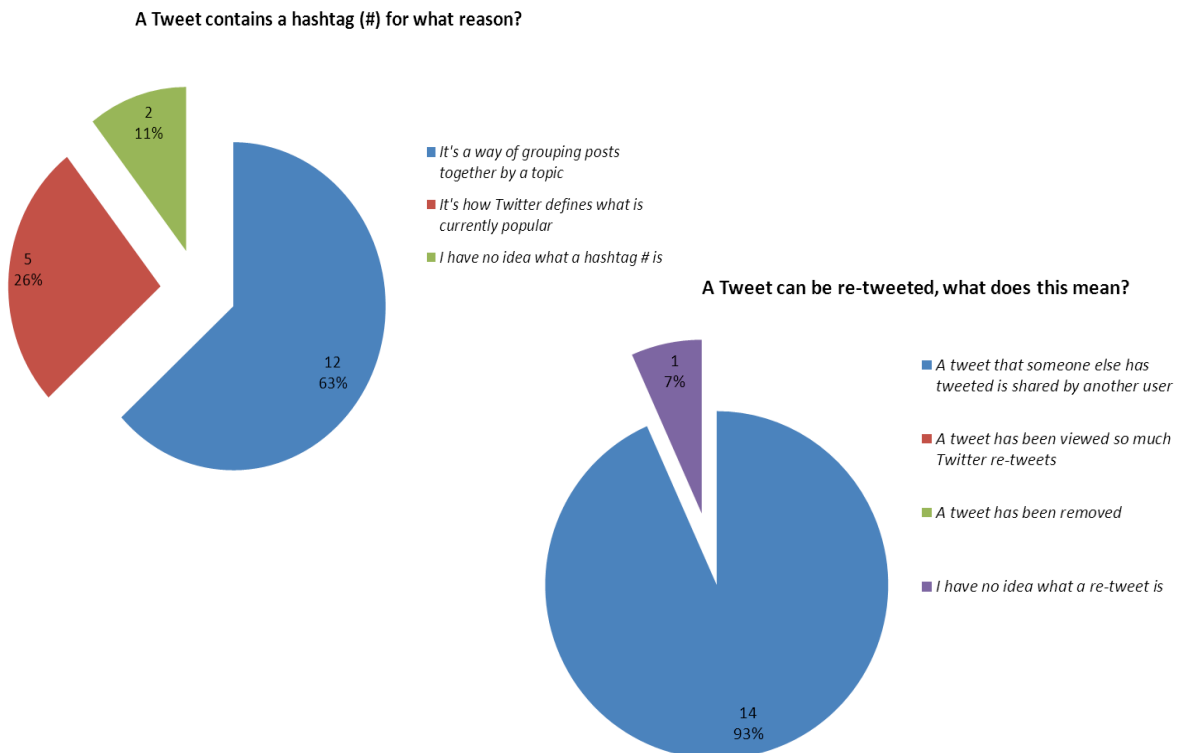
It is interesting to note that although 53% have a Twitter account nearly half (46%) think that you need to have an account to view tweets. One could argue that this may be due to the fact that to use Twitter via a mobile device application a user does require registration. You can however, view tweets via a browser without registering and this I think is an important conclusion, this could be a fundamental education to the affordance of the technology in this

context and may have an affect as to whether people will use the technology in certain situations.

There is a fairly even split of responses to the question ‘What is Twitter’ this puts some of the later responses into consideration as there is a familiarity to the technology although not all of the participants own an account. This would suggest people are either using the technology in the way I explained earlier or the sheer popularity of the technology and presence in our day to day lives has introduced the terms to people who don’t really engage with it and even allow an understanding of the potential uses within education.

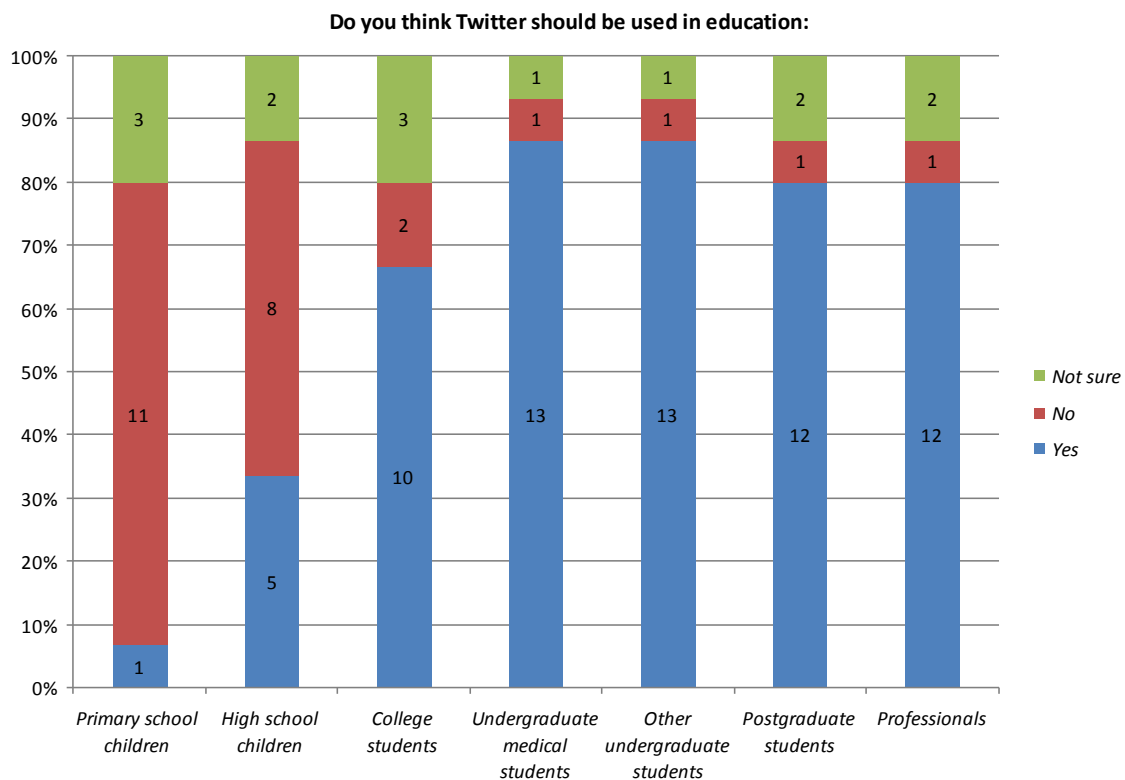
With only one person answering that they did not ‘know enough about Twitter to answer this question’ I was keen to look at how the other participants responded to this. This question allowed for more than one answer from the participants, 13 out of the 15 (86%) choose the ‘official’ definition of the tool, although more pertinent in this study was that 11 out of the 15 (73%) said that it was ‘a place you can connect with who people you may not know’ and ‘a place you can share your thoughts’.

As discussed earlier a number of medical education related hashtags (#) have become popular and used by a range of medical students and professionals. I therefore decided to explore whether the group understood the term and how it is used whilst also identifying if people understood the re-tweet term.



Although there is a recognition and awareness of the technology, it was of interest to see if people knew certain Twitter specific terms. 20% of people said they were unsure of what a hashtag is, with two people responding in the survey and one giving a free text comment saying “Don’t know why It is used” whilst 80% identified it as a way of grouping messages. Twitter does use hashtags to define what is trending but it also uses words within a Tweet to do this too.

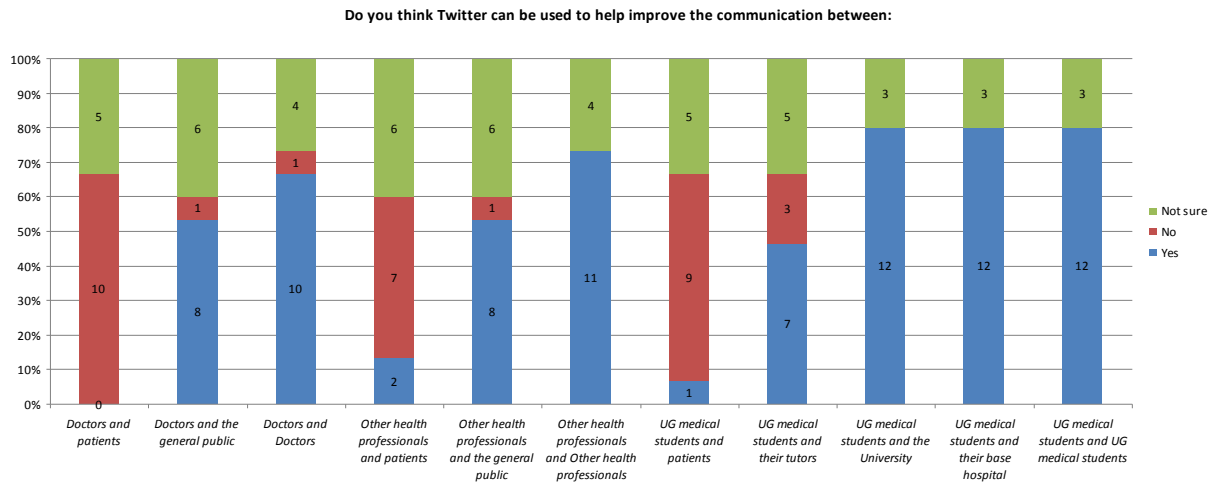
Almost all responders (11, 93%) were aware of the purpose of a re-tweet which is rather surprising given the other responses I discussed earlier; one could argue the wording of the question may have affected this. I will discuss this further in my reflections but this could also be due to the raised awareness generally which I touched on earlier.



Using Twitter in other educational contexts was an important question for me to ask as I was hoping to gain some understanding of how participants view the possible affordances. The results provide clear conclusions and most interestingly the number of participants who felt it should be used with both medical students and other undergraduate students is the highest, at 87%.

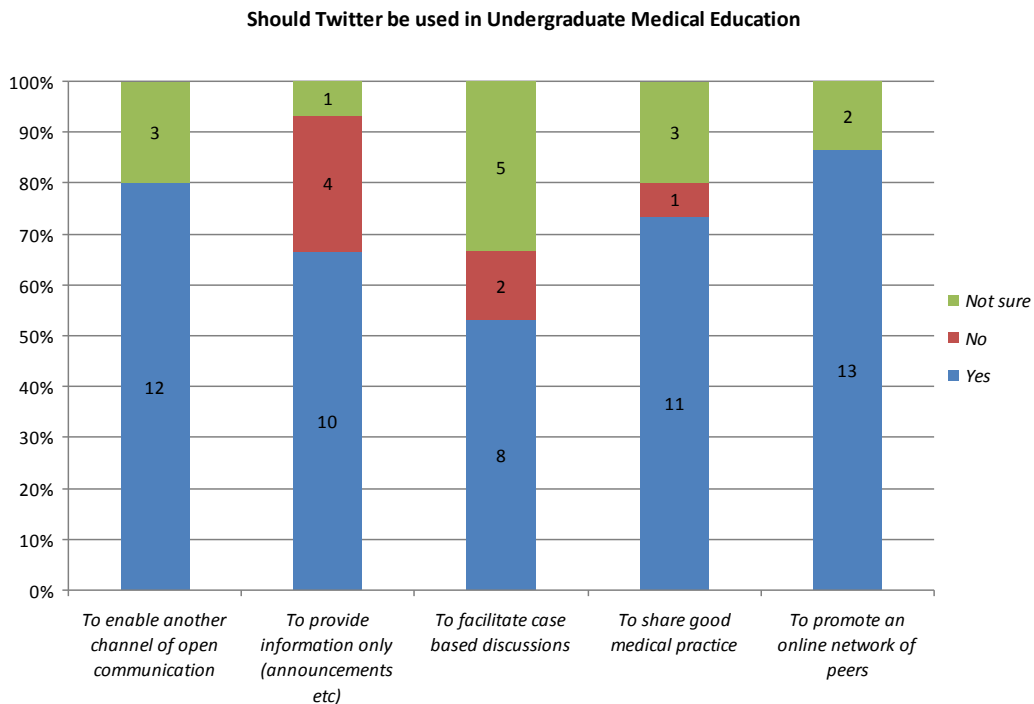
Given the concerns around internet security and the number of stories in the media about child abuse online I’m sure some of the results above highlight some of these concerns, the comparisons are quite clear though in terms of the use from ‘formal’ education onwards.





Here I wanted to see if participants had a view on the different affordances and the use of Twitter as a communication tool across a range of scenarios, the results again are insightful. There is clearly an awareness of the technology and it's potential to help communication but more importantly it raises obvious concerns around Doctors, health professionals and students communicating with patients via Twitter, again something which could be interrogated by further research.

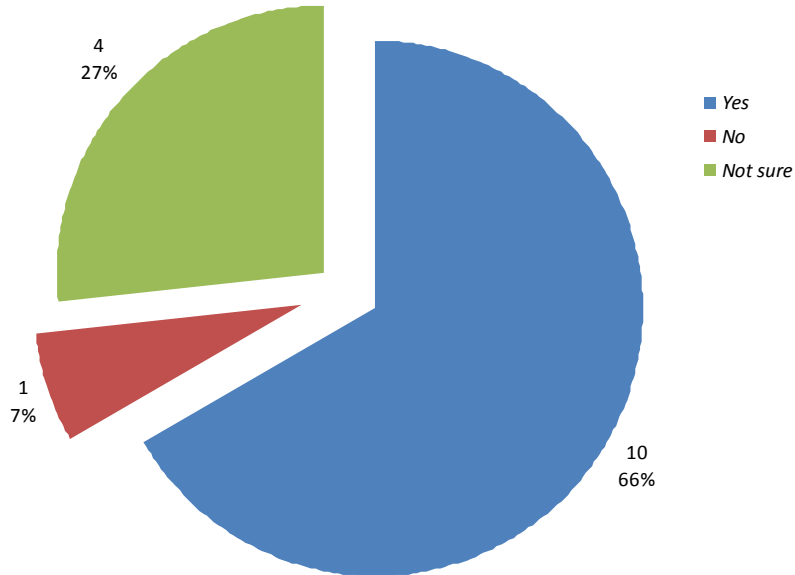
Another clear conclusion is that colleagues feel Twitter can improve communication specifically in relation to undergraduate medical education, thus answering part one of my principal questions. This again raises more exploratory questions which I will discuss in my reflection.



One of the most prominent current uses of the technology in Medical Education is to facilitate case based discussions between medical educators and students, this provides students with a learning tool they can dip in and out of and although this raises some professionalism concerns there is no conclusive evidence to support this is exactly the case (Cartledge, Miller, Phillips, 2013).

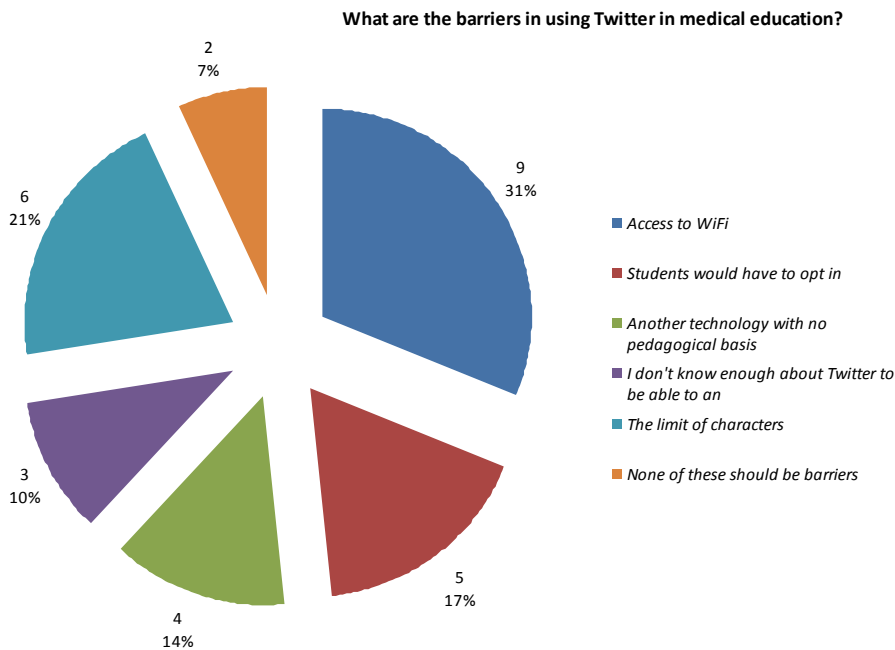
The pilot group results show that Twitter can ‘enable another channel of open communication’ and ‘promote an online network of peers’ and this is particularly important in relation to my initial research question. Although it is also valuable to see that the results for this are more varied to others, this is another area that can be explored in much more detail I feel. I would be particularly interested in discovering why people do not think the technology should be used to provide information only as this will be quite important element if the technology is used to improve the connection between students and the school.

**Do you think Twitter can improve the connection between students and MMS?**



This was my principle research question and although not conclusive, this data is still of real value and provides the opportunity to develop some stronger ideas around the application of the tool to improve connection. There is understandably a certain element of caution that comes with answering this question and an assumption could be made that would link non Twitter users to those who are 'Not sure' about its potential to improve the connection. Again this is something to reflect on, analysing individual responses is an area that could provide some useful results.

Having questioned the potential usage of the technology I wanted to understand any potential barriers.



I think this shows there are concerns with using the technology within medical education, with only 7% thinking that there are no barriers, access to WiFi also seems to be an issue which personally I find very surprising due to the availability nowadays. However, availability in the hospital setting is somewhat different and can be limited especially in clinical areas so this may explain this result.

The limit of characters one can include in a Tweet seems to be another area of concern, and due to the complex nature of medical education and terminology I can understand why this has been raised. If we are relating this to the main research question though I don't feel it's as appropriate. Five people think that 'students having to opt in' is a barrier and to a certain extent I understand that, however one could argue that students would not have to 'opt in' to anything as the technology is open to all, even if you have not got an account. There is an exception to this where users can be private and thus only registered users can see their Tweets.

I concluded my questionnaire with an open question "Any general comments about using Twitter & Undergraduate Medical Education?" and although this was not a compulsory question 7 out of the 15 (46%) participants responded to this question and I feel this certainly shows a level of engagement within the subject, some of which may not have been there prior to this questionnaire.

*"In my opinion twitter is good in the context of knowledge management where student can share and transfer knowledge between students and the other professionals in the area of medical science in order to improve patient treatment. Also, twitter is good in the sense that it can improve communication between student peers but not patient due to confidentiality and data protection rules."*

*“A useful tool of communication to guide students to resources and to trend events and for quick communication. Should not be used in conjunction with patients ever. That has to be formal and thorough to ensure that all information is provided and all procedures etc correctly followed.”*

*“Confidentiality issues, especially around patients”*

A number of responses acknowledge the relationship to patients and the importance of confidentiality, this is a theme that runs through all of the pilot data.

*“Very interesting topic for the questionnaire; it's made me curious about the use Twitter for education - I may even set-up a Twitter account to get a better insight. I have not done so previously as I find Facebook takes enough of my time already, but I appreciate that their maybe benefits for using Twitter. Had you also thought about using Facebook for your pilot or are there obvious reasons why you did not. Very curious# 4. Is there a limit to the number of characters you can use in a Tweet?\*” [sic]*

*“I think that microblogging is a great way of sharing very current information whether it is announcement or practice (link in to articles) however it should never be the only way” [sic]*

There is recognition of other social media here but personally I think they are two different technologies with different affordances. Both of these responses suggest a positive attitude towards the technology.

*“There is often a gap between tutors and students in how well the technology is grasped and used. Older generations may seem a little hesitant. The twitter messages would have to be used responsibly; there have been incidents where professional boundaries have been crossed.”*

*“I don't feel twitter is a reliable method of disseminating vital information e.g. announcements etc, rather it serves to act as a thought-provoking medium where the quality of posts is higher than via other social media.”*

Two interesting points here, the first is relating to senior colleagues and usage whilst both draw on potential barriers and highlight valid areas of concern, specifically around the validity of posts.

## **Reflection**

The process has been incredibly useful. The pilot data has provided me with a whole range of further questions and areas of exploration whilst probably, more importantly, concluding that this is an area is worth exploring further, yet it also provides a number of challenges and issues.

It has been noted that timing is key, I did not consider holiday periods for the people I surveyed and this could have been an issue had I not had been able to chase the small numbers up

explaining the importance of completion. Something I must consider when deploying questionnaires and organising potential interviews, especially with students.

A number of reflections have been made in regards to specific questions, which is valuable for future work. Although I asked if people have an account I probably should have included another question to identify whether participants access the technology anonymously (un-registered). Un-registered users would not be able to see Tweets from some users who have made their account private. I think this could be an important question to raise in relation to the fact you cannot expect all students to register for an account that is not part of the University.

The 'Barriers to using Twitter in Medical Education' should have included access to a mobile device, however as I know the medical students all have been given an iPad as part of a Medical School Project I assumed this was not necessary but on reflection a further barrier could be access to a 'suitable' mobile device.

I asked if Twitter could improve communication in various contexts, I would want to explore this in more detail and try to develop an understanding as to exactly how participants feel that this could be done and for those that are not sure why this is the case, does this have any relation to their usage of the technology? I would need to follow this up with potential interviews or even an observation exercise; I feel this could add real value to the data.

One responder suggested a change to the layout of the questionnaire "Question Number 4 should perhaps have a not sure option? I had to guess my answer." On reflection it is essential to ask someone else to proof read the questionnaire prior to deployment, especially if a larger number of responses are expected as mistakes and poor design can lead to the questionnaire lacking credibility. Unfortunately my personal assumptions of the technology may have affected the design of this question.

The initial part of my questionnaire was to try and understand the knowledge of the cohort and how this may relate to the questions about the linkage between this and it's affordance in education within specific emphasis on Undergraduate Medical Education, on reflection I need to be able to understand how deep I want my analysis to go.

Another reflection would be to ask a more specific question about the usage of Twitter for users, which could be done by exploring responses and following up with a structured interview to gather more data about the usability, I really want to discover other techniques to collect data after the pilot data has drawn some flaws and certainly some areas I want to explore that cannot be done via the use of a questionnaire. I will certainly need to follow it up with some more in-depth interview or observation work.

In summary there are definitely more definitive questions I need to ask, whether this be through a longer questionnaire or a structured interview I'm still unsure, maybe this depends more so on the availability of my target group and to some extent their geographical location, although a Skype interview could suffice.

Having analysed the data in relation to the specific research question I am considering exploring another area of Twitter and analysing the actual usage of the tool already. I mentioned specific hashtags and one in particular is #McrMed I will consider doing a content research project based on this data to hopefully understand how much it is being used, what for and maybe even why?

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

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