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Opinion article: Blogs and podcasts in medical education

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ABSTRACT

Within the last years new online resources such as blogs and podcasts are making their way into medical education. With the introduction of the internet in the last decades, the field of medical education and training has also changed. Consumption of information independent of time and location through blogs and podcast is now a part of everyday life. The FOAM ("Free Open Access Medical Education") community in particular is playing a pioneering role here. We discuss the roles of blogs and podcasts in medical education and possible applications such as the "flipped classroom" concept. We explain the many advantages, like their function as a filter against information overload or their role in the so called "knowledge translation gap" but we also highlight points such as a cult of personality that should be viewed critically. Last but not least, we describe the reasons why we run a blog ourselves and the challenges we face.

1. Introduction and problem overview

We are convinced that the majority of this article's readers probably have looked up medical information on the internet at some point and might have come across a blog or podcast during his or her search.

The Internet has changed everything. The way we interact with each other, the way we do business and the way information is spread. It impacts our everyday life as hardly any innovation before. With information being available 24 hours a day, 7 days a week and simply needing a smart phone in your pocket, it is not a surprise that things have changed a little bit in medical education as well.

In earlier days textbooks were the go-to resource to look up medical knowledge. Nowadays almost any information can be found online.

Although we still believe that textbooks need to be studied and internalised during training, one should also be aware that during the process of writing a textbook until its publication, information might already be out of date.

Nowadays, asynchronous learning -learning independent of time and location and also independent of conferences, courses or journals-is not only possible but probably also part of a self-determined life and therefore particularly popular with the young generation of medical professionals. Within the last ten to fifteen years possible adjuncts to conventional medical education such as blogs and podcasts have also arisen in medicine and are most probably here to stay. Especially the FOAM-community plays a leadership role when it comes to the usage of online resources in medicine and medical education.

2. What is FOAM?

FOAM stands for "Free Open Access Medical Education" and is a collaboration of users and creators of blogs, podcasts or any other educational online resource: "This FOAM community is bound by the loosely woven philosophy that high-quality medical education resources and interactions can, and should, be free and accessible to all who care for patients and especially those that teach others the art and science of medicine" [1].

3. Information overload

A problem we are all facing is the enormous speed at which new literature is published. The inability to stay up to date in every possible aspect of our medical profession is, at least for us, a relevant problem. Several, most often very extensive, guidelines relevant to our daily practice are published each year, and the amount of information is sheer overwhelming. It is difficult or rather virtually impossible to keep up with current literature in times of high workload and limited timely resources. The number of new

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articles published every day has long exceeded the readability and processability of human knowledge in many areas. We, therefore, need and already use human filters, such as recognized specialists in a certain field, in order to be able to consume selected medical information according to their recommendations. As knowledge is available online nowadays, it is obvious that similar processes also take place on the Internet. In recent years, some blogs and podcasts within the FOAM community have definitely become a filter in this field. The results are more easily consumable and appealing than anywhere else. On the other side, just as with experts in “real life”, they are also “eminence-based".

Due to the popularity of some protagonists, opinions in blog posts or podcasts are sometimes rated higher in discussions than a randomized controlled trial or established guidelines. As long as selfies with prominent representatives of the FOAM community at congresses such as SMACC (Social Media and Critical Care) enjoy almost the same popularity as selfies with pop stars at pop concerts the danger of a cult of personality cannot be ignored. However, it is always one's own responsibility whom to trust and who not to, be it in everyday life or online-the same rules are applied online as offline. A topic that has already been addressed in several podcasts [2].

4. What are podcasts and blogs?

Usually, podcasts are defined by Wikipedia as “an episodic series of digital audio files which a user can download in order to listen to” [3]. The first podcasts came up in the early 2000s. But at the latest, when more than 40 million people listened to “Serial”, an investigative journalism podcast in 2014, podcasts had arrived in mainstream entertainment. In 2018 this podcasts reached over 340 million downloads, being one of the most popular podcast so far [4].

However, we believe that it is just a matter of time before podcasts become mainstream for healthcare workers as well: Probably the most popular podcast in emergency medicine, the EMCrit Podcast, has surpassed 30 million downloads in 2018 [5].And this kind of education may already be reality, at least in those fields where blogs or podcasts are available and of good quality. Almost 90% of emergency medicine residents in the United States of America listen to podcasts at least once in a month, which is more time than they spend on consumption of other educational materials and its impact is also quite astonishing: almost three quarters of residents responded in a study that podcasts changed their clinical practice either “somewhat” or “very much” [6].

Blogs, on the other side, are written texts on a website, unusually in a more informal style compared to scientific journals. Since the founding of the FOAM-community in 2012 hundreds (460 to be exact) of blogs have evolved and the ones we are aware of and interested in, cover mostly high acuity settings such as emergency medicine, anesthesiology or intensive care. In 2018 blogs were written in 16 different languages in 40 countries and are read all around the world [7]. So we believe blogs and podcasts are here to stay.

5. Knowledge translation

In 2001 it was described that the attempt to apply high-evidence information into our daily practice was rather unsuccessful. There are many barriers to be overcome to get new evidence applied. The time from submission of an article with new findings to the actual application in practice amounts on average 17–23 years [8].

Knowledge translation, the process of transferring high-quality evidence into clinical practice as described by Lang, Wyer and Haynes consists of two major categories: “Getting the evidence straight” and “getting the evidence used” [9]. In the latter part blogs and podcast might play a role and might help to shorten this gap: by the low-threshold and simple access (all you need is a smartphone), which is possible around the clock, from almost every point of the world free of charge for everyone, scientific results can be spread faster [10].

Usually, new evidence is spread by a frontal lecture, supported by more or less well-designed slides or printed handouts. But it is also known that this widespread mean of teaching is one of the least effective: “Didactic sessions alone are unlikely to change professional practice.” [11]. On the other side, when new guidelines or studies are published they are usually picked up and discussed by the FOAM-community very fast. For example, when the vortex approach or articles on apneic oxygenation were published dozens of blogs and podcasts talked about those articles within hours or days-some highlighting the most important take home points, some interviewing the lead-author, others critically appraising the studies [12,13]. And all that in a usually more appealing way than a traditional lecture or talk at a conference. The speed at which FOAM content is created is stunning: Content is usually produced and published by individuals or small groups in an incredibly short time-a pace traditional journals cannot keep up with. Even with an everyday smartphone and some technical aids, acceptable audio and video quality are achieved. These new media adjuncts help us stay up to date and inform us about important changes within our specialty and could help shortening the so-called knowledge translation gap.

6. Pros and cons

So, what are the advantages and disadvantages of online resources in our opinion?

As mentioned above, we consider the filter function and the speed of information dissemination as clear advantages.

Another advantage of this method is that learners can self-determine their study process. Topics can be reviewed at their own pace, videos or podcasts repeated as many times as needed, and information searched on the Internet if necessary-until the material is fully understood.

An important question for any of these modern, online resources is, how high quality without classic peer review (which is flawed in itself) can be guaranteed?

As a consumer it is indispensable to critically analyze FOAM content, to question it and to discuss it with your experts at home. As blogs and podcasts are not peer-reviewed, they cannot be considered as scientific research. “Instead, FOAM is a useful way of disseminating, discussing, dissecting and deliberating over the products of that research – as well as exploring issues where research findings do not apply, or simply do not exist.“ [1].

For the quality assessment one can take the referencing, the reference to classical studies as a basis. In addition, the size of the blog is also a good indication. The more people discuss and read along, the better.

When we write a blog post, we, of course, have our article corrected both among ourselves and, if available, by trusted experts before it is published. The most important peer review, however, takes place in many blogs only after the content has been published. The so-called post-publication peer review takes place: The readers of the article discuss, supplement and provide their own input. This swarm intelligence has already led, among other things, to a blog post initiating the correction of an article in the New England Journal of Medicine [14]. This highlights why it is important and an integral part of FOAM to participate actively and, above all, critical discussions of the contributions are essential. Another quality marker ist the so called Social Media Index. According to the impact factor in scientific journals, the Social Media index was designed as an indirect quality feature for blogs and podcasts

[15,16]. In this, Alexa rank, Twitter followers and Facebook Likes are included and can be an indication of the quality of the site.

However, just as quickly as blogs or podcasts are launched, they can also disappear. Websites and media production cost money and as financing via advertising is widely rejected within the FOAM-community. Independent financing models are difficult to implement, and so the costs are usually covered by committed private individuals who are enthusiastic about this concept. In terms of consistency FOAM cannot yet compete with traditional journals.

7. Conventional teaching and web based learning

We find it important, however, to stress that in our opinion, blogs or podcasts can (and should) never replace conventional teaching methods. They can only be seen as an adjunct. Discussions, workshops,bedside-teaching, simulation, learning basic knowledge from textbooks or critically appraising articles in peer-reviewed journals are still the foundation of a good training program.

As blogs or podcasts mostly provide an unidirectional mean of knowledge transportation (apart from the discussions in the comments), we believe, they cannot take sufficient care to ensure that information has been properly understood and processed.

They may be good in providing knowledge, but they are not able to assess a students real-life and hands-on performance. Questions, feedback and physical training are immensely important aspects of teaching and can only be the responsibility of a supervising doctor via face to face interaction.

A way blogs and podcasts can add value to teaching is by using those resources either to provide knowledge beforehand (e.g. within the setting of a workshop) or in innovative training concepts such as the so-called “flipped classrooms”: Flipping the classroom means that the information is studied at home beforehand and then its application is discussed later in the classroom (not vice versa as usual). In the presence phase, questions that have arisen during preparation can be answered by the teacher and clarified. This leads to more time in class or more hands-on time during workshops. The teachers are responsible for providing the materials: YouTube or FOAM have been offering these materials for free for a long time, and even curricula at universities have used those resources as teaching material.

8. Conclusion

Yet, it should not be forgotten, that the creation of FOAM content, be it blogs, podcast or any educational material for that matter, requires significant personal dedication and more specifically time. The motives behind this in the busy life of a modern-day clinician can be different and are typically distinct from motives for publishing in classic journals or textbooks. Traditional publishing is often required for academic researchers to advance their career and should lead to the advancement of medical knowledge in general, which means that it is often supported by institutions and medical societies. It is, however, constricted by a rigid corset that involves the whole and often cumbersome process of “research” that includes at least conceptualizing a study, obtaining ethics approval, consenting patients, generating and then exploring data including elaborate statistical methods, drafting a manuscript, consulting co-authors, submitting to a journal, being frustrated with negative reviews, rewriting the manuscript, resubmitting maybe multiple times, waiting for acceptance and so forth, which functions as a high entry barrier for many. Creators of FOAM content on the other hand, often operate either individually at their own pace or in much more informal Networks and they do that in a much more accessible way. Of course, the aspiration to become a “FOAM-celebrity” with thousands of followers and millions of clicks could be an important driving force for some, however we sincerely believe that most (if not all) FOAM contributors spend hours of their free time writing and recording for a much more relatable and less selfish reason. In a world of endless opportunities, they want to make a meaningful contribution and FOAM offers just that in a very engaging way without any relevant restrictions. By researching and preparing for a post, one gathers clinical and scientific knowledge and becomes an expert in that field which improves immediate patient care. In short words, it makes you a better clinician yourself. By then sharing one's knowledge openly, this knowledge is transferred to countless other clinicians and therefore, your actions potentially positively influence patient care across countries and disciplines. At least for us, this feels incredible. But it does not end there and gets even better. One of the most important aspects of FOAM is the interaction with readers or viewers respectively, and therefore often the comments section of a blog post is as interesting and engaging as the original post itself. Through this open discussion, which can be described as some sort of “post-publication peer review” as mentioned above, everyone, including the author of the original post is enabled to see different opinions and engage in a discussion. This discussion is, however, not limited by any boundary, be it time zones, publishing cycles, disciplines or clinical experience or status of the participants. So not only producing content for FOAM has a very low entrance barrier, but also fruitful discussions are facilitated by easy access. This again benefits the author and the whole reader-/viewership and makes the time you put in to create content even more worthwhile.

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