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Opinion

Sharpening the double-edged sword: Revisiting the evolving role of social media within medical education

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Social media (SoMe) represents a rapidly fluctuating learning landscape within the medical community. In 2021, we mapped the practical utility of platforms for medical educators and learners.[1] In doing so, we highlighted a diverse array of methods of sharing learning 'pearls', as SoMe has historically focused on knowledge translation, underpinned by social interaction. Practical examples of such approaches have been described, including virtual journal clubs, tweetorials/threads and knowledge-based debates.[2] A tweetorial or thread is a series of posts that are strung together to explain a complex topic. Relevant reviews in the past decade have been dominated by such approaches, consistently highlighting the importance of connectivism learning theory (CLT). CLT focuses on learners forging innumerable networks based upon resource sharing and knowledge transfer.[2,3] This formed the theoretical basis for our argument on SoMe's importance despite concerns surrounding professionalism, marking out the medium as a 'double-edged sword' for educators and learners.

Stepping onto SoMe in 2024 reveals a different social reality. X (formerly Twitter) has undergone ownership, name and functionality changes, while also anecdotally becoming more vulnerable to misinformation. The ripples of this effect are felt throughout the online world of medicine. On popular discourse-dominated platforms in particular, X or Reddit, we may now find organised clinical tips appearing less frequently and educator-led initiatives like journal clubs declining. Anecdotally, the power of the hashtag such as #MedTwitter seems to be dwindling in the SoMe of 2024, with early adopters of the Free Open Access Medical Education (#FOAMed) movement perhaps advancing in their careers or migrating to different educational spaces. Instead has risen a new paradigm of educational activity. Often perceived as combative or toxic, SoMe is more disruptive than ever, yet evidence of high-quality engagement with education remains clear. While the evidence base is yet to map out the shifting sands of medical education, there is precedent for user behaviours and even entire platforms to dramatically shift in short spaces of time, suggesting that it may take some time for the traditionally slow-moving academic community to chart the evolution of SoMe education.[4] It is strongly likely, however, that the median user of Medtwitter or Medreddit will have noticed traditional educational tips replaced by early-career-led threads on the identity of a doctor, or intensive debates raging regarding training reform or recruitment. Welcome to 'Medical SoMe 2.0'.

In this piece, we propose five key characteristics of SoMe 2.0 within medical education, critique their theoretical basis and make recommendations for educators for constructive engagement.

Disruption of traditional hierarchy

SoMe has long been associated with a flattened hierarchy, usually accepted as a strength. While early career learners can still confidently link with senior experts to gather information and build professional networks, there has been a realignment of the social capital on SoMe. Social capital – in this context meaning power, influence and trustworthiness – appears to be more distributed, unaligned to historical hierarchies.

Arguably, some accounts representing traditionally trusted UK educational institutions have never established a consistent SoMe presence involving meaningful engagement or listening; this is perhaps due to perceived organisational risk in utilising public-facing spaces to enact or influence policy, or may be due to fear of the fast pace of SoMe discourse. This absence became noticeable during the COVID-19 pandemic, when learners were forced to migrate to online spaces. While institutional support attempts were frequently made via traditional means, examples of SoMe initiatives to listen, educate or engage in conversation were less common. Perhaps feeling abandoned, learners turned to self-curated networks dominated by peers. The vacuum of influence did not take long to fill.

Empowered by donning online masks, anonymous accounts set the tone for debate and discussion on platforms, particularly on Reddit, which is fundamentally underpinned by anonymity.[5] While anonymous accounts were once treated with immense suspicion as a source of reliable content, today, some have amassed huge followings – of over 10,000 – and personal brands of their own. They have prompted responses from hospital trusts, royal colleges and the General Medical Council. Yet, there remain key unanswered questions about the dangers of elevating faceless accounts to relative primacy; many set the tone for

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medical SoMe, despite being criticised for bullying, toxicity and misinformation concerning a (sometimes prominent) minority. Can they be held to account? Is there room for nuance in polarised SoMe debate? What does this say about the communication approach of our traditional leadership? There is a feeling of a changing of the guard which has potentially, directly or indirectly, inspired large swathes of early career students and doctors to abandon lurking passively on SoMe, instead engaging with educational discussion or peer networks.

For academics, the next steps in this evolving domain relate to ensuring that students and doctors early in their careers are empowered to critically evaluate and appraise the information received through interactions with anonymous X accounts, as well as critiquing the use of SoMe by institutions. To facilitate healthier, more constructive discourse, we must ensure the building of a culture that rewards openness, transparency and tolerance, that welcomes both energised learners and intimidated seniors and institutions – looking to the literature for guidance on ethical approaches to SoMe use may be a helpful start.[6]

Professional identity formation

Perhaps the most prominent feature of recent SoMe activity pertains to passionate debates surrounding the scope of practice of physician associates. While we will not discuss this specific argument in depth, we believe that its ascendency is partly emblematic of a higher-level phenomenon occurring on medical SoMe. Years of turmoil which have included multiple periods of industrial action, decline in pay, recruitment errors and pandemic disruption have inevitably affected the working and educational lives of early career doctors and medical students. Subsequently, many are openly problematising what it means to be a 'doctor' in our modern context. This goes beyond questioning scope and includes examining our collective professional identity. Social identity theory Box 1 may help explain how 'in group' support contributes to professional identity in times of uncertainty.[7]

We typically associate professional identity formation in medical education with mentorship, supervision and observation in clinical settings.[8] However, SoMe is the newest battleground for influencing identity formation. The very meaning of mentorship is evolving in parallel to the evolution of medical SoMe. Students are as likely to find their mentors on SoMe as they are on the wards, and leaders praised or criticised for decisions and behaviours. Finding a longstanding mentor on SoMe could likely be significantly more impactful than any journal club or tweetorial. Good SoMe mentors aim to be approachable, generous with their time and connect their mentee with opportunities which may be linked to medical SoMe. Medical TikTok, the fastest-growing SoMe platform, and Instagram reel content are dominated by students and doctors sharing lived experiences from their day-to-day lives. Role models are not always positive, and SoMe is no exception, as there remains a risk that both public or anonymous senior users may also negatively influence behaviours or contribute to a culture of bullying or misinformation. For good or ill, communities of peers now model their behaviours and values collaboratively.[7,9]

Box 1. Potential educational theories underpinning new SoMe

Transformative learning theory has been described as learning induced by disorienting dilemmas, which challenges fixed assumptions and expectations, to bring about openness, reflection and ability to change. It is possible that healthcare professionals are experiencing challenging and traumatic workplace encounters, particularly early in their professional identity formation. Potentially lacking in formal structures favouring supportive reflection due to clinical pressures, students and doctors are turning to discussion-based SoMe to make sense of educational crises.

Social identity theory moves beyond communities of practice to argue that *belonging* to the 'in group' is paramount, particularly during formation of professional identity. Social identity theory focuses on group behaviour rather than individuals, and suggests that any one person could have multiple, hierarchical identities which may be nested or crosscut to specific professional contexts. This could effectively explain how students and doctors navigate multiple SoMe accounts and platforms with ease, displaying different learning behaviours and (usually) negotiating professional and personal accounts effectively. The sense of belonging and shared identity offered by discussion-based SoMe may particularly offer solace to doctors feeling uncertainty among constant rotation and recruitment bottlenecks.

Engagement with policy

The idea of student and doctor involvement in educational leadership and policy is hardly new. There have long been arguments supporting the involvement of doctors in leadership decision making, yet this has historically been limited to specific, transient fellow roles within leadership bodies. However, it is evident that disruptive policy debate, often led by medical students and junior doctors, has become the norm on SoMe. This can be exemplified by the rise of DoctorsVote, an organisation formed by Reddit users, that has been the driving force behind sweeping changes to the makeup of the British Medical Association (BMA)'s representatives. SoMe has also provided a platform to help bring about inclusion-focused change. The Association of LGBTQ+ Doctors & Dentists (GLADD) Medical Schools Charter against so-called 'conversion therapy' demonstrates how campaigns to challenge institutions may be aided by modern SoMe. Clearly, not all engagement between organisations, leaders, students and doctors could be described as positive. Therefore, SoMe now lends itself to crowd-based, ground-up behaviours on policy among a UK healthcare population impacted by years of being ignored, or for many from minoritised backgrounds, suffering injustice or persecution for their identities.

Creation and criticality

Previously, when considering SoMe learning, we suggested using relevant educational frameworks to conceptualise learning quality.[1] Bloom's taxonomy is a well-established hierarchical structure for framing quality and features cognitive, affective and procedural domains.[11] While the learning pearls highlighted in our 2021 paper focused on short bursts of knowledge-based videos, tweetorials or summarising the latest literature, the explosion of user-developed Reels, infographics, interactive quizzes and career role-modelling on Instagram and Tiktok demonstrate that Creation, the peak of the cognitive taxonomy, is still flourishing. However, with seemingly limitless sources of education available at their fingertips, unique learning environments are being curated by everyone with every like, share and follow. Feed curation acts as a form of critical appraisal. When communities unite in critiquing leaders, policy and each other, the relevance of SoMe to the Evaluate rung of the cognitive taxonomy becomes apparent. While SoMe breaks down the traditional barriers of hierarchy, it has inevitably led to 'apparent' experts giving commentary to a variety of topics, irrespective of true expertise. As users of SoMe we have a duty to maintain a critical eye, challenge inappropriate claims, and declare our own areas of expertise where relevant.

The Affective domain of Bloom's taxonomy is frequently overlooked. This model, outlined in Table 1, concerns behaviours, attitudes and the internalisation of values derived from specific learning environments. Consideration of the Affective taxonomy could help explain how medical learners receive and respond to the new ideas proposed on SoMe that they deem relevant.[10] Online collaboration helps learners invest in new common values with their online peers, while medicine provides numerous opportunities for learners to practically organise into groups of shared cause, ultimately developing new codes of behaviour (Table 1).

Table 1
Bloom's taxonomy: Affective domain.

Category	Description
Receiving	Awareness and tolerance of ideas, materials or phenomena
Responding	Active participation on the part of learners, involves some dedication of resource (ie time) and willingness to respond
Valuing	Worth attached by a learner to a specific activity or behaviour
Organising	Initial construction of a values system as some are prioritised over others
Characterisation	The development of a pervasive values system

Life–work–SoMe balance

Lastly, the life–work–SoMe balance must be considered for the learner, educator, policy maker and casual user alike. All aspects can intersect, and navigating these can be challenging. For 'digital natives' who have grown up with SoMe, the distinction between professional and personal SoMe has become increasingly challenging to identify and navigate. The complex battle between private and professional lives must be better appreciated by employers and regulators, as platforms are not always tailored to strictly professional networks. However, LinkedIn appears to be an effective tool for those who wish to maintain a professional mask online. Balance does not solely relate to online visibility, however. Ensuring effective SoMe impact requires hard, almost *constant* work. In a wider healthcare climate where burnout is a lived reality for many doctors, we must also guard against online burnout. SoMe can be addictive and all-consuming. It is time that meaningful wellbeing initiatives are put in place to safeguard against online fatigue and remind users of the importance of 'real world' communities.

What next?

Concerning SoMe research, it is no longer appropriate to separate out specific platforms to evaluate 'effectiveness'. Most public-facing platforms now have heavily overlapping features or are used in similar ways educationally. This can be exemplified with the rise of short-form videos, from TikTok, to Instagram'–s reels, to YouTube shorts, and the resultant algorithmic rewards for users who generate this content, across platforms. Platforms have become homogenised, with little functional difference. It would be wiser for educators to examine higher-level behaviours linked to better-quality learning that transcend platforms, as these are more likely to be future-proofed as the influence of individual applications declines. Furthermore, early literature on SoMe learning was seemingly fixated on accompanying professionalism risks due to user behaviour.[3] While previous review has established that students are highly adept at SoMe professionalism, we have now entered a phase where authority is actively challenged, and norms are disrupted. It is arguable that rather than examining SoMe professionalism concerns, educators and institutions should instead problematise the concept of 'professionalism' in the context of a new SoMe order and examine their own responses to challenges to the old order.

It would be unwise to consider the recent changes to SoMe as purely 'positive' or 'negative'. For every energised and inspiring student account, one could find an example of faceless trolling. Yet, efforts could be made to bring about a SoMe climate that works towards a common good. This would require meaningful engagement from leadership organisations in our field, particularly from those who have previously seen SoMe as too risky to be part of. The far greater risk now is the absence of leaders from key online discussions. The patients we serve must play a greater role in our discourse and we should not allow ourselves to be drawn into echo chambers. We should not be afraid of being challenged, yet must be intolerant of intolerance. New SoMe can shed light on real world injustice and discrimination, but at times, the profession must also point that light towards itself. We must be a profession that unapologetically asks itself difficult questions without fear of trolling or being silenced. It is also important to note that whilst there is this fast-paced growth on some SoMe platforms, education is utterly secondary to international events and business implications which can suddenly undermine educator efforts.[4] For example, TikTok is currently embroiled in a dispute with the US government, several platforms are banned in other countries, and for some time X appeared vulnerable to mass migration of users away from its networks. The transience of SoMe should not be forgotten.

The double-edged sword has never been sharper, and while collaborative engagement should be celebrated when it brings about positive – even disruptive – change, it is the responsibility of the medical community to fight for a culture of tolerance, criticality and quality engagement in the face of emerging SoMe challenges.

CRediT authorship contribution statement

Jonathan Guckian: Conceptualization, Writing – original draft, Writing – review & editing, Visualization, Supervision. **Éabha Lynn:** Writing – original draft, Writing – review & editing. **Sarah Edwards:** Writing – original draft, Writing – review & editing.

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