Social Media for Learning: Advancing Theoretical Frameworks to Understand Complex Learning Environments

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Abstract

Students in higher education are driving the informal use of social media to support their cognitive and socio-emotional learning experiences during their undergraduate studies, with a growing literature base supporting the use of such technologies. This paper highlights a need to take a longitudinal approach to explore how students' use of social media tools may change over time and promotes the use of social learning theories as a useful lens through which to explain this complex and situated learning of a given community of practice. It argues that to enhance social media pedagogies the research community needs to explore more explicitly ways that innovative pedagogy can inform theory development within the field, and equally how a greater maturity in understanding those theories can enhance our pedagogical practices. The potential for cultural historical activity theory (CHAT) as a framework for researching the multi-dimensional, or dialectical, interactions that may occur in the social media space is examined. CHAT is promoted as a useful theory for introducing a greater focus on the role of the social media tool itself in mediating learning. The paper concludes by proposing that that whilst existing social learning theories provide useful starting points for making sense of how social media can support learning, there may also be a need for the advancement of such theoretical frameworks to ensure that we develop theory capable of exploring the complexity of learning that could take place in social media spaces.

Keywords

Social media, informal learning, cultural historical activity theory, higher education, social learning theories

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Introduction

Web 2.0 technologies have enabled the creation and sharing of information, and collaboration and communication in the online environment. Social media could be described as a collective term for channels to facilitate this activity, and social networking sites and instant messaging applications are two examples of such technologies. Social media was previously described as an emerging technology likely to have an impact on learning and teaching by organisations such as the New Medium Consortium (NMC) Horizon Report (Johnson et al, 2014, 2015 and 2016). More recently, research by the UK organisation JISC reported that 46% of higher education students discussed learning informally on social media weekly or more (Newman et al, 2018) suggesting that students are driving the use of social media to support their learning informally.

Alongside this proliferation in the use of such tools by learners, we have seen an increase in the volume of literature exploring the use of social media in higher education, although most frequently reporting on activity driven by teachers. This is perhaps well demonstrated by the growing number of literature reviews in this field, including those which review a spectrum of social media platforms (Tess, 2013) and those which review one particular social media platform (Lopez et al, 2017; Chugh and Ruhi, 2017). In addition, we are starting to see the emergence of literature reviews which focus on the use of social media in one discipline, in this case healthcare education (Scott and Goode, 2020), and those repeating reviews over time who highlight a growing interest in studies exploring the use of social media in informal learning interactions (Manca and Ranieri, 2013 and 2016).

My PhD research (first author) aims to understand the use of social media through the lens of learning theories. 'Dabbagh and Kitsantas (2012, p.2), in exploring the relationships between social media and self-regulated learning in higher education, propose that teachers and learners are creating new ways of learning within social media spaces, and in doing so are "demarcating areas of higher education where a potentially significant transformation of practice is underway". Laurillard (2013) challenges educators to consider technology as a social and cultural phenomenon, proposing that the way students learn may not fundamentally have changed, but asks us to rethink pedagogy and pedagogical practices in this new context.

We wish to theorise how these relationships impact upon the learning experience. In presenting the literature which has led to the identification of a research need in the field of undergraduate healthcare education we hope to facilitate critical reflection amongst educators and researchers. The continually evolving digital lives of learners mean that we as educators need to devise educational practices based on principles, underpinned by appropriate theories. This allows us to be responsive to our students. The changing practices of our learners may also mean there is a need for our current theoretical frameworks to also evolve. We propose that there is a timely need to consider whether social theories of learning can provide educators with a useful lens through which to understand the complexity of learning that could take place in social media spaces. We anticipate that empirical research will help us develop a framework that encompasses conceptualisations that could support responsive-educational uses of social media.

The potential for social media to support the learning experience in higher education

Having proposed that social learning theories could be useful to educators in this context, it is important to now identify which aspects of the higher education learning experience would benefit from further exploration. The term *learning experience* is frequently used throughout the literature, and yet the term itself is not well defined.

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Within this paper, we use the term holistically to mean the cognitive and socio-emotional experiences that a student encounters during their undergraduate degree programme. Within this broad definition, we include concepts such as the links between social and academic learning skills, sense of belonging, individual agency and self-motivation, identification with a community of practice, professional identity as well as the activities associated with developing knowledge and skills one might associate with the taught curriculum.

The potential for social media to support learning in higher education has a growing body of literature and includes studies where authors make claims of an impact, both positive and negative, on academic achievement, (Junco, 2012; Junco and Cotton, 2013), knowledge construction (Hamid et al, 2015) and knowledge sharing between peers (Eid and Al-Jabri, 2016). In addition to his work on the impact of social media on learning outcomes, Junco asks higher education institutions to consider the role of social media as a tool for enhancing student engagement and student development in its widest sense (Junco, 2014). This work is complemented by the suggestions that social media use by learners can also enhance life satisfaction and social trust (Valenzuela et al, 2009; Chang and Lee, 2013) and a sense of social connectedness (Hung and Yuen, 2010). However, in contrast a number of studies argue that sophisticated use of social media in a learning context is not widespread (Eynon and Malmberg 2011, Laird 2014), that its educational value is questionable (Junco and Cotton 201 et al 2014, Henderson, Selwyn and Aston 2015).

As research in the field began to grow in volume, and particularly in those studies that focused on exploring content analysis of student posts within social networking spaces, more authors including Selwyn (2009) helped the field to understand how students are using these spaces in the context of their undergraduate studies. Selwyn suggests that the use of social networking tools supported interaction between learners, including the exchange of practical and academic information but also in supporting the "informal, cultural learning of being a student" (Selwyn 2009, p 171) and in shaping learner identity. Hartley and Kassam (2015) supported the findings by Ellison et al (2007), Selwyn (2009), Madge et al (2009) and Yu et al (2010) in proposing that social networking can support the overall transition and socialisation into higher education.

The somewhat contradictory findings in studies exploring the potential of social media tools to support learning is, in part at least, linked to the different philosophical and methodological approaches taken within the research. Our own research is focused on undergraduate healthcare education and whether those students are using social networking platforms to communicate with their peers in the context of their studies, specifically exploring the potential for such interactions to support self-regulated learning, and/or healthcare professional identity. Whilst in general, the bulk of the literature in the broader higher education sphere is interpretivist and explores the holistic aspects of the learning experience as defined earlier, the healthcare literature tends to take a more positivist approach looking for *impact* of the use of social media on student performance in cognitive tests. We propose that there is a need for an alternative narrative in healthcare educational research and it is needed to both complement, and to challenge that discipline specific debate.

In this paper, we suggest that theoretical perspectives can act as useful starting points for making sense of a learning experience and support the view of Farnsworth and Solomon (2013, p1) that this relationship between theory and practice is in itself dialectical, that is that they can "both inform and enhance on another". We support the views of several authors who have been critical of the body of research published on educational technologies to date. They argue that there is an extensive focus on the practical implementation of technology tools (Bennett and Oliver, 2011), lacking in theoretical rigour (Issroff and Scanlon, 2002) and with very little research in terms of theoretical advancement (Hew et al, 2019).

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Theoretical Frameworks

The concepts of social constructivism, connectivism and social capital have been used to explore the use of social media for learning. Traditionally, these have been developed to explain face-to-face learning experiences but as our increasing exposure to, and subsequent understanding of, online learning experiences has developed, many of these frameworks have also been applied to the online learning environment. Whilst acknowledging the tensions that can occur when applying the theories to the practice of contemporary education (Chaiklin, 2003; Daniels, 2005), the socio-constructive framework continues to be applied to the online learning environment generally (Woo and Reeves, 2007; Sharma et al, 2016; Raspopovic et al, 2017) and social media networks specifically (Ractham et al, 2012). Within the umbrella of socio-constructivism, there are two learning theories that appear to provide a useful approach to exploring how and why students drive the creation of peer-led social networking groups, namely the theory which proposes learning within an activity system which is known as cultural-historical activity theory, and the theory which proposes learning within a community of practice.

Cultural-Historical Activity Theory

Cultural historical activity theory, also known as activity theory or CHAT, provides a useful framework to explore learning that is mediated through a tool such as a social media platform. The theory has its roots in socio-constructive ideologies, most notably those of Vygotsian scholars, focusing on the ways in which knowledge is constructed within our own particular social context. However it places a greater emphasis than other socio-constructive theories on the *processes* occurring in those learning spaces and introduces the notion of purposeful, multi-directional interaction between the subjects (the students) and the objects (other students, the social media tool, the content of the discussions), along with the motivations which are driving that activity.

Several authors including Engeström (2001), Roth and Lee (2007), and Altinay (2017) suggest that that cultural-historical activity theory can support educational researchers to understand how learners develop in the interactions between subjects and objects in *units of activity* systems. A classroom or healthcare curriculum can be seen as an activity system. The underlying concepts of cultural historical activity theory have in part evolved over time often reported as second, third and fourth generation CHAT frameworks. More recent seminal authors, including Engeström (2001), theorise how those processes are inherently interwoven rather than linear and how individuals are continually *shaping* and *being shaped* by these social contexts (their peers, the content, and the tool itself).

Interestingly, there is some debate within the literature (Hoffman, 2005) around the philosophical roots of the term dialectical within activity theory, which can be used to describe how it is impossible to understand any moment within an interaction as independent of the activity as a whole. Our work focuses on the view of Roth and Lee (2007) who describe that in dialectical situations there are inner tensions or conflicts between opposing views, and these contradictions within the unit are what often trigger the communication, or thought processes, to bring about change, sometimes referred to as expansive or transformative learning. In the context of studies exploring student's use of social networking spaces to support learning, this change could be the development of knowledge, skills or potentially identity development. Readers interested in exploring how CHAT has been applied as a methodological approach and framework for analysis generally can learn from the comprehensive paper by Timmis (2014) which guides the reader through a range of relevant studies

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There is a relatively small but growing body of work proposing CHAT as a useful framework for understanding the impact of technology on teaching and learning, including Scanlon and Issroff (2005), Murphy and Rodriguez-Mazanares (2014) and Batilbwe (2019), although not yet specifically exploring the role of social media in this context. In other aspects of society, including the fields of civic society and political movements, and also in some organisational learning contexts, the literature supports the use of CHAT to model the complex interactions between social media and society itself. There remains however a clear gap in the existing literature in exploring the dialectical nature of social media specifically as a technology tool in student-led learning in higher education via a theorised exploration of cultural historical activity theory.

Community of Practice

Despite the potential for cultural historical activity theory to help understand the complex interaction between social media platforms and student learning, the concept of a community of practice (Lave and Wenger, 1991; Wenger, 2012) remains a dominant theme for many researchers in this field as demonstrated by repeated literature reviews focusing on the application of the theoretical framework within the online environment (Johnson, 2001; Brosnan and Burges, 2003; Lai et al, 2006; Smith et al, 2017).

Wenger's refined description of a community practice states, "groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (2012). We are interested in how, if at all, the use of social networking with learning peers can influence identity formation as a healthcare profession, another aspect of the framework that Wenger describes as a "central element of the theory" (Wenger, 2010). Whilst in the analysis of research findings we may discover practices that are reminiscent of a community of practice, the authors Smith, Hayes and Shea (2017) propose that simply verifying the existence of the community of practice theoretical framework in the online learning environment generally is now over-researched.

Merchant (2012) argues that current research on the use of social media and the relationship between formal and informal learning oversimplify the complexities of such relational networks and that even the relatively basic theoretical frameworks for how these might be used in education are under-developed. Greenhow and Lewin (2016) further develop this argument proposing that more research is needed on both the student experience of the use of social media in higher education but also on the theoretical models underpinning such online learning communities. As a growing academic community therefore, we are asking peers to explore other frameworks that the literature suggests are helpful to analyse the impact of social technological tools on the learning process.

Additional concepts to consider

Whilst cultural historical activity theory provides a useful perspective on learning as mediated, there are aspects of the complex relationship learners have with social media that suggest other concepts may be useful for including in our framework. The authors Tian, Yu et al (2011) summarise an important concept that encompasses much of the literature described earlier in this paper. Building on the earlier work of Tinto (1987), the authors focus on the complex "interwoven processes between social and academic systems" that contribute to the overall learning experience stating that both types of learning should be promoted by higher education institutions (Tian, Yu et al, 2011, p269).

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In their study, the authors propose that social networking can affect learning through the nurturing of the integration between social and academic learning, they also highlighted the importance of time in integrating these two different forms of learning, suggesting that social learning can be observed relatively early but academic learning can take longer. Similarly, Wenger's (2012) emphasis on the importance of time as a core concept underpinning the framework and its influence on the meaning making which can occur in a community of practice, is especially relevant for our work as we are interested in part in students' perceptions of how their use of social networking with their peers throughout their undergraduate studies, and whether this evolved over that time in any way. This suggests that research should take a longitudinal approach to understanding how this integration and potential benefits evolve over time.

Keren, Lockyer and Ellaway (2017) have noted a lack of student voices in their review of literature supporting social studying and learning among medical students. In her recent studies focused on student-led use of social media technologies, Smith (2016, 2017) identifies a relationship between students' choice of a specific social media tool to help them make sense of their learning experiences, and the purposeful way in which different tools are used for different reasons. Beyond the recent work of Smith however, the literature analysing *student-led* use of social networks with peers in the context of their studies is relatively weak and this longitudinal view is lacking. A theoretical framework would therefore ideally help us to theorise how students themselves may drive how the use of such tools may change over time.

The socio-constructivist approach we take means that the views of the students themselves are central to the proposed research. In healthcare professions education, students' personal development to becoming self-regulated learners in the journey to developing their professional identity is crucial. In constructing our framework, we therefore expect to draw upon literature relating to self-regulated learning or professional identity development in healthcare students. As this work tends to also follow socio-constructivist principles, we believe the integration of this work with CHAT and other theories within this paradigm will be productive. What we would be introducing is a greater focus on the role of the social media tool itself and its role in the development of the self, and how the development of the self may also influence the use of the tool over time in a non-linear, multi-directional relationship.

Earlier in this paper we suggested that the term dialectical can be used to describe how it is impossible to understand any moment within an interaction as independent of the activity as a whole. We propose that it is because the relationship between technology and pedagogy is not linear but dialectical, that studying how social technologies are leading pedagogical change, and equally how students are leading pedagogical change through the use of such technologies, is difficult. This may go some way to explain why there is a literature gap in exploring learning (and teaching) in such a complex, multi-directional system.

Conclusions

There continues to be a growing academic interest in the potential benefits of the use of social media for learning in higher education, perhaps most obviously in those wider, more informal aspects of the learning experience associated with a university education. Within our own field of undergraduate healthcare education we have identified a need to develop a longitudinal research-informed view of how students themselves may drive how the use of such tools may change over time, and a need to take an overarching socio-constructive approach to understanding and explain learning experiences within a social networking space.

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To enhance social media pedagogies we must embrace the dialectical, multi-directional relationship between theory and the practical use of such platforms, and explore more explicitly ways that innovative pedagogy can inform theory development within the field, and equally how a greater maturity in understanding those theories can enhance our pedagogical practice. We promote the use of social learning theories, mapped onto a framework that considers the complex relationships, time dimensions, and situated learning of a given community of practice. We aim to develop a framework that can explain how learner interactions with other learners and the content of those discussions, and the social media tool itself play a role in the development of the self, and how the development of the self may also influence the use of the tool over time.

This paper has argued that there is a timely need for the academic community interested in promoting the use of social media to support learning to work together to respond to the call for action proposed by Jones and Czerniewicz (2011). That is, to compliment the literature supporting the practice implementation of such technology tools with new research focusing on the advancement of theoretical knowledge in this field.

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