

The influence of Twitter on lecture engagement and discussion

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Abstract

The research presented in this paper is driven by a desire to increase student interaction and engagement in lecture discussion. The issues relating to the use of Twitter to achieve this goal are outlined. At the outset, the importance of interaction and engagement in learning is established, drawing on a number of educational theories and previous research in the area. Following this, the necessity for action is recognised by critiquing lectures as a forum for this standard of learning. The researcher presents technology as a means to increase student interaction, beginning with Audience Response Systems (ARS). A summary of research carried out on ARS is examined to provide a basis for integrating technology. Following this a review of experiments conducted using Twitter is carried out. Although there is a dearth of research in this area, these provide some insights into the use of this technology and its integration into education. The paper then examines student adoption of Twitter as a means of engagement, outlining the strengths, weaknesses and opportunities for the future. Finally emerging uses of the Twitter platform are examined, allowing the reader glimpse student hopes for future integration.

Keywords: Twitter, Audience Response Systems, interaction, engagement, discussion, technology

1. Introduction

The purpose of this paper is to explore Twitter's influence on lecture engagement and discussion with University students. The study context is introduced, along with the Twitter platform and its current uses. Provided also is a summary of previous research in the area, exploring significant findings that influenced and guided this study. The research approach is then described, including how Twitter was integrated to facilitate engagement and discussion. Following this, findings are outlined, with those most critical being discussed in detail. Finally tentative conclusions and recommendations for future research are presented to the reader.

1.1 Context

This research was conducted over a twelve-week period with seventy eight (78) first year undergraduate students, completing semester one of a three-year honours degree in Education and Training. The module chosen was 'social and personal development with communication skills'. It was felt this module provided ample opportunity for engagement, discussion and shared experience, thus presenting abundant scope to investigate the influence of Twitter on these facets of communication.

Experience has shown students entering University can be shy and reserved during lectures. Lecture theatres can be daunting places, full of unfamiliar people, where students must forge a new identity in new surroundings. Often discussions are dominated by a minority of prevailing voices (Moss & Crowley, 2011). It was proposed that Twitter would promote increased student engagement, providing for richer ideas and experiences to draw upon for discussion.

1.2 What is Twitter?

Twitter is real-time networking platform through which users communicate and share information of interest via 'small bursts' of information called Tweets. Each Tweet is a short update (≤ 140 characters) containing user comments, musings or questions. Networks are established by 'following' or creating friends with similar interests. Unlike many social platforms, updates are possible via the internet, Smartphone application, or SMS; making it one of the more versatile platforms available. Twitter has experienced enormous growth since its launch in 2006, with a variety of users taking advantage of its fast communication and information gathering. Current uses include daily chatter, conversation, information sharing and news reporting (Educase, 2007). However, as outlined in the following section, recent developments have seen its adoption in education. The researcher sought to examine the effectiveness of Twitter in a lecture setting.

2. Background and theoretical underpinning

As a background to this study, it is prudent to recognize the significance of engagement and discussion in lectures. Many prominent educational theories feature student engagement and discussion as pillars of their construction. For example; Bruner's (1967) discovery learning model posits that question oriented discovery enables students to draw upon past experiences and existing knowledge to solidify their learning. Vygotsky's (1978) social development theory emphasises the importance of constructing meaning through peer interaction. Research indicates adoption of these learning principals in University is of utmost importance, with engagement in the learning process and interaction with faculty and peers understood to directly impact student learning (Crouch & Mazur, 2001; Feden, 1994). Furthermore, successful assimilation of prior knowledge and experience is known to arouse attention and interest in subjects, improve cognitive processing and formative assessment abilities (Steinert & Snell, 1999; Bates et al, 2006).

Mindful of these findings, the diagnosis of lectures as weak links in University education (Blight, 1998; Duncan, 2005), due to their lack of interactivity and active learning methodologies (Draper & Brown, 2004), is a stark call for action. Consequently, many lecturers are using technology to construct active and discovery based learning environments, allowing students share experiences and opinions with faculty and peers (Morales, 2011; Chickering & Ehrmann, 1996; Tamim et al, 2011). What follows is an

examination of technologies used to bridge the gap between content transmission and student engagement (Laurillard, 2002). Given the dearth of research available on the use of Twitter, a review of Audience Response Systems (ARS) is conducted to provide grounding for the influence of interactive technology on these factors.

Audience response Systems (ARS) are handheld devices employed by lecturers to increase interaction. Course related questions are created in advance using specialised software. Students are then given the opportunity to respond during lectures with results displayed for the class to see. Participation is generally anonymous and limited to button press answers to true/false, yes/no and multiple choice questions. ARS are generally used during lectures to check understanding and initiate discussions (Simpson & Oliver 2007).

Evidence suggests ARS increase student engagement during lectures. The competitive nature of their 'quiz like' functions appeal to students who enjoy seeing responses compared in a 'who wants to be a millionaire?' fashion (Abate et al, 2011). The ease of engagement facilitates participation from an abundance of students, meaning lectures are not dominated by outspoken members of the class (Moss & Crowley, 2011). However, lasting impact on engagement outside of these 'quiz like' scenarios is somewhat unclear. Students embrace processing information and 'speaking out' to answer questions (Draper & Brown, 2004). However attempts at follow up discussion or engagement can be futile, with apathetic students contributing little in the way of experiences and opinions (Morales, 2011). This makes it onerous for lecturer and student to measure real understanding of concepts. The limiting nature of multiple choice questions may be offering superficial engagement, precluding the assimilation of student experiences and opinions. To achieve this, a conversational and expression based approach is needed. Early evidence suggests Twitter can move beyond multiple choice questions and enable a more creative approach to engagement in lectures (Moss & Crowley, 2011).

Educase (2007) argue that the versatility of the Twitter platform enables its use in most educational settings. Its social design has natural links to active learning methodologies and inherent lecture discourse; encouraging comprehension, reflection and retention of information. In contrast to fixed 'quiz time', facilitating conversation throughout lectures enables students to integrate discussions with their existing experiences and social context (Dunlap & Lowenthal, 2009). Through these shared interactions, student awareness of peer opinion and experience increases, leading to the development of a 'social sixth sense'. This sense of community breaks down perceived communication barriers (Hesmondhalgh, 2011) and leads to superior engagement and discussion (Thompson, 2007; Beldarrain, 2007), allowing lecturers to draw out background information, feedback and critical issues from students. By linking experiences to lecture content, students define their own teachable moments, resulting in important academic and psychological development (Junco et al, 2011). An important synergy is also created

when students construct and enhance each other's ideas in a group learning environment (Ebner et al, 2010).

In Rankin's (2009) Twitter experiment, students valued using the platform as means of communication, providing an outlet to express their views and opinions, resulting in participation by students normally intimidated speaking out in front of peers. This view was upheld by Young (2009a), who found that using Twitter not only kept lectures fresh but also that students lauded the ability to have their comments heard without speaking out during class.

It is clear that student engagement in lectures reinforces learning. Providing opportunities to interact with faculty and peers increases student attention, provides for more worthwhile cognitive processing and allows students perform formative self assessment. We have seen that lectures without these attributes are in danger of losing student interest and reducing impact on learning. Lecturers are using technology to bridge the gap between passive transmission and interactive engagement in lectures. ARS provide ways of engaging students in lectures by encouraging them to answer questions and engage in cognitive processes. Moreover, Twitter is being used to go beyond multiple choice questions and create a social learning environment where ideas and experiences are shared with peers and lecturers in a fluid manner. This 'conversation' draws out rich opinions from students, who construct meaning when linking this to lecture content and experiences of their peers.

3. Set-up and methods

Before embarking on this exploratory study, plans were implemented to set up and structure the integration of Twitter. The first step was setting up a Twitter account using the name @es125dcu. This name was chosen as it represents a mixture of the module code and University name, making it easy to remember. The decision to use a separate account was taken to ensure students understood this was an academic experiment and intrusions were not being made into their personal lives (Young, 2009b). Account details were occupied with the researcher's name and University logo as the profile picture. Finally tests were carried out using the web interface, SMS and Smartphone application to ensure all functionality was viable.

At the outset students were given a demonstration of Twitter. The rationale for the study was explained and students were asked to set up an account. For this purpose, students were directed to instructional videos on the University Learning Management System (LMS), where a range of videos were provided, along with documentation on using Twitter by SMS. It is salient to note, students were not required to participate; they were instead invited to join the study. In order to do so, they could 'follow' the account (@es125dcu) to 'see' Tweets and reply to them during lectures.

3.1 Preparation and execution

Twitter needed to satiate two functions: seamless integration into lectures and the enhancement of engagement and student representation in discussions. To achieve this, lectures progressed as normal, with material and videos presented, intertwined with solicitation of student opinions, feelings and experiences. Distinct to this year is that solicitations for engagement were also Tweeted, allowing students to interact in this way. Dialogue moved seamlessly from spoken comments to Tweets displayed on the projector screen and while this worked well, an element of technological comfort was required. Lectures involved multitasking between PowerPoint, Twitter and other applications such as YouTube and the University LMS system. This experiment was not for the fainted hearted (Young, 2009a) and acceptance that things may go wrong was a prerequisite. As the ebb and flow lectures progressed, different applications were used: PowerPoint was used to present materials while Twitter was opened during conversations. It is important to note that students could Tweet at any time and the alternating of applications was due to the restriction of having one projector screen.

3.2 Research methods

A number of research methods were employed to capture the feelings and experiences of the group. Formative observations were used to modify and improve the use of Twitter. Evidence was also gathered from student Tweets, emails and comments. However the majority of the information presented is derived from a questionnaire distributed at the end of semester. This questionnaire contained both qualitative and quantitative questions to gain valuable student insights.

4. Findings and discussion

The exploratory nature of these evaluations investigates student adoption of Twitter as a communication tool and examines the impact on lecture engagement and discussion. Also revealed are possibilities for improvement and emerging future uses. The overall aim of the study is to improve student engagement and as such the focus remains squarely on developing facilitation, not promoting the technology itself. The researcher is careful to provide a balanced view of its integration.

4.1 Student acceptance of technology

Given the voluntary nature of participation, initial enthusiasm was high, with 56% (n=44) of students setting up an account within the first four weeks. This enthusiasm was mirrored in student responses with many indicating their understanding of Twitter as a communications platform increased. Significantly, there was considerable awareness of how Twitter can be used in educational settings to increase engagement. Of those that set up accounts, 36% (n=16) tried to engage in discussion using the platform.

The contribution of ideas and experiences without fear or embarrassment is pivotal to the adoption of Twitter. Tweepers felt 'more comfortable writing their opinions down in a

large audience' and being involved in a 'less intimidating' way. Some students who did not Tweet later regretted 'not using it more, as being shy, they could have benefited' from engagement.

"I really like using Twitter to express my opinions in class, it was a brilliant idea. I'm not a big public speaker you see"

Students that did not participate identified (perceived & actual) technological constraints, motivation and facilitation as influencing factors. A large proportion were put off by technical issues, attributing their lack of involvement to having no laptop or Smartphone in class, seemingly unaware that Tweeting was possible using standard SMS technology. Others reported difficulty accessing the University Wi-Fi network, giving up entirely after multiple efforts. There were also those that were hampered by motivation to use Twitter, believing traditional classroom engagement more appropriate for them. One student summed up that 'it worked well for those who used it, but it's not for me'. Emerging facilitation issues indicate a level of sensitivity is required when adopting the technology. From time to time Tweeters were asked to elaborate on comments out loud; discouraging others from Tweeting, saying 'they still had to talk out loud' and were uncomfortable being 'singled out in from of the class'.

"I prefer to actually participate; Twitter defeats the purpose of classroom engagement"

While full adoption of Twitter was not achieved, those that used the platform valued the ability to contribute their opinions, ideas and experiences. The voluntary nature of participation illustrates that students appreciate a platform to speak out in a less threatening way. While technology enabled this experience for some, it hampered it for others. Clearer structures are needed to ensure students understand how to access the Wi-Fi network, use Twitter via SMS and generally reduce technology constraints. Facilitation must also be balanced, allowing Tweeters participate more passively, while also encouraging outspoken members to participate in new and creative ways.

4.2 Affect on engagement and discussion

With the adoption of Twitter established, understanding the impact on lecture engagement and discussion for the entire group is critical.

"I think it had an amazing influence on the class. Personally, I am not a big speaker in front of large groups. Twitter helped me engage in class discussions in a way that felt comfortable to me. So I never felt awkward... It helped me a lot"

The overwhelming majority of students felt Twitter impacted positively on engagement and discussion (Fig 1 & 2). By breaking down perceived communication barriers the dynamics of conversation were altered whereby students could participate in their own

time and ‘from every corner of the room’, thus reducing the need for rigid question and answer time. This more ‘relaxed’ and ‘fun’ atmosphere also afforded the more ‘shy and timid’ members of the group the opportunity to contribute, leading to an ‘exciting mix’ of Tweets and spoken comments, combined to produce a rich debate and ‘intense conversation’. Interestingly Twitter did not lend itself to apathetic contributions. In fact the need to be concise (140 characters) and present to an ‘audience’ encouraged students to process ideas fully, ‘cut the waffle’ and link to the subject matter in a worthwhile way (Dunlap & Lowenthal, 2009). Through this process of group learning, student understanding of topics increased by taking the conversation in ‘new but related directions’, while simultaneously creating a sense of awareness and community among the group. Students felt more comfortable as they ‘got to know each other’ and there was a palpable feeling of a social sixth sense developing (Hesmondhalgh, 2011).

“In comparison to our other modules, it was the most active lecture for discussions to take place”

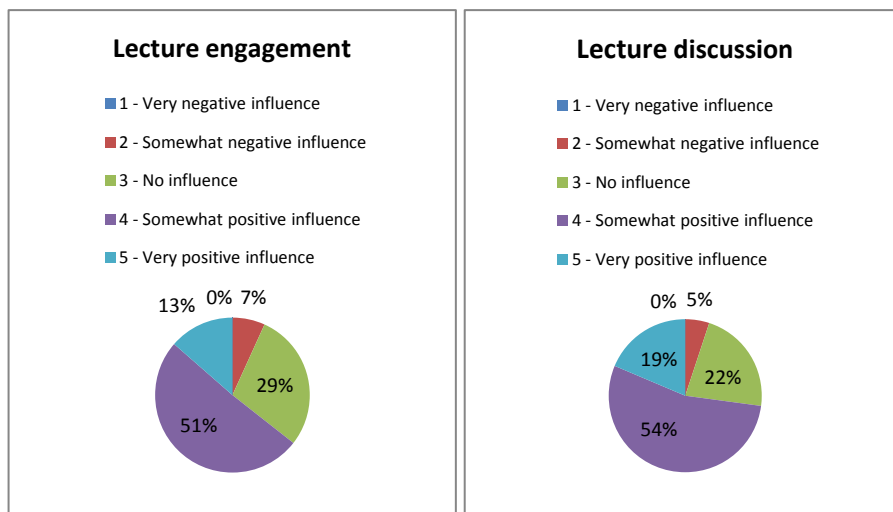


Figure 1

Figure 2

In addition to student feedback outlined above, researcher observations paint a similar picture of Twitter’s impact on the dynamics of engagement and discussion. An increased volume of student contributions was noticed, with these offerings strengthening the quality of engagement by creating a variety of inputs for debate and discussion. This in turn led to more rewarding dialogue in class, where information was woven between Tweets and spoken comments to create a more complete picture of student perceptions. The researcher also noted that the development of a ‘social sixth sense’ extended past the boundaries of the student population, recognising that through shared experience and Twitter profiles, an increased awareness of student needs and progress was developed.

“Putting hands up can be difficult as I always feel confident making the point but stutter if I am asked a question I am not expecting, so at least with Twitter I can get the point across without discussing it”

Some students felt that for Twitter to have a real impact, numbers using the platform must increase, commenting that the same students used it every week. Feedback indicates this increase may be achieved through deeper integration into varied activities such as group work, class quizzes, ‘fun interactions’ and links to the module assessment. More subtle adjustments to facilitation, such as the mandatory use of pseudo names to guarantee anonymity may also yield results. Other issues highlighted include the timing of Tweets, with one student commenting that it took too long and conversation had moved on by the time some were typed. This led to a feeling of repetition, duplicating what was already said in class. Another felt that Tweeting itself discouraged students from speaking out in class, offering them an easy alternative. Such issues could be alleviated by providing topics in advance to allow preparation and structuring activities so that some involve the use of Twitter, while others do not.

"Twitter takes away from individual engagement... learners need to speak in the classroom environment"

4.3 Future uses

What emerged from this study is that in addition to use within lecture time, students’ would like to see a more integrated use of Twitter to aid discussion in support of their studies. Many wish the conversation to extend after lecture time, sharing problems and further developing the sense of community built up during lectures. They envisage a University life where lectures don't 'just last two hours' but extend through discussion and shared experience, facilitating group learning and collaboration. Evidence of this began emerging, with students contributing comments outside class time. Others began sharing more than thoughts and experiences, posting links to relevant articles and websites for others to view. Students value Twitter as a formative assessment tool where lecturers can post 'mini tests' and assignment related questions to prepare for end of semester projects and examinations. Finally students see the potential in using Twitter as a platform where lecturers can share interesting articles, videos and answer student queries outside of lecture time, this seems to concur with Carnevale’s (2006) synopsis that email is for old people and students are using innovative ways of communicating. Again glimpses of this behaviour emerged during this study with a small number of students directing assignment related questions over Twitter, ‘Hi Peter, do your two essay topics have to link or relate to each other? Can they be different?’

5. Conclusion

This study focused on the influence of Twitter on lecture engagement and discussion. Findings indicate that Twitter has vast potential for engaging students in ongoing conversation during lectures. Students who would ordinarily remain silent are given the opportunity to express their experiences and opinions. Their inclusion in debate produces a diverse pool of thoughts to draw on, making for a more interesting and engaging experience for all students. The inherent nature of Twitter means comments must be concise, encouraging cognitive processing before presentation to the group. Sharing these thoughts also develops a sense of community, encouraging collaboration and group learning. To improve impact, technological barriers must be removed, ensuring all students are prepared to engage using the platform. Twitter must also be more deeply integrated into classroom activities, in particular, group work and class quizzes. This suggests that a hybrid between ARS and Twitter would satiate students' desires by providing conversation and quiz like functionality. Future research in this area is needed to fully ascertain this. Outside of lectures, students have an appetite to continue their learning through collaboration and contact with lecturers. An environment where transition between weekly lectures is punctuated with lecturer questions and updates is an interesting and challenging proposition, which requires further research to establish its viability and impact on student learning.

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