Use of Twitter Technology in Educational Learning

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Abstract
This paper explores the use of Twitter technology in educational learning and teaching in education system. The objectives of this study emphasizes on the contributions of Twitter to personal and educational learning experience, and its adoption for professional development in 21st century. Twitter technology was invented as a media outlet in 2006, to provide a unique kind of communication that allows only 140 numbers of characters. It is a technology that permits users to send and receive information on website, from mobile or computer-enabled internet. A Twitter requires a valid email address to sign up for an account and equally set up private profiles in line with the system command. Users share pictures, videos among other educational materials of what is happening in the world. Twitter is a social media platform that has drawn the attention of its users, especially the students and educators around the world. Secondary sources of data collection were adopted in the paper review. In spite of the short comings of Twitter technology, major findings revealed that the use of Twitter technology is becoming a common usage among students and professional development of educators across the world. Recommendations include the need for sustained campaign of the use of Twitter technology in institutions of learning across the world, especially in the developing countries, and the pedagogical adoption of Twitter for professional development of the future of education, as opposed to traditional method of teaching.
Keywords: Twitter, Twitter Technology, Twitter usage, Professional Development

Introduction

Twitter as an aspect of social media, is a major social network in the world. Twitter is a new channel of information dissemination that has continued to attract tremendous user growth since the invention of the technology in 2006 (Java, Song, Finin, & Tseng, 2007). Twitter is a technology that permits users to send and receive information on website, from mobile applications or through short message service (SMS) messages. A valid email address is the only thing that is required of an individual to sign up for an account and equally set up private profiles in line with the system command. Twitter invites users to share pictures, videos of what is happening in the world (Tang & Hew, 2017). As at 2015, twitter has more than 320 million users per month (Twitter, 2015).

Research on Twitter reveals that the uses of Twitter include, conversation and dialogue; collaboration and exchange; self-expression and self-communication; status updating and checking; information and news sharing; and marketing and advertising (Dijck, 2012).Tweets are simply comparable to blog posts, and it is characterized by simple use of phrase abbreviation, due to limited allowance on the amount of tweet (Omofonmwan,2012). Twitter creates opportunities to increase connectedness and relationships building (Gonzales, Vodicka& White, 2011). Twitter can change the perception of people and their relationships (Turkle, 2011). It is resourceful in posting short questions, messages, as well as sharing information such as reference to articles or books given as an assignment (Cohen &Duchan, 2012).

In recent times, twitter use has become an integral element of teaching and learning in the school system. Although Twitter is used for entertainment, it is mainly used for social exchange, information sharing and seeking, self-documentation and expression (Liu, Cheung, & Lee, 2010).According to Haythornthwaite (2016), twitter is a top tool which educators have opted to utilize in future classroom work than Facebook, among other tools of learning.

Besides large-scale public communication or information, personal communication is permitted, though, the tweet is limited to 140 characters (Omofonmwan,2012; Tang & Hew, 2017). Little attention has been given to Twitter use (Tang & Hew, 2017). However, an essential aspect of Twitter is that users are in control of their interactions and activities, especially on relevant issues of concern (Holmes, Preston, Shaw, & Buchanan, 2013). Twitter enables teachers to network beyond their immediate environment, share the required resources, and respond to requests for improved practice (Forte, Humphreys & Park,2012).

Few studies have underlined the negative dimension of incorporating Twitter in educational context which include, overexposure, inappropriate usage, reputation, addiction, information overload as well as on content and personal privacy (Cho & Rangel, 2017; Kinnison, Whiting, Magnier, &Mossop, 2017; Rinaldo, Tapp, &Laverie,

2011).Other obvious barriers to being able to transfer learning to new situations include, lack of foundational knowledge with which to build upon, not having a model that demonstrates how to incorporate new learning, and a lack of opportunities to practice new learning in a real life situation (Foley & Kaiser, 2013). In addition, some researchers have noted setbacks of using Twitter, irrespective of the strengths that Twitter appear to provide educators. According to Sauers and Richardson (2015), educators may be open to use Twitter based on their judgment of how others use it. While some educators may adopt and use Twitter due to incentives from the corporations. On the other hand, information adopted from Twitter use may provide the much needed informational materials essential for the students. Another setback is the use of social media to write unsuitable remarks (Butler, 2010), andamong other concerns which include cyberbullying, internet predators, sexual exploits, and violent contents (Manzo, 2009). Generally, Young (2010), noted that college students are comfortable using social media, since the media provides them the opportunity to make their voices heard in class without having to speak orally.

Despite that social media platforms were not designed to be incorporated in the educational system, their networking patterns and content sharing have made Twitter part of education and learning-related activities (Tess, 2013).All and sundry, involving elementary, high schools, higher institutions, as well as federal and state education agencies have actively incorporated various social media platforms (Jordan, 2017; Wang, 2016). In view of the foregoing, the focus of this paper is to ascertain how Twitter technology contributes to personal and educational learning experience, and how it enhances the adoption of Twitter technology for professional development in 21st century teaching.

Theoretical conceptualization and literature review

This paper is conceptualized and reviewed under the following sub-themes: understanding the efficacy of twitter technology use in educational learning; benefits of Twitter technology integration in classroom teaching and learning; professional development and technology adoption in teaching; and   Twitter as a tool for professional development. The review of these concepts provides a clearer understanding the objectives of the paper.

Understanding the efficacy of twitter technology use in educational learning

The usefulness of Twitter is contingent upon the determination of both the educators and students to be involved in its usage, with expectations that are educationally driven. With a purposeful intention, students will be active participant in the Twitter-related activities that is accompanied with expected outcomes (Tang & Hew, 2017). Twitter is a social media platform that rapidly grew to the attention of its users, especially the students (Adnan &Giridharan, 2019). Twitter as an aspect of social media that help students in performing educational tasks in classrooms (Ebner, Lienhardt, Rohs, & Meyer, 2010). Twitter is useful for resource and information sharing to a wider audience of learners than the traditional classroom teaching methods (Goff, Jones, Toney, Nwomeh, Bauer, & Ellison, 2016; Kassens, 2014; Stephens & Gunther, 2016). In addition, people use Twitter to share ideas and thoughts with each other, including virtual content such as videos and other digital contents. It is regarded as a friendly source of communication for users (Adnan &Giridharan, 2019).

In recent times, Twitter is seen as a support for scholarly tool for communication for both informal and formal learning. In other words, scholars, students, and professionals in diverse academic cycle use the Twitter technology to connect and engage with peers and public to share relevant and discipline specific information that addresses academic interests and goals (Holmberg &Thelwall, 2014; Veletsianos&Kimmons, 2016).In the context of education, Twitter has been described to contribute to learning capabilities and communication (Bista, 2015; Carpenter, 2014; DeGroot, Young, &VanSlette, 2015), and thought to be useful in augmenting engagement and collaboration among teachers, peers and students (Desselle, 2017; Greenhalgh, Rosenberg, & Wolf, 2016; Osatuyi&Passerini, 2016).

Twitter usage permits multi-directional dialogue, free and independent discussion that is opposite to classroom situation that requires speech by request (Cohen &Duchan, 2012).Cohen andDuchan, (2012), asserts that the Twitter-related interaction permits the assessment of difficulties that may be encountered by students on a subject area, especially the introverted students who do not participate in class exercises to express themselves freely using Twitter technology, and to facilitate learning about their interests and phenomenon encountered in the course of study. According to Jefferis and Bisschoff, (2017), the in-built mechanism of Twitter suggests materials that may be of interest to users in the #Discover tab, suggest the user to follow in the network and the activities to view in the process.

Although Twitter messages are limited to 140 characters, Dunaway (2011) noted thatit is used to deliver instructional content, prove information literacy ideas and formulate critical thinking that explains social and political information, and enables students to perceive themselves as active agents in the creation of knowledge and information. According toClipson, Wilson and DuFrene(2012), other ways that Twitter benefits students by

raising their level of awareness of communication challenges accompanying social networks, enabling them to evaluate their areas of educational improvement.

Studies demonstrate that Twitter has positive effects on higher education and institutes, the learning of a particular subject matter and the college student engagement and grade (Aydin, 2014). In a study of educational relevance of Twitter and how it can impact on college student engagement and grades, Junco, Heiberger, and Loken (2011), found that the experimental group had a significantly greater increase in Twitter engagement than the control group, as well as higher semester grade point averages. The study also found that faculty and students were highly engaged in the learning process in a manner that transcended traditional classroom activities. Furthermore, the study revealed that Twitter could be used as an educational tool that can help to mobilize faculty and students into active participation.

With regards to the effect of Twitter on learning a particular subject, a study by Kassens-Noor (2012), found that Twitter usage is associated with potential opportunities and pitfalls to the e-learning community in higher education when compared with traditional teaching methods. The study revealed that Twitter can be used to provide instant feedback in lectures, in an out of class situation, although there are problems regarding privacy issues.In addition, Tyma (2011), noted that Twitter provides an additional channel for students to communicate in the classroom using technology which they are familiar. The usage implies freedom and cataloging of conversations in relation to class activities.

There is a blend of the home, university, and social lives of students in Twitter usage (Aspden& Thorpe, 2009). Twitter usage is a nonthreatening and decidedly nontraditional activity that can be employed to engage students in university-wide development (Aspden& Thorpe, 2009). For Elavsky, Mislan, and Elavsky (2011), the positive effects of using Twitter in a lecture course is an avenue for evaluating the impact of pedagogy and the potential of contribution to large lecture course dynamics. Twitter as a technological mediated communication of new media is a source of ideas for classroom discussion and activities (Veltsos&Veltsos, 2010). This is largely because Twitter combines elements of social networking with academic activities, especially as educators constructively guide students in the learning environment (Taranto &Abbondanza, 2009). The firm knowledge of twitter technology use in educational learning is accompanied by numerous benefit to teaching and learning. Thus, the following sub-theme will focus on the essential benefits to users as it relates to information dissemination, open participation and learning.

Benefits of Twitter technology integration in classroom teaching and learning
The students of the next generation cannot cope with traditional methods of teaching because these children belong to the information overload age where data is universal and information is accessible with a click of the mouse. The students have also developed the characteristics and information-age habits that are remarkably different from those students that were traditionally trained in the old days (Tadros, 2011). This is one of the reasons why Arnold and Moshchenko (2009), contend that it is vital for technology to be instilled in the curriculum in a children's early formal learning experiences in order to provide robust learning experiences. The early introduction of technology through computer technology begins at the elementary levels, from which the pupils grow with to the tertiary levels.

The benefits of technology integration in the classroom setting are enormous. The utilization of technology, enables students to learn things in the abstract through the use of simulations and games; permitting students to cooperate with others through distance learning opportunities; and providing students with the ability to dictate their learning pace (Bransford, Brown, & Cocking, 2000; Liu & Szabo, 2009). More so, through technological advancement in schools of learning, Darling-Hammond Banks, Zumwalt, Gomez, Sherin, Griesdorn, and Finn (2005), noted that the usage of video tools is an opportunity for students and teachers to reflect on their performances. Technology is also an opportunity for students to determine and pursue their own goals, and express in concrete terms their strengths, weaknesses and achievements (U.S. Department of Education, 2010). In other words, students' digital literacy is a must engagement, determining for themselves tools and services that support their learning goals (Beetham& Sharpe, 2013).

A study by Project Tomorrow (2009), revealed that some teachers have expressed interest in utilizing social network site (SNS) to teach their students. SNS builds relationships between teachers and students, and also a good way of fostering trust. Schroeder, Minocha, and Schneider (2010) noted that relational barriers are surmounted when students access each other's blogs and social networking profiles. For example, a study conducted by Hitlin and Rainie(2005), showed that most teens reported that access to internet improves their performance in school. This assertion underscores the contribution of Twitter to the knowledge and understanding school children from

the beginning of their education. This level of exposure is most likely to extend to adulthood, making Twitter essential for learning.

Contrary to technology-based learning, Scardamalia and Bereiter(1999), argues that traditional schooling hardly provides an opportunity for students to form their own knowledge and do not guarantee a better functioning in the world as a graduate. What students learn in school must reflect what they will encounter in the real world. Learning that facilitates communication among people, according to Jenkins (2009), is participatory culture. A culture that makes members of the society feel that their contributions matter and also have a sense of social connection with one another. For example, in Twitter, a hashtag (#) is occasionally used to gain feedback from computer users all around the world. As teachers and students communicate, feedbacks are expected. This implies that creating a participatory culture in schools can modify the traditional learning approaches from teacher-directed learning to student-centered learning(Jenkins, 2009).

Professional development and technology adoption in teaching
To implement 21st century learning in classrooms, teachers are expected to prepare students to succeed in today's competitive world, develop their own expertise with new learning and ever changing technologies (Killion, 2011).This implies that technology plays a vital role in the patterns of teaching in the 21st century. In recent times, some teachers do not recognize that modern day students have new sets of needs and expectations for learning that internet-based. That is to say that learning habits is ever changing, downplaying the traditional model of teaching and learning (Levin &Arafeh, 2002). In their study, Solomon, Allen,and Resta (2003) found that since most teachers teach in line with how they were taught, especially without the use of technology, it is difficult for these set of teachers to accommodate the value of technology in enhancing students' learning. It is important to note that Twitter technology allows people to learn at the same time outside the constraints of time and space, and also permits educators to transform the traditional ideas of professional development (Trust 2012). According to Trust (2012), this transition enables educators to become true life-long learners who nurture and share their expertise with others, and model this perpetual learning to students.

Technology is dictating the pace for communication and learning, as well as the learning principles and process, and changes in social environments (Siemens, 2005). The willingness to appreciate and demonstrate self-competence or innovativeness of teachers into the use of technology is through staff development (Marcinkiewicz, 1993). Teachers who find it difficult to adapt or adjust to technology in their teaching practices are likely not to have high commitment to continuous learning in the field of education (Riel & Becker (2000). Thus, educators that have adjusted to teaching and learning are more likely to engage students in higher-order thinking tasks compared with educators who are engrossed with traditional teaching patterns who are preoccupied with remedial, drill and practice types of learning (Kmitta& Davis, 2004). Palak and Walls(2009), argues that teachers who may not integrate technology to support student-centered practices lack models of technology to facilitate this type of learning.

A major setback in the professional development of teachers in technology usage is that in most cases, workshops for teachers are fragmented, episodic and short-term based, which offer little or no opportunity to integrate learning into practice (U.S. Department of Education, 2010). Mueller, Wood, Willoughby, Ross, andSpecht (2008), noted that with the exception of short-term focus of professional development, in most cases, the training approach revolves around a particular software. To address these challenges, Miranda and Russell (2011) propose that educational sector should promote professional development prospects thatrely on the benefits rather than the procedure of using instructional technology, and highlight instructional technology strategies used by teachers who use technology creatively and effectively.

What educators need is job that is accompanied with assistance as they attempt to adapt a new curricula and new instructional practices to new innovative classroom method (Guskey& Yoon, 2009). According to Plair (2008), teachers desire a constant support person in this unique area. In addition, Educators must model the use of various technologies for the K-12 and higher education classrooms, explain and demonstrate how these technologies are linked to and affect learning outcomes, and contribute toward meaningful learning (Edwards & Mosley, 2011).

Twitter technology adoption in teaching learning demonstrates its usefulness professional advancement of knowledge. Consequently, Twitter technology becomes a tool for professional development of educators. Owing to ever changing pedagogical dimensions, it is germane as a tool for development in the educational sector. This will form the focus of discussion in the next theme as foundational for the expected growth in education sector.

Twitter as a tool for professional development
Professional development refers to learning that progresses through stages of learning opportunities designed and administered by an external expert (Easton, 2008).Teachers from educational domains reported using Twitter for professional development than within classrooms, which reinforced commitment to work (Cho & Rangel, 2017; Greenhalgh et al., 2016; Visser et al., 2014; Wesely, 2013). However, research findings revealed that extended experiences of professional learning that are ongoing, rather than concentrated, are more beneficial (Bauer, 2010; King, 2011; & Reich et al. 2011). It is believed that real professional development should engage educators in learning that is both flexible and dynamic, take advantage of mentors in formal and informal methods of learning to improve teachers' awareness of their own practices, and philosophies, and weaknesses and strengths (Bauer, 2010; Kabilan, Adlina, &Embi, 2011).

Professional development of educators include those skills and knowledge acquired for personal and career advancement (Ross, Maninger, LaPrairie, & Sullivan, 2015). In contrast, Traditional methods of professional development include courses offered by school districts, universities, technical assistance agencies, professional associations, nonprofit organizations, and among others. However, it has been observed that these models of learning delivery, no longer provide meaningful learning experiences that is expected to enhance teachers professional competencies (Kabilan et al., 2011). According to Kabilan et al., (2011), the traditional professional development lacks the pedagogical content and structural characteristics needed in a dynamic world.

The use of Twitter is grassroots professional development Forte, Humphreys, and Park (2012). The effectiveness of professional development of educators could be enhanced by teaching of digital literacies and by exploiting the affordances of digital tools and social networking capabilities to join forces, plan with, and learn from other educators (Beach, 2012).

Somescholars argue that professional development should be school-based, located within classroom setting (Carpenter &Krutka, 2015), while others are seeking improved use of Twitter for professional development (Carpenter &Krutka, 2015; Visser, Evering, & Barrett, 2014).It is argued whether teacher education programmes have the in-built capacity to prepare future teachers to avail themselves the opportunity that social networking sites such as the Twitter have for their profession (Visser et al. 2014). This is because some scholars have found that Twitter is vital for teachers who are progressives, and have the capacity to build networks that can strengthen leadership in educational community (Forte et al., 2012). In other words, facts have been found to suggest that a community of practice on Twitter that is concentrated on the professional development of teachers supports learning in various ways (Wesely, 2013).

Learning is fundamental in understanding and responding to the changing world (Hammerness, et al. 2005). The life-long learning is essential for teachers who are not only expected to instill the value of learning to their students but also confront the challenges of developing their pedagogy in response to the ever-changing socio-cultural and economic environment they find themselves (Duncan-Howell, 2010). In this respect, it is vital that teachers engage in continuous update of their skills and knowledge through professional learning and development (Organisation for Economic Co-operation and Development, 2009).

The social media networking has generated new ways of professional learning, as a result has become popular among teachers in most part of the world (Alderton, Brunsell and Bariexca 2011; Forte, Humphreys and Park 2012; Grosseck and Holotescu 2011).It is normal that social media has provided an alternative avenue for the private and professional growth of educators Elias (2012).Duncan-Howell (2010) found that teachers generally regarded participation in online communities as a meaningful and relevant form of professional learning.

Furthermore, the nature of professional development arising from social networking sites such as Twitter is seen by the proponents as more democratic, collaborative, and accessible and absolutely free (Elias 2012). In other words, social networking is in contrast to traditional method of professional development narrow and top-down lesson creation and delivery (Rutherfod, 2010). In essence, teachers engage in professional development to formulate, implement, and share learned practices, knowledge and necessary values that meet the needs of students (Schlager, Fusco, Barab, Kling, & Gray, 2004)

Conclusion
Having explored the use of twitter technology in educational learning, it is pertinent improve on the campaign across many countries of the world, especially in the developing countries where people have not fully recognized the invaluable usefulness of Twitter. Twitter technology has proven to be resourceful for both teachers and students alike. More so, the pedagogical adoption of Twitter for professional development suggests what might be the future

of world of education, as opposed to traditional method of teaching. Therefore, twitter technology as a growing integral element in the schools system is adequate in the 21st century.

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