Application of cutting-edge social media technologies in Connectivist Pedagogy

Dr. Charles Kivunja

Abstract—Although the penetration of social media technologies into orthodoxy teaching and learning has been slow, there is an increasing awareness that embedding social media in pedagogy bestows upon students much greater capacity to construct knowledge according to Piaget, co-construct understanding through interaction with others as postulated by Vygotsky; effectively utilizes Brunner's 5E Instructional Model; is consistent with Bloom's Cognitive Taxonomy; applies DeBono's Six Thinking Hats problem solving strategies and creates opportunities for students to learn in their styles as postulated by Howard Gardner's Multiple Intelligences.

This paper reports the lived experiences encountered when embedding Google+, Discussion Circles, eFoliospaces and YouTube social media technologies in connectivist pedagogy for doctoral students and 2nd Year B-Education pre-service teachers at a University in Australia.

The experiences reveal that the introduction of selected social media technologies into pedagogical practice has potential to shift learning paradigms from Constructivism to Connectivism and from Instructional to ultra-modern Digital Pedagogy.

Keywords— Connectivism, Constructionism, Constructivist Pedagogy, Digital immigrants, Digital nativity, Digital Pedagogy, eFoliospaces, Google+, Discussion Circles, Social media technologies, Social media technophobia, Student-led inquiry.

I. INTRODUCTION

It is well documented that the advent of social media sites such as Facebook, Twitter, MySpace and Bebo was warmly embraced for application in recreational and conversational interaction, mainly for fun and humour [1]. However, their penetration into orthodoxy education settings where the rigors of academia are shrouded in competition and survival of the fittest, has been more elusive and sometimes controversial. Drawing from personal experiences at one of my former schools, whereas we encouraged our students to use computers to develop competitive models of profit maximisation in Economics, we blocked their access to social media. Moreover, especially in the lower stages, students were allowed to use computers only if they had completed their set learning activities. In particular, the thought of secondary school students, including year 12 high school students turning 18 years old, accessing ‘social media’ exposed to global audiences and capable of instantaneous responses, sent trepidation and shivers down our spines as we implemented what amounted to covert censorship and surveillance measures in our efforts to “protect” the students from what we regarded as potentially distractive or harmful sites. Thus, access to social media was not seen at part of standard pedagogical practice. As a result, students were denied access to digital learning resources, which could have been helpful in their construction of knowledge about High School Economics. This social media technophobia seems to sustain the gulf between, on one side, academics (and teachers) who advocate reliance on orthodoxy textology-digital immigrants- and (on the other) those inclined to towards embracing and extending the footprint of digital nativity. Whereas it is well argued that it is difficult for institutions like schools and universities to manage the use of social media by their members [2], it is suggested in this paper that this technophobia is unwarranted and not only needs to be exposed, but worked upon to be rectified. What’s more, the paper argues, that the introduction of selected social media technologies, as part of well-structured, computer-supported collaborative epistemology, into pedagogical practice has potential to shift learning paradigms from Constructivism to Constructionism [3]; from Constructionism to Connectivism [4] and from Orthodoxy Instruction to Digital Pedagogy [5].

One way to realize this potential, is to encourage pre-service teachers as well as present and future educational leaders [6] to see the potentially great value of social media as highly motivational, interesting inquiry-based, student-led learning that has the potential to shift our pedagogical practice paradigm from Vygotsky’s [7] constructivist pedagogy, to constructionist pedagogy [3] and connectivism, as we move our teachers and students towards becoming digital natives. Such social media have great value not only in Best Practice Pedagogy in the classroom, but also in workplaces, be they institutions of higher learning or otherwise. Relying on the theoretical constructs of giants in the field of Best Practice Pedagogy, - giants upon whose shoulders we stand as we try to make our own contribution to pedagogical practice, - convinces us that the application of social media technologies in teaching and learning can only have meritorious consequences on knowledge creation by our students. For example, Vygotsky [7] tells us that children learn best when they are actively engaged in the construction of knowledge through social interaction with others. Social media technologies appear to excel in this regard. A second example is taken from Brunner [8] whose 5E Instructional Model

---

1. Dr. Charles Kivunja is Senior Lecturer in Pedagogy at the University of New England, Australia where he has a particular interest in applying the latest digital technologies in Pedagogy and is Manager of Leximancer ICT in the School of Education.

Contacts/School of Education, University of New England, Armidale, New South Wales, Australia, Email: ckivunja@une.edu.au; Mobile Phone: +61-412466184; Website: http://www.une.edu.au/staff/ckivunja.php

99
informs us that children maximise their learning when they are given opportunity to maximise the 5Es of Engagement, Exploration, Explanation, Elaboration and Evaluation. Again, my experience suggests that the application of social media technologies enhances these 5Es very effectively. The third example comes from a giant in the field who says, give me a child that is interested and I will teach her or him anything; particularly if it is interesting and funny [9]. One of the reasons why social media were widely and warmly embraced in recreational and conversational interaction is because they keep participants interested while at the same time providing fun and enjoyment.

This paper briefly discusses how 258 students enrolled in a Bachelor of Education degree to train as Primary Teachers and 10 students in a doctoral unit on Educational Leadership were transitioned, from orthodoxy textology in their studies towards not only becoming digital natives, but also leaders of cultural change to embrace social media tools in learning and teaching. While a comprehensive evaluation and discussion of this transition is a study proposed for the future, the present paper relies upon anecdotal evidence to evaluate the suitability of the selected social media tools in constructionist learning and teaching as a way of enhancing Digital Pedagogy.

One of the core units offered to the 258 2nd Year, BEd pre-service teachers at the University in question is EDLT217, which, inter alia, equips students with teaching skills and strategies that are characterized as “Best Practice Pedagogy” [10]-[11]. The unit is offered to an internal cohort of 98 students and an external cohort of 160 students. Whereas the internal cohort has both face-to-face access to instruction and learning resources, the external cohort’s access is fully internet based. Leadership and culture in the workplace, is unit EDCX782 in an EdD doctoral course that is offered only in the eLearning, external mode to a relatively small number of students at the university in question. The experiences reported in this paper emerged from the 258 BEd students and two cohorts of 10 students in the doctoral unit.

Whereas most of the BEd students are recent graduates of high school, most of the EdD candidates that have enrolled in their unit over the last four years that I have coordinated it have been leaders in their own workplaces, mainly as school principals, deputys or in some other middle management level in their organisations, external to education. They came from across Australia and some cohorts included students from overseas, from as far away as Saudi Arabia and South Africa. In introducing social media technologies in teaching these two cohorts, I decided to start with the latter because of their small number, greater maturity and professional experience.

A common complaint that many of these students have expressed over the years has been the feeling of isolation as each student worked on their own to introduce himself or herself in an online forum within the Learning Management System, Moodle and before that Blackboard, and then go on to post a comment about an important topic on leadership and culture in the workplace for their first assignment. The second assignment required them to critique relevant leadership and culture literature and write an essay about it. The structure of the unit tended to reinforce the reliance on orthodoxy textology with little use of Web 2.0 technologies with the exception of Blackboard or Moodle Leaning Management Systems as already mentioned above. This year, with the help of the ICT Pedagogy Officer I decided to venture into the uncharted waters of using social media as tools of constructionist pedagogy and thereby pursue the twin objectives of promoting increased engagement by the students and, equally importantly, break the lonesome cycle, by getting the students to form a Peer Learning Network (PLN) built around Google+.Discussion Circles and eFoliospaces which would enable them to invite their peers into academic conversation outside Moodle and increase interaction with each other, thereby shedding the loneliness of the past. Encouraged by the positive experiences gained from introducing the selected social media technologies in teaching the small EdD cohort in trimester one this year, I decided to introduce them to the much larger BEd cohort in trimester two. What follows is a narrative of how these social media digital technologies were incorporated in the two units and deployed to facilitate learning in a manner that enabled participants to complete the units not only in an engaging, but also interesting, motivating, exciting, explorative, creative and intellectually enriching way: an experience well worth embedding in our teaching and learning curriculum and sharing with peers.

II. METHODOLOGY

As stated above, the results discussed in this paper are not the outcomes of a research study. Rather they are simply a discussion of my experiences as I embedded the use of Google+.Discussion Circles, eFoliospaces and YouTube technologies in the doctoral unit and BEd unit that I teach. The aim of this strategy was to enrich peer-to-peer informal learning among the students through a-synchronous, virtual conversations using cutting-edge social media technologies. The basic unit of conversation was the Peer Learning Network (PLN) which served as an a-synchronous round table. Clear instructions were given to enable the students to join the PLN and to engage in academic conversations with each other. Each doctoral student enrolled in this online unit was required to engage with the unit in the following ways:

- Go to the Forum in Moodle and introduce yourself to your peers in 200 words
- A Google+.Discussion Circle has been created for you.
- Create a Gmail.com account for yourself and post it in Moodle.
- Once your Gmail account has been created you will be sent an invitation to join the unit’s Peer Learning Network (PLN) built around a Google+.Discussion Circle.
- Get the topic posted by your lecturer in Moodle and discuss it in the Google+.Discussion Circle.
- Continually revisit the Google+.Discussion Circle so that you respond to and comment on the postings of your peers.
• Your response may include *YouTube* videos, *Lucidchart* graphic organisers, simple text or supporting images.
• Design a personal website using *eFoliospaces* and in it discuss your understanding of the culture and climate of a workplace you are familiar with.
• Advise members of your PLN of the URL for your *eFoliospace* so they can access it.
• Engage with the set readings in eReserve and post three Critical Analyses of the Literature.
• Create a link via the *Google+.Discussion Circle* and notify your peers that you have completed your critique so they can engage in dialogue conversation about your posting.
• You are to respond to three of the critiques in a manner that provokes further sought and discussion.
• After the conversations with your peers in the *Google+.Discussion Circle*, revisit your *eFoliospace* and using one of the theoretical frameworks from the selected readings, explore and reveal your understanding of the culture and climate of that workplace.

Similarly clear instructions were also given to the BEd students. However, there were differences because they were given a new topic for discussion every week. The topic related to the lecture content given in the respective week. Also because of the larger numbers, the BEd students worked in a core PLN of 10 students. Furthermore, again because of the much larger numbers involved, I gave instructions to the BEd students to set up *Google+.Discussion Circles* by themselves as it would be inefficient and ineffective for me to set up such a large number of *Google+.Discussion Circles*. Apart from such structural differences, the pedagogical approaches and practices were similar.

III. OBSERVATIONS, OUTCOMES AND FINDINGS

As already explained above, one of the reasons the doctoral unit was chosen for the introduction of these new tools was because it had a small cohort. It was anticipated that the students would ask many questions as they embarked upon this new way of learning. Indeed this was the case as many of the students commented on this being a very steep learning curve new way of learning. Indeed this was the case as many of the participants to postings of tweets no more than 140 characters, whereas Twitter excels as a microblogging tool restricting characters in a post. Secondly, the *eFoliospaces* used did not restrict types of documents or resources that students could embed in their posts. As a result, students uploaded a wide range of learning resources, including photos that they had taken to illustrate their points of view as well as video clips which they had created themselves or imported from *YouTube*.

It was interesting to observe students gradually gain confidence in the use of the social media technologies and venture into what was a new way of learning. As expected, there were teething problems as the students set up their *Google+Accounts* and then designed their *eFoliospaces*. However, as they grew in confidence, they became adventurous and embedded graphics using *LucidChart* software, wikis and *YouTube* audio-video clips into their postings in the *Google+.Discussion Circle*. In the introductions of their workplaces, it was refreshing to see that students did not simply download open-source material to illustrate their workplace but some actually took photos or video-recorded their work environment and posted the products in the *Google+.Discussion Circle* or in the *eFoliospace* for all to see and to comment.

For both the doctoral students and the BEd cohorts, the structure set up for them advised and encouraged them to invite their friends into their *Google+.Discussion Circles* to participate in their academic conversations. A very encouraging feature of this approach was the strong peer support that the students extended to each other via the PLN. Whereas their comments targeted the academic content in the topic for discussion, it was clear that students tried to be positive and supportive when commenting on each other’s postings and critiques.

A fascinating finding was the apparent superiority of *Google+.Discussion Circles* over Forum group discussions conducted using the Moodle LMS. Whereas Forum groups of ten students restrict their academic exchanges to the ten members, the *Google+.Discussion Circles* PLN started with a core membership of 10 students but because they invited their friends from outside the initial core, they were able to enlarge their PLN to much larger numbers. For example, one of the BEd *Google+.Discussion Circles* (PLNCK5) extended its computer-supported collaborative network (PLN) from 10 to 47 participants. This represents an increase in collaborative interactions capacity of 470% when compared to Moodle based interactions. In the smaller doctoral cohort the multiplier was 2.25 or 225%.

Another interesting observation was that students invited others to participate in their *Google+.Discussion Circle* not only from within the University but also from outside. Exogenous participants included people who had taught the students in the past and were still teaching. These people proved to be an excellent source of information on current pedagogical practices which students were learning about. This added authenticity to our pedagogical practice.

Furthermore, the streams of postings on any topic for discussion were not only deeper and richer in content but also more extensive. This arose partly because, unlike, *Twitter*, *Google+.Discussion Circles* impose no restrictions on characters in a post. Secondly, the *eFoliospaces* used did not restrict types of documents or resources that students could embed in their posts. As a result, students uploaded a wide range of learning resources, including photos that they had taken to illustrate their points of view as well as video clips which they had created themselves or imported from *YouTube*.

IV. DISCUSSION, PROSPECTS AND CONCLUSIONS

Whereas Twitter excels as a microblogging tool restricting participants to postings of tweets no more than 140 characters, the *eFoliospaces* and *Google+.Discussion Circles* have no such limit and this is why this trial was set up to use the latter.

It is a new pedagogical practice when our students can invite anyone in the world, including people from outside their host university to participate in their academic conversations. Of course as we embrace social media technologies in
academic contexts we inevitably face the challenge of content ownership. As it has been argued [12], the data deposited on social media sites and responded to in that arena belong to the participants in that conversation. The way we avoided making our data public was by requiring participants to sign into the PLN Google+Discussion Circle. This meant that only those members invited into the Google+.Circle could see the data and contribute to it. However, whereas access to the data was by invitation, using Google+Discussion Circles created the opportunity for the students to invite friends who were not students at their University to join in the conversations. This meant that the students’ conversations could be enriched by input from experts outside their cohort who were interested in the topic of educational leadership and organisational cultural dynamics, in the case of the doctoral students, or on Best Practice Pedagogy in classroom contexts for the BEd students.

The experiences show that the use of social media technologies has the potential to engage students in a more exciting way than traditional means, enhance collaborative PLNs and break the loneliness that is so typical of online eLearning, particularly in postgraduate studies; and to encourage a move from constructivist dissemination of intellectual content to Constructionist pedagogy. The constructionist approach postulates that learning is predominantly experiential and therefore students learn best when they are actively engaged in constructing tangible objects in the real world [3, p.196]. After students had set up their Google Accounts and joined the Google+.Discussion Circles, one of the things they liked was the ease with which they could gain access to and share current, real-life information to enrich their academic conversations. The design of their own video clips and photos and embedding these in the Google+Discussion Circle academic conversations helped the students to bring real world artifacts into their pedagogy.

The enthusiasm that was evident in the students’ contributions (e.g. filming their own work contexts and sharing these with the PLN; embedding YouTube clips) demonstrated a high level of engagement and excitement, exploration of ideas on the topic of leadership and culture, explanation of attributes of these in their own workplaces, elaboration and evaluation as students discussed their contributions to the PLN in a manner consistent with Brunner’s 5E Instructional Model [8]-[13] for both the doctoral and BEd students.

The great extent to which students were keen to embed materials sourced from outside their set textbooks demonstrated students’ inclination towards Connectivism which posits that knowledge exists in the world rather than in one individual’s head [4, p. 28]. The best way to access such knowledge is through creating connections such as PLNs based on Google+Discussion Circles. This is social constructionism at its best.

Students enrolled in the BEd unit are mainly Digital Natives of the Internet Generation, Gen I, Net Gen, Gen Y or Gen Z. They are therefore, expectant of opportunities to apply digital technologies in their learning. And since they are the teachers of the future, it is imperative that we equip them with the skills that will enhance their capacity to help children create new knowledge. For the students enrolled in the EdD unit, their professional trajectory is that of educational leaders. As current leaders and leaders of the future, it is only fitting that they lead the move from traditional orthodoxy learning to digital learning and help to break the technophobia conundrum, particularly relating to the introduction of social media in the classroom.

Moreover, it is not only our students that expect increased opportunities to learn using cutting-edge technologies. Parents, employers, institutions and the community at large expect that we shall equip the students with the skills that will enable them to be productive contributors to the information-based, knowledge-driven, digital economy. For us to meet these expectations, we cannot afford to be reluctant digital immigrants. Rather, we should, as a matter of vital urgency, up-skill ourselves in Technological, Pedagogical And Content Knowledge (TPACK)[4, p. 30] and pass this on to our graduating students.

As universities all over the world become more technologically aware of the positive impacts that a user-friendly online presence, tailored to the appetite of their clientele can have on their ability to attract enrolments, social media, whose major advantage stems from universal user-friendliness, will have an increasing presence in curricula design. Noting that Facebook is ranked as the number one social medium [14] in all markets except China [15] it would be unwise for universities not to design courses that give their students the opportunity to engage in their academic work while using social media technologies such as Google+.Discussion Circles and Facebook. The potential for these social media technologies to be the engine that could accelerate the uptake of Digital Pedagogy in schools and universities cannot be over stated.

Whereas face-to-face personal contact has no equal in meeting prospective students’ demand for information about courses, the experiences in the doctoral and the BEd units that are the subject of this paper show that both postgraduate and undergraduate students can benefit from using social media tools as they engage with their course content. Students engaged with their pedagogy not for me; the teacher, but for the benefit of one another. Whereas the activities contributed to their assessment, they did not see them as competition against each other but as collaborative learning through Vygotskian [7] social constructionism for understanding. It was Connectivism and cooperative learning at its best as students posted their own contributions to build a whole that was larger and more meaningful than the sum of all the individual contributions.

This experience should not be restricted to tertiary students. Children in Kindergarten in developed countries now have access to computers. They no longer draw using crayons. They design shapes of objects on computers and deposit them in dedicated folders for their teachers to evaluate. Primary school children no longer write on blackboards but touch on objects on Smartboards, browse and google for answers to problems, create blogs of their searches. We no longer take them on field trips for a day outside the confines of one school; instead, we give them opportunity to engage in a virtual trip to some overseas country to witness foreign cultures of different
countries. Such techno-friendly tools should be encouraged because they expose the children to authentic learning experiences which engage their mental faculties and facilitate their personal [16] and social [7] construction of knowledge and thereby help to prepare them well to be better citizens in the digital nativity world of today and the future.

REFERENCES


