21st Century Pedagogy in Open Society: Is it a Shadow Pedagogical System with Social Media as a Pedagogical Tool?

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Abstract: This paper examines why it is important and how it is possible to provide equal access to post-secondary, tertiary education for people of all demographics and nations. The brick-and-mortar type of university education is contrasted with alternative forms of pedagogical delivery and the shadow pedagogical system. The final hypothesis is that social media is a viable medium for providing ubiquitous access to higher education.

Key Words: technology, tertiary education, internet, social media, pedagogy, open society

Introduction

The enduring pedagogical question addressed in this paper is "How can we provide universal (or at least increased) access to post-secondary, tertiary education"? This question is particularly pertinent now given the forecasted skilled labour shortage. In this decade, more than 60% of the jobs in the USA will require post-secondary, tertiary education. Yet, as of 2006, less than 40% of the US population between the ages of 25 and 34 had more than a high-school education (US Dept. of Ed., 2011). In Canada, it is projected to be a total of 6.5 million job openings due to economic growth and replacement needs over the next 10 years. Over two-thirds (66.5%) of these job openings are expected to be in occupations that usually require postsecondary education (college, university or vocational) or management occupations (HRSDC, 2011). Less than one-third of these forecasted job openings (around 2.2 million) are expected to be in occupations requiring only a high school education or on-the-job training.

These statistics indicate that the demand for more educated individuals continues to exceed supply. Yet, despite this need for increased access to higher education, we are faced with dwindling government financial support for universities and colleges and increased tuition costs (Johnson, Oliff, & Williams, 2011; McGuire, 2013). I propose that this concern about access to education is not new and that it has dominated pedagogical thinking throughout the classical era to the present. Regardless of whether we examine physical access (through brick and mortar institutions) or technological access (through online learning platforms or social media), the goal is to understand the impact that the lack of access to education or pedagogy has on society. The examination of unequal access to education begins in approximately 350 BC.

Access to Pedagogy in the Classical Greek Era

During the classical antiquity era, Alexander III of Macedon, more commonly known as Alexander the Great, was a student of Aristotle who in turn was a student of Plato. Given the combined wisdom of two great philosophers, the pedagogy that Alexander the Great received was of undeniably high quality and arguably the best education opportunity of the time. Military genius aside, Alexander the Great's access to such a superior pedagogical system helped shape his advanced global thinking and vision. For example, he demonstrated the ability to see positive humanistic possibilities by assimilating the vanquished (those of different races, cultures and religions) with the victors through his support of inter-racial marriages and other actions. Such acts did not sit well with his soldiers and a society that preferred to disassociate the vanquished.

Unfortunately, the chasm of understanding between Alexander the Great and his soldiers was so vast that assimilation was not sustainable. To paraphrase the inspirational words of Chinua Achebe (1958): "Alexander the Great's kingdom fell apart". Alexander the Great's ideas were so far ahead of their time that after his death, the Macedonian Empire was divided up among his generals. It appears that Macedonian soldiers could not assimilate among themselves let alone with the vanquished. If we fast forward over two thousand years to 1948, we see Alexander the Great's vision materialize with the adoption of the Universal Declaration of Human Rights (UDHR). Our point is that Alexander the Great was so great because he had access to a higher quality of pedagogy than did his soldiers. Although access to pedagogy will not guarantee greatness,

I hypothesize that universal access to tertiary pedagogy will facilitate positive global growth and evolution.

Access to Pedagogy in the Contemporary Era

I now turn the focus to the 21st century and posit the Organisation for Economic Co-operation and Development (OECD) as a hallmark and reflection of current-day outcomes of pedagogical access and its derivative questions. In its Education at a Glance report of 2013, the OECD identified a strong positive correlation between lack of tertiary / post-secondary education and unemployment. The relative earnings premium (or the salary gap between those with a tertiary education and those without) has increased in most OECD countries over the past ten years. In 2000, American workers with post-secondary education earned 76% more than workers without higher education (the OECD average was 49%). Ten years later, the earning gap had widened to 77%. The report goes on to say that Americans without post-secondary or tertiary education were hit the hardest by the recession that started in 2007 (OECD, 2013). For example, the unemployment rate in the United States of America for people who had not attained tertiary / post-secondary education increased by more than 6 percentage points between 2008 and 2011 while the average increase across all OECD countries was lower than 4 percentage points. Given the rising post-secondary tuition costs, the following aphorism is appropriate: "The rich get richer and the poor get poorer".

The OECD is also concerned about accommodating the changing demographics and increased diversity of the working population (Marin & Heckmann, 2013). Their bottom line is that:

> Tertiary institutions not only have to meet the growing demand for university education by expanding the number of places they offer, they also have to adapt programmes and teaching methods to match the changing needs of a more diverse generation of students (Marin & Heckmann, 2013, p. 4)

Given the systematic imbalance in access to education, perhaps it is time to listen to the voices of the silent majority and develop innovative, economical ways to provide ubiquitous access to education. For example, on-line technologies such as social media may be ide-

al economical vehicles to increase access to tertiary education, engage younger generations, and fuel pedagogical growth.

The Shadow Pedagogy System

Concern about type of access to education, particularly on-line access and its derivatives, has influenced, shaped and reconfigured contemporary traditional pedagogy. Questions such as: "Who has the right to provide pedagogy?" and "Should pedagogy be limited to traditional brick and mortar access?" have laid the groundwork for collaboration, contestation, and accommodation among educational institutions, non-government organizations, and corporations. Further, questions such as these have instigated the rise in social media mega-corporations (i.e. Twitter, FaceBook, Youtube, Instagram, and Google) and new technologies such as online platforms that provide a virtual learning environment (i.e. Khan Academy, Carnegie Mellon's Open Learning, and CK-12 Flexbook). These two interdependent trends have transformed the traditional spheres of pedagogy, society, and everyday life through a shadow pedagogical system. The term "shadow pedagogy system" has several underpinnings and will be analyzed in two distinct ways: the shadow pedagogy system as a form of non-traditional education, and the shadow pedagogy system as a feedback medium.

The Shadow Pedagogy System as Non-traditional Education

As a metaphor, a "shadow" only exists as a manifestation of an entity: In our case, the entity is mainstream education (such as elementary, high-school and traditional university education), and the shadow represents all non-traditional forms of education (such as homeschooling, tutoring, and online learning). As the entity shifts, so does the shadow. And, although the entity (mainstream education) may justify the existence of the shadow, sometimes the shadow looms larger than the entity. Despite the recent growth in online learning, home schooling, and tutoring in the West, these shadow pedagogy systems are not receiving adequate attention from educational policy-makers (Bray, 2009). As costs of mainstream education rise, the gap between the educated and uneducated will increase unless we can focus on more cost-effective ways to deliver pedagogy. We propose that the answer may lie in the shadow pedagogy system.

The Shadow Pedagogy System as a Feedback Medium

Shadow systems or networks can also be explored through the lens of complexity theory (Stacey, 1996). Essentially, when the entity is rife with details and clutter, we may be better off examining the shadow. The term "shadow system" was coined by Stacey (1996) to denote the intrinsic, creative value of informal networks in organizations. We can easily see the entity through its structure, mission statement, actions and so on. What is not as obvious is its shadow: the insights gained from subcultures, the intrinsic knowledge gleaned through the grapevine, and the innovations that arise from conversations at the water cooler. Researchers have discovered the power of shadow networks or systems to provide insights that enhance learning and pedagogy (Hansen, 2013). By listening to the unregulated and even unauthorized opinions and needs of the students, educators are able to design more innovative learning environments. This shadow pedagogical system plays a central role in producing collective intelligence, collective narratives, collective collaborations, metaphors, and images that can inform critical pedagogy (Giroux, 2004).

I wholeheartedly support the notion of examining the shadow pedagogical system to provide equal access to education and to gain valuable feedback for pedagogy. Further, I propose that on-line technologies such as social media (which is currently in the shadows) may be a useful vehicle for tapping into the unspoken words of learners and providing access to pedagogy for the silent majority. Before moving on, it is important to define and frame social media.

Social Media

Andreas Kaplan and Michael Haenlein define social media as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content" (Kaplan & Haenlein, 2010, p. 60). We embellish this definition of social media to include multiple platforms of the virtual learning environment such as Twitter, Massive Open Online Courses (MOOCs), Facebook, YouTube, MIT OpenCourseWare, Instagram, Khan Academy, Google, Carnegie Mellon's Open Learning, and CK-12 Flexbook. Given that more than half of the American young adult population uses some form of social media (Correa, Hinsley, & De Zuniga, 2010), I propose that social media has the potential to impact, in-

fluence, and transform pedagogical principles and philosophical practices. Further, social media, in all of its various on-line gyrations, can provide a platform for collective collaboration, collective thinking, and collective support. I now turn the attention to contemporary pedagogical issues that impact access to education.

Alternative Forms of Education

The concept of "deschooling" was introduced in the early 1970s (Illich, 1971) whereby people could opt out of traditional educational institutions in lieu of other pedagogical methods such as "educational webs which heighten the opportunity for each one to transform each moment of his [sic] living into one of learning, sharing, and caring" (p. 2). John Holt (1977) supported Illich's views with his concept of "unschooling" in his newsletter "Growing without Schooling" (Holt, 1977). Like Illich, Holt rejects the tenets of staying in school, defined curricula, and standardized testing and supports the idea that students should decide what, when, where, how, and why they should learn.

At the peak of this debate, the claim was that the only way to experience unschooling or deschooling was to drop out of school and create one's own learning environment. At that time, alternatives to traditional education were limited to private schooling and homeschooling. Today, forty years later, social media and open source textbooks (i.e. CK-12 Flexbooks), make it much easier for students to practice the pedagogy of unschooling or deschooling. As well, students can take on-line courses at their leisure through a program like MIT Openware, Carnegie Mellon's Open Learning, or MOOCs.

Pedagogical videos such as those from Khan Academy are used at an early age by unschoolers or deschoolers to learn complex mathematics skills such as calculus. Rather than follow a strict curriculum (as in the traditional brick and mortar pedagogical system), unschoolers or deschoolers can exercise their intellectual curiosity and increase both practical and critical learning skills by creating their own interactive story, game, animation, or simulation with Scratch, a MIT programming language, or Museum Box.

Further, motivation is likely to increase if students are able to choose the pedagogical topics they want to pursue. For example, because of the flexibility of social media tools, students can learn division before mastering addition if they so choose. As such, social media and virtual learning online platforms have made it easier for

unschoolers and deschoolers to practice their pedagogical philosophy.

Homeschooling (which is considered by many to be a branch of unschooling) has also been facilitated by social media technology such as Khan Academy, Youtube, and Twitter. The reason for this belief is that homeschoolers now has pedagogical tools at their fingertips to achieve their pedagogical objectives. Case studies and exercises are only a click away. As a result homeschooling (or unschooling) is gaining momentum, attention, and acceptance in the United States and around the world. According to the U.S. Department of Education Office, 1.5 million students were homeschooled in USA in 2007, which represents an increase of 36% since 2003 (ONPE, 2012).

Pedagogy Before and After the Advent of Social Media

Before the advent of social media, it was difficult for philosophers to garner international support, and it was easy for critics to argue, given the lack of empirical evidence. For example Julius Nyerere (1967) made a significant contribution in the area of pedagogy of the oppressed when he argued

> Man [sic] can only liberate himself or develop himself. He cannot be liberated or developed by another. For man makes himself. It is his ability to act deliberately, for a self-determined purpose, which distinguishes him from the other animals. The expansion of his own consciousness, and therefore of his power over himself, his environment, and his society, must therefore ultimately be what we mean by development. (p. 27)

These words ring true for our current pedagogical system and its purpose to liberate humans from the restraints and limitations of ignorance and dependency. A pedagogical system should increase our physical and mental freedoms and give us control over ourselves, our lives, and the environment. The ideas imparted by the pedagogical system should therefore be liberating ideas: Nothing else can appropriately be called a pedagogical system (Nyerere, 1967).

Nyerere's (1967) comments such as: "Pedagogy that induces a slave mentality or a sense of impotence is not pedagogical at all—it is an attack on the minds of men" (p. 28) raised the dander of many

critics who labelled his words as ill-defined and socialist or communist. Had social media been available to academia and the general public, we may have recognized the similarities between Nyerere's proposition of a neo-colonial pedagogical philosophy and the assimilation strategies of other great philosophers such as Paulo Freire, Malala Yousafza, and Alexander the Great.

Before the advent of social media it was easy for critics of critical pedagogy to play the game of divide-and-conquer. By localizing the issue of oppressed pedagogy, particularly during the Pinochet era in Chile, Videla era in Argentina, and the various Brazilian dictators' eras (from Branco to Figueiredo), political leaders were able to oppress and suppress the majority of their countrymen. Exposure to social media and globalization at the end of the 20th century helped society understand the irony of the confrontations. Proponents of critical pedagogy in Latin American countries rallied against dictatorship and communism. In short, they strove for the good of the majority: sociological, political, and economic freedom. These goals are similar to those of feminist and gender equity movements, equity legislation, or affirmative action for protected groups.

In the absence of social media in the 1960s, 1970s, and 1980s, most of these great movements in the realm of critical pedagogy were isolated and detached from one another. The advent of social media has facilitated the increase in collective thinking, collective responsibility, and collective support (Kellner, 2000). What were once considered racial attitudes are now better understood as cultural differences. Because of free and ubiquitous access to social media tools, critical pedagogy is becoming more universal, liberal, and secular rather than localized, isolated, and detached.

In the new millennium, information technology has given rise to a new knowledge economy where critical pedagogy and education play key roles (Kellner, 2000). According to Kellner (2000): "Critical pedagogy considers how education can strengthen democracy, create a more egalitarian and just society, and deploy education in a process of progressive social change" (p. 1). We propose information technology, and in particular social media, as an ideal conduit for critical pedagogy. Social media has the potential to become a virtual town crier platform whereby social agents can work in harmony with others to educate each other, strengthen democracy, foster critical thinking, and create a less repressive society. By accepting these responsibilities, reactors can become actors, the objective can become subjective, and it becomes possible to

end cultural domination through a better understanding of different interpretations of ethnic, gender, political, and class distinctions.

Learning Theories

Several 20th century theories about learning and knowledge integration laid the groundwork for mainstream pedagogical design. Although authors used different terms and emphasized different areas, the common message was that the integration of knowledge requires a complex set of mental processes (including recognition, organization of ideas, and evaluation) that are embedded in and influenced by the learner's sociocultural environment (Vygotsky, 1962).

Originally these learning processes and theories were geared toward mainstream education that required brick and mortar access. Attempts have been made to apply these theories to the shadow pedagogy system (the non-traditional forms of education).

However, the sociocultural environment has changed drastically over the past few decades, which, according to theory, influences the learner's experience. Current day theorists are calling for a transformation in pedagogy by utilizing information technology to develop and deliver engaging and authentic learning experiences for multiple constituents (Kellner, 2000).

I propose that social media may facilitate such a transformation. Given the number of people that require access to pedagogy and the physical and economic limitations of mainstream higher education, social media may be the only viable solution.

Conclusion

This paper attempted to answer the question: "How can we provide universal (or at least increased) access to post-secondary, tertiary education"? I hypothesize that social media is a viable source of access to education for the public and a source of pedagogical feedback for educators. I concur with researchers such as Kellner (2000) that access to education is a critical component of the current technological revolution. Just as the application of mathematics was a primary catalyst in the industrial age, the use of social media may be a primary facilitator during the transition to the contemporary digital age. As part of the current shadow pedagogical system, social media can provide economical and ubiquitous access to pedagogy and can help to narrow the gap between the educated

and undereducated. This increased access to education could in turn facilitate positive global connectedness and democracy.

Social media is also an appropriate vehicle to reach and engage the growing population of homeschoolers and unschoolers. In addition, social media is also an ideal conduit for critical pedagogy by providing the space for developing harmonious relations and solving critical problems among nations. Further, ubiquitous access to social media gives a voice to the silenced and can ultimately lead to development "for Man [sic], by Man, and of Man". By giving everyone equal access to higher education each human being has the opportunity to experience the: "expansion of his [sic] own consciousness, and therefore his power over himself, his environment, and his society" (Nyerere, 1967, p. 27).

Finally, the increasing diversity of the world's population in terms of age and culture dictates the need to adapt our pedagogical tools as well as the manner in which we deliver education. Education should operate as an open system with its external environment, rather than in a vacuum.

In the inspirational words of Samuel Taylor Coleridge, it will take a "suspension of disbelief" for some mainstream academics to consider social media as a useful pedagogical tool. However, I believe it would take a "suspension of disbelief" to say that social media is not a force to be reckoned with in the area of pedagogy. It is up to us as educators to decide whether social media is an albatross around our necks or a golden goose that can lead us to a universally educated open society.

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