'Show Me Your Wiki and I'll Show you Mine': Using Online Interactive Media to Improve Academic Writing and Research in a Public Health Under-Graduate Cohort.

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Abstract

The number of Internet users in Australia has been steadily increasing, with over 10.9 million people currently subscribed to an internet provider (ABS, 2011). Over the past year, the most avid users of the Internet were 15 – 24 year olds, with approximately 95% accessing the internet on a regular basis (ABS, *Social Trends,* 2011). While the internet has been described as fundamental to higher education students, social and leisure internet tools are also increasingly being used by these students to generate and maintain their social and professional networks and interactions (Duffy & Bruns 2006). Rapid technological advancements have enabled greater and faster access to information for learning and education (Hemmi et al, 2009; Glassman and Kang, 2011). As such, we sought to integrate interactive, online social media into the assessment profile of a Public Health undergraduate cohort at the Queensland University of Technology (QUT). The aim of this exercise was to engage students to both develop and showcase their research on a range of complex, contemporary health issues within the online forum of Wikispaces (http://www.wikispaces.com/) for review and critique by their peers. We applied Bandura's Social Learning Theory (SLT) to analyse the interactive processes from which students developed deeper and more sustained learning, and via which their overall academic writing standards were raised. This paper outlines the assessment task, and the students' feedback on their learning outcomes in relation to the Attentional, Retentional, Motor Reproduction, and Motivational Processes outlined by Bandura in SLT. We conceptualise the findings in a theoretical model, and discuss the implications for this approach within the broader tertiary environment.

Background and Rationale

Web 2.0 has come to the forefront of higher education to improve learning amongst students in tertiary environments (Wheeler et al, 2008; Tetard et al, 2009; Kirkwood, 2010; Knight, 2009; Hemmi et al, 2009; Duffy & Bruns, 2006). The range of information and communication technologies that can be classified as Web 2.0, such as blogs, social media, websites, and wikis, provide innovative and fertile

learning spaces for students, as they shift the learning processes from linear pathways to more interactive and collaborative dynamics (Wheeler et al, 2008; Tetard et al, 2009). These tools also facilitate social learning, peer assessment, formative feedback from educators, and individual and group reflection on the learning experiences (Kirkwood, 2010; Knight, 2009). Studies have shown that the use of online tools, such as blogs and wikis, enhances students engagement, deepens their learning experiences, and improves their overall academic achievement (Hemmi et al, 2009). In this paper, we firstly describe Bandura's Social Learning Theory (SLT) as it applies to the use of wikis for academic assessment in a tertiary education setting. Secondly, we outline the wiki assessment used for the Health, Culture & Society unit in the School of Public Health & Social Work at QUT. Thirdly, we detail the methodology of observation and data collection from students regarding their learning processes and outcomes. Fourthly, a conceptual model is proposed to illustrate the findings of this process, and finally, benefits and limitations of applying wikis in the higher education context are discussed.

Theoretical Framework: Social Learning Theory in Collaborative Cyber Spaces

In keeping with the social and collaborative features of Web 2.0 technology, Bandura's Social Learning Theory (SLT) was applied to investigate the effectiveness of a wiki as an online tool to improve the academic writing and referencing standards of undergraduate students in this setting. Bandura described this complex, interactive process of social learning as being comprised of four key conceptual elements. These elements were used as the conceptual framework for analysing students' motivations in observing, interacting, modelling, and performing their academic work on the wiki.

1. **Attentional Processes** – In order to observe accurately, attention needs to first be given to a particular action or behaviour. If the behaviour is seen as attractive, the individual is more likely to give it attention. An individual may be more inclined to *pay attention to a modelled behaviour that they will be required to perform publically, rather than privately.*

2. **Retentional Processes** – An accurate reproduction of the modelled behaviour may be more likely if the behaviour is immediately imitated, if the observer is repeatedly exposed to the particularly behaviour, and/or if the actions required to complete the behaviour are rehearsed, mentally and then overtly.

3. **Motor Reproduction Process** – The course of action that an individual chooses to take is largely dependent on the anticipated outcome, and the confidence that they posses in their own ability to perform the necessary actions (self-efficacy). Self-efficacy will dictate, at least in part, the level of difficulty they wish to tackle, and the amount of effort they wish to invest.

4. **Motivational Processes** - People are also more likely to model behaviours that lead to pleasing results (Bandura, 1997). Differential reinforcement by models, such as teachers or fellow students, is likely to lead to appropriate behaviour. If a model gives similar feedback to everyone performing the behaviour, regardless of the quality, the behaviour is not imitated well (Bandura, 1977).

In light of these well-established theories by Bandura (1977), and his more recent reflections on wiki and internet-based learning, we set out to test the dynamics and learning processes involved in the collaborative production of a wiki by a cohort of Public Health undergraduate students. We designed a piece of assessment which would allow us to specifically examine whether the nature and characteristics of a shared online space for the production of research and academic writing either challenged, or enhanced, the quality of their work and learning processes – or both.

The Assessment Task

Having selected a topic, the students were directed to the established Health, Culture, & Society Wiki in Wikispaces (http://www.wikispaces.com/) for the unit, which can be viewed in **Figure 1** below. They followed the steps outlined below **Figure 1** to generate their own individual research projects on a page at this website.

Figure 1. The Health, Culture, & Society Wiki
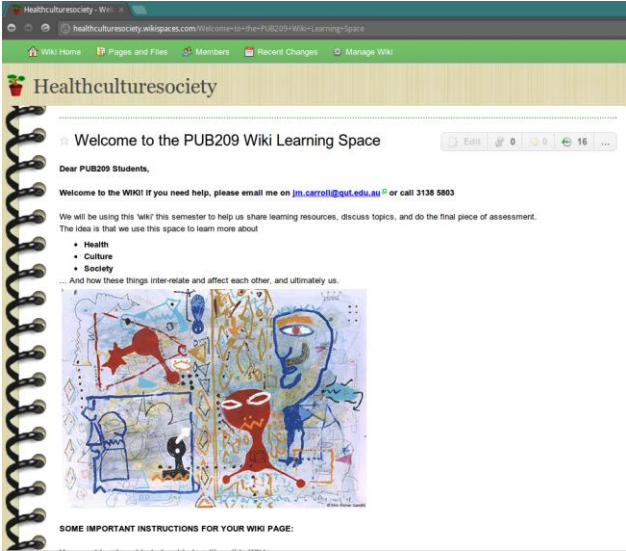
The student's first task involved describing and depicting a cultural artefact. The artefact could be any *symbolic item* that they had located from within their social/cultural worlds that represented the public health issue being addressed in the assessment.

Figures 2, 3, and 4 below depict some examples of artefacts used by the students in this assessment piece.

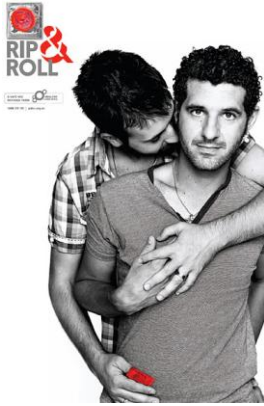**Figure 2. 'Rip and Roll' Advertisement for HIV Prevention.**

Figure 3. Body Shop Advertisement promoting Healthy Self-Image for Women.

Figure 4. Painting depicting Mental Illness (Depression)
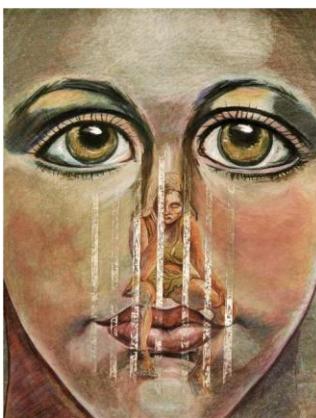
The students were to then identify and briefly describe the core public health issue that the cultural artefact represented . The students then conducted a comprehensive and in-depth literature review to demonstrate their knowledge of the latest research and scientific evidence on their chosen topic. Students were required to apply social theory, philosophy, and/or a research-based analysis of how

and why *society and culture* were crucial elements in both understanding and redressing the population health issue they had chosen to focus on. Finally, the students had to go back to their cultural artefact and describe what it symbolised and represented, and how it was a good 'case in point' of their topic/issue, and what it meant to them personally.

Research Questions

1. Can shared 'cyber spaces' be occupied by undergraduate public health students to raise standards in academic research, referencing, and writing skills, and what are the processes via which this occurs?

2. Does the interactive process of sharing and comparing assessment items generate collaboration and competition amongst undergraduate students wherein more critically informed arguments are made contemporary public health?

3. What are the implications of this assessment trial for future teaching practices in undergraduate courses?

Data Collection

Following the completion, submission, marking and return of grades and feedback to the students on their individual wiki page contributions, we asked them the following questions.

- What did you think of the Wiki research project when it was first introduced for assessment?
- What did you like/not like about doing the Wiki research project?
- Do you think your own academic standards were raised as a result of this type of assessment?
- What were some of the factors that affected how you performed in this task?

Data Analysis

We conducted a thematic analysis in the first instance, followed by axial coding to explore the relationships between the key concepts arising from the data. We employed SLT to organise the emanating findings from a social constructionist perspective, and to develop theory about how ICTs such as a wiki work to raise standards amongst undergraduate public health students. We paid particular attention to the social dynamics that shaped the students' internal processing and outward performance and academic achievement.

Findings

The findings are organised the model below to highlight the learning processes as described by the students in producing the high quality of academic writing and research we observed in the wiki in the final production.

Collaboration and Competition on a Wiki: The Praxis of Social Learning
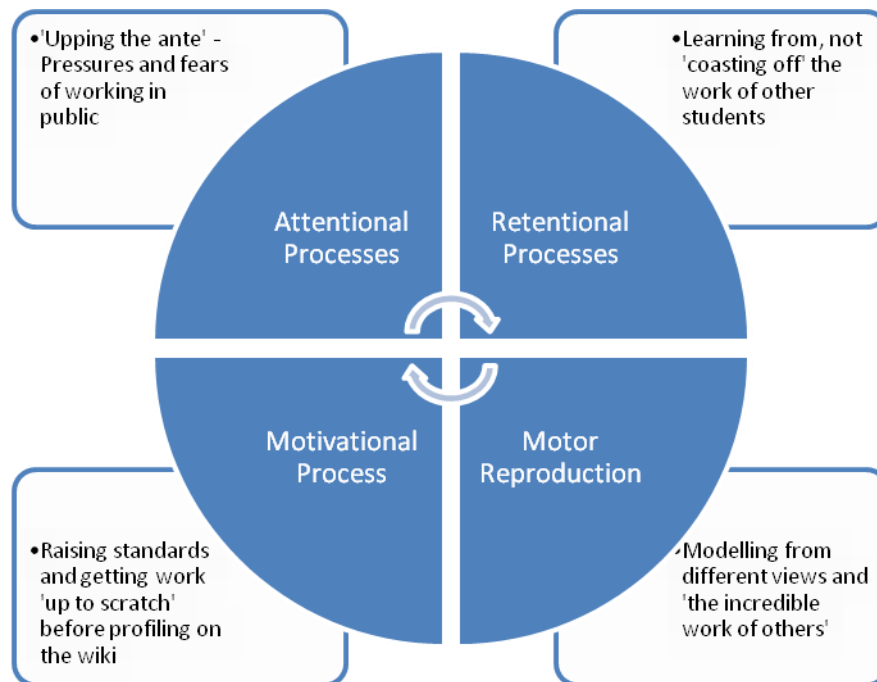
Attentional Processes

According to SLT, more attention will be paid to a behaviour that is perceived as appealing or attractive, and which will be required to be performed publically rather than privately. The students stated that while the desire to perform well was indeed present, they were initially intimidated by the demands on them to produce work that would ultimately be visible to the entire student cohort, as these students clearly express:

'I didn't like or feel that comfortable with having my name attached to my work for all to see'
and
'*I was intimidated when I heard the wiki would be able to be accessed by my fellow classmates.'*
While the task was initially approached with some fear and caution by the students, who were aware of the pressure involved in producing public, rather than private work, this resulted in the initial demands and expectations and motivations being higher, as this student explains:
'I guess I felt it created a bit of pressure on myself if other people were going to read it, but really in hindsight that actually worked in my favour, as I put a lot of time and energy into it.'

Retentional Processes

There was ample opportunity for the students to be exposed to the final products that they were required to produce, as some students began their work early, and there were many examples to watch unfolding and to study during this time. What was most interesting, was that despite students'

anticipating that they could simple model, or copy the work of others, this time of observing and processing what was being produced actually made them want to perform even better than their peers, as this student described:

'Initially I had thought that doing this assessment might mean that you could coast off those more organized and submitted early, however, it made me want to find something different, and do better than them.'

Motor Reproduction Process

Following the opportunity to observe, ask questions, and plan an approach to their own projects, students began to attempt to post work on the site, and this process was an iterative one of self-reflectoin and regulation – which they conducted in relation to 'checking-in' with their models and/or peers. During this stage of production, the students were still heavily engaged in observing the work of others around them, as these quotes indicate:

'It was great to see others style and notice the differnce in views'

'[the best part was] Seeing other people's artefacts and wiki's, most of which were incredible'

Motivational Process

In order to direct students to examples or models of the best work possible, the teaching staff identified the best work being produced and held these up as exemplars for other students to use as a guide. We regularly showed our students pages that had achieved excellence in writing, referencing, and analysis, and told them why we thought these pieces were exceptional. As well as generating a useful guide for performance, this process of rewarding 'good work' instilled a further level of competitiveness amongst students to raise the quality of their work, as this student stated:

'My standards were raised because I saw the quality of work posted before I had completed my own wiki. It made me put that extra bit of effort in to get it up to scratch.'

Even those students whose self-efficacy was high enough that they were confident to post their work prior to the due date were encouraged to continuously improve their projects based on the exemplars regularly being presented to them, as this student explains:

'I put up the page early and edited it regularly based on comments, which was very helpful.'

Discussion and Conclusions

By providing a standard against which one's own performance can be evaluated, modelled behaviour can induce self-motivation (Bandura, 1977). These processes were highly evident and able to be observed in the work produced by students on the Health, Culture, & Society wiki project, and were further highlighted in students' accounts of undertaking their individual wiki page projects. The learning that occurred was done socially, publically, collaboratively, and competitively; and via an iterative process wherein students observed and studied each others' work, and then both imitated and innovated ways of conducting their own projects. We did observe some initial fear and hesitation to engage in the project, wherein only the students with a heightened sense of self-efficacy were confident to begin posting and sharing their work on this public forum. It became evident that within

this cohort the feedback exposed feelings ranging from intimidation at their work being observed by their contemporaries, through to the pragmatism of rising to the challenge of performing at their best because the work would be scrutinized by their peers. However, as predicted in SLT theory, the value the individual students placed on accomplishing the desired behaviour allowed them to overcome such barriers. Overall, the wiki allowed some of the most advantageous elements of social media and ICTs to work in parallel with the pedagogical goals of the teaching staff to ensure deep and sustained learning for students; learning which had been inspired by competition, and informed by lengthy periods of collaboration and iterative reflective processes.

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