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Critiquing undergraduate student participation in academic research using Kincheloe and Steinberg's eight cognitive benefits

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Using Kincheloe and Steinberg's *eight cognitive benefits*, this paper engages in a reflective analysis of a collaborative research project involving a university lecturer and four undergraduate students. The eight cognitive benefits present as critical pedagogical directives influenced by post-formal thought, which is, in part, characterised by the ability to engage in flexible problem solving within a range of authentic situations. Kincheloe & Steinberg suggest that, as a benefit to students' research, this approach "...pushes students to new depths of insight" (Kincheloe & Steinberg, 1998b, p. 241). This framework was selected as part of a post-project process debriefing the experiences of the students, and applied as a way to link practical aspects of collaborative research with critical pedagogies; a pertinent consideration here, due to the existence of potentially unequal power relationships. Using this framework, the genuine collaboration that occurred (the writing of a chapter for a Bachelor of Education course textbook) and the resulting emancipatory discourses of learning experienced by the students and academic are detailed. This paper categorises the eight cognitive benefits into two domains, internal and external, enabling an engagement in critical self-reflection for the internal domain, and critique of authentic connections made outside of self within the university context, for the external domain. By addressing each of the benefits individually, effective outcomes of student-academic collaborations aligned with the theories of Kincheloe & Steinberg (1998a) are demonstrated to have occurred. It is the experiences of the undergraduate students, rather than the academic, that form the focus of this paper. This critique can be transferred to other educational contexts when educators and students engage in authentic research collaborations.

Keywords: critical pedagogy, student engagement, research collaboration

Introduction

The context of the collaborative exercise between an academic and four undergraduate students was the process of researching and writing a chapter in a textbook (Austin & Hickey, 2007) used for a core subject in a Bachelor of Education degree. This collaboration occurred in the first year of operation of the Springfield campus, University of Southern Queensland, with first year students and an early career academic. First year experience is an area of increasing interest amongst higher education researchers, especially strategies for

meaningfully engaging this cohort (see, for example, Krause, Hartley, James & McInnis, 2005; McInnes, 2002; Ballantyne, Todd & Olm, 2007; Trigwell, Prosser & Taylor, 1994). The involvement of the students who participated in this project can be seen in light of their own personal positive first year experiences. Rather than the student-academic collaborative experiences which were essential for the success of the project, and is the focus of another publication; this paper centres on the transformative impact the project had on the students individually, through critiquing the experiences of two of the four students originally involved in the collaboration. Analysis of these experiences is framed using Kincheloe & Steinberg's (1998b) eight cognitive benefits, recognised here as emancipatory discourses in the students' higher education experience. This paper is co-authored by the academic and two of the four students involved in the original collaboration, enabling an authentic student voice.

The motivation behind inviting students to participate was based on the academic's interest in exploring ways to authentically incorporate learner-centred and constructivist philosophies of education into a meaningful, educative project that would enhance the experience of university students. The students pre-identified by the academic as possible participants in the collaborative exercise were selected as they appeared to have not only adjusted to, but were also succeeding in, the intellectual challenges of tertiary study. Additionally, it was evident that a tentative peer group had been established with a number of mature age students. This project was considered as a way to strengthen this peer connection, and develop the sort of every-day professional collaboration evident in schools between teachers on issues such as curriculum planning.

Far from being a simplistic project in which the students are adjuncts to the research process, a critique of the eight cognitive benefits (Kincheloe & Steinberg, 1998b) will demonstrate the depth and breadth of the students' involvement as being equitable to that of the academic. While the students produced the writing to the best of their abilities, the academic supported the learning process that this exercise became through the use of a variety of teaching strategies and materials intended to extend the students' academic abilities.

Scholarship of student transformative pedagogies

An established tradition exists, widely published in academic literature, of academics engaging in research with their students, particularly as part of university courses such as Honours projects and post-graduate research. This is an important aspect of acculturating students in academia and/or the profession they will be entering, and occurs in forms such as the 'modified apprenticeship' model (Zanna & Darley, 1987, p. 140), which combines two common approaches: a graduate or honours student independently bringing a research question for investigation; and the student being given a research question by an academic supervisor to address. Whilst this approach has its deficits, namely not recognising student competencies in designing research projects based on their own research questions and methodology, having to instead defer to the more experienced academic, it can be seen as a stepping stone to students' gaining independence. The approaches mentioned above occur across a range of disciplines, such as psychology, science and medicine.

Other literature published on the topic of student and academic collaboration focuses on engaging students in research with the scope of the project generally pre-defined by academics. The students are often positioned in an academic-assistant role, such as interviewer, scribe or note taker, field worker, or research assistant (Chang & Schmidt, 2007; Chang, 2007; Lawrence, 2002), and in this type of collaboration, it is common for the student

to be paid. Additionally, the students engaging in this type of academic assistant work are generally honours or postgraduate students looking to gain experience in the tertiary sector. These roles are, in themselves, important and provide students with a range of valuable experiences and skill sets which can be used for leverage when pursuing academic and professional employment.

"...comfortable with ambiguity [as they] are better equipped to establish a productive interaction between students and students and teachers. Such interaction heightens self-awareness as student researchers are attuned to the power of their own words and those of others and the nature of the contexts and codes and the ways they construct the meaning of communication." (Kincheloe & Steinberg, 1998a, p. 8)

In the case of this collaboration, being comfortable with the ambiguity that surrounds the initial development stages of a school teaching unit (the focus of the chapter), was not a difficult task, as the students had been carefully and specifically selected to participate (although they did believe for quite some time that it was a random selection). The academic had experience teaching these students, had witnessed the standard of their work combined with their commitment to strive to achieve their academic best and watched their confidence develop through participating in class discussions and debates; these elements combined made establishing trust within this new context a smoother transition than it otherwise may have been if the students were not so well known to the academic.

Building on from their discussion on open and collaborative research partnerships developing between teachers and students, Kincheloe & Steinberg (1998a) also report on the respect teachers give to their students when engaging them in meaningful work with real-world outcomes. Rather than the oft-cited need for students to respect their teachers (which has a number of ambiguous connotations), directing attention at teachers respecting students leads to meaningful work being given to students in their day to day learning. Kincheloe and Steinberg write

"(T)eachers operating on the basis of this critical system of meaning respect students enough to give them real work to do, research that matters...Research as real work involves teaching students to do work that historians, anthropologists, or physical scientists perform." (Kincheloe & Steinberg, 1998a, p. 15).

In the case of this collaboration, the research and outcome the students produced was a real-world example of what school teachers do regularly in their classroom curriculum planning. Providing this truly authentic experience, not as an assignment which potentially no-one other than themselves and the marker would read, but rather as a published outcome meant the students' *real work* had a deeper meaning than otherwise may have been the case. Despite the benefits of publishing, this activity also had the added pressure of ensuring that a high quality chapter was written with the unit of work carefully aligned to stated curriculum outcomes.

Critiquing the process of student participation

Using Kincheloe & Steinberg's (1998b) eight cognitive benefits, this section engages in a critique of the process of student participation. These eight cognitive benefits are viewed as emancipatory discourses because they enable critical reflection to occur with authentic connections that result in an empowering educative experience. Potential impacts from this

process include developing critical educators and contributing to heightened undergraduate experiences through awareness and valuing of the emancipatory experience, cognisant of the potential for transfer to other contexts.

Table 1 categorises the eight cognitive benefits into the internal and external domains that students as critical researchers engage in. The benefits have been categorised in internal and external domains by the authors of this paper, not Kincheloe and Steinberg. The categorisation is a result of critiquing this research experience within this framework. For more detailed explanation of the eight cognitive benefits see Kincheloe & Steinberg (1998b, p. 239–241).

Table 1: Internal and external domains of student critical researchers

Internal domain: engaging in critical reflection	External domain: authentic connections outside of self
1. Moves student to the critical realm of knowledge production.	5. Improves student ability to engage in anticipatory accommodation.
2. Focuses student attention on thinking about their own thinking.	6. Cultivates empathy with ‘others’.
3. Creates an analytical orientation toward their lives.	
4. Helps students learn to teach themselves.	
7. Negates reliance on procedural thinking.	
8. Improves thinking by making it just another aspect of everyday existence.	

Engaging in critical self-reflection (internal processes)

Using Table 1 as a guide, each of the eight cognitive benefits is expanded, focusing on the emancipatory experiences of the student participants. The benefits, categorised into either an internal or external domain, each provide an example of the effect the collaboration had on the students both during and after the research project and both within and outside the set boundaries of the project. This section, written primarily by two of the four students involved in the project, Marie Hayward and Linda Stanley, is expressed through their combined first-person voice.

1 Moves student to the critical realm of knowledge production

Although the academic guided us through the processes required for the project to be successful, hers was not the *dominant* voice. Participating in this project enabled us to move to a position of active producers of knowledge. This was a significant shift from our previous understandings harboured as a result of our formal education experiences which mirrored Freire’s “banking system” (Freire, 1993, p.33), in which we had been passive recipients of knowledge. The transition to active producers of our own knowledge occurred according to Kincheloe and Steinberg because of the need to “engage in their own interpretations of the world around them” (Kincheloe & Steinberg, 1998b, p.240).

Choosing to accept the offer to participate in authoring a chapter was a strategic decision through which we perceived an opportunity to write a case study that had an immediate application to our Bachelor of Education degree. Therefore, we purposefully generated a text that was significant to our studies, and our lives, by linking the topic of the text to land development in the vicinity of our university campus. Such goal driven behaviour allowed us to complete a chapter that had our needs as students as the directive force, encouraging us to

produce work of relevance and value to which we had immediacy of knowledge and understanding. The topic of the chapter could then be used during our practicum experiences for the Key Learning Area (KLA) of Study of Society and the Environment (SOSE).

Had we not become involved in the construction of this text, the alternative scenario would have been the prescription of a text book by the course teaching staff that potentially addressed the interests and goals of a distant publisher as their foremost concern (Kincheloe & Steinberg, 1998a). Strategically choosing to become involved in the creation of our own learning materials removed the concerns we had about the promotion of the agendas of others and placed our own agendas, as critical learners, to the fore. Although empowering to us, this was viewed by some of our contemporaries as a selfish act, with the potential to disempower the students in the 160+ cohort who were not involved. We were targeted with minor 'othering' behaviours from students who claimed there was little value in a text part authored by fellow students; behaviours that were less significant to us because of the empowerment we felt through our increased involvement in all aspects of university life.

2 Focuses student attention on thinking about their own thinking

Participating in this project made us aware of the value of our own intellectual qualities, and the potential we had for intellectual output. Up to that point within our formal educational experiences, knowledge had been presented as prescriptive with predictable, predetermined outcomes. As a group, we actively and intentionally diverged our thinking from the expectations of the transmission approach which we had experienced. Importantly, this collaborative exercise provided us with the means and mechanisms for authentic self-constructed learning; we were enabled to step outside the constraints of undergraduate academic requirements, a process which resonated with our developing interest in critical pedagogy (Giroux, 1988).

Our collaborating academic provided some existing examples of SOSE teaching units from which to draw structural notes and directives. However, these units were only used as guidelines and templates, mere structural tools. Our emerging confidence allowed us to juxtapose our own ideas with an accepted format, effectively putting our own 'stamp of authority' on the work, establishing an appreciation for the ways knowledge can be communicated, and developing a passion for synergising the knowledge accumulated and produced through this process. Essentially our academic produced "the conditions in which critical learning is possible" (Freire, 1993, p.33), enabling freedom of choice for both content and presentation.

At the beginning of this process, we were *raw recruits*, uninitiated in the realms of academic thinking, but by the end of the process, the work we produced enabled us to see the benefits of self-managed knowledge creation. From the point in time that marked the end of the initial collaboration (that is, publication of the textbook) our ability to think academically expanded to allow us to accept the challenging rigours of undergraduate honours research projects.

3 Creates an analytical orientation toward their lives

During the semester in which we were engaged in the research, our collaborative academic was also our lecturer and tutor. The course we were all involved in included the critical analysis of public pedagogies, through which we chose assignment topics which would ultimately demonstrate to us that there were links between what we were looking at collaboratively, and what we were investigating academically. With our academic's encouragement and support we investigated topics for the major assignment that allowed us to

emancipate the critical pedagogue within us, because through the collaborative process we had identified beneficial attributes of critical, emancipatory pedagogies that resonated with our burgeoning interest in socially just teaching practices. Although, according to Kincheloe & Steinberg (1998a, p.6), “No one is ever emancipated – we only work towards emancipation” we feel as a result of this collaboration we have moved closer to emancipation from the traditional forms of knowledge acquisition with which we had been previously acculturated. Our chosen topics linked the thematic concepts embedded within our assignments to the creation of the text book chapter, encouraging us to question the ‘critical emancipatory context’ of both assignment and textbook as they became “...cultural artefacts to analyse in the same way an archaeologist examines pieces of ancient pottery” (Kincheloe & Steinberg, 1998a. p.6). As a result of the combination of the courses we were studying as part of our undergraduate degree program, and participating in this research project, we developed a critical approach in our thinking outside of a formal education context.

4 Helps student learn to teach themselves

As a result of being highly motivated to complete tasks, we were able to work through the cognitive dissonance affected by the timely and intentional self-distancing of our collaborating academic. We were presented with a challenging scenario through which we had to develop strategies to achieve success. This did not always happen as a cohesive group exercise, but often as individualised expressions of anxiety about perceived lack of direction, that as a group of students were not always visible to us. This was due in part to the misinformation some of us harboured about authentically collaborative conventions (Lawrence, 2002). Our group diverged in thinking, went in different directions from time to time, and sometimes wandered aimlessly through seeming impenetrable fogs of academic angst before seeking strategic direction from our collaborating academic. Each of these non-productive phases provided us with realisations of our needs and shortcomings from which we learned how to move forward, as well as strengthening the collaborative links we were nurturing and striving towards. This also engendered a sense of empowerment within us, as we were genuinely creating our own learning without denying the existence of the authority invested in our academic. In retrospect it is obvious she was attempting to transfer power to each of us to strengthen our academic achievements in a manner similar to Shor’s “transformative power relations” (1996. p.21).

7 Negates reliance on procedural thinking

Participating in this project developed our thinking of and perspective on academic research and writing. Our thinking was no longer confined within the boundaries of an assessment criteria sheet, nor were we reliant on this work for a graded outcome. Instead, this process enabled a sophisticated level of student inquiry to take place. During the time of collaboration we were not cognisant of a set concept of method or methodology – we just ‘did it’; effectively removing the need for producing an item of work that homogenised our thinking with that of all the other students in our cohort. This newly discovered avenue of academic freedom allowed us “the right to change ... strategies in the face of new circumstances” (Kincheloe & Steinberg, 1998b, p.241).

At this point we acknowledged a harboured assumption that the academic teaching staff inhabited an exalted and elevated position at the top of a hierarchical power structure, placing ourselves in the lowest position. This, we presumed was the ‘way things are’. However, in this instance, our conventional thinking was challenged by our academic’s “disconfirming unilateral authority” (Shor, 1996, p.125), changing institutionalised ideologies to democratising ideologies (Shor, 1996) in order to encourage us to meet her increased

expectations of our developing abilities with academic thinking and ways of working. We were no longer content to be reliant on criteria sheets to guide our work; we planned and executed our chapter through a self-developed strategic process.

8 Improves thinking by making it just another aspect of everyday existence

The collaborative process contributed to our developed capacities to critically engage with aspects of our lives outside our formal education experiences. We no longer viewed thinking as an activity best conducted for the enhancement of grades; thinking could also provide a foundation for the interrogation of everyday activities making us critically aware of our surroundings. Embarking on individual research projects was no longer outside the realms of possibility for either of us, as both of us had developed confidence in our ability to produce quality work of a level appreciated by our collaborative academic and the editors of the textbook. During the process of writing the chapter, we never quite believed our work would make it to the publisher (we were confident our work would be heavily edited, if included at all). Despite this, we steadfastly continued striving for excellence in what we were writing. We were essentially subconsciously challenging the editors to find a reason to exclude our writing. As undergraduates we were aware that those who did not know us might harbour lowered expectations of our abilities, due to our position as undergraduate students, rather than postgraduate research students or academics.

Authentic connections outside of self (external avenues for actions)

5 Improves student ability to engage in anticipatory accommodation

The lessons and principles we learned throughout this experience have enabled us to incorporate aspects of the critical, emancipatory pedagogies we experienced ourselves into our classroom teaching practices. Having said that, not all aspects of the collaboration are transferable to other contexts, in the manner we engaged with. Both of us have met with degrees of resistance to any attempt at including critical and emancipatory pedagogies in the classrooms of our mentor teachers in practicum placements, and we have also had to accommodate a lack of interest in collaborative teaching from some of these teachers. However, our understanding of the importance of such issues directs us to strive for their continued inclusion in our teaching practice, regardless of the disapproval of mentors.

As we are also still involved in collaborative projects with our academic in other areas, we have modified our modes of engagement as we are more cognisant of the deficiencies of our previous patterns of collaboration. What worked then will not work now, as our academic is employed in a different interstate institution. Therefore, we have had to consciously plan our efforts in order to maximise the benefits of what little time we three have been able to spend face-to-face, while, as students studying in the same institution, we two have been able to work closely on our collaborative projects (namely this paper and a book chapter to be published in early 2010). We have also engaged with the challenges afforded by the use of various electronic media, for example the academic set up a wiki that we use to modify drafts, plan research directions, and general communication. This has assisted us to remain in as close contact as is practicable with the academic. In this instance, of even greater value to the collaborative effort is the rapport which developed into professional respect, which has consequently moved to friendship between the three of us, allowing us to be more proactive in accommodating our individual learning and research eccentricities.

6 Cultivates empathy with 'others'

In the interim period between collaborations we have taken the opportunity to strengthen the friendship aspect of our relationships, enjoying each others' diversity. We also acknowledged the importance of learning about our individual work and study habits as a means of enhancing our future collaborative projects. The importance of our developing understanding of each other became evident when we collectively felt the necessity to enforce deadlines to curtail procrastination. This developing empathy of each others' level of tolerance of individual idiosyncrasies allowed us to collectively work towards creating an atmosphere within which we could scaffold each other to create a project which enhanced our individual pathways towards academic and professional success.

We also identified ways in which our newly created confidence, through knowledge, could enhance the student experience – not only for us, but for the rest of our cohort. To this end we used our newly acquired confidence to adopt proactive roles. By involving ourselves in various social and political activities such as University Council, Student Representative Council and voluntary work throughout the year, including Orientation Week ambassadorships.

If we had prior knowledge of the eight cognitive benefits we could have structured the project to enhance the emancipatory aspects as we ultimately came to know them. However, this project took place in the first year of our degree, and so was engaged in with the minimum of academic "groundwork" relevant to first year students. The application of Kincheloe and Steinberg's theoretical work took place after the events described, and evolved from our developing theoretical understandings juxtaposed with our retrospective understandings of the events that we experienced. These were valuable lessons learned, and the evidence of learning is in (part) the acceptance by academic reviewers of a book chapter detailing this experience currently under development.

Conclusion

Through the application of Kincheloe and Steinberg's eight cognitive benefits, this paper has mapped the experiences and cognitive processes of undergraduate students participating in an authentic academic research project, as well as detailing the emancipatory benefits yielded during and post-project. Witnessed by the academic, the transformative process these students engaged in was an exciting and unplanned aspect of the collaboration. The empowering effect participating in this type of research project has on other aspects of the students' academic lives is referred to by Kincheloe & Steinberg (1998a, p. 2) as their ability to:

"gain a power literacy – that is the ability to recognize the ways power operates to create oppressive conditions for some groups and privilege for others. Thus, students as researchers gain new ways of knowing and producing knowledge that challenges the common sense views of reality with which most individuals have grown so comfortable."

In this case, the practical impact this *reality* had on the students was to develop their confidence and critical thinking skills, begin a process of critiquing the hidden (and not so hidden) power structures of the tertiary institution, and encourage them to join various student groups and participate voluntarily in events both as a group and as individuals. This developed efficacy has led them to advocate on behalf of other students to actualise real change, rather than simply tokenistic representation on boards and committees which have a

mandatory student representative. Where participation on boards and committees could lead to a potentially tokenistic representation, the students have developed sufficient self-efficacy to challenge this arrangement (for example, Linda's co-ordination and part authorship of USQ Council's submission to the Bradley Review) and to voice their views at meetings leading to a stronger, more meaningful tertiary experience of which they have been commended for by academic and community representatives on the same boards. Many publications addressing the topic of academic student collaborations or students as researchers are authored by the academic or teacher involved. We maintain that this practice continues to silence students and treat them as a type of subaltern 'other'. Instead, by co-authoring we acknowledge the strengths each of us as individuals bring to the collaboration, and support each other in strengthening our weaknesses. In conclusion, a "pedagogy of critical student research" (Kincheloe & Steinberg, 1998a, p. 19) which was conceptualised during the initial collaboration continues to develop as collaboration continues. This is evident through the co-authorship of this piece and others planned, which seek to further de-mystify and to celebrate the successes of academic-student research partnerships.

Dedication

This paper is dedicated to the memory of Professor Joe L. Kincheloe (1950–2008).

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