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Service-Learning Within Higher Education: Rhizomatic Interconnections Between University And The Real World

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Abstract: This paper discusses Service-learning within an Australian higher education context as pedagogy to teach about inclusive education. Using Deleuze and Guattari's (1987) model of the rhizome, this study conceptualises pre-service teachers' learning experiences as multiple, hydra and continuous. Data from reflection logs of pre-service teachers highlight how the learning experience allowed them to gain insights in knowledge as socially just, ethical and inclusive. The paper concludes by arguing the need to consider Service-learning as integral to university education for pre-service teachers.

Inclusive education has an emphasis on community and democratic participation where teachers work together to meet the challenges of supporting the diverse needs of students. A critique of social values and a consideration of who is included and excluded in schools is necessary to enable a more inclusive approach (Barton, 2003). In order to better prepare teachers to work in inclusive ways, some significant questions emerge: How can teacher education programs assist teachers to comprehend their role in developing more connected and socially just communities? How can teachers be assisted to understand their work as central to the future role of schooling for social responsibility, democracy, social justice, and civility (Smyth, 2000)?

This paper discusses Service-learning within an Australian higher education context as a pedagogy about inclusive education that enables a critique of social values and promotes acceptance of diversity. The theoretical framework draws on Deleuze and Guattari's (1987) notion of rhizome. to analyse data from student reflection logs to suggest shifts that occur in understanding around diversity and inclusion. The paper concludes by advocating the importance of Service-learning within academic learning.

Service-Learning Theory

Since the 1990s, Service-learning has been popular in higher education, particularly in the United States. Service-learning is defined as pedagogy, a philosophy and a form of inquiry (Le Grange, 2007) that integrates classroom instruction with community service activities. Service that is organised in relation to an academic curriculum has clearly stated learning objectives, addresses real community needs in a sustained manner over a period of time and assists the learner in drawing lessons from the service through regularly scheduled, organised critical reflection through a variety of modes such as structured writing like reflection logs (see Skinner & Chapman, 1999). As an innovative practice (Stanton, Giles & Cruz, 1999), Service-learning has been coupled with concepts of social justice, civic responsibility and ethical practice. Giles and Eyler (1994) draw on principles from Dewey (1966) to discuss that Service-learning provides unique learning experiences. As Giles

and Eyler (1994) state, Service-learning ensures: 1) the continuity of experience; 2) the principle of interaction; 3) process of inquiry that leads to further knowledge through participation; 4) reflective activity that leads to learning; 5) citizenship promoting conscious awareness of values; and 6) democracy through conflict resolution and inclusion.

Further, Butin (2003, pp. 1676-1677), uses the four Rs - respect, reciprocity, relevance and reflection to provide a values oriented framework for Service-learning: Respect for members in the Service-learning organisation; reciprocity, where the server interacts positively creating mutual outcomes; relevance where the Service-learning pathway adds to academic learning and reflection that enables the participant to make pertinent meaning of the experience.

These two theoretical frameworks for Service-learning are enhanced when it is perceived as critical pedagogy that can be experienced as a pathway to challenge the traditional modes of learning at university. However, a critical approach to pedagogy does not only focus on critique. This approach to education also engages in a language of transcendence, so there is a capacity to imagine an alternative reality and a hope for education and society (Giroux, 1988; Greene, 1986; Kincheloe, 1993). The term "Service-learning" emphasises "a reciprocal relationship" with service and learning responding and strengthening the other (Prentice & Garcia, 2000, p. 20). The significance of Service-learning in higher education has been reiterated by scholars (Battistoni 1997; Boyer, 1990; Bringle & Hatcher, 2000; Zlotkowski, 1998), and in the past decade, there has been a growing movement to integrate Service-learning into higher education as "an avenue for civic engagement and scholarship" (Billig & Welch, 2004, p. 222).

Service-learning frameworks have been described either as a continuum or as distinct models (Morton, 1995). The continuum framework has a charity perspective at one end and an advocacy or social change perspective at the other end. The charity paradigm of service involves assistance to one or more individuals to solve immediate problems and has no expectation of a lasting impact. The advocacy or social change paradigm of service is concerned with producing changes in the larger societal structures that determine outcomes for people in need (Morton, 1995). This second approach requires an "increasingly complex analysis of the situation that created the need for service in the first place" (Morton, 1995, p. 20).

Models of Service-learning, in contrast, are built on a clear, underlying set of assumptions and therefore have their own paradigm. For example, critical Service-learning has been used to describe a social justice-oriented approach to community Service-learning that "redirects the focus of Service-learning from charity to social change" (Boyle-Baise & Langford, 2004, p. 55). This type of pedagogical approach expects individuals to take responsibility for the future of our society and the critical issues facing communities so that Service-learning becomes a "problem-solving instrument of social and political reform" (Fenwick, 2001, p. 6). Further, as Mitchell (2008) states, critical Service-learning attends to social change, questions distribution of power in society and focuses on developing authentic relationships (p. 1)

The above model of pedagogy expects transformation in education and action because it focuses on a deeper understanding of the root causes of the problems that require service (Morton, 1995; Wade, 2008). There is limited evidence of a service component in teacher education courses about teaching diversity (Bell, Horn & Roxas, 2008), however, Butin's (2008) edited collection of chapters provides good examples of how critical Service-learning models are being used in higher education. The Service-learning model described in this paper draws on the critical Service-learning approach. We wanted to support a group of mainly monolingual, white, pre-service teachers from dominant middle-class backgrounds to participate in service organisations that value diversity, promote equity, and strive for inclusivity (Author & Saggars, 2008). As critics (Bringle & Hatcher, 1995; Butin, 2003; 2008) note, Service-learning is conducted in the spirit of respect for community members, is based on reciprocity and should be a reflective practice. In this study on Service-learning, reflection is embedded within traditional university activities such as reading and discussion. It is combined with students' twenty hours of voluntary service within organisations that

support individuals with diverse needs within their communities. Students' understandings of ethics, diversity, equity and their roles as teachers and citizens are developed through a scaffolded reflection log. The reflection log is a particularly powerful vehicle because it leads students to reflect on their transition from being unaware of societal inequities to being deeply aware of such forces and the critical importance of their role as teachers in a democratic society (Author, Mercer, Bland & Kimber, 2009). The model involves supporting students to examine and challenge traditional beliefs about student diversity and the role of schools in society.

The program aims to challenge pre-service teachers to imagine how schools could be different - as places where diversity is valued for the richness it brings to the learning community; where belonging and trust characterise the environment; where barriers to learning are broken down so that educational outcomes are maximised for all students; and where inclusive practices are possible and not just an ideal (Author, Mercer, Bland & Kimber, 2009). Some of the specific goals of the Service-learning program were to:

- 1) Enhance student learning by joining theory with experience and thought with action
- 2) Enable students to help and enter into caring relationships with others
- 3) Increase the civic and citizenship skills of students
- 4) Assist agencies to benefit from enthusiastic volunteers
- 5) Expose students to societal inadequacies and injustices

Drawing on Butin (2005, pp. 90-91), Service-learning outcomes can be viewed through four lenses: technical, cultural, political and postmodern. Briefly, the technical is focused on the pedagogical and on changes that occur to students in practice; the cultural aspect focuses on meanings that are made by participants through practice; the political is concerned with agentive positions subjects occupy in their desire to change systemic imbalances through attention to socially unjust practices and the postmodern is concerned with Service-learning as a site to disturb, disrupt and redefine the boundaries of the self in relation to the world. Butin's four lenses explain the process of learning that occurs through Service-learning within education. The lenses provide a link between theory and practice of Service-learning. The lenses reverse the modernist, liberal conceptualisation of self, unpack the different purposes of Service-learning, and foreground the hidden agenda that might be part of a Service-learning program. We adopt these lenses as these assist in situating Service-learning in all its complexities within the field of teacher education.

This paper focuses on the last lens, postmodern, for deeper examination. Like Butin (2005, p. 90), we view Service-learning as postmodern, with "multiple pedagogical strategies". Butin (2005) argues that a postmodern conceptualisation "disrupts" norms and directs attention to the micro aspects that operate and are relevant to Service-learning, for example, efficient knowledge links being formed by students through practical application of learning acquired at university. Instead of a linear, structured approach to curriculum, Service-learning involves a multiplicity of practices where ethical practices, inclusivity and appreciation of diversity become significant. The postmodern/poststructural lens allows us to theorise disruption further through the rhizomatic model provided by Deleuze and Guattari. As Butin (2003) notes, the postmodern lens assists in questioning how far Service-learning helps in disrupting notions of self and others.

While Butin's (2005) conceptual model is holistic, and we agree that Service-learning as postmodern pedagogy is an "analogous", "embodied process" (p. 101), we move beyond this vision of Service-learning to one that is more fluid and flexible, where learning occurs through disruption and sets new directions that are not linearly learnt. We believe that Service-learning is a pedagogy that interconnects theoretical understanding of concepts of inclusion, civic responsibility and ethical practice occurring in lived experience. To illustrate this lived experience and the rhizomatic nature of Service-learning, we explain the rhizome as conceptualised by Deleuze and Guattari (1987) and analyse the themes that emerged from narratives drawn from student reflection logs that were completed in the Service-learning program.

Deleuze and Guattari's (1987) concept of rhizome has been adopted widely in education (Gough, 2004; Gregoriou, 2004; Semetsky, 2004; St Pierre, 1997), and in feminism (Braidotti, 1994); yet it is in its infancy in Service-learning, with Le Grange (2007) being a notable author. Drawing on the above studies, we clarify the rhizomatic characteristics of Service-learning and elucidate how students develop new subject positions as caring professionals through contextual, experiential application of theory to practice.

Rhizomatics is a mode of thinking that disturbs and disrupts hegemonic, linear mode of operation common to Western ways. Instead of a singular and forced unity that symbolises the tree, the rhizome is a 'messy' de-centered network that grows in all directions. As Deleuze and Guattari (1987) state, "the rhizome has "neither beginning nor end, but always a middle from which it grows and overflows". Rhizomes display multiplicity through roots and branches that emerge without a structured order, and though shattered will re-emerge at another point; a rhizome defies the principles of structure because it does not conform to any one generative or linear model (Deleuze & Guattari, 1987, pp. 8-12). The non-linear, multiple growth of the rhizome associates it with difference and its lack of center provides it a space to establish external networks. There are six principles of a rhizome: connection and heterogeneity; multiplicity; assigning rupture; cartography; and decalcomania. Each of these is required if the rhizome is to be considered a map:

- 1) The principle of connection and heterogeneity signifies how Service-learning relates theory with practice in lived experience. Theoretical understanding of inclusivity and ethics of care in Service-learning is realised through students undertaking an active role of being an inclusive, caring and responsible individual.
- 2) The principle of multiplicity explains how Service-learning could be understood as an assemblage (Le Grange, 2007, p. 8). Multiplicity explains how new knowledges can be formed through interconnections between knowledges acquired at university and new knowledges on site. The assemblages that are formed have possibilities in terms of acquisition of values and for promoting ethical and inclusive practices.
- 3) The principle of assigning rupture explains how Service-learning could de-centralize academic learning from its confines in the institution and become applicable in a practical context or, to use Deleuze and Guattari's terms, to deterritorialize and reterritorialize.
- 4) The principles of cartography and decalcomania explain the capacity of inclusion and diversity to spread, take root and become a map through Service-learning. As Deleuze and Guattari (1987) explain, the map is open to change, to be contested, to be reformed and to be reshaped.

The principles of rhizome are not tight compartments and, as Goodchild (1996, p. 85) notes, mix and proliferate. Briefly, connection and heterogeneity indicate the multiple offshoots and links that are possible through a rhizome. The difference between the arborescent tree and the rhizome is well established through the above principles, where the rhizome in contrast to the tree is set out as smooth and deterritorialized with no central or structured branch or body. The linear tree like structure of traditional learning is rooted in singular (delusional) logic with clearly defined (Western) epistemologies. The traditional mode of learning within the higher education ignores the multiple points of learning that could occur if learning were practice based and interactive, as happens in Service-learning.

As Dimitriadis & Kamberalis, (2006) observe, "rhizomes build links between preexisting gaps and between nodes that are separated by categories and orders of segmented thinking, acting and being" (p. 89). In a similar manner, Service-learning promotes variegated learning beyond the immediate conception of course requirements. Deleuze and Guattari (1987, p. 7) state that, "any point of a rhizome can be connected to anything other, and must be. This is very different from the tree or the root, which plots a point fixes an order" (p. 7). Applying the rhizomatic model to Service-learning pathway, students may begin with a given identity, but are able to form different subject positions for themselves in and through service activities. Like the rhizome, Service-learning

provides an opportunity for students to build links and to overcome gaps in knowledge-based comprehension. Although the rhizome signifies mapping and deterritorializing, Deleuze and Guattari (1987) deny a firm binary between the tree and the rhizome; for them, the rhizome-tree exists in metaphoric connections where “there are knots of arborescence in rhizomes and rhizomatic offshoots in roots” (p. 20). The rhizome forms and re-forms by conforming to the principles that underlie its composition. As Gregoriou (2004, p. 244) states, “the rhizome is perpetually in construction or collapsing”. By applying this rhizomatic principle, Service-learning is perceived as not dissociated from the structured principles of learning favored in institutions, while at the same time, it provides for practical, and lived experiences.

Similar to the rhizome, aspects of Service-learning may conform to the structured format of formal learning because, as Butin (2006) rightly observes, “higher education is a disciplining mechanism”, so the benefit for Service-learning lies in being similar to, rather than completely different and distanced from, the academic unit with which it is associated (p. 491).

Interrelated with the rhizome are the concepts of nomad and haecceity. While the nomad explains how spaces deterritorialize and re-territorialize, haecceity describes that assemblage, in this context, the teaching, learning nexus that comprises Service-learning. For Deleuze and Guattari (1987), nomads experience freedom by being unconstrained and through constant movement. In the Service-learning context, smooth space and displacement that is the result of being nomadic (Semetsky, 2004; St. Pierre, 1997) occurs when students in new spaces experience new ways of learning. As St. Pierre (1997, p. 367) observes, nomadic identity attends to the requirements of the place, in this case, the requirements of the service organization helping students to develop a sense of belonging during their engagement. The associated concept of haecceity explains the specificity or this-ness of Service-learning (Deleuze & Guattari, 1987, pp. 260-262). We interpret haecceity as the individual and particular engagement that each student is enabled through Service-learning and to the process of learning that occurs when students are involved in the service aspect of learning. Together, these concepts provide for rhizomatic ways of thinking about service as a form of learning that occurs in key moments at different intensities at different sites.

The interconnections between formal learning in academia and the lived experiences of learning through doing make the pedagogical aspects of Service-learning significant. With its propensity to resist the “lines of articulation or segmentarity” (Deleuze & Guattari, 1987, p. 4) that crystallize institutional learning, Service-learning provides for de-stratification of the values of education along “lines of flight”. The lines of flight are not discrete or isolated and enable cohesive, tangential yet interconnected roots and lines in multiple spots. As Butin (2005, pp. vii- viii) observes, “Service-learning challenges our static notions of teaching and learning, de-centers our claim to the labels of ‘students’ and ‘teachers’, and exposes and explores the linkages between power, knowledge, and identity” (p. vii-viii). We believe that Service-learning achieves the above through a rhizomatic approach to knowledge gain and application; through its capacity to de-center, through its propensity to be applied at multiple points and for enabling the participant to engage in a variety of experience. The significant aspect of Service-learning for us as educators/researchers is that it enables students to experience learning as an intensity where each layer of experience is interconnected and spans the academic and practice field. To explain the rhizomatic processes involved in Service-learning we proceed to examine the data.

Method

The study involved teacher education students (primary and secondary) enrolled in a unit on inclusive education in a Faculty of Education in Australia. Approximately 500 students enrolled in the unit in 2007. The majority of these students were white, mono-lingual and from middle-class backgrounds. The students were in their fourth and final year of study and had experienced three

different teaching placements in schools. Students had not participated in Service-learning in other years at university.

The Service-learning program is an optional program in the fourth year teacher education unit and involves students completing service in partner organisations such as refugee homework centers, playgroups for single mothers who need financial and social support, respite groups for terminally ill children, leisure programs for children with disabilities, meal support for adults, and adult literacy programs amongst others. The service activity is voluntary, non-paid work and involves the university students completing 20 hours of work in the various organisations supporting people in need.

All students (n=500) in the university unit that offers Service-learning were provided with information about the goals and assessment requirements of the Service-learning program along with information about the type of service in 23 partner organisations. Approximately 160 students applied to participate in the program and the first 72 students who applied were given placements. The number of places in the program was determined by the number of partner organisations. In 2008 and 2009, the program expanded to 170 student places and approximately 40 organisation partnerships. In 2011, there are 340 students engaged in Service-learning across 90 community organisations.

Data Sources

As part of the Service-learning program a reflection log was completed that required students to consider how the service experience broadens their knowledge and appreciation of an inclusive society and their future work as a teacher in schools. The structure of the reflection log is informed by the lenses of Butin (2003) to scaffold the transformational learning required in the university unit (Author & Selva, 2010) and can assist beginning teachers to learn about equity, diversity, global interconnectedness (Merryfield, 2000) and attitudes towards “others” (Gomez, 1994). The students complete journal entries before, during, and after the Service-learning experience. The reflection log incorporated individual experiences in private personal reflection informed by a reflective writing scale (Bain, Ballantyne, Mills & Lester, 2002) and students had the freedom of responding to peers’ lines of thought in online discussion forums. This process enabled ideas, learning and reflection to flow freely and ensured spontaneous response to peers’ thoughts and ideas.

The reflection log combined with the Service-learning practical experience accounted for 70% of the total unit work. Twenty-seven students from a total of 72 students gave permission to access their Service-learning reflection logs. All students were invited to participate in the study and the twenty-seven students who consented were not chosen for specific reasons such as high achievement. In reviewing the content of the reflection logs, we would suggest this sample of work was representative of the range of reflection work across the larger group of students.

To establish credibility and trustworthiness of the analysed data, the data was generated by the participants and was included as raw data. The data was drawn from the responses provided by the participants in the reflection logs. Further, the two researchers were assisted by a research assistant to verify data interpretation for link with theory and practice. The data was also compared with findings from other literature on Service-learning (Baldwin, Buchanan & Rudisill, 2007) so that criteria could be developed to establish the validity of the data that was collected and analysed.

The data from the 27 reflection logs were analysed according to Butin’s framework (2005) on Service-learning outcomes and reported previously (Author & Selva, 2010). The data that is reported in this paper emerged as an unexpected theme in the earlier data analysis. This theme was described as a flowing narrative that represented the complexity of the learning process associated with the Service-learning in the organisations combined with the university learning. The

researchers realised that some students were demonstrating a messiness of academic learning and Service-learning experiences where the students were reflecting, thinking, challenging themselves and learning in new ways. This observation prompted a closer examination of reflection and our approach to pedagogy and assessment of learning in the Service-learning program. We wanted to document the process of shifts in subject positions that occurred through application of theory to practice for students, and we use the reflection log data to demonstrate the rhizomatic ways of learning. The flowing narratives of student reflections reflect the rhizomatic model and multiple “lines of flight” (see below for more detail). While we recognise that there is a possibility that some of the students’ comments in their reflection logs were a consequence of being assessed rather than of transformational learning, data were accessed by researchers who were not teaching the students to ensure unbiased choice of samples. All data were accessed once student grades were finalised according to ethical clearance guidelines. Service-learning reflection logs used in the study had student names removed and were allocated a log number.

Findings

Drawing on the rhizomatic model, multiple “lines of flight” in the reflection logs that demonstrated complex challenges to preconceived ideals of education practice were identified. Reflection logs reflected the rhizomatic model as questions were provided to invite open-ended and interactive opportunities that produced new ideas. Student learning was not controlled as is frequently seen in traditional pre-service education assignments; students were given permission to explore their own learning in response to experiences in the Service-learning program and to discussion conducted by fellow students and lecturers “so that new possibilities for thinking, acting, and being maybe opened up” (Dimitriadis & Kamberelis, 2006, p. 92).

From 23 student reflection logs, a selection of representative narratives were studied for Deleuze and Guattari’s theory (1987) to illustrate a mode of learning grounded in experience that ensures there is no singular process of learning. To reflect a rhizomatic model of learning, we avoided over-interpretation, coding and categorization into tree-like, arboreal concept maps of hierarchies of constructs. We provide below an analysis of three themes based on the major themes highlighted in the Service-learning program goals outlined in the methodology section, namely: joining theory with experience and thought with action; enable students to help others and enter into caring relationships with others; the importance of critical learning and pedagogy. We acknowledge our preference for interpretations of certain goals as promoting the rhizomatic aspect of Service-learning.

Goal 1: Joining theory with experience and thought with action

Reflections illustrated the interlinking between theory and practice that enabled students to acquire a new lens in comprehending academic learning. For instance, one student described her work in an organisation as:

Becoming aware that I could easily interact with clients and that this is one of the major ways that [the organisation] creates an inclusive and risk free environment; I was able to recognise the importance of being prepared for a range of learning levels and to see how group work could be really effective. (9)

Applying it to her future profession as a teacher this student commented:

Having in-depth knowledge of students’ strengths is very important for a teacher as it would mean that each student could be utilised as a valuable team player during class activities or excursions. The knowledge I learnt is invaluable to a classroom setting because now I really

understand how essential it is for each person in a classroom to be noticed, acknowledged for their skills and feel welcome. (9)

Here learning is experienced as non-linear as a “range of knowledge” that develops through practice. The service aspect of Service-learning enables the student to transfer her knowledge of inclusion learnt at university. The emphasis is on multiplicity of new knowledges that are formed through interaction of content knowledge and knowledge on-site. The experience of learning outside the traditional institutional structure allows the student to be nomadic and constructs a new subject position as a support worker.

The theoretical importance placed on scaffolding is evident here:

It is important to integrate scaffolding and additional support into your lessons so all students can participate; and going beyond the student as a deficit. I finally feel like I now have the basic skills I need to be able to assess how much help the student needs and how much scaffolding I need to provide. (10)

In this excerpt the concepts taught at the university are reaffirmed through lived experience. Further the student states:

I am now aware of how important it is to have a variety of skills to be able to assist a variety of learners and significantly, being able to apply the theory of inclusivity: If you only ever aim your lesson at the average learner, a wide range of students will be excluded as a result... I now realise that to have an inclusive classroom I must become a more flexible teacher and incorporate a variety of teaching techniques so that all students will benefit from the experience of being in my class. (10)

The experience also provides her with the scope to learn and grow beyond the requirements of the Service-learning pathway. In a postmodern and rhizomatic manner, de-centered networks of interactions emerge, and scaffolding is illustrated as highly relevant to efficient practice.

Furthermore, decentralization of academic learning enables the student to comprehend interconnections between nodes of content knowledge as being multiple and performance oriented.

For other students, practice based experience helped to form new subject positions. As one student commented:

I feel like this service has helped me find what I was missing in teaching, you don't get that thrill very often especially with 28 kids in your class but when I had 6 and I got to know every one of them in such a unique way, well I can't say that I'll forget that feeling for a long time. So I'm currently looking into doing a postgraduate study of special education and we'll see how that goes. (2)

Here, the rhizomatic effect of the Service-learning experience is in extending her university knowledge and possible career pathways. The haecceity present in the service aspect of learning provides a basis for this student to plan further studies. Service learning has de-stratified formal education, provided multiple “lines of flight” and helped conceptualise life-long learning.

Another student found Service-learning pathway helped to understand academic unit and perceive the link between theory and practice:

I now have a much greater understanding of Autism Spectrum Disorder (ASD) and know what it looks like and that it is a very broad spectrum. All students are different and I now have some strategies to help students with Autism and a greater understanding of how inclusion might work and obstacles that could be encountered. (26)

An assemblage of values forms in inclusive practice and there is a rupture in academic learning as it de-centralizes from academic learning through application in a practical context. Multiplicity in Service-learning occurs through new knowledges being formed, here a deeper understanding of ASD, and how it can extend to further learning.

The following statements are also reflective of the translation of theory into practice:

This situation challenged my own understanding of students and learning disabilities in the classroom. This experience demonstrated a practical way in which collaboration within the school and with the community can help build an inclusive community. (1)

It is one thing to be taught how to be more inclusive and it is another thing completely to actually practice inclusivity. Through my Service-learning experience I was able to attend the lectures and then immediately put into practice and try things that I had learnt. This made the experience a very rich one for me similar to that of a prac where you have an opportunity to use everything you have learnt in a practical situation. I also think I will benefit more from this subject in the long run from Service-learning, as things I learn in many subjects quickly slip into grey matter, but when there is a direct link to a lived experience they are far more memorable. (10)

This excerpt illustrates the multiple offshoots of experience that result from Service-learning with an inclusive practically applicable approach to the aims of the unit. Most of the respondents echoed similar notions of academic learning and its translation into practice and illustrated a shift in their own subject positions from passive learners to active participants. Service-learning as an assemblage is evident from the interconnections between knowledges acquired at university and the new knowledges gained by students, and the resultant decentralisation of academic learning. The examples demonstrate that learning deterritorializes from striated academic space and is reaffirmed when concepts are practiced in nomadic spaces other than academia.

Goal 2: Enable students to help others, give of themselves, and enter into caring relationships with others

The following excerpt explains the situational learning process that enables students to practice inclusivity and experience diversity and to self reflect critically on concepts of inclusion, and ethical care:

Without patience, loving care, and the notion of being inclusive, none of these children would be able to survive in this world. I will teach my students that inclusivity and diversity are a large part of learning. I know I will struggle to achieve all that I want to achieve in inclusive teaching but I will be a reflective learner. (4)

Here students comprehend abstract concepts and processes by which they develop into caring professionals, an important goal of Service-learning. As a rhizome connects randomly, Service-learning, being performance oriented, maps out new avenues for identity, here by the student placing herself in the position of handicapped people. In terms of critical Service-learning, the student's view reflects the transformative potential in teaching, and a deep understanding of how service operates within teaching:

In future teaching, I need to advocate the rights of my students, and try to obtain funding so they are not excluded because of their family's socio-economic circumstance. As a first year teacher, one of my aims is to be as proactive as possible and advocate for the rights and needs of the students in my classroom and community. I believe I have gained an increased awareness in helping all the students I come into contact with. (12)

I believe that the only thing that has changed as a result of this experience would be that I truly believe that every student can learn. Not that I did not believe this before, but I now see how we as teachers are responsible for making this happen. We, the teachers have a duty to try and reach out to students in any way, shape or form to make them want to learn, make them enjoy learning and to want to continue to be life-long learners. (3)

Service-learning as critical pedagogy enables students to disrupt normative understanding of difference and perceive diversity as an inclusive practice (Author & Selva, 2010). The social justice agenda provides a deeper aim for this student who perceives inclusivity as an ethical aspect of

teaching. As data suggest, practice based learning leads to greater sensitivity towards those under care, in this case community members. The excerpts outline the act of giving, being socially just, aware, and being able to imagine the condition of others by developing qualities of care which is an integral aspect of pedagogic philosophy. In a rhizomatic sense, the students were able to break away from arboreal, singular perceptions of learning as constituted of academic subjects and, in the process of becoming caring professionals, provide new understanding of being a teacher, thereby acquiring new subject positions.

Goal 3: Critical teaching and learning

The following excerpts display a transfer of learning that happens laterally rather than in a linear manner, alongside and through academic learning. One student finds the knowledge “invaluable” by seeing the connections between concepts of care as taught in universities and as practice. Acquiring “tools in my box” indicates the professional realisation of assembling multiple concepts at one site for yet another student and this reflects the overall data responses for the study.

I found it incredibly useful that the knowledge and understandings I was gaining from my experience in the organisation, linked with what I was learning at the university. (6)

I am a very hands-on learner, so this will be an invaluable lesson on how to be a more inclusive practitioner. I find that having a rich experience in a real context is always the best way to learn. Also, at university we are always learning from people within our own discourse and I think there are so many valuable life lessons that can be learnt from working with people outside your normal circle. (10)

I chose [the] Service-learning pathway because I am a big believer in learning through doing. There is only so much you can learn by listening to lectures and writing essays. I want to immerse myself in an environment where I observe, assist and gain confidence before I have to be the one standing in front of the class with all the responsibility resting only on my shoulders. (8)

Service-learning as a critical pedagogy was highlighted when students discussed how their experience impacted on their perceptions of teaching:

I think one of the most important things I can do as a teacher is adjusting my thoughts and beliefs about inclusion and helping my students to understand this as well. By encouraging my students to be inclusive and ensuring my classroom culture and practice enforces the ideas of everyone having input and an opinion, by accepting difference, then I will be assisting with the inclusiveness of my school. (6)

Other students displayed a strong sense of critical orientation in teaching:

I can encourage my students to think about how they are living their lives and what they can do to make it better’ (12).

As a teacher who aims to create life long, socially critical and aware students, after this unit, I feel respecting one another regardless of color, sex, age etc. will play an important pedagogy that underpins how and what I teach. (19)

I will aim to be a teacher that is fair and approachable at all times. Sometimes all it takes is for one person to listen and understand to change a child’s life. Of course, being open and available to students will not encourage ALL students with problems to come forward, there is only so much I can do as a teacher, but I think an understanding and acceptance of diversity goes a long way to promote an inclusive and safe classroom. (16)

These comments exemplify Service-learning as encouraging students to see themselves as agents of social change. Academic learning transferred to a practical context infuses links between the nodes of institutional learning and practice based knowledge. Data illustrate how values of education get disseminated when previously static understanding of teaching and learning are de-stratified. The criticisms that students had in their logs were about the shortcomings of their experience with students noting ‘concern’ or being ‘unsure of persevering’ as a volunteer, ‘being confident’ at the outset and ‘not to be judgmental’. In general, the logs reflected the growth students achieved by applying the principles of inclusivity and acceptance of diversity they had learnt in theory at university.

Discussion

The rhizomatic model for data analysis allowed new possibilities for thinking about how pre-service teachers learn about inclusive education. In the past, units on inclusive education have reflected a traditional, special education approach and focused on areas of disability. For example, units had a traditional hierarchical structure with lectures on hearing impairment and other disabilities, and the focus was on the non-inclusive notions of “special”, as deficit, segregating people in society. More recently, units have focused on pre-service teachers developing an understanding of curriculum and pedagogy that meets the needs of all areas of diversity in a classroom. However, content associated with inclusive education is still far too restrictive, and there is a focus on delivery of content associated with strategies for the classroom.

Data illustrate students’ engagement and reflection as a personal journey connected to real life, personal experience and learning that is “messy” because different types of learning are acquired at the same time rather than a structured framework of content and skills so frequently seen in teacher education. Along with Le Grange (2007) we claim that Service-learning is an assemblage and “its transformative potential lies in its orientation toward experimentation with (real) communities” (p. 10). In the data, we see beliefs and values that would help teachers comprehend a deeper understanding of their active role in developing connected and socially just communities. Their learning has a transformative potential that is, as yet, not possible within and through the traditional approaches to pre-service education programs. As Baldwin, Buchanan and Rudisill (2007) argue, “Service-learning has the potential for development TCs’[teacher candidates’] abilities to question their own assumptions, societal inequities, and existing curriculum” (p. 318).

The excerpts indicate that Service-learning appropriates concepts from academic learning only to develop these further pragmatically as novel and multidirectional. Learning is demonstrated as rhizomatic with the principles of connection and heterogeneity evident in multiple connections, interconnections and nexuses that form through theory when translated into practice; students accepting the assemblage of new and given knowledges produced on site. The principle of assigning rupture explains the shifts that occur to the identity of students while undertaking Service-learning and the principle of cartography and decalcomania illustrates how proactive learning is not a simple reproduction of academic knowledges. Student identities shift from the traditional forms to take root elsewhere (in a Service-learning organisation) in a nonlinear, nomadic fashion. Yet these subject shifts are fragile. They exemplify subjectivities in the process of forming and reforming, becoming different, becoming other while retaining characteristics of pre-service teachers.

In brief, then, through Service-learning academic learning acquires a nomadic quality invested with haecceity. The academic space provided to students deterritorializes yet reterritorializes in new spaces indicating that the abstractions and constructs learnt at universities are applicable in a practical context. Haecceity indicates that the teaching/learning nexus is not a simple linear progression but a this-ness envisaged in a highly interconnected assemblage of specific hands on experience, reflection, inclusion, civic responsibility and care.

Service-learning as disrupting binaries of academic and practical learning without a clear set of goals could be a weak justification as these cannot lead to deep and proactive learning or agentive student selves. As a model for inclusive education, Service-learning attempts to overcome deficits of academic ideals and focuses on processes of transformational changes. While the arborescent tree like structure of the university planning process was found very useful to set up the Service-learning program, the experience itself became a rhizomatic process of academic discovery and self discovery often situated with debatable and modifiable measures. The exercise has taught us, as academics, to search for the critical with greater rigour and to seek out the potential conflicts that might exist within the Service-learning program.

The Service-learning model adopted for this study was based on the social justice paradigm and drew on critical pedagogy that was clearly articulated in the program goals. Students experienced varying degrees of personal achievement with regards to inclusion, recognition of diversity and difference. The authors acknowledge that participant responses have influenced our perspective on Service-learning. The reflection logs provided a positive approach to Service-learning and this could be due to students voluntarily opting for the pathway and determined to learn through lived experience. As a pioneering attempt at incorporating the critical in Service-learning, participants who valued real world experience and embraced social justice expressed a high degree of learning. We accept that, in the following years, there could be a diverse approach and reaction to Service-learning by participants.

Conclusion

This paper has provided a snapshot on the principles of the rhizome as evidenced in and through Service-learning. We argued that developing more inclusive ways of working in schools demands problem solving in real experience that forms “an intrinsic genesis, not an extrinsic conditioning” (Deleuze, 1994, p. 154). Dimitriadis and Kamberelis (2006) suggest there is a need for more theoretically informed research in the field of education that might inform a critique of learning, teaching and the institutional space of schools and perhaps universities. Our study is an initial attempt to use Deleuze and Guattari’s framework (1987) to think about pre-service teachers’ learning and the associated development of new approaches in teaching and assessment in universities. This paper has not explained the long term effects of a Service-learning pathway within academic learning which is being attempted through our on-going study, and the authors realise that a one-off program within academic learning may not help to sustain the rhizomatic way of learning. We have attempted here to illustrate transformational learning that acquires “new precepts and new affects” (Deleuze, 1995, p. 164) that allows the student multiple understandings of standard academic knowledge.

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