

Education for Social Responsibility: Ethics and Imagination in Engaging Teachers and Students

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In this chapter we make an assumption about the primary role of education for the life of its beneficiaries and for society. Arguably, formal education plays an important role in enhancing the likelihood for participation in future social life, including employment, enjoyment and general wellbeing. Similarly, education is often seen as a main means for intergenerational transmission of knowledge and culture, thus contributing to the maintenance of society and its development. However, as Dewey (1916) argues, in liberal societies, education has the capacity of enhancing democratic participation in civic society that goes beyond passive participation by its members. One can argue that the achievement of the ideals of democracy demand a free and strong education system. In other words, while education can function as an instrument to integrate students into the present and future society, it also has the potential to become an instrument for its transformation by means of which citizens can develop an understanding of how their society functions and a sense of agency towards its transformation. Arguably, this is what Freire (1985) meant when he talked about the role of education to “read and write” the world. A stream of progressive educators (e.g., Apple (2004), Freire, (1985), Giroux (2001) and McLaren (2002)) taught us that the reading of the world that is capable of leading into writing the world is a critical reading; i.e., a reading that poses “Why” questions and imagines “What else can be” (Carr & Kemmis, 1987). In this context, we see this role of education for democratic participation as inclusive of the above two roles – yet more comprehensive in identifying the type of desired social participation by individuals and the type of social change it affords.

The intention here is not to argue that the goals of education for integration into society and the transformation of society are contradictory goals. We propose that a progressive and peaceful transformation of the world is not possible if one is excluded from the world. Hence, integration into the world is a first step towards its transformation. However, in order to transcend the given and achieve its transformation, this integration must be based on a critical understanding of the world, including an awareness of its adverse aspects and a commitment for its improvement. The concern here is that traditional education often stops short of preparing students for social transformation. Often, the

aspirations of education as a means to increase agency and to develop democratic competency are diluted by the discourse of economy and jobs. We will consider one example.

In Australia, the Ministerial Council on Education, Employment and Youth Affairs, consisting of all the state ministers of education along with the Federal government issued the Melbourne Declaration (Australian Government, 2008). This declaration formed a basis of the current attempts in the country to develop the first National Curriculum. The declaration identifies two goals of education:

Goal 1: Australian schooling promotes equity and excellence

Goal 2: All young Australians become

- successful learners
- confident and creative individuals
- active and informed citizens. (p.7)

The identification of “active and informed citizens” as a main goal of education may be taken as a commitment for social transformation as discussed above. However, the preamble paragraph to these goals states that “Improving educational outcomes for all young Australians is central to the nation’s social and economic prosperity and will position young people to live fulfilling, productive and responsible lives” (p.7). The juxtaposition of the concept of “active and informed citizens” with “economic prosperity” and “fulfilling lives” may lead into a narrow interpretation of the former as being solely constituted by the latter.

In this chapter we explore a type of education that is likely to achieve the aim of “active and informed citizens”. We consider two different projects that involved working with students and teachers which contributed to the development of their social responsibility. We base our approach on the principles of ethics that, we argue, support the social justice and critical approaches to education. We posit ethics as the discourse of moral judgements or *what we ought to do* that are inevitably involved in the development of social responsibility. The view of ethics developed here demands that the *ought to do* be based on the *ought to know* which in turn is based on the *ought to be*. We base our views on ethics as initially articulated by Emanuel Levinas (1969, 1997) who put forward the argument that while ethical responsibility towards the *other* is pre-ontology and pre-epistemology, in complex society, this responsibility is not possible without knowledge and politics. Further, we contend that ethical conduct is not possible without imagination. In particular we will posit two constructs of imagination that we found useful to structure and understand our work, empathic and critical imagination.

An Ethical Basis for Socially Responsible Education

The approach to education taken here is in line with the critical education movement articulated by several educators (see for example Carr & Kemmis, 1986). The intention is not to imply that the various authors from this perspective reflect a unified understanding or approach to critical education. However, it is possible to point to several themes that run across many of these authors: these would include issues of social justice, inclusion and exclusion, participation, empowerment and social action. A question can be raised as to whether such a 'critical' approach to education is sufficient to lay the foundation for social transformation - without devaluing its contribution to theorising education and informing its practice. In other words, we call for a critical stance towards critical education itself; as Christie (2005) articulated, this stance implies "working with and working against" (p. 240) the construct. Like Christie, we argue that an ethical approach complements the stances taken by critical education by laying a foundation for a commitment to action and providing normative criteria for judging outcomes of social transformation.

Blumenfeld-Jones (2004) argues that "critical knowledge espoused by critical theory is not a sufficient motivator of ethical action" (p.163). Critical knowledge, by itself, does not commit to any action. Further, from a crucial education perspective, it is not often clear who is responsible for social action to transform society. The author examined constructs of class and oppression as categories for social analysis, in particular as employed by Horkheimer and Freire. He points out that critical analysis conducted from these two perspectives lead to confusion as to who is responsible and capable of initiating social change. Horkheimer argues the bourgeoisie as a class represent the hope for change while Freire points to the oppressed themselves as holding the key for their liberation. Blumenfeld-Jones goes on to assert that from a "grounds of ethics" perspective,

all individuals live on the same ground, occupy the same world, are affected by all that comes to pass in the world ... and thus may share common ethical interests. In imagining existence as a shared existence, the "grounds of ethics" provides the possibility of talking across differences ... while still acknowledging differences; this in turn, lays the basis for the solidarity necessary for a group to affect social change. ... The "ground of ethics" provides the opportunity to conceptualise "politics of invitation" that seeks social change through a unifying image. (p. 267)

Another call for introducing the discourse of ethics into critical education comes from Giroux (1987) who points to a paradox facing many radical educational theories that often posit "moral" indignation about social and political justices and yet have "failed to develop a moral and ethical discourse upon which to ground its version of society and schooling" (p. 9). He adds that, without such discourse, it is not possible for critical education to "move from criticism to substantive vision" (p. 9). Giroux calls for an ethical discourse that transcends both the essentialist constructions of ethics from the right - that may lead to standardisation of being and conduct – on one hand, and constructions of certain "free-

floating” forms of postmodernism – that may lead to pragmatism and relativism, on the other.

Further, critical education itself does not provide criteria to judge the value of the outcome of social action. Action to remedy social injustice may in turn lead to violence and further injustice. A common theme of critical education is developing the agency of students and their power to initiate social change. However, as Simmons (1999) points out that power “unbounded may lead to tyranny, absolute power of the strongest” (p. 97). Thus, increasing the individual’s power to participate in social transformation, may lead to maximising personal gain at the expense of the public good and, at worst, to dominate others and reduce their opportunity for meaningful participation. Hence, relating critical education to democratic participation for the public good requires other considerations in order to keep democratic participation in check. Such a role necessarily involves social justice considerations. In the same vein, social justice requires ethical considerations.

As Young (1990) reminds us, the principles of social justice are not theorems or laws; rather, they are claims that one group makes of others, and hence, the notion of social justice itself is contested (Rizvi, 1989). Further, Simmons (1999), quoting Kant, claims that social justice to one group may imply social injustice to another group outside our immediate concern. A contested social justice depends on discourse and language, and hence it is inherently “violent” in the sense discussed by Derrida (Critchley, 1992). Political considerations in general and social justice in particular, are under threat of reducing the individual to merely being a member of a species. By saying social justice is violent, we do not understand it here as being malevolence to be overcome; rather, it is inherently open to the possibility of violence and, hence, needs to be kept in question and in need of another foundation to deal with its conflicting claims. As Levinas argues, the political, while not reducible to ethics, requires ethics as a foundation of its decisions (Simmons, 1999). Standish (2007) takes the stance that ethics is beyond the agendas of social justice; it is what makes these agendas possible.

An approach to ethics

Very infrequently the discussion of *ethics* is raised in educational discourse and this silence is paralleled by the avoidance of discussing ethical questions in most traditions of Western philosophy. With the rise of scientific rationality, ethics is often associated with questions of morality, dogma, codes of behaviour and legal imperatives and is often seen as belonging to the domain of metaphysics rather than philosophy proper. Cohen (2005) explains this avoidance as a fear of moralising, preaching and questions of values by philosophical discourses that are mainly focused on ontology rather than meaning. Similarly, in Western thinking there is a movement away from essentialist thinking represented in the universality of ethical principles (Christie, 2005) and their foundation on rationality as established by philosophers such as Kant. As Levinas (1969) maintains,

western philosophy is mainly concerned with questions of being (ontology) and knowledge (epistemology).

K. Roth (2007) notes that relating ethics and knowledge is not new. Going back to the philosophical and ethical discourses of Socrates, who established the primacy of the knowledge of the *good* over the knowledge of the *truth*, and noting that contemporary philosophers have abandoned questions of ethics, Cohen (2005) raises the question “has the philosopher abdicated responsibilities” (p. 39). However, this avoidance to deal with ethical discourse is slowly dissolving. As Critchley (2002) indicates, it was only in the 1980s that the word ethics came back to intellectual discourse after the “antihumanism of the 1970s” (p. 2). Further, the post-ontological philosophical writings of Levinas (1969, 1997) have been credited for the re-introduction of ethics within philosophy by establishing ethics as the First Philosophy.

For Levinas, ethics is before any philosophy and is the basis of all philosophical exchanges. It precedes ontology “which is a relation to otherness that is reducible to comprehension or understanding” (Critchley, 2002, p.11). Levinas points to the trend in Western philosophy to develop understanding by reducing the *other* to the same (Critchley, 2002). This, he argues, is a philosophy that attempts to assimilate and dominate the *other*, and hence is a form of violence towards the *other*. Ethics arises from an encounter with the *other* who is totally, and infinitely, *other* than the self. This relation to the *other* that precedes understanding he calls “original relation”. Further, this encounter with the *other* “awakens a sense of responsibility that will deepen the more I answer to it, and is wholly *other* to any calculus of want and satisfaction, of need and fulfilment (Standish, 2001, p. 342). W. R. Roth (2007) argues that this original ethical relationship (what we are calling here, “*ought to be*”) discussed by Levinas consists of an “unlimited, measureless responsibility toward each other that is in continuous excess over any formalization of responsibility in the law and stated ethical principles” (p. 31).

Critchley (2002) points out that Levinas’ original contribution to ethics is that he does not see ethics as a pre-determined set of principles that can be used to make decisions about particular instances of behaviour (what we are calling here, “*ought to do*”); rather, it is an adjective that describes a relationship with the *other* that precedes any understanding and explanation. Using a phenomenological approach, Levinas argues that to be human is to be in a relationship with the *other*, or more accurately, in a relationship *for the other*. This relation is even prior to mutual obligation or reciprocity. This being in relationship *for the other* is perhaps best illustrated in responsibility for people with special needs or the less privileged in society (see the chapter by McKeith in this volume).

In his later work, Levinas (1997), in response to Derrida’s claim that the encounter with the *other* is “violent” if it is based on language and discourse, introduced the distinction between *saying* and the *said* in the face to face encounters with the *other*. Further, he locates the initial encounter with the *other* as based on saying which precedes the ontological said. Simmons (1999) explains “Prior to the speech act, the speaker must

address the *other*, and before the address is the approach of the other or proximity” (p. 88). Importantly for our purposes here, Levinas places ethics in the *saying* and politics and social justice in the realm of the *said*. He argues that peace is in the *saying* and the *said* is necessarily open to the possibility of violence. The *said* is always open to be *un-said* or *re-said*. In particular the *said* is based on knowledge in its concreteness and context. Using this distinction, Levinas demonstrates how ethics and politics are necessarily independent; however, one needs the other. Ethics, which is the encounter with the *other*, needs politics since the *other* is not singular – as there are many others. On the other hand politics needs ethics since politics is always open to the possibility of excess and needs to be kept in check. In particular, the discourse of social justice (see the chapter by Skovsmose in this volume) lies in the domain of the *said*, thus it is as Skovsmose argues, a socially and contextually constructed term.

Here we understand that while the *ought to be* resides in the *saying*, the *ought to do* and the *ought to know* lie in realm of the *said*. The *ought to know* is an ethics that calls for understanding the *other*, or the others, and a knowledge of possible actions and their effect in order to act towards a more socially-just world. This distinction implies that even though attempts to know and understand the *other* are possibly desirable for social interactions, such knowledge is necessarily limited and not a prerequisite for being responsible towards them. However, without some understanding of the *other* it is not possible to hear their claims (Young, 1990) for social justice. Further, this understanding of the *other* is ethical in the sense that it is based on responsibility for the *other*. In other words, here we posit an ethical approach to education that supplements critical education by focusing on the *ought to do* based on the *ought to know*, and at the same time develops the imperative for both based on the *ought to be*.

Ethics and imagination

Positioning ethical responsibility as not based on knowledge but preceding it, necessarily raises the question as to the role of rationality in making ethical decisions. In the past few decades there has been an awakening of the role of imagination in philosophical discourse as an essential a feature of human intelligence and reasoning. Saul (2001) noted that a “stubborn Platonist conviction” (p. 123), reinforced by Descartes, that reason is more powerful than imagination gets in the way of the normalisation of imagination and insists on their separation. Castoriadis (1997) challenged the modernist positioning of reason as superior to imagination, stating that “imagination is always present in thought, and it is beyond our power not to engage it, not to think, and not have opinions” (p. 228). Castoriadis presents radical imagination as the “first imagination” - the primary or prelinguistic imagination, without which there would be no language, and, indeed, no ontology. He argues that imagination gives meaning to the perceptions of the senses, and forms the images which give rise to language and communication. It is our facility to make sense of the irrationality and the apparent chaos of the word around us. It is the

“consciousness of consciousness” (Heath, 1999, para. 41)), representing the self to consciousness and entailed in the capacity to be self-critical. Here we posit imagination as intrinsically related to the *ought to know* and *ought to do* domains of our ethical topography. It is worthwhile to stress here that our construction of the *ought to be* based on Levinas’s original relation with the *other*, precedes knowledge, and hence, imagination.

The first type of imagination is invoked in the attempts to meet the ethical demand of knowing the other person. As we maintained above, without reducing the other to the same, knowledge of the other person is always incomplete. Smith and Pérez-Samaniego (2009) contend that penetrating the world of the other, or in other words, attempting to put one’s self in the shoes of the *other*, is only possible through imagination. They call this empathic imagination. For sure, this is not a romantic attitude of “I know how you feel” or a projection of the self onto the *other*; rather it is an orientation towards active listening to the *other* and a constant striving to understand their concerns and needs and feel compassion for and empathy with them. Empathic imagination is never final, but can only be enhanced through a process of dialogue with the *other*. In her chapter in this volume, McKeith talks about her vision of an educational system to deal with the needs of disabled people “where we all know how to listen to each other and care for each other”.

Developing socially responsible education demands the development of the responsibility of the different stakeholders towards each other and towards the society in which the stakeholders live. Acting on this responsibility without establishing empathic understanding is futile. In their normal teaching situations, teachers are often entrusted with the education of students from a variety of ethnic and cultural backgrounds. Without an empathic imagination, difference causes alienation and breaking of communication. In the same vein, for educators to develop a social responsibility from their educational experiences, they need to develop an empathy with the different players in their immediate world.

The second type of imagination is required to meet the demands of the *ought to do*. Ethics as understood above is not a process of adherence to laws and codes of practice. It is concrete decisions called for in, at times, very difficult situations marked with conflicting interests and values and where the outcome of any action is not certain. Principles of ethics and codes of practice never completely fit situations which call for ethical decisions. More often than not, a balance of responsibilities is called for together with innovative and creative solutions. We will call this imagination the critical imagination. It is in line with what Bruner (1990) calls our ability “to conceive of other ways of being, of acting, of striving” (Bruner 1990, p. 110). Maxine Green (2009), following Barak Obama’s election to the US presidency wrote:

To commit to imagining is to commit to looking beyond the given, beyond what appears to be unchangeable. It is a way of warding off the apathy and the feelings of futility that are the greatest obstacles to any sort of learning and, surely, to education for freedom (p. 397).

This critical imagination is in the spirit of education for social responsibility. It is not fantasy, romanticism, naïve utopianism or wishful thinking; rather it is entrenched in the here and now. Cartwright and Noone (2006) argue that while critical pedagogy can start with the here and now, it can develop a critique of the here and now. However, critical imagination can lead from this critique into the “Imagined ‘not yet’” (p. 4). Talking about critical mathematics education, Skovsmose and Borba (2004) argue that critical imagination (which they call pedagogical imagination) constitutes a part of critical research and action in education. While critical imagination can provide an *imagined situation*, research into critical education postulates an *arranged situation* as a target for its action. The authors go on to postulate *explorative reasoning* as a process of re-examination of the imagined situation as a result of action in the arranged situation. Further, they argue that educational transformation is achieved through a spiral of critical imagination, action and exploratory reasoning.

Finally, empathic and critical imaginations are intrinsically related for the construction of education on ethical grounds. An ethical approach demands that the critique of actions should be conducted from the perspective of the other. Further, total knowledge of the other is not possible (Smith & Pérez-Samaniego, 2009); hence, empathic imagination is a requisite for evaluating our knowledge of and action towards the other resulting from critical imagination. Similarly, critical imagination is necessary for an empathic imagination otherwise our knowledge of the other is mere sentiment and unproductive at best or constitutive of violence against the other at worst.

Enhancing Social Responsibility of Students and Teachers: Two Exemplars

For the purposes of illustrating some of the issues discussed above, this section discusses findings from two projects in which we have been engaged during the past few years. The first project involved students working with their teachers and university researchers to investigate conditions in their school and society that limit their participation in higher education. This project involved collaboration between two of the authors, Atweh and Bland. The second project involved working with a group of teachers attempting to reform their mathematics classes along the principles of social responsibility. It also involved two of the authors, Atweh and Ala'i.

Enhancing Social Responsibility of the Students

In this section we discuss a project in which students, working collaboratively with their teachers and university academics, have developed their social responsibility by increasing their knowledge about their immediate school life and contributed to its improvement. In telling this story, we will consider how applications of ethics and imagination were essential components of this approach to school improvement.

In designing this project, we employed the “students as researchers” methodology involving students undertaking action research projects to solve real problems affecting their education. It follows the critical research model suggested by Lincoln and Guba (1985) who position the researcher as a collaborator with teachers and students, aiming to illuminate some of the “hidden forces” (Kemmis & McTaggart, 2000, p. 573) that impact on students’ educational opportunities. Educational research, according to Kemmis (2005) should fuel “the development of education both in the interests of individuals (especially those disadvantaged in access to and success in education) and for the common good” (p. 9). This particular project aimed to explore factors associated with low aspirations and participation for university study among students in schools serving low-income communities who traditionally were excluded from participation in higher education. However, using Skovsmose’s discussion in his chapter in this volume, rather than focusing on the students’ background, this project aimed to expand the possibilities for the students foreground. A main feature of this project is that it attempted to combine the *ought to know* with the *out to do* in that it not only aimed at increasing the knowledge of students about social factors effecting their aspirations but also engaged in action towards their alleviation. Similarly, it was the outcome of a shared responsibility of the different participants one for the other.

Each participating school chose their student researchers, who were frequently those considered to be “problematic” in the classroom, and nominated a support teacher. Many student participants appeared to have limited knowledge of post-school options, especially those offered by university study, and many, regardless of academic capacity, had stated they were unable to imagine themselves as university students.

While a basic tenet of the project was that those who are closest to the problem should be the architects, rather than passive recipients, of their own change processes (Whitmore & McKee, 2001), it was also recognised that being too closely involved in the issues may obscure the view of alternatives and a process of “acompañamiento” or “accompanying the process” (p. 396) was necessary. Hence, this project involved the student researchers accessing their critical imaginations through a scaffolded process of conscientisation (Freire, 2000) to increase their awareness of the social issues and the systemic factors that influence and constrain their educational options. For Freire (2000), this coming to awareness of the historical and social processes that impact on people’s daily lives meets an ontological need to anchor hope in practice. Crucially, it also requires participants to develop their agency to address and resolve problems in their lives.

Achieving this level of critical awareness takes time, but an essential feature of the project’s introductory workshop was to create the openings in their awareness and ignite critical imagination. Working in groups, students were given the opportunity to discuss their own school’s situation and to identify local issues impinging on equitable outcomes. These ideas were then graphically represented by the students through the preparation of “posters” to assist in conceptualising their concerns and in communicating these to the

other workshop participants. In doing so, they demonstrated a high level of awareness, with students addressing issues related to attrition, teen pregnancy, racism and boredom. It was at this time that the students were at their most creative, engaging their critical imaginations in the processes of analysis and visualization. Their thinking was illustrated through visual metaphors, frequently depicting a journey through education or a climb towards an educational summit, with a variety of hurdles and supports along the way. Other, perhaps more creative, metaphors have included illustration of education as a restaurant meal, where the number of courses and the quality of food is dependent on the socio-economic level of the community, and progress through schooling as a board game such as Snakes and Ladders or Monopoly with winners and losers.

School-level action plans developed from these activities were enacted in the weeks and months following the workshop. In other words, this phase involved students in action, first to enhance their knowing, and secondly to enact a result based on this knowledge. With the assistance of their nominated teacher and university researchers, students carried out research using a variety of methods including visual and more traditional methods to find information relating to levels of awareness of tertiary options among their peers. School-based solutions were then considered to address the local issues, an appropriate action was selected and subsequently put into practice. These actions included the production by the students of informative artefacts, such as a DVD and a comic-style publications to challenge their school friends to think about alternative post school options, while others created resources such as a homework centre for students with limited home facilities and support for study, and a school-university interaction program where school students, many of whom have never visited university, have gained first hand familiarity with its campuses.

The activities were monitored and evaluated by the students to assess their effectiveness and to form the basis of future research and action. A student conference at the end of each year's activities brought all the participants back together to present and discuss their projects. Frequently, these consisted of PowerPoint presentations, but innovative performances have also been chosen by some groups. Such presentations provided students with opportunities to document their learning – an essential component of the research process - and at the same time fulfill their ethical responsibility to expand the aspirations of other students in their school communities.

Throughout all of this process, from the initial invitation to participate through to the final conference, the facilitators attempted to ensure that an empathic and ethical framework underpinned all activities and decisions. As the students were novice researchers and their nominated teachers were also often new to such activity, this required a level of tact and project facilitation that did not intrude on the fundamental principle of student ownership of the project and student decision-making. Sustaining student interest and involvement in the project was dependent on them developing a sense of ownership and responsibility for the focus, the processes, and the outcomes. A strong awareness of

responsibility for the other is represented in their motivation to complete the project for the benefit of their peers rather than for self gain (Bland, 2008). For many students, their school-based activities grew from a desire to help others and through empathic identification with the problems being faced by other students. For example, student researchers in one focus group said that the project gave them a sense of purpose, they felt good about “doing something for the school”, and they were happy to think that their project had “changed someone’s mind”. Hence, while our empathic stances towards the students helped to give voice to the marginalised and to those who were absent from the collaborative process (Grundy, 1996), the students have demonstrated an empathic concerns towards other students in their school.

The project facilitators also demonstrated empathic imagination to understand the research process, as far as possible, through the eyes of the student participants and the teachers involved in the project. Informal and fun introductory sessions helped in this regard, breaking down tensions that could be created by what was for students, an unknown environment, and what were for all participants, uncertain relationships. The teachers involved found that the relationships created through the project were often carried out in unfamiliar spaces, such as on the university campus, in which the traditional teacher-student power relationships were challenged. For teachers and university staff, working with students as co-researchers allows for a levelling of the fields between the participants, and can be based on mutual respect and dedication to the task. Reimagining relationships between all the participants in the project ensured an ethical framework was established through which a commitment to mutual trust and respect was able to develop, based on a “parity of esteem” (Grundy, 1998, p. 44) that did not privilege the knowledge or contribution of any participant: the contribution of university researchers was to offer their research experience and encouragement of some theorising of the data obtained (Greenwood & Levin, 2000); the contribution of students was to bring their local knowledge and expertise to the research; the nominated teachers’ contribution was to provide care and advice on the school systems level context of the research activities. This is not to suggest that the project necessitated any party abrogating leadership (Grundy, 1996), but rather the process opened up multiple opportunities for leadership by the various participants. In other words, the success of projects of this kind depends on the ethical relationships *for the others* between the different participants (W. Roth, 2007).

Working with students in collaborative research activities is not unproblematic. In spite of the best intentions between the participants, often tensions arise that require imaginative solutions – thus illustrating Levinas’ construction of the necessary interdependence of ethics and politics (see Simmons, 1999). Some student groups have, however, developed proposals that needed considerable refinement to be acceptable in a school environment. One group, for example, researched the attitudes of their peers towards school attendance and found that, for a considerable number, school was boring, leading to frequent absence. This heightened critical awareness led to the group’s proposed

solution of creating a school-wide radio station, believing that having music constantly in the background would make school a more inviting environment, reducing absenteeism. A number of meetings followed during which a range of potential impacts had to be considered. Paramount was the need for the facilitators to understand the students' perspective, and not undermine their ownership of the proposal. Indeed, music was a vital component of the students' ethnic background and there was strong support for the idea among their peers. Through guided empathic imagination, the student group was led to the consideration of the needs of others in the school community; for example, those who may not share the musical tastes of the student group; students and teachers who may need quiet places to study and talk; and nearby residents whose rights to peaceful enjoyment of their homes may be violated. This case is an example of how the social justice for one can become injustice, or *violence*, for others (those who do not want music at school). Eventually, a negotiated settlement was reached, with a trial broadcast agreed to, limited to specific rooms and times, and this process was an important aspect of the students' learning from the project. It was also a learning process for the school in trusting the students and working with them as their ideas did appear to meet the project's aim, to some extent, of reducing absenteeism.

This example, while not representing the most effective in bringing about whole school change, serves to illustrate the need for both critical and empathic imaginations. Waghid (2005) suggests that students should "be taught what it means to act with compassion and imagination because such action has the potential to promote civic reconciliation, which is essential to building relations of care, justice, and trust in university and school dialogical actions" (p. 342).

The development of the project was, then, geared towards a sense of social responsibility - a commitment to both critical and empathic imagining, through which the student researchers could look beyond the given and the apparently unchangeable, to ward off apathy and feelings of futility (Greene, 2009). The scaffolding of hope - the ability to imagine a different future - and the creation of spaces in which to give voice to that hope, were fundamental to the project. As Butler (1998) has suggested, this is essential for those students who inhabit schools where their own knowledges have been "ignored and/or intentionally shut out" (p. 108).

To hearken back to our original argument that the goal of education is for students to become integrated into society in order to effect its transformation, this project has enabled the students and teachers alike to be agents of change within the school community.

Enhancing Social Responsibility of the Teachers

In participating in educational reform, teachers in many Western countries face two contradictory demands. On the one hand, school based devolution of decision making and increased teacher accountability signify a societal expectation that teachers are increasingly

responsible for student outcomes. This is compounded by trends to tie teacher pay and promotion to their students' performance. On the other hand, many teachers see the increased adoption of regimes of national and state testing of their students as limiting their freedom to plan and deliver reform of pedagogy and content according to directions that research might indicate (Hargreaves & Evans, 1997). One can add to the list of factors that inhibit teachers from reforming teaching the taken for granted assumptions about the content of their discipline that is seen to be valuable for students' futures and the epistemology of its learning. Undoubtedly, teachers are key elements of educational reform. However, they need institutional and academic support to play that role effectively. Arguably, mathematics education is one subject that illustrates such tensions par excellence, making the subject one of the most difficult to reform in many schools. In this section, we tell a story of one teacher's struggles to come to terms with changing his practices in a mathematics classroom. His story also illustrates the interaction of the empathic and critical imaginations discussed above.

Peter is a trained geologist from the United Kingdom who migrated to a coastal town in Western Australia in the 1970s where he commenced teaching in a private faith-based school. At the time of his involvement in a project with the university, he was the head of the middle school and the mathematics department. His second teaching area was science. Peter is a dedicated teacher who placed high value on higher level mathematics and at the same time was able to gain the respect of his students and colleagues at school. Like many teachers he was well aware of the curriculum demands on his students.

Being the only private school in the small town, the school is not elitist in its selection of students; however, academic and moral development of students is a priority for the school and many of the parents. He relates that there are "no big discipline problems at the school". In this project he involved his small group of "higher ability" year 10 students (15 year olds) in mathematics.

The project in which Peter was involved, designed on the concept of ethical responsibility (Atweh & Brady, 2009), aimed at assisting school teachers from six Western Australian schools to develop and trial real world activities that engage students in order to develop their social responsibility. Activities that relate to the "real world" were targeted. The activities were expected to develop knowledge about the world in which students live at the same time as they developed their mathematics knowledge. In other words, we aimed at demonstrating the efficacy of learning mathematics while students learnt about the world and vice versa. Learning about the social world, rather than the physical and financial world, and issues of social justice were given priority by the university collaborators in the project. Mathematics education has a very strong tradition in its curriculum and pedagogy based on often made assumptions of objectivity and universality (Bishop, 1998; Ernest; 1994). Although questions of social justice in mathematics have often been raised in the discipline, they have mainly been concerned with social justice *in* mathematics education

(Burton, 2003; Secada, 1989) rather than attempts of achieving social justice *through* mathematics education (Gunstien; 2003).

Peter's interest in joining the project was due to his concern about making mathematics relevant to the students: "to find something that actually meant something to them". This was certainly in line with the approach taken by the project. Even though he came from a school system that focused on issues of social justice, he did not feel comfortable when dealing directly with issues of social justice in mathematics. In his own words, in one of the planning sessions, he said "if [the activities] go too far [from] the mathematics curriculum - that would worry me". At the start of the project, he also expressed concern if questions of values are dealt with in mathematics classes. His fear was that such discussion of social justice and values might lead to the imposition of the teacher's values on the students. Even though questions of social justice and values were also main features of the projects, we were aware of our responsibility to be empathic to what he felt comfortable with. Throughout the project, we were aware of the difference between opening possibilities for teachers and imposing these possibilities on their reality. We also were aware of the pressure that he faced to meet the demands of the official curriculum with his students – considerations that we also shared.

Hence, Peter's involvement in the project constituted an ethical dilemma for him. His sense of the *ought to do* was motivated by his concern and ethical responsibility for the students (the *ought to be*) and but moderated by his views about what is traditionally valued in mathematics education and inscribed in the official curriculum, Peter was always forthcoming in expressing his concerns. For instance, he had the traditional view of epistemology of many teachers who develop the mathematical knowledge of students first through direct instruction and then sought applications of that knowledge afterwards. Hence for him, the activities that we encouraged in this project could only be used to practice and apply the mathematics and "not to learn something new". As his planning in the project progressed, he also felt that activities such as these could merely supplement the official school program of study and, hence, could not contribute to student assessment. He strongly objected to any form of alternative assessment other than the normal exams, because, he said, "how can you assess students if they are working in groups on the projects". When we shared stories of the experiences of other teachers that used student projects and presentations themselves as means of assessment, he expressed great concerns that such projects tend to be "repetitious and boring to listen to". Also they may not demonstrate understanding in mathematics or mathematical thinking – "[such presentations] are not mathematics, they are presenting mathematics". He could see that such assessment techniques are perhaps useful for language and social studies classes but not mathematics.

Further, Peter was concerned about the efficacy of the project. For him, activities such as we were attempting to develop can only be done once with a single group of students. His rationale was that if a group of students have "got the answer" it did not make

sense to repeat the activity and maintain its authenticity. Finally, when we discussed our understanding that real world activities are necessarily interdisciplinary and suggested that collaboration with other teachers may be useful, he pointed out several concerns including difficulties due to demarcation of the curriculum and that cross curriculum activities often lead to watering down the curriculum in mathematics. He did not believe that in his school it would be practical to collaborate with teachers across other subjects.

We do not think that any of these concerns are rare among teachers of mathematics. For us, they seem to be based on particular assumptions and practices that are very common in many schools with which we have worked. Similarly, they are reflected in a significant amount of literature dealing with traditional teaching of the discipline. However, we did not feel that was our right to challenge Peter, nor did we believe it would have been helpful to do so. The university academics and the group of participating teachers had attempted to create a community of practice by providing each other with critical friends' comments on each other's projects. We were conscious that these comments were not to replace the teacher's own learning from the actual implementation of their projects. This is one aspect of the project that gained Peter's strong approval. Hence, the university collaborators faced a similar ethical dilemma in collaborating with Peter. Our sense of the *ought to do* was motivated by our concern and ethical responsibility for the students as well as teachers (the *ought to be*) but was moderated our view of professionalism of teachers and the institutional demands for accountability placed on them,

For his activity with his students, Peter planned a two week project in which his students attempted to calculate the necessary height of a storm surge wall around the town to safeguard it from the effect of cyclones that frequent the area. Concerns about damage of cyclones were a "real community talking point" for the students and their parents. The last major cyclone hit the town about four hours before high tide. Hence, one question attempted by this activity was "what might have happened if it hit at high tide". A related question asked how high a wall the town must have to safeguard the particular classroom in which the students were meeting from flooding.

In order to shed some light on these questions, the students obtained data about the height of the normal tide every four hours as per the records of the local shire council. They also obtained data on the day that the cyclone hit the town. Plotting the two graphs, they were able to learn about the trigonometric sine function as well as learn about subtraction of functions, which they were able to accomplish using a spreadsheet built by the teacher. By translating the scale of the two functions, they determined that if the cyclone had hit during high tide, the storm surge would have been 6.5 metres. To answer the second main question about the height of their classroom above sea level, the students had to learn the use of a surveyor's levelling instrument. They found out that the height of their classroom floor was 4.6 metres. The actual height of the existing wall protecting that part of the town ranges from 1.9 to 2.7 metres.

The success of this activity far exceeded Peter's expectations. He had never seen his students as excited about mathematics activities before. "You should have heard them", he related in our interview with him at the conclusion of the project. He also was surprised at the students' abilities to deal with "such an abstract topic such as trigonometry".

Seeing his level of excitement about his observations, we felt that perhaps he was ready to be challenged a bit further. We asked if the data that the students obtained was valid mathematically, which of course he was sure of. We further asked, if the information was of social importance. Once again he was confident that it was. Then we asked, if there was a social responsibility to share that knowledge with other people. Naturally, he hesitated in his answer. In a previous planning session, we discussed the danger of such information causing alarm in town if not handled sensibly. On this occasion, together we thought that perhaps a presentation of the findings – by the students – to the local shire council may be warranted. After all, he was not sure if the council actually had that information and wanted to ask why they had not built a storm wall that would ensure the town's safety.

Such a meeting with the council was arranged within a few weeks. For the presentation, the students worked in pairs. They divided the project among themselves and each pair prepared a PowerPoint segment. The students required a significant amount of coaching to prepare their segments of the presentations. They received help from their teachers, their parents and other teachers from the school. After initial intergroup rivalry, as the time got closer to the presentation the students took the task of helping each other quite seriously. A failure of any segment meant that the whole message might have been lost. During the presentations, the level of confidence and knowledge of the students about their findings was obvious – albeit at different levels.

From the shire council side, the meeting was attended by the Chair and the Chief Engineer. At the conclusion of the presentations, the Engineer congratulated the students and indicated that he had employed exactly same techniques and obtained similar results within few centimetres of the measures obtained by the students. The look on the students' faces was a testimony of the great sense of pride in what they have done. Not often are school students taken so seriously by people in authority. The Engineer went on to identify the complications associated with the decision about the height of a storm wall needed for the town. For example, he pointed out that the cost of building a 6.5 metre wall would have been astronomical. Secondly, the town prided itself in being a coastal town with easy access to the sea and scenic views, so living behind a wall 6.5 metres high was not a preferred option for this reason. Lastly, if the storm wall is too high, at the time of a cyclone, it would trap the water in town and have to be knocked down to allow water to recede. The council had adopted an alternative partial solution to the problem. Current building regulations demand that new constructions should be built on an elevation of least 6 metres.

In an interview we conducted with the students after their presentation, we asked them if mathematics always gives you the correct solution to a problem. After a few seconds of hesitation, they responded “not really”. They realised that solving social problems is not a matter of getting a correct answer from a formula. Certainly, they could see that mathematics can contribute to social decision making, but they became aware that often there are other considerations on whether the solution is appropriate or not – some of these have no relation to rational thinking.

The interview with Peter following the project considered many of his concerns expressed in the initial stages of his project design. Undoubtedly, significant changes were noted. In the area of assessment, as a result of working with his students on the project, the level of performance of students was rather obvious. He reported “I am convinced that they were thinking in ways they’d never done before”. Similarly, he noted the difficulties that some of the students were having. In the final interview, he elaborated on different ways in which projects like this can be developed to incorporate students’ assessment. Arguably, Peter’s concept of assessment remained bounded by individual testing such as giving students a parallel task with different conditions and seeing how they perform on it. He was confident that the more able students would have been able to perform these tasks. Hence, Peter’s experience with the project resulted in an expanding of possibilities for assessment. However, he still maintained that learning tasks and assessments remain distinct activities. Although he admitted that the presentations themselves have contributed to student learning, still he found it difficult to imagine how they can contribute to assessment since students were coached for them.

Similarly, significant development was noted in the area of connecting mathematics to other areas of school work. In this project, the students have considered damage and its causes by similar cyclones in other countries to which they referred in their presentations. Similarly, Peter was able to relate the discussion about tides with the content of his science classes in which students considered the effect of the moon on tides. Seeing the great work that the students were performing, other teachers in the school saw opportunities to contribute to the project. The religious study teacher saw the presentation part of the project as an opportune time for developing students’ self confidence and public speaking which she incorporated in her classes. Similarly, the English teacher has utilised the student presentation as a part of the assessment in her subject. Hence, Peter’s concerns about the difficulty of cross curriculum collaboration were challenged based on his experience.

We conclude this section by making a few observations about leadership and effecting change for teachers. During this one year project, Peter has been able to challenge many of his views about the teaching and learning of mathematics. He has done this through empathic support of his “critical friends” group of teachers involved in the project and through a critical imagination that is based on action and reflection. Taking risks and trusting the project participants has paid off for Peter. In the safe confine of the project, he was able to imagine a highly successful project, try it out and learn from it. In

other words his *ought to know*, developed through taking risks and his reflection on action enabled him to deal with his assumptions of teaching mathematics to increase his range of actions towards the *ought to do*. However, change of practices and assumptions does not happen overnight. Teachers' assumptions about teaching and learning mathematics are not abandoned or reversed easily. With continuous support and opportunity, teachers' involvement in educational reform can provide fresh ideas and new practices.

Concluding Remarks

In this chapter we asserted that the primary role of formal education is to prepare students for active citizenship. This view of education is aligned with the principles of critical education as articulated by several authors around the world. We developed the argument that in order to achieve this role, ethical discourse must be intrinsic to the planning and conduct of critical education. The construct of responsibility is at the heart of the discourse of ethics. Ethics as understood here is not only a matter of doing the right thing, but it also involves ethical knowledge and ethical being. While rational debate and discourse is useful in critical thinking, ethics demands the use of imagination to provide a normative means to guide actions and decisions. Ethics in education as understood here is not determined by adherence to legal requirements and codes of practice, no matter how important they are for maintaining public trust in education. Rather, it is a commitment and responsibility to act and evaluate practices based on the perspective of the *other*.

Ethics is not an add-on to education. It lies at the very foundation of education. It is reflected in identifying the aims of education, in making decisions about practices of teaching, learning and assessment. It raises questions of inclusion and exclusion. However, it is not deterministic in a sense that following simple rules or principles assures ethical conduct. As Foucault (1983) famously warned us, "everything is dangerous". But Foucault added "If everything is dangerous, then we always have something to do. So my position leads not to apathy but to hyper- and pessimistic- activism" (pp. 231-232). By the same token, an ethical approach to education calls for taking risks, albeit with a great sense of responsibility, and to be constantly vigilant about the outcomes of our actions. Ethics invites us, rather compels us, to a continuous and exhaustive sense of engagement with the welfare of the *other*.

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