Quality and Equity in Mathematics Education as Ethical Issues

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This chapter discusses different constructions of the agendas of quality and equity in mathematics education that may lead to tension - if not conflict - between them that may lead to undesirable outcomes. The chapter presents an understanding of the two agendas based on the discourse of ethics. By using ethics as a foundation for both constructs, not only it is possible to argue that the two agendas are not contradictory, but also that they are both necessary for an ethical practice in mathematics education. Furthermore, since ethics is based on questions of what is good to do – and what is good to be, such a discussion could provide a normative guidance to practice that allow us to act and reflect on our actions.

Keywords: Citizenship; Equity, Ethics, Mathematics education; Quality; Responsibility

The discourses of quality and equity have become globalised concerns in the field of mathematics education as reflected in most policy and curriculum documents around the world. While few people would contest their importance to mathematics education theory and practice, their meanings often remain unexamined. A careful reading of their use in various contexts reveals alternative, if not divergent understandings behind them. This chapter[1] is an attempt to contribute to a systematic theorising of the two agendas that taken separately potentially, even though not necessarily, might lead into conflicting actions and outcomes and may lead into lack of achievement of either. In the first part of the chapter, I undertake a critical reconstruction of some of the tensions reflected in the use of the two terms and their interactions. By "reconstruction" I do not mean abandoning or rejecting the understandings of the past. However, an interrogation of the two concepts allows us to examine the assumptions and limitations behind their different uses. As Christie (2005) argues, all concepts are socially constructed and hence are "contingent and contestable" and are to be "rendered permanently contested" (p. 241). In other words we need to be "working *with* and working *against*" (p. 240) the constructs towards alternative understandings that are more likely to deal with contingent problems that any discourse may lead to. In the second part, I present a reconstruction of the two agendas grounded on the discourse of *ethical responsibility* that allows for a viable understanding of both agendas and constructs them as complementary, and hence more likely to facilitate their achievement.

Tensions within the Discourses of Quality and Equity

To start with, here I understand *quality* as a question of values and judgements rather than an objective and decontextualised description of a phenomenon. As Dahlberg, Moss and Pence

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[1] This chapter is based on my contribution to the Plenary Session 6 (Panel Debate on Equal Access to Mathematics Education) at the International Congress of Mathematics Education in Monterrey, Mexico in 2008

(1999) point out, the dominant understanding of "'the discourse of quality' can be seen as part of a wider movement of quantification and objectivity intended to reduce or exclude the role of personal judgement, with its attendant problems of partiality, self interest and inconsistency" (*quote in the original*, p.87). The authors go on to trace the emergence of this discourse by placing it within the rise of the Enlightenment with its overzealous trust of quantification, comparing the dissimilar by reducing them to the same criteria. They add that in the age of uncertainty, it "offers us confidence and reassurance by holding out the prospect that a certain score or just the very use of the word quality means that something is to be trusted, that it is really good … rather than being a symbol whose meaning can only be arrived by critical reflection and judgement" (p, 92-93). Thus, the determination of quality involves setting standards of product or service delivery and criteria for the achievement of these standards. Of particular interest here is the argument the authors make that these criteria and standards are often taken to be based on *rational*, *objective* and *universal* grounds.

Although different policy and curriculum documents in mathematics education around the world have been constructed using the discourse of quality, the term is often assumed and not defined. Hence, it remains, and should remain, a contested construct. It seems to me that the discourse of quality in mathematics education is often based on one or both of two considerations:

a) Doing better mathematics, and
b) Increasing students' achievement in that mathematics

As Atweh and Brady (2009) argue, in the dominant mathematics education discourse, "better mathematics" often refers to abstraction and the rigor of the discipline of mathematics (e.g. Juter, 2006). This includes formalized symbolic language, axiomatic thinking, standard efficient algorithms and proofs. It may also include sophisticated modelling of mathematically-based problems – usually from areas such as physical world, engineering, and the economy, in which there is a unique or best fit solution. This is often contrasted with practical mathematics that focuses on social world applications, routine problem solving – on personalised (often called student-invented) algorithms, solutions and non-standard presentations of mathematical arguments. In many Australian curricula, these two types of mathematics are contained in alternative streams that students select (or are assigned to) depending on their previous mathematics performance (often taken as a sign of ability) and post school aspirations. This construction of quality mathematics, in contrast to practical mathematics, is presented as a *common sense* solution for the need to provide a greater choice (a valuable endeavour in neo-liberal politics) for students and to cater for the needs of a larger number of students. Regardless of attempts by education systems and teachers to present the different streams as equally valuable, many students refers to the practical mathematics subjects with the diminutive term "vegi-math[2]".

This binary might be counterproductive by denying the majority of students (that is, those taking the so called social or practical mathematics), the opportunity and the ability to develop their generalised abstractions of mathematical concepts and procedures and to develop their confidence as users of mathematics. Likewise, it denies the students undertaking the more academic mathematics subjects the opportunity to see the application of mathematics to solve problems in their immediate life. Arguably, in our times students need both abstract knowledge and practical knowledge. Hence, if quality of school mathematics education is only understood from within the discipline of mathematics, it may lead into

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[2] That is, vegetarian mathematics – in contrast to the academic mathematics which is regarded as meaty (with apologies to the vegetarian readers!)

alienation of the majority of the student population that fail to appreciate such abstraction, are not capable of achieving it, or fail to see its relevance it to their lives.

An alternative understanding quality mathematics education is the focus on students' achievement, in particular based on comparing students' performance with others or with pre-determined standards using frequent national testing. As Apple (2000) argues, neoconservative governments around the world have encouraged privatisation and devolution of decision making in education yet reinforced their control over curriculum and standards through testing regimes. This is the "scientific management of education through legislation" approach to curriculum development and reform as discussed by Neyland (2004). Commenting on the standards movement in the USA and on the attempts to implement the No Child is Left Behind policies, Mark (2008) raises the question whether such practices are able to achieve equity. He argues that high stake testing may lead to an image of mathematics as something to be planted in minds of students irrespective of meaning and isolated from their everyday life and experiences. Further, such practices are in danger of reinforcing student alienation and dissatisfaction from their experiences in mathematics school learning.

I will return to the discussion of the different understandings of quality below. However, now I turn to deal with another important challenge to mathematics teaching, namely that of *equity*. Whereas concerns about quality are about what type of mathematics is worthwhile and valuable and about how students can best develop this mathematics, concerns about equity are about who is excluded from the opportunity to participate and achieve in mathematics within our current practices and systems, and about how to alleviate their disadvantage (Burton, 2003; Secada, 1989). Atweh and Keitel (2007) note that concerns about participation and achievement in mathematics study by different social and cultural groups are no longer seen at the margins of mathematics education policy, research and practice. Issues relating to gender, multiculturalism, ethnomathematics, and the effects of ethnicity, Indigeniety, socio-economic and cultural backgrounds of students on their participation and performance in mathematics are regularly discussed in the literature.

In a previous article (Atweh, 2007), I indicated how the concepts of equity, diversity and social justice are often dealt with in the literature as exchangeable constructs. At the risk of over-generalisation, perhaps there are some regional variations in their use – i.e. concepts of equity and diversity are widely used in the USA, while European literature make more reference to social justice. In the USA, however, Secada (1989) discusses equity in terms of social justice. Similarly, the three terms are often used to discuss different forms of disadvantage – i.e. equity and social justice are often used – but not exclusively – to look at lack of participation and achievement based on gender, Indigeniety and social class, while diversity is often used – but not exclusively – to look at variation due to ethnicity, language and cultural background, age, sexual orientation, and disability.

In spite of the overlap in the aims of both agendas of equity and diversity, there is an important difference between them in that they aspire to potentially contradictory outcomes with regard to group status. Fraser (1997) points out that the diversity discourse might lead to essentialising the differences between the different groups and it may fail to take into consideration the changing constructions of these labels and their contextual understanding in time and place. Similarly, the diversity discourse fails to adequately take into consideration one of the biggest threats to social inequality and exclusion in mathematics education, namely socio-economic background and poverty that are difficult to construct as diversity issues in the same way as, for example, cultural differences. Equity projects aim at reducing group differences, e.g. in achievement and participation, and hence its ultimate aim is to abolish group differences. Diversity discourse, on the other hand aims at enhancing respect to group differences and status. This is the dilemma that Fraser (1997) refers to in discussing the

multidimensional model of social justice. There are two further limitations of the equity and diversity agendas. On one hand, remediation equity concerns might be vulnerable of creating a backlash of misrecognition (Fraser, 1995) for the target group by constructing them as victims or as needy of special assistance, while diversity construction promotes group status. On the other hand, the diversity agenda might be vulnerable of romanticising difference between groups by treating them as exotic, while the equity agenda highlights their exclusion and disadvantage. As Burton (2003) argues in her introduction to her book "Which Way Social Justice in Mathematics Education", in mathematics education literature there seems to be a "shift from equity to a more inclusive perspective that embraces social justice" (p. xv). She goes on to say "the concept of social justice seems to me to include equity and not to need it as an addition. Apart from taking a highly legalistic stance, how could one consider something as inequitable as socially just?" (p. xvii). Using Fraser's conceptualisation of social justice as having two irreducible dimensions, distributive and recognition, social justice agenda incorporates both equity and diversity concerns respectively. Fraser (1997; Fraser & Honneth, 2003) demonstrates that while neither agenda is reducible to the other, the two are not mutually exclusive. In practice, most social justice action contains elements of both.

Relationship between equity and quality
It is perhaps not difficult to point out to both extrinsic and intrinsic values that many industrialised societies might have to explain their attempts to achieve both quality and equity. In terms of quality, excellence is often valued for its own sake. Perhaps the world's fascination with high performance in sports, and the huge amount of resources devoted to it, illustrates the intrinsic values of quality performance. Closer to the topic here however, Stack (2007) discusses the media frenzy around the PISA results in Canada that are undoubtedly mirrored in many participating countries around the world. Regrettably however, the serious questions about the possible invalidity of these tests to represent real performance of students (Fensham, 2008) and the hidden inequity with societies that their results reveal (McGaw, 2004) are not seen to be as newsworthy. Likewise, quality in mathematics educations is also extrinsically valued for the significant potential of mathematical knowledge to the society's well being and economic and technological development. Undoubtedly, it has that potential. However, these assumptions about the value of mathematics education for the student and society should not be accepted uncritically. First, the relationship of mathematics to general economic development is far more complex than is often assumed. For example, Woodrow (2003), citing the example of the development of the Asian economies and the high achievement by their students in international testing, argues that increases in mathematics education standards have occurred after their economic development, and arguably as a result of it, rather than the other way around. Further, Ortiz-Franco and Flores (2001) demonstrate that during the period between 1972 and 1992, the mathematics achievement of Latino students in the USA have increased in comparison with other students, although their socioeconomic status has decreased.

Similarly, concerns about equity in different societies reveal some intrinsic and extrinsic values. Equity in mathematics education can be constructed as a human right issue for full participation in society by many traditionally excluded groups. Perhaps, the pioneering work of many women in mathematics education represented at different times at International Organisation of Women in Mathematics Education have shown us the way how concerns about exclusion combining research and political action can lead to changes of patterns of participation and achievement. Similarly, concerns about equity and social justice reflect extrinsic values that equitable participation and achievement brings to any society – in particular values such as social cohesion, and harmony, peace as well as economic benefits.

The consistent message from educational economists is that if a society considers that achieving equity is costly, they should realise that the cost of an inequitable world is potentially far greater.

Here I argue that, although not necessarily mutually exclusive, the agendas of quality and equity may lead to undesired contradictory outcomes. As Gough (2006) points out, in many policies "equality (or equity) is understood to be a *necessary condition* of quality" (p. 12). However, in practice, a focus on one without the other is problematic. In the same article, Gough refers to several South African writers who argue that the quality agenda in that country is often used as means to justify the continual exclusion of black students from further education. In other words, a concern about quality with no concern about equity may lead to "elitism". In the same vein, a concern about equity with no consideration about quality runs the risk of sacrificing it. Luke (1999), referring to the work of Newman and his associates (1996) points out that "the worst enemy of equitable and socially just outcomes is the phenomenon that we could call "dumbing down" (p. 11) the curriculum. Hence the focus on only one demand is not only misguided – by failing to deal with significant determinants of participation and achievement in mathematics – but also counterproductive – in leading to results contrary to what we are aiming to achieve.

This potential conflict between equity and quality is not only hypothetical. In practice, where resources are scares, as often is the case in education in particular in many less industrialised countries, this potential can become reality. At the International Conference on Education organised by UNESCO in Geneva (International Bureau of Education (2005), Mohammad Osman, the Bangladesh minister of education is quoted as saying

> *While access has increased, quality has suffered largely due to systems' inability to provide the requisite number of well qualified and trained teachers and syllabi and curricula that is consistent with the need of a changing world. (p.51)*

In other words, under adverse conditions, the choice may come down to either concentrate of some basic education for a wider range of students, or spend more resources to increase the education of the most likely to reach their high potential.

Is the identification of values as basis for quality and equity agendas sufficient to guide necessary action towards their achievement? There remain few problems. Firstly, values are socially constructed and can vary from one culture to another and from one time to another. Further, values are open to conflict with each other, and action towards one may lead to a sacrifice of the other. Values alone do not lend themselves to obvious criteria for their own evaluation and critique. Hence their ability to provide normative criteria for action is limited. Lastly, action towards achieving quality and equity in mathematics education based on values is becoming increasingly difficult in our age of uncertainty (Skovsmose, 2005). As Foucault (1984) says "people know what they do; frequently they know why they do what they do; but what they don't know is what they do does" (p.95). Skovmose goes on to argue that in the age of uncertainty the only option we have to guide our action is sense of responsibility of one to the other. As Critchley and Bernasconi eloquently put it "the end of certainty can be the beginning of trust" (2002, p, 26). Equally correct, they could have said the beginning of responsibility.

This concept of responsibility brings us to the heart of the discourse of ethics. In the following section, I will articulate a particular understanding of responsibility based on ethics as elaborated by Levinas and argue that this understanding provides alternative constructions of quality and equity and contributes to the normative criterion for action and reflection towards their achievement.

Ethical Responsibility

Atweh and Brady (2009) point out that the demand for responsibility, or more often in its related term accountability, is an ever increasing concern in educational discourse, policy and practice in many countries around the world. In educational discourse, the term responsibility is used with a variety of meanings. Responsibility is often presented as a requirement or duty that restricts (as in, it is the teachers' responsibility to cover the curriculum), as privilege that enables (as in, the teachers' responsibility to maintain discipline in class), as a placement of blame (as in, who is responsible for the students' lack of achievement?), or in its ethical or moral meaning (as in, it is the teachers' responsibly to tell the truth). In these uses, responsibility is understood as determined by social structures and roles, rules and regulations or codes of behaviour. Such rules and codes assume an individual agent who is independent and with a moral choice of following the rules or not. Further, they are based on a rationality that constructs the "good" as subservient to knowledge of the good and such knowledge is taken to be objective and universal (Cohen, 2001).

The argument here is not that rules and codes are not necessary for the well functioning of society and the common good of its members. Rather, the concern is that this construction of responsibility mechanises the relationship between people and, hence, is in danger of eroding the humanity of the human (Cohen, 2001). Similarly, it reduces complex decisions to a choice between one rule and another, and hence hides deep ethical concerns. As an illustration of this danger, consider the processes for assuring ethical conduct of research as adopted in many countries. Reducing ethical concerns to filling in forms and ticking of boxes is in the danger of researchers avoiding facing deeper ethical questions as to who benefits from the research, whose concerns are researched and what is the role of the participants in the research process (Groundwater-Smith, 2007).

Alternative constructions of responsibility and ethics acknowledge that ethical decisions are often messy and complex. Universal laws are often not helpful in dealing with case by case situations. This of course is not a sanction for an 'anything-goes' ethics. On contrary, as Dahlberg and Moss (2005) argue, this ethics is more demanding of the agent than simply following conventions. Ethical decisions are much more of a burden when seen as more than merely following of rules. This of course supposes that the agent is intrinsically an ethical being who acts for good and does not need rules and codes to act responsibly. Are people intrinsically ethical?

Can we turn to philosophy to assure us? Cohen (2005) explains this avoidance of ethical discussion in philosophy as a fear of moralising, preaching and questions of values by philosophical discourses mainly focused on ontology rather than meaning. 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. Going back to the philosophical and ethical discourses of Socrates, who argued for the primacy of the knowledge of the *good* over the knowledge of the *truth*, Cohen raises the question "Has the philosopher abdicated responsibilities" by only dealing with questions of knowledge rather than values (p. 39). However, this avoidance of 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 influential in 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). This relation to the other that precedes understanding he calls "original relation". Using a phenomenological approach,

Levinas argues that to be human is to be in a relationship to the other, or more accurately, in a relation *for the other*. This relation is even prior to mutual obligation or reciprocity. Roth (2007) argues that this original ethical relationship 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".

From this perspective, people are neither intrinsically good nor are they intrinsically bad. They are morally, ambivalent (Neyland, 2004). However, since *being-for-the-other* precedes *being-in-itself*, the self is intrinsically ethical – in the sense that concerns about ethical responsibility towards the other precedes the knowledge about the self. As Neyland argues, it is an "incorrect assumption that the ethical self is caused by – is a product of – social legislation that redeems the pre-ethical self from a prior and unwanted disposition" (p. 56). On the contrary, there is a danger that the legislation limits, if not erodes the ethical self. However, he goes on to argue that ethical encounter is not sufficient as a substitute for ethical codes, but needs to be supplemented by a "shared ethical ideals, priorities and principles that are open to agonistic negotiation" (p.57). These should complement rather than override ethical primacy of direct encounter.

So what do the agendas of quality and equity look like within this ethical responsibility?

Constructing Quality and Equity as Ethical Concerns

As discussed above, in mathematics education quality is often understood from within the field of mathematics and articulated in terms of rigor and in the form of standards and means of testing. Very rarely it is based on a discussion of the aims of mathematics (Jurdak, 1999). A discussion that is based on the wider role of mathematics in the lives of the students as well as society, would lead an alternative understanding of quality that does not refer to a particular type of mathematics nor achievement in it, but whether or not the practice of mathematics education itself has achieved these aims and what type of mathematics education would promote their achievement.

Undoubtedly, mathematics is useful for economic and technological development of society (Kuku, 1995). However, traditional forms of mathematics education based on the development of abstract and objective content is not a guarantee against the misuse of such developments that might lead to inequality, insecurity and environmental degradation – arguably all encompassing threats to our global society. Similarly, mathematics is a useful subject for many jobs and careers. However, often it is used as a badge of eligibility of entry to those careers as much as it is used in those careers themselves – thus leading to exclusion and disadvantage. Mathematics education cannot abdicate its responsibility to deal with arising problems in the content it develops and remain ethical. Further, limiting the aims of mathematics education to social development, constructs the individual as subservient to social structures rather than an active agent in their society. Once again, ethical practice, as discussed above, is based on the responsibility to the *other* before, and as a basis of, responsibility towards the social.

Here, I recognize an encompassing aim of mathematics education as a contribution to the ability of students to meet the demands of their current and future lives – i.e. as their development as responsible citizens. I acknowledge the problematising of the concept of responsible citizenship provided by Popkewitz (2004). In this context, responsible citizenship is not understood as playing a particular social role, obeying laws, following regulations or be pleasing to authority. Rather a responsible citizen is somebody who is both willing and able to take responsibility to expose social problems through mathematics and propose possible solutions for them. Puka (2005) illustrates how the distinction that some feminists make

between responsibility and "response-ability" is a significant contribution to ethical thinking. Response-ability highlights the ability to respond to the demands of the other. This is similar to what Roth (2007) points out, that responsibility

> *etymologically derives from a conjunction of the particles re-, doing again, spondere, to pledge, and –ble, a suffix meaning 'to be able to'. Responsibility therefore denotes the ability to pledge again, a form of re-engagement with the Other who, in his or her utterances, pledges the production of sense. Each one, on his or her own and together, is responsible for the praxis of sense, which we expose and are exposed to in transacting with others. (p. 5)*

In other words, the aim of mathematics education is to develop a response-able citizen. Using Gutstein's terms (2006), a citizen who is able to "read and write the world through mathematics".

Undoubtedly, to achieve this role, care is to be given to develop the power of rigor in mathematical arguments, flexibility in problem solving and generalisation in mathematics. Hence the contention here is not that the understanding of quality mathematics referred to above is wrong, but that it is limited. The meaning of quality in this case is what kind of mathematics is more likely to promote the response-ability of the student. Quality in mathematics education is measured not as, or not only as, formal abstraction and generalisation, but by its capacity to transform aspects of the life of the students both as current and future citizens. In another context (Atweh, 2009), I discussed some curriculum and pedagogical implication of what I and some colleagues have called Socially Response-able Mathematics Education. Perhaps intuitively it is not difficult to understand that the agendas of equity and ethics are associated. In the previous sections I argued that social justice is a wider agenda than equity; hence we will discuss the relationship between social justice and ethics. I will follow with the discussion of ethics as postulated by Levinas and show why ethics needs justice and why justice needs ethics.

As discussed above, Levinas constructs the encounter with the other as the bases of ethical behaviour. It posits the ethical self as prior to consciousness of the self, being and knowledge. The encounter with the other demands nonreciprocal and unlimited commitment to the serve the needs of the other. However, the other is not singular. There are many others. How can this unlimited responsibility be shared with two or more others? Hence, by necessity, this primal ethical relationship is restricted by the presence of the Third (Simmons, 1999). How can ethics not lead into injustice in treating two or more others the same way? Levinas' answer is that ethics needs justice to regulate it. This should not be taken as a defect in the construction of ethics as an infinite demand. Rather, it is call for a construction of justice at the service of ethics. If ethical responsibility is to be good for the other without leading to injustice, it needs justice to regulate it in a society that has many others. Although, justice is not reducible to ethics, it is taken to be a subservient to ethics.

What does this construction contribute to the understanding of social justice? Atweh and Brady (2009) posit two reasons why the discourse about ethics supports, and lays the foundation for, concerns about social justice. First, social justice discourse is often constructed as concerns related to the participation of social groups in social activity and their enjoyment of their fair share of social benefits (Fraser, 1997). It has less to do with the outcomes achieved by a particular individual - unless the outcomes are due to their belonging to a social group. They are often silent on issues related to the interaction between two people – say of the same social group. Ethics, on the other hand, is concerned with a face to face encounter and interaction between people. This understanding of justice as subservient to ethics resolves the problem of dealing with individual vs. group in social justice concerns. Undoubtedly, dealing with the demands of marginalised group remains a crucial social justice

issue. However, by understanding that justice is justified by ethics, an encounter with a particular member of that group is still subject to the unlimited ethical responsibility. In practice, this implies that dealing with individuals in isolation from their social group memberships, thus failing to see the effect of their background on their chances of social participation, is in danger of being unjust. In the same vein, stereotyping an individual only as member of a group, thus focusing on their background and failing to see their possibilities, is in danger of being unethical.

Secondly, as argued above, the foundation of social justice on values that different social groups and countries have is not sufficient. This focus on ethics establishes social justice concerns as a moral obligation, rather than on charity, good will or convenient politics. In other words, adopting a social justice approach places knowledge as a servant of justice; while an ethical approach places justice at the service of the moral (Cohen, 2001). Neyland (2004) quotes Cohen (1986) as saying

> *The demands of justice arise out of ethical situations and at the same time pose a danger for that situation. The danger of justice, injustice, is the forgetting of the human face. The human face "regulates", it is the goodness of justice itself" (p.9).*

Conclusions

The demand to re-examine issues of quality and equity in mathematics education arise not only from their increasing role in official and academic discourse and practice in the field. The perceived importance of mathematics and the implications of lack of achievement in it have the potential of increasing pressure and anxiety for students and teachers. Similarly, many countries around the world are investing huge resources for reforms in their mathematics education curricula and teaching. Often these reforms mirror reforms in more industrialised countries. Rather than accepting quality and equity as absolute and non-problematic constructs, this chapter presents alternative possible understandings of them. In particular, I examined the possibility of basing both constructs on the discourse of ethical responsibility as elaborated by Levinas.

By using ethics as a foundation for both constructs, not only it is possible to argue that the two agendas are not contradictory, but also that they are both necessary for an ethical practice in mathematics education. By understanding the educative interaction as ultimately an ethical encounter highlights the responsibility (read response-ability) of the teachers to meet the demands of the responsibility (read response-ability) of the students to meet the demands of their current and future social lives. This understanding necessarily implies the call for "powerful" mathematics (read quality) for every student (read equity). Here, I understand the power of mathematics not as traditional rigor of formal mathematics but as its potential to contribute to active citizenship for reading and writing the world (Gustein, 2006). Furthermore, since ethics is based on questions of what is good to do – and what is good to be, such a discussion should form a normative guidance to practice. By normative role, I do not mean they are sufficient to inform practice in every classroom and with every student around the world. Rather, they establish criteria for decision making in educational planning and practice that allow us to act and reflect on our actions.

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