Theorizing Critical Discourse Theory and Analysis for Investigating Mathematics Classrooms

Bronwyn Ewing

School of Teacher Education and Leadership, Queensland University of Technology, Brisbane, Australia
Email: bf.ewing@qut.edu.au

Abstract

Critical Discourse Theory and its elements, discourse, language, power, ideology, subject positioning, struggle and discursive practice, allow a critical understanding of the issues of the working of power and its contestation, and the processes of inclusion and exclusion from social contexts such as mathematics classrooms. Critical Discourse Analysis as a method brings together the theoretical understandings of critical discourse theory to analyse social contexts as well as the language of research participants' accounts. It enables an understanding of how power, discourse, and ideology are realised in accounts about mathematics learning in middle years secondary classrooms and in a Youth Reconnected Program at one Technical and Further Education Institute.

Keywords

Critical Discourse Theory, Critical Discourse Analysis, Mathematics Education

1. Introduction

Schools and teachers play a critical role in developing fully the talents and capacities of all students (Education Council, 2014). The Adelaide Declaration on National Goals for Schooling in the Twenty-First Century (Education Council, 2014) emphasizes the need for schools to foster the pursuit of excellence and safeguard the entitlement of all young people to high quality schooling. The intent is the attainment of high standards of knowledge, skills and understanding through a comprehensive and balanced curriculum in the compulsory years of schooling encompassing the agreed eight key learning areas. In the case of ma-

thematics education, there is a need to establish strategies for improving student outcomes as students continue to experience difficulties in this subject.

The study from which this paper draws, examined Technical and Further Education (TAFE) enrolled students' accounts to explore their experiences of mathematics learning in middle secondary school and at a TAFE Institute in Queensland Australia. It drew together critical discourse theory and analysis (Chouliaraki & Fairclough, 1999; Fairclough, 2001), to undertake this task. In combination, these frameworks provided a lens through which powerful insights into the students' discourses about their mathematics learning could be gained. As far as can be ascertained, this articulation has not previously been developed in mathematics education. Insofar as it opens up understandings of the processes underlying student success or failure in mathematics learning, it provided a further justification and significance for the study. Thus, such understandings contribute to research about mathematics education, teaching practice and student success and failure in the subject in secondary schooling and at TAFE.

Mathematics could be understood from various multiple perspectives, and that does not mean refuting those perspectives but rather not taking them for granted. Skovsmose (2012) states that mathematics can be understood as text and or discourse, however that does not mean that needs to be only a discourse. Considering mathematics as a discourse, then, implies examining the assumptions of mathematics education and critical discourse theory and analysis. The former emphasizes understanding mathematics, whilst the later emphasizes that discourse as language is socially situated (Fairclough, 2001). This paper will focus on the latter.

In the approach to understanding discourse then, Fairclough's (2001, 2003) adaptation of Foucault's (1972) ideas of discourse for critical discourse analysis [CDA] is central. Cognate approaches by other significant discourse analysts (see for example, van Dijk, 2001) or from critical theory (see for example, Hall, 2001a, 2001b) are drawn on where appropriate, thus using a toolbox approach to explain ideas. The work of Bakhtin (Clark & Holquist, 1984; Emerson & Holquist, 1986) and Volosinov (1973) is drawn on for its development of a "dialogical theory of language" (Fairclough, 2003: 42) and the contingency of meaning on social context. To demonstrate how elements of critical discourse theory and analysis was applied in the study, the focus will be on discourse, discursive practices, ideologies, power and discourses, orders of discourse, discursive struggle, hegemonic discourse, oppositional discourse, the subject and positioning, critical discourse analysis, dimensions of discourse, textual features, limitations and a final word. The paper does not focus on the larger complexities of the study, rather it aims to show how critical discourse theory and CDA were used, drawing on excerpts from interview data.

2. Discourse

For Critical Discourse theory and for this paper, then, discourse is "language as

social practice determined by social structures" (Fairclough, 2001: 14). Following Foucault (1972), a discourse is a group of statements that provides a language for representing knowledge about a particular topic at a particular historical moment; indeed it constructs the topic. That is, as a social practice, discourse constitutes situations, objects of knowledge, the social identities of, and relationships between, people and groups (Fairclough & Wodak, 1997). It is about knowledge defined and produced through language within a particular context and history (Hall, 2001a). In short, discourse constructs meaning through social practice.

Discourse then is not simply a linguistic concept: it is the social practice of language and its consequences (Fairclough, 2001; Thomas, 2006). It is "a complex of three elements: social practice, discoursal practice (text production, distribution and consumption), and text" (Fairclough, 1995: 74). Here social life is made up of social practices, "habitualised ways, tied to particular times and places, in which people apply resources (material or symbolic) to act together in the world" (Chouliaraki & Fairclough, 1999: 21). Discoursal practice and text comprehend the two ways in which discourse articulates with practice, so that while "practices are partly discursive (talking, writing, etc. is one way of acting), … they are also discursively represented" (Chouliaraki & Fairclough, 1999: 37). Further, "each practice is located in a network of practices" (Chouliaraki & Fairclough, 1999: 23), and these networks "are held in place by social relations of power" (Chouliaraki & Fairclough, 1999: 23-24).

This conceptualisation of discourse removes the arbitrary distinction between "what one *says* (language) and what one *does* (practice)" (Hall, 2001a: 72). Here, as noted above, social practice entails meaning, and since "all practices have a discursive aspect" (Hall, 2001a: 72), meanings shape what an individual does, and how s/he conducts her/himself. That is to say, discourse governs how a topic or idea can be spoken about and put into practice, it regulates how people conduct themselves (Hall, 2001a). Just as a discourse defines acceptable ways of talking and writing intelligibly about a topic and of conducting oneself, so by definition it also limits and restricts other ways of talking and writing "in relation to the topic or constructing knowledge about it" (Hall, 2001a: 72). Knowledge is put to work through discursive practices in social institutions as a way of regulating people's conduct.

This understanding foregrounds the relations between discourse, knowledge and power (Foucault, 1972; Hall, 2001a). In and through discourse, knowledge is linked to practice and power (Fairclough, 2001; Foucault, 1972; Hall, 2001a; van Dijk, 2003) and its application can lead to the acquisition of power in society (Foucault, 1972; Hall, 2001a). It assumes the authority of "the truth" (Hall, 2001a: 76) and has the power to "make itself true" (Hall, 2001a: 76). That is, once knowledge is applied in social contexts, Hall (2001a) argues it has effects, and consequently "becomes true" (Hall, 2001a: 76). Knowledge in this sense has the power to regulate the conduct of others and in doing so involves "constraint,

regulation and the disciplining of practices" (Hall, 2001a: 76). Discursive practices are central to "the production, distribution and consumption" of discourse (Fairclough, 1995: 75).

Discursive Practices

The Discursive practices are the elements of discourse that are used by individuals to give structure and coherence to daily practices and routines (Martin Rojo & Gomez Esteban, 2005). They can be said to be a group of rules that are inherent in social practice (Foucault, 1972); they guide people and order discourse (Fairclough, 2001). Practices are described as part of the belief in institutions that are a driving force behind social order (Bourdieu, 1977). In mathematics classrooms, such practices can be identified as holding particular views about how mathematics should be taught and learned (Ewing, 2017). However, what makes such practices discursive is the focus on talk in social contexts, or an action or actions done by an individual or a group in social contexts. Hence, discursive practices do not exist outside of discourse—they are associated with particular areas of social life (Hall, 2001a), for example, the classroom. They are carried out within broader social practices such as teaching. In doing so, they contribute to the ongoing process of organising and constituting social reality (Hardy, Palmer, & Phillips, 2000).

If discursive practices are ways of interacting socially it follows that to learn such practices is a process of appropriating the voices of the relevant communities (Hirst, 2004). Through communication, such voices, that is, the personal and the social, construct the person and society. The construction of an identity emerges through "the point of articulation and suture between discourses and practices" (Hirst, 2004: 40).

There can be many complex and often fine-grained layers of discursive practices that can be fine-grained. They can be said to be beneath the surface of words, ideas, and images that are produced socially (Baker, 2000). The more natural and taken-for-granted the discursive practices are, the more powerful they are in social and institutional life (Baker, 2000; Bourdieu, 1977). They guide people and order discourse. However, it is what people do during talk, their discursive practices, that can be subtle. For example, the discursive practices of a discourse maintain particular assumptions that directly and indirectly "legitimize power relations" (Fairclough, 2001: 27). This power resides in their everyday application and reinforcement of routine tasks that are viewed as practical and common sense but which at the same time create a particular image of the subject in the classroom (Selander, 2003).

From all of this it follows that discursive practices are not only the product/s of a discourse; they are equally constitutive of the discourse itself (Fairclough, 1992). Consider for example, the ways teachers and students produce the social in the classroom as outlined above. Through such social interaction, teachers and students produce social relations and identities. Discursive practices mediate

their experiences and offer possibilities or constrain their learning in classrooms. They include the practices that follow with a discourse, such as methods for carrying out tasks.

Therefore, the manner that the discursive practices of a discourse of mathematics are drawn on will have substantial implications for the ways in which students shape an identity as a learner in mathematics classrooms and the types of discourse in which they engage. What is explicitly learned becomes opportunities for further discussion, making sense of the mathematics presented and participating in mathematics discourse (Brown & Renshaw, 2004; Cobb, Boufi, McClain, & Whitenack, 1997). However, how discursive practices define a community and who determines and has the power to grant a learner access to a community, is in part dependent upon the exercise of power through discourse (Fairclough, 1995). Here critical attention can be directed to the assumption of the naturalness, indeed the inevitability, of such "asymmetrical relations of power" (Fairclough, 1995: 16) in classrooms. Such an assumption is ideological.

3. Ideologies, Power and Discourses

Ideologies are "the 'common-sense' assumptions which are implicit in the conventions according to which people interact" (Fairclough, 2001: 2). Thomas's (2006) work describes ideologies as "frameworks of thought, manifested in material practices, which constitute or shape human subjects and the social world in different ways" (Thomas, 2006: 59; cf. Hall, 1982; 2001a). They "produce different forms of social consciousness, rather than being produced by them" (Hall, 2006: 397). Ideological structures are most effective when those who use them are unaware they inform their claims and views about the world, believing rather that they are "simply descriptive statements about how things are (that is, must be) or of 'what we can take-for-granted'" (Hall, 2006: 397). They work by constructing "for their subjects (individual and collective) positions of identification and knowledge which allow them to 'utter' ideological truths as if they were their authentic authors" (Hall, 2006: 397). "How we 'see' ourselves and our social relations *matters,* because it enters into and informs our actions and practices" (Hall, 2006: 397).

Since ideologies are frames of thought manifested in discursive practices, the significance of ideology for establishing and contributing to the maintenance of unequal power relations must be stressed (Fairclough, 2001). The effects of ideology are evidenced in discursive practices that are the site of social struggle (Thomas, 2006). Ideology then, as a site of struggle, potentially allows "for the possibility of multiple and competing ideologies, rejecting one dominant and one subordinate ideology as inadequate" (Thomas, 2006: 58). Hence ideologies are discursive and plural—they operate in discursive formations.

When individuals or groups speak, they do not create their own language, rather, they use language and terms that are available culturally, historically and ideologically (Billig, 2001; Volosinov, 1973). They draw on ways of thinking and

acting in a given society which make those ways seem natural and commonsense (Billig, 2001) and which are caught up in the interplay of knowledge and power in and through discourse (Hall, 2001a).

However, as will be elaborated later in this paper, this process is dependent on those in more powerful positions in institutions or groups to define what is common sense, and which ideologies and discourse types are at issue (Fairclough, 2001). This exercise of power is what has the possibility of constructing and supporting social inequality (Hall, 2001a; van Dijk, 2001). What comes to be common sense and taken for granted is determined in large measure by the language used by those groups who exercise power in a society or social institution (Fairclough, 2001). As part of their power, they are likely to impose a discourse type and its discursive practices on others, pressuring them to occupy a particular position and to behave in a certain way (Fairclough, 2001; Hall, 2001a).

Power then involves control (van Dijk, 2001)—the power of one group over those of other groups may limit their freedom of action and influence their thinking. The actions of others are controlled through legitimate authority—for example, that of a school principal—however, more effective power can be cognitive. This type of power is enacted through persuasion, dissimulation and manipulation to change the minds of others to suit the interests of those other than those on whom it is exercised. It can also be enacted through routines and day-to-day text and talk that appear natural and acceptable (Fairclough, 2001; van Dijk, 2001; Wodak, 2001). To exercise power is to control the context and to restrict, censor or ignore the talk of those groups in less powerful positions. In doing so, their discoursal rights are said to be restricted.

Power is not only negative and does not always repress what it seeks to control. It can be productive (Hall, 2001a; Foucault, 1972). For example, those who challenge more power in social structures can do so by controlling its consumption or the way it is used, whilst acknowledging the interests of the more powerful group (de Certeau, 1984: xx). This can be subversive, with members of groups "making over" what a powerful group offers. Subversion operates through the discursive practices of social structures. In doing so, groups seek ways to operate and serve their own interests. Whilst social structures are organised strategically to control the meanings produced, they can also be used to produce subversion and or struggle through networks such as the orders of discourse.

3.1. Orders of Discourse

Orders of discourse are "sets of conventions associated with social institutions" (Fairclough, 2001: 14; cf. Foucault, 1972) such as schools or families. They provide "a particular social ordering of relationships amongst different ways of making meaning" (Fairclough, 2001: 2). An order of discourse structures relevant discourses in ways shaped by the "changing relationships of power at the level of the social institution or of the society" (Fairclough, 2001: 25). Here, power involves the capacity to control the orders of discourse, ensuring that they

are "ideologically harmonized internally or (at the societal level) with each other" (Fairclough, 2001: 25).

A school for example, has an order of discourse that structures its social space into specific contexts where discourse occurs (Fairclough, 2001). Contexts include assembly, class, staff meetings and recess. In these contexts, people such as head teachers, teachers and students participate in a set of approved purposes—teaching and learning—within the school's order of discourse. In such contexts however, participants are not equal. In this order of discourse head teachers and teachers exercise legitimate authority to direct or control the practices of that discourse.

How the orders of discourse are shaped by those who have power is most productively thought of as a matter of ideology (Fairclough, 2001). That is, the orders that position teachers and students in relation to each other can be considered as representing the ideologies of those who control education. Learning a discourse becomes a matter of "acquiring the necessary skills or techniques to operate in the institution" (Fairclough, 2001: 76). Discourse establishes the "interactional routines" (Fairclough, 2001: 81), that is, the ways and forms in which people—teachers and students—interact with each other. However, it is through these routines that struggle occurs. That is, struggle emerges from interactions between different groups. Conflict is evident because of the way discourse is used to exercise power and control as mentioned earlier in this paper.

3.2. Discursive Struggle

"Discourse is the site of power struggles" (Fairclough, 2001: 61). At any one time, a discourse may simultaneously be a part of a situational struggle, an institutional struggle, or a societal struggle. Struggle is evident in the ways discourse is used to interpret experience, meaning and evaluate or make judgments about what words and phrases are referring to (Maybin, 2001; Volosinov, 1973). Hence there can be ideologically competing discourse types that correspond to particular situations (Fairclough, 2001), and power is won, sustained and or lost in the course of struggle between them. In this struggle, those who hold power at a given time must reassert that power, and those who do not hold power must bid for it.

Issues of struggle between discourse types occur because of the "establishment and maintenance of one type as the dominant one in a given social domain, and therefore the establishment and maintenance of certain ideological assumptions as commonsensical" (Fairclough, 2001: 75). Individuals are constrained to operate within the subject positions set up in such discourse types. However, while such positioning implies constraint, it is through the tensions consequent on such constraint that participants are enabled to act as social agents and can be creative. Here, creativity emerges through the combinations of ways that discourse types are used to meet changing demands and the contradictions of social situations. This creativity is similar to de Certeau's (1984) argument that indi-

viduals can subvert or make over what powerful groups can do, to suit their own interests. Power in discourse then can constrain or enable the contributions not only of those in less powerful positions but also of those in powerful positions.

The issues surrounding the positioning of particular groups of students can give rise to problems associated with acquiring the knowledge that is tied to a discourse. How students are represented in classroom contexts is a matter of social significance (Fairclough, 2001). If the students are represented as subject to the actions of others, "the implication is that they are incapable of agency" (Fairclough, 2001: 222). Then, given the discussion to this point, the classroom becomes a site of discursive struggle. However, this struggle is diverse, competing and conflicting because of the many and varied discourse types. For example, teachers are not the only participants to have an authoritative position; students can also accept and or reject that authority. This issue was found to be the case in Zevenbergen's (2004) study of interactions in two mathematics classrooms. In that study, students at Angahook were found to challenge the teacher's authority and the content of the lesson. The study found that "the linguistic habitus of the student implies a propensity to speak in particular ways which, … works to exclude students from the mathematical content" (Zevenbergen, 2004: 126). Because the student were identified as not as linguistically competent as their "middle-class peers" (Zevenbergen, 2004: 126), they were marginalised in their attempts to learn. Hence, it is the combinations of discourse types and their related discursive practices used in social situations such as mathematics classrooms to meet the demands and contradictions that contribute to diversity and struggle.

The effect of a discourse has implications for students' lives and social prospects (Fairclough, 1995). That is, a discourse constructs particular viewpoints, concepts and values, but in doing so, it has the potential to marginalise viewpoints and values considered important to other discourses. It establishes who is an insider and who is not (Gee, 1996). As part of that power and through positioning in discourse, "struggles over identities" become "struggles over difference" (Chouliaraki & Fairclough, 1999: 96). Further, when a discourse uses the first person plural *we* (Chouliaraki & Fairclough, 1999: 96) to construct a universal subject, this discourse is effectively constituting an identity which represses difference (Chouliaraki & Fairclough, 1999). In this regard, such discourses and the ensuing social struggles constrain the forms of participation and identities that can be constructed in classrooms.

However, in any institution, there are multiple discourses that provide social participants with choices concerning which discourses they draw on. Drawing on different discourse can be important for bringing about change (Hardy, Palmer, & Phillips, 2000). Within a single institution or program, here for example, a TAFE Youth Reconnected Program, there are multiple, alternative, even ideologically competing discourses (Fairclough, 2001). Some discourses may be similar or overlap and share similar characteristics. Some may be alternative or oppositional to another discourse type.

3.3. Hegemonic Discourse

The term hegemony describes "how the relations of power operate" (Lewis, 2002: 31). It indicates how groups maintain their power through processes of negotiation with subordinate groups (Gramsci, 1977; Hall, 1982). The maintenance of consensus is achieved by strategic management. That is, when subordinate groups have been included in the negotiation process, they are said to go along with their own oppression (Hall, 1982) however, this is not always the case as pointed out by de Certeau (1984). This usage of hegemony neutralises dissent and instils the values, beliefs and cultural practices of social structures.

A hegemonic discourse, then, is one that establishes and maintains particular ideological assumptions as common sense, maintaining its dominant position over the orders of discourse. Dominance in this sense refers to the exercise of power by an institution or a group that produces social inequality (van Dijk, 2001). This discourse includes the products and conventions of social institutions such as secondary schools, TAFE colleges and an education system whose practices "embellish inequitable social relations" (Lemke, 1995: 54). The power to control discourse is seen as "the power to sustain particular discursive practices with particular ideological investments in dominance over other alternative (including oppositional practices)" (Fairclough, 2003: 2).

Learning a hegemonic discourse creates an image of reality that takes what is seen to be commonsense (Hall, 1982; Kenway, 1990). Its conventions embody particular knowledge, beliefs and relations shared by those who participate in a discourse (Fairclough, 1995; Hall, 2001a). It is accessible, exercised and constrained by power-holders. It is reproduced through forms of intricate social interaction, communication and discourse.

The hegemonic nature of the discourse of mathematics education is of particular concern. It is the mathematics teacher whose specialised knowledge and legitimate exercise of power can constrain or enable student access to that discourse. The exercise of legitimacy here is more important than teaching. For example, when science or mathematics is treated as a technical discourse to be taught by the teacher and practised from a textbook, someone must translate the language and semantics of the technical thematic formulations into more familiar terms… (Lemke, 2004)… The opacity of technical discourse to the uninitiated… obliges the technocrats [or here, the teachers] to transform technical discourse into something that is comprehensible to a wider audience [here students] (Lemke, 2004: 65).

The problem for students is when the technical discourse of mathematics is not recontextualised in such a way that they can understand, learn and apply it (Bernstein, 1990). From the students' perspectives, this then implies that "they can be appropriated and transformed in diverse and unpredictable ways, and undesirable ways" (Chouliaraki & Fairclough, 1999: 45). The interactions between the teacher and student are crucial to students learning mathematics, shaping whether they inquire and discuss their learning about mathematics top-

ics, and relate this to the world beyond the classroom (Cobb, Boufi, McClain, & Whitenack, 1997; Schoenfeld, 1994, 2002). Barriers to understanding a technical discourse relate to the negative influences of its discursive practices on these students.

A hegemonic discourse and its discursive practices are an "effective mechanism for sustaining and reproducing cultural and ideological dimensions of hegemony" (Fairclough, 1995: 94). For example, to establish "hegemonic relations" (Fairclough, 1995: 94) within a mathematics classroom, the hegemonic discourse and the discursive practices have to be constructed and accepted as commonsense and part of the natural order by those who are subordinate to it, that is, those who hold less powerful positions. This legitimising of particular power relations is what Fairclough (2001) calls "opacity" (Fairclough, 2001: 33). It is the invisible or hidden nature of this process that is opaque. In short, a major function of a hegemonic discourse is to manufacture consensus, acceptance and legitimacy of dominance (van Dijk, 2001).

Such forms of discourse can be unifying in that they uphold an "infinite continuity of discourse" (Foucault, 1972: 25) that isolates anything new "against a background of permanence" (Foucault, 1972: 21). Permanence in this sense is propagated and transmitted through individuals, notions and theories. It makes possible their linking to the same "organizing principle, to subject them to the exemplary power of life" (Foucault, 1972: 22). However, Foucault (1972) proposes to suspend tradition as an explanation for their apparent durability, arguing that "it is too easy to simplify the problem of successive phenomena through the levelling agency of tradition" (Foucault, 1972: 21). The appearance and reappearance of certain forms of knowledge is too persistent to be reduced to tradition (Cousins & Hussain, 1984). Rather, the conditions with which knowledge appears and reappears require reference to specific meaning rather than simply to tradition. Tradition and permanence can be contested as they are seldom complete or total. They may be contested through various forms of challenge and counter challenge (van Dijk, 2001; de Certeau, 1984). This contestation can take the form of an alternative discourse.

3.4. Alternative Discourse

An alternative discourse presents different perspectives of the world to those that are implicit in hegemonic discourse (Fairclough, 1995). These differences are related to the different relationships that people have with one another, their positioning, and their social identity. Hence, such discourses may complement each other, compete with each other, or one may dominate the other.

An alternative discourse takes the hegemonic discourse and restructures it in the "course of hegemonic struggle" (Fairclough, 1995: 95). There may be overlap with each discourse having its unique set of discursive practices but also practices shared by both discourses. Fairclough's (2001) description of creativity is useful here to understand alternative discourses. It is through their creativity

that alternative discourses emerge as a consequence of changing demands in social situations. Put another way, hegemonic discourses could be said to be made over by individuals to subvert the maintenance of their dominant position whilst at the same time serving their interests (de Certeau, 1984). In doing so, the discursive practices of a hegemonic discourse are present but modified in particular ways to suit the interests of individuals.

3.5. Oppositional Discourse

An oppositional discourse stands in a relationship of "opposition" to a hegemonic discourse (Fairclough, 2001: 75; cf. Halliday's (1978) usage of anti-language). That is, an oppositional discourse may be established and used in opposition to a hegemonic discourse (Fairclough, 2001). Its discursive practices may be consciously oppositional from the discursive practices of a hegemonic and or alternative discourse.

However, where discourses are oppositional, there is pressure to suppress, eliminate, or contain them since they oppose or reject the hegemonic discourse (Fairclough, 2001). For example, in the mathematics classroom a hegemonic discourse has constructed a particular version of reality that shapes and positions students. Hence, students who consciously engage in oppositional discourses are marginalised; they are either excluded or exclude themselves and perforce engage in a discourse of non-participation. From a range of possible ways of being a student—ways that "they are exposed to partly through learning to operate within various discourse types" (Fairclough, 2001: 85) and their related discursive practices—students come to be positioned as subjects.

3.6. The Subject and Positioning

Just as identities are defined as who and what people think they are in particular social contexts or communities, what they do in consequence, and how they interpret what they do, subjects are socially produced and positioned within discourse (Foucault, 1972; Hall, 2001a). The subject does not exist outside of discourse, that is, outside the way it is represented in discourse, produced in knowledge and regulated by the discursive practices of a particular social context Hall, 2001a). It is subjected to the rules and dispositions of power and knowledge of that context. For example, institutions construct "their ideological and discoursal subjects: they construct them in the sense that they impose ideological and discoursal constraints upon them as a condition for qualifying them to act as subjects" (Fairclough, 2003: 39).

The power of the discursive practices of a discourse and how people are positioned through such practices is generated through their learning and use of particular social practices (Davies & Harré, 2001; Henriques, 1998). A subject position includes "the conceptual repertoire and a location for persons within the structure for those that use that repertoire" (Davies & Harré, 2001: 262). If a person takes up that position as their own, they view their world from that posi-

tion in terms of the knowledge that is made relevant within the discourse and the discursive practices in which they are positioned. Like particular identities that are in some degree a function of the social context in which a person finds themselves, when individuals speak or act from a particular position they are bringing their history as one who has been engaged in multiple positions in different discourses. However, to identify with a position that a discourse constructs, they must subject themselves to the rules and become subjects of its power and knowledge (Hall, 2001a).

For example, subject positions are constructed within a discourse such as mathematics. Through occupying these positions, teachers and students are what they do—they become teachers and students (Fairclough, 2001). Individuals are constrained to operate within the subject positions set up in discourse. While in one sense they are passive, it is through being constrained that they are able to act as social agents and can be creative (Fairclough, 2001; cf. Zevenbergen, 2004). The constraints of a discourse include the social relations that teachers and students enter into through discourse, and their subject positions. It also includes the way things are done. These constraints are derived from the practices of the discourse type drawn upon (Fairclough, 2001), here, a discourse of mathematics. The practices utilised may contribute to certain students contesting the discourse type and its related practices.

Through participation, experience and its social interpretation inform each other. As individuals enact social relations with one another through the discourses drawn on, they construct an identity that "textures" (Fairclough, 2003: 102) and interweaves participative experience with the negotiation of meaning. In doing so, the theory of practice highlights the ways in which discourse works as an identity kit (Gee, 1996), where what matters are meaningful social roles, social membership, and an understanding of knowing how to engage and share in the enterprise in which members participate. To a socially meaningful group, others, that is, those who are not members, are positioned as being outside the discourse. Attaining membership then translates into the enactment of a particular identity as a form of competence so that one can identify oneself as an individual or as a member of a collective or group (Chouliaraki & Fairclough, 1999).

In summary, Critical Discourse Theory offers a methodology for analysing students' accounts of their experiences in mathematics classrooms. CD theory and its elements, discourse, power, ideology, identities, subject position and discursive practice, allow a greater understanding of the working of power and its contestation. It provides the methodological scaffold for the analysis of research participants' accounts of their experiences in learning mathematics. Critical discourse analysis [CDA], becomes the central method for that task. Using CDA brings together the theoretical understandings of critical discourse theory to analyse the social context as well as the language of research participants' accounts. It enables an understanding of how power, discourse, and ideology are realised in these accounts. It also provides the means for redressing these issues as they happen with students and in mathematics classrooms. Whilst such a

study could be conducted in other classrooms, for example, science, the intention of this study was to focus on mathematics and what participants say about their learning of the subject.

4. Critical Discourse Analysis

Critical Discourse Analysis is necessary for the analysis of discourse and discursive practices to gain a fuller understanding of social life (Thomas, 2006). In this study, analysis of discourse and discursive practices enables a fuller understanding of students' representations of their mathematics learning experiences. An analysis of their accounts of their mathematics learning gives both a valid representation of their experiences in mathematics classrooms and a deeper understanding of the forms of participation associated with their identities. These accounts are regarded as spoken or written products of social interaction.

CDA is defined as a method derived from CD theory to be applied in the linguistic analysis of the accounts. As described in previously, CD theory considers language as social practice (Fairclough, 2003; Wodak, 2001), hence it also regards the context of language use to be significant. It is concerned with the relation between language and power (Wodak, 2001). It provides, through CDA, a powerful way to explore the processes of organising, and the fragility of struggles within, organisational and institutional life (Hardy, Palmer, & Phillips, 2000) such as schools and classrooms.

The field of CDA is diverse (Chouliaraki & Fairclough, 1999). Included in this field is Said's (1978) analysis of the discourse of orientalism which draws on Foucault's theory of discourse, but unlike Foucault includes "some analysis of texts, though without drawing on any linguistic theory" (Said, 1978: 6-7). There are other poststructural and postmodernist critiques of discourse such Billig (2003). There is also a diversity of positions within approaches that are defined as CDA (Chouliaraki & Fairclough, 1999; Fairclough & Wodak, 1997).

There has been criticism of CDA (see for example, Hutchby & Wooffitt, 1998; Schegloff, 1997; Widdowson, 2000). Such criticisms suggest that CDA applies sociological categories to discourse when it does not need to do so, "imposing its own preoccupations on the discourse" (Chouliaraki & Fairclough, 1999: 7). Critical discourse analysts are said to use the terms that they are preoccupied with to describe, explain and critique the texts that they are attending to (Schegloff, 1997). Hence, from a critical position, the danger could be that the analyst may not be surprised by the data (Wetherell, 2001). That is, "the world is already known, and is pre-interpreted in light of the analyst's concerns" (Wetherell, 2001: 385). It has also been claimed that they are "not being sensitive enough to the more basic sense of context… the local… sequential context of talk in which utterances are produced" (Hutchby & Wooffitt, 1998: 164).

In response, it is asserted that CDA "begins from some perception of a discourse-related problem in some part of social life. Problems may be in the activities of social practice" (Chouliaraki & Fairclough, 1999: 60). It chooses the pers-

pectives of those who suffer most (van Dijk, 2001; Wodak, 2001). In doing so, it "critically analyses those in power, those who are responsible and those who have the means to solve such problems" (Wodak, 2001: 1). It focuses on issues of social importance, in particular, those that contribute to reducing harm and promoting social justice. CDA seeks to critically investigate social inequality as it is expressed, constituted and legitimised by language use or in discourse. It is concerned with finding ways of redressing these issues (Martin, 2000). This approach is seen as positive in that it gives voice to those in less powerful positions (Martin, 2003; Maybin, 2001; Pietikäinen & Dufva, 2006).

As mentioned above, the context of language use is significant for CDA and this includes its social, psychological, political and ideological components (Meyer, 2001). It is understood in CDA as "something that requires a more comprehensive theoretical explanation to allow an analysis of discourses" (Weiss & Wodak, 2003: 21). To do this, an interdisciplinary approach is proposed (Meyer, 2001; Weiss & Wodak, 2003). That is, CDA integrates theoretical approaches—here CD theory—to produce new holistic approaches (Weiss & Wodak, 2003).

In this process, discourses are not investigated for their immediate use alone. Rather, their ideological history is examined to identify how history shapes and continues the local practices (Billig, 2001). CDA seeks to investigate what has been taken-for-granted as commonsense, noting that "ideology embraces the common-sense of each social period" (Billig, 2001: 220). The analyst, in seeking to investigate the patterns of discourse, observes not only the issues being challenged by speakers but also how those challenges are discursively affected, and those that are left unchallenged.

That said, the task of CDA is to provide a detailed analysis of accounts from a social context, here the mathematics classroom, and in doing so, to attempt to theoretically and empirically connect these accounts to understandings of power and discursive struggle and to broad social conditions. This involves examining the social conditions of the production and interpretation of discourse. There are three levels of social conditions: the level of the social situation or immediate environment in which the discourse occurs; the level of the social institution that constitutes a wider matrix for the discourse; and the level of the society as a whole (Fairclough, 2001; Rogers, 2004). These conditions shape what people bring to production and interpretation. They shape the manner in which the accounts that are resources for understanding what is going on, are produced and interpreted (Fairclough, 2001: 20). Accounts are constituted by their social context (Fairclough, 1995; Lazar, 2005). Constitution applies in this sense to the meaning-making through spoken and written text, and which contributes to understanding the social context (Lazar, 2005).

4.1. Dimensions of Discourse

Fairclough's (2003) three dimensions of discourse, representations, relation-

ships, and identities provide a useful framework for analysing accounts. These dimensions enable a broad description of the discourses of mathematics as traced in the participants' accounts. The representation dimension focuses on the happenings and relationships in the world; the people, animals and objects involved in the happenings and or relationships. It includes the ways the happenings occur and their "spatial and temporal circumstances" (Smith, 1990: 57). It considers what processes and participants predominate (Fairclough, 2001). In doing so, it focuses on representing a real or imaginary action, event, or relationship textually, that is, as a particular version of reality of what is occurring.

The relations dimension of discourse focuses on how the choice of a text's wording creates social relationships between participants (Fairclough, 2001). Its interest is in examining particular ideologies that are common ground for the speaker and other participants (Fairclough, 2001; Thomas, 2006). In particular, this dimension considers the relationships of power set up and enacted in particular versions of reality.

The identities dimension involves the "commitment that people make in their texts and talk which contribute to identification" (Fairclough, 2003: 162). The "process of Identification" (Fairclough, 2003: 159) refers to how people identify themselves and how others identify them in talk and texts. It is a complex process because it arises from the distinctions between personal and social aspects of identity. The construction of an identity is associated with discourse as discussed previously, however, "people are not only pre-positioned in how they participate in social events and texts, they are also social agents who do things, create things, change things" (Fairclough, 2003: 160). Identity construction then is a textual and social process and involves the constitutive effects of discourse. Such processes therefore, are dialectical, as discourses are inculcated in identities.

Although described individually, in practice, the three dimensions of discourse are not discrete they co-occur and overlap. It is useful, however, to distinguish between the three for analysis. They serve as a framework for employing particular textual features to trace particular elements of discourse.

4.2. Textual Features

The following textual features have been identified as useful for analysing research participants' accounts.
- classification schemes
- modality and modal markers
- deictic categories
- presuppositions and,
- declarative mood.

Each feature will be described in turn and the focus for analysis explained. The features will be selectively applied in the analysis as not all the features will be relevant to all the data.

4.3. Classification Schemes

A classification scheme is a systematic means of organising, classifying and evaluating people, practices and things. Social groups impose meaning on their world by ordering things into classification schemes (Douglas, 1966). Classification schemes work to emphasise the differentiation of people and practices from one another, how they are placed in opposition to one another, and how they are placed as equivalent to one another (Fairclough, 2003; Laclau & Mouffe, 1985). Classification schemes in different discourse types allow for an understanding of the wording of particular versions of reality to "different degrees, with a larger or smaller number of words" (Fairclough, 2001: 96). They work to show "how people think and act as social agents" (Fairclough, 2003: 88). They also work to indicate "equivalence and difference" (Fairclough, 2003: 88), that is, the tendency for creating and proliferating particular differences between groups of people and "collapsing or 'subverting' differences by representing" (Fairclough, 2003: 88) groups of people as equivalent to one another. Binary oppositions, which are discussed later, are considered crucial for classification schemes because a clear difference between things must be established in order to classify them (Hall, 2001b). The following account indicates how some students are classified in opposition to school.

> A lot of these children I think they've been in big trouble at main stream schools. A lot of them find great difficulty in sitting still and I can imagine that they'd spend a fair bit of time in isolation in the classroom where they— because they're disruptive and they talk to each other—which in a classroom situation is untenable for a teacher. (Interview, Joan, Program Tutor)

This account is from a tutor in the Youth Reconnected Program. Ostensibly, the statement is about a particular group of students who reject schooling. However, the account carries many meanings, all of which may be plausible, for example, the students have been in trouble at school, the students have been excluded from class because of their disruptive behaviour, and the teacher may find the students difficult to work with. What is important, though, is that this account classifies a particular group of students as different to another group which is not included in the account. That is, the members of this group are in trouble, have difficulty sitting still, are placed in isolation, and are disruptive and talkative. This classification places the students in opposition to other groups of students in the classroom and in doing so gives rise to "negative feelings and practices" (Hall, 2001b: 230).

What is seen to cause negativity is when something is in the wrong category or does not fit any category (Douglas, 1966; Hall, 2001b) but floats ambiguously in an unstable in-between zone, for example, social groups who are mixed-raced and who are neither "black" nor "white" (Hall, 2001b; Stallybrass & White, 1986). Stability requires everything to be ordered and in place. However, what unsettles stability is when something is out of place and the rules are being broken. Things that are out of place are seen as a "sign of pollution, of symbolic

boundaries being transgressed" (Hall, 2001b: 330). Things that are out of place are removed, to restore order. Classifications of difference can lead to a closure of ranks and the stigmatisation and expulsion of anything that is defined as impure. However, difference can be powerful because it is forbidden and threatening to social order. Difference then creates social divisions, whilst equivalence subverts existing differences and divisions. In doing so, they continue the process of social classification.

A classification scheme can be identified through the use of "overwording—an unusually high degree of wording, often involving many words which are near synonyms" (Fairclough, 2001: 96). Overwording may be used when there is a preoccupation with an aspect of reality that may cause ideological struggle. When it occurs, that particular version of reality is likely to be "a focus of ideological struggle" (Fairclough, 2001: 96).

Alternately focusing on the text and the discourse type enables a better understanding of "meaning relationships" between the words used in the text, the discourse types underlying the words, and the ideologies on which they are based (Fairclough, 2001: 96). Two forms of meaning relations, synonymy and antonymy, are significant here. The first term refers to words that share a similar meaning. "Generally, such words do not overlap, but rather as far as one meaning goes, they mean the same" (Halliday & Hasan, 1989: 80). The second term relates to "oppositional wording" (Fairclough, 2001: 94), as when an existing and dominant wording is replaced by another in opposition to it, for example, the words "*subversive* and *solidarity* belong respectively to 'right' and 'left' ideological frameworks" (Fairclough, 2001: 95). How either of these words tends to occur, will "ideologically 'place' a text" (Fairclough, 2001: 95). These terms are extended to include phrases that in repetition emphasise the same theme.

4.4. Modality and Modal Markers

Modality refers to the stance or attitude taken in a text or statement, a judgement made about someone or something (Fairclough, 2003: 165). As a textual feature it identifies what people commit themselves to, what is desirable or undesirable. It enables the analyst to trace the processes by which such identification proceeds. Here identificational meanings presuppose representational meanings, that is, "the assumptions on which people identify themselves as they do" (Fairclough, 2003: 160). Examining modality in the analysis makes apparent what people commit themselves to through different types of exchanges, either in terms of their authority to make that statement, or their evaluation of the issue in that statement (Fairclough, 2001).

Modality is used in the analysis because it emphasises the "stance" that people take towards their representations (Hodge & Kress, 1988: 122). It expresses the speaker's judgement on the reality of the representation in a statement (Kress & van Leeuwen, 1990: 49). Of importance is how social participants, contexts and relations are categorised and described. Descriptions of particular versions of

events are descriptions of the relations of social participants to the social context. The descriptions represent social construction, contestation and struggle. Through the descriptions, discourses and the processes of power that contribute to such construction and contestation can be traced. Modality is realised by the use of modal markers—verbs such as may, might, must, modal adverbs such as probably and possibly, and modal adjectives such as possible and probable. Modal markers have a strategic role in discourse (Baker, Francis, & Togni-ni-Bonelli, 1993). They are used by a speaker who wants to make their interpretation of the situation stand out from others' interpretations or more common consensus views. It is a common emphasiser that serves to express that "what is being said is true" (Quirk, Greenbaum, Leech, & Svartik, 1985: 583) and that there is a degree of unexpectedness and surprise (Lenk, 1998).

Modality is concerned with the speaker or writer's authority and the direction of that authority. There are two dimensions to modality, relational modality and expressive modality, each depending on the direction in which authority is orientated (Fairclough, 2001). Relational modality exists if it is a case of the "authority of one participant in relation to others" (Fairclough, 2001: 105). Expressive modality refers to the "speaker's authority with respect to the truth or probability of a representation of reality" (Fairclough, 2001: 105).

An important feature of relational modality is an understanding of the implicit authority and power relations in the accounts, authority and relations that are not made explicit but yet impose obligations on subjects. The following account from a program tutor illustrates this aspect:

Well that's the way I work, others may not work, but I prefer to get to know the student really well, look for their good points and empower them and praise them wherever I can. (Interview, Joan, Program Tutor)

In this account, the textual feature relational modality is identified. This feature shows the authority of the tutor to speak about their knowledge of what they would do and the relations with others. The relational modal auxiliary verb, may, signals a possibility, but with the negating adverb not, the meaning suggests that there is the possibility that others do not work in the same way as the tutor. Of interest in this account are the speaker's authority and the power relations to withhold what others do, that is, not make explicit what others do. The implicit claim and power relations are a matter of ideological interest because "ideology is most effective when its workings are least visible" (Fairclough, 2001: 71). Such an invisibility is achieved when it is brought to discourse as background assumptions that lead the speaker to "textualize the world in a particular way, … and yet leads the interpreter to interpret the text in a particular way" (Fairclough, 2001: 71).

Expressive modality, that is, the speaker's evaluation of a particular representation of a version of reality and the basis of her authority to make that evaluation, can also be expressed using modal markers such as may, might, must, should, can, can't, and other similar terms (Fairclough, 2001). Evaluation refers

to the explicit or implicit ways that speakers or writers commit themselves to values (Fairclough, 2003). Claims about experience, other people, and relationships for example are value judgments that are used in conjunction with an "evaluative accent" and conveyed using expressive intonation (Volosinov, 1973: 93). Evaluative statements are about desirability and undesirability, and or what is good or bad; for example, mathematics is good or mathematics is bad. The desirability of anything is socially constructed (Graham, 2003). Evaluative statements are realised as relational processes, with the evaluative element the attribute, which can be an adjective—*good*—or a noun phrase—*a good example*.

Explicit evaluative statements about desirability generally contain words such as good, bad, hate, and love. The perceived desirability of something is socially mediated (Graham, 2003). Within a discourse, the evaluative dimensions that propagate desirability for something, suggest significance. Evaluative statements evaluate by importance and usefulness where desirability is concerned (Fairclough, 2003). What is taken as self-evident as important or useful is considered desirable, for example, the textbook is useful.

One implication of evaluation for analysing discourses of mathematics learning is that it allows for the identification of the possibilities for student learning. Another is that it reveals the existing problems that produce exclusion and isolation from mathematics learning. Evaluation allows for consideration of what exists that causes struggle in and through discourse, and the possibilities that might lead to social change which could decrease the struggle and enhance student access to discourses of mathematics learning. For example,

Well let's go back and look at this, you can see at a glance that it is not right. I then go back, then take them through, and say to them, you can't, [you] must take the bottom number from the top number, and what you do is borrow from next door. (Interview, Louise, Program Tutor)

In this account expressive modality is identified. This modality shows the speaker's commitment to the "truth of the proposition" (Fairclough, 2001: 107) of how to solve a subtraction task. The modal auxiliary verb, must, marks expressive modality and is associated with certainty "you must take the bottom number from the top number". The ideological interest is in the authenticity of the speaker's claims to knowledge, with the steps used to solve a subtraction task represented as fact without any intermediate modalities.

4.5. Deictic Categories

Deictic categories refer to the terms used to organise socially what and who is present or absent in a text (Smith, 1990: 57). For example, the terms now, then, here, there, the verbs come and go, and the personal pronouns, *we, I, they, them, us* and *you*, work to socially locate and organise by "time and distance and the positions and arrangements of participants with reference to the 'position' of the speaker" of a text (Smith, 1990: 56). What the speaker refers to can only be identified "when the position of the speaker and the context in which they are used is

known" (Smith, 1990: 56). Using these categories enables an understanding of the social organisation of participants in a text. Its concern is with the ideological significance of participants and their relations (Thomas, 2006).

Deictic categories work to locate how participants are included and excluded from a discourse (Thomas, 2006). A participant may be a social actor, although this is not always the case; a physical object, for example, a textbook, can be a participant (Fairclough, 2003). Deictic categories such as the personal pronouns, I, we, you, they, them, and us, can be tied to relations of solidarity (Fairclough, 2001). Because social actors are classified and rarely named, understanding we as the first person plural pronoun is crucial to the identification of groups and how accounts represent communities. Such groups and communities "are elusive, shifting and vague" (Thomas, 2006: 86). The use of they suggests knowledge of the group in a them and us way, rather than making reference to the previously used noun. For example,

The teacher like say they would not explain the whole subject to you. They just explain parts of it. (Interview, Aderley, Program Student)

Deictic categories were identified in this account. This textual feature shows two groups of people, the teacher, identified as the personal pronoun, they, and the student or students identified as the personal pronoun, you. These two groups are mutually exclusive. It is not possible, in this account, to be both. This categorisation is constructed around "the whole subject". The teacher, identified as they, has the ability to explain the whole subject. The student, identified as you, expects this response, but it is only partially fulfilled. Here the teacher has power, and the student does not. This construction works to indicate who is included and excluded from the discourse of mathematics. Further, it shows how such a construction positions some students outside that discourse.

In this example, deictic categories work to produce an opposition between two social actors around power and control and inclusion and exclusion. There are two types of exclusion of social actors, suppression, and backgrounding (Fairclough, 2003). Suppression is when the actor is not evident in the account at all. When an actor is mentioned in the account, but has to be inferred in one or more places, it is a case of backgrounding. The reasons for exclusion can be varied, for example, as irrelevant or politically or socially significant. When social actors are constructed in and by discourse they are either initiators or controllers of actions and events. There are those who do things and make things happen, while others are constructed as affected or beneficiaries, the objects of action or control. In discourse they said to be either "activated" or "passivated" (Fairclough, 2003: 145).

4.6. Presuppositions

What is implicit in a text is of social importance. This is because solidarity in a community depends on shared meanings that are taken as givens and that work to form common ground (Fairclough, 2003). However, the capacity to shape this

common ground is equally significant. That is, the exercise of power and hegemony includes the capacity to shape the content of what is considered common ground. Implicitness and assumptions are significant when considering ideologies. The identification of presupposition was important because it worked to show that what was implicit in the text was socially significant. For example,

hard, very hard um, very confusing and that's just about it. Because I wasn't in the right level I needed to be in the lower level and they put me in the higher level which I wasn't ready for. Um the teacher didn't really have time for every single student to teach them easier ways. (Interview, Suzanne, Program Student)

In the student account, the complaint is that she should have been in a lower stream where she could cope with the work. The complaint was compounded by lack of time and—by presupposition—large class size, so that "the teacher really didn't have time for every single student". A reasonable further presupposition here is that this group of students was so alienated from secondary school mathematics and so unable or unwilling to learn there that streaming was of no real consequence.

Making judgments about the meaning of what has been said varies depending on the social groups that people belong to and the languages spoken (Gee, 1996). In this instance, making guesses about the meaning are made easier because of similarities in the group and or the language spoken. The guessing principle (Gee, 1996: 74) refers to the judgments made about what others mean by a word or words used by "guessing what other words the word is meant to exclude or not exclude" (Gee, 1996: 74). Making judgments is also about building theories, testing them by how "well they make sense of past and future experience" (Gee, 1996: 75) and revising them when necessary.

4.7. Declarative Mood

The expression of mood in clauses is described by Halliday & Matthiessen (2004) as consisting of a "Subject plus Finite" (Halliday & Matthiessen, 2004: 114) which realises the indicative feature. This feature is used to exchange information. Associated with this feature is the declarative (Halliday & Matthiessen, 2004). Declarative mood enables statements to be made that provide or give information (Halliday, 1990). It is the "order Subject before Finite that realises declarative" (Halliday, 1990: 115). A declarative sentence is generally instigated by the person who has the knowledge, although it can also be initiated by a person who wants the knowledge, that is, the interviewer (Fairclough, 2003). Such statements are the most frequently used when speaking or writing, for example,

I think because um, it gives me, it makes me want to learn when I know when I know what I am talking about and what they're talking about it kind of gives me the confidence to do it as well, with them in the class to join in so it's a lot better. (Interview, Angelique, Program Student)

Declarative mood was identified in this account. This mood provides the information about this student's learning. The student was identified as wanting to

participate when she understood the discourse of mathematics. For example, "it makes me want to learning when I know what I am talking about and what they're talking about" and "it kind of gives me the confidence to do it as well, with them in the class to join in", worked to provide information about the student's participation in learning. The evolving identity suggests an opening, a way of gaining access to the language and learning for understanding and growing involvement. Here once again learning to become a legitimate participant involves accessing and learning how to talk in and talk about the mathematics language of the community. Thus, access to the language for learning may have more to do with legitimate participation than simply transmitting knowledge.

In summary, using CDA brings together the theoretical understandings of critical discourse theory to analyse the social context as well as the language of research participants' accounts. It enables an understanding of how power, discourse, and ideology are realised in these accounts. It also provides the means for redressing these issues as they happen with students and in mathematics classrooms. As a method for analysis, together with the three dimensions of discourse, representations, relations and identities, CDA provides a way of ascribing meaning to the participants' experiences. They enable broad descriptions of the discourses traced in the participants' accounts. They also serve as a framework for employing the textual features described to trace the particular elements of discourse, and identities in the accounts.

4.8. Limitations

The contributions made by the study from which this paper draws have to be considered in the context of its limitations. Firstly, in relation to the sample of early school leavers used, no claims have been made that the results presented here can be generalised to all students or even extrapolated to all early school leavers. The sample used in the larger study and this paper was a small select group of early school leavers from one TAFE Institute. Nor can generalisations be made about all teachers and how they teach mathematics.

A further limitation of the study was that it was based exclusively on semi-structured interviews with participants in one context—the program. It is acknowledged that including secondary teachers and students would have further strengthened the larger study and this paper. However, this was not the intention of this paper nor the study. Rather, the scope of this paper was to demonstrate the use of critical discourse theory and CDA for analysing students' interview data.

5. Final Words

The discussion of Critical Discourse Theory highlighted the significance of the social context and provided the methodology from which CDA and its elements described could be drawn. Indeed, "society can … be understood as a vast argumentative texture through which people construct their reality" (Laclau, 1993:

341) in particular contexts. That context can include factors such as the material setting, the people present and what they know and believe, the language that is used, the social relationships of the people involved and their identities, as well as historical, cultural and institutional factors (Gee, 2004). This framing of context implies a correspondingly complex set of theoretically-based tools or methods suited for analysis of discourse (Chouliaraki & Fairclough, 1999; Poynton, 2000; Weiss & Wodak, 2003). CDA attempts to theorise the mediation between the social and the linguistic in an interdisciplinary approach, and to operationalise the theoretical constructions of discourse into such tools and methods.

The adoption of such an interdisciplinary approach necessitates the acknowledgement of the importance of the social context in which the accounts are produced. Such accounts are constituted in and by the social context, and that context can be understood through spoken and written accounts (Fairclough, 1995; Lazar, 2005). CDA, with its commitment to fine-grained analyses of accounts constructed within social contexts, has been chosen by the researcher to meet this requirement. Such an analysis ensures links are made between the accounts of participants and their social context. That is, the research needs to be sensitive to their accounts without losing sight of the contexts in which they occur.

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