

POWER AND POVERTY – WHOSE, WHERE, AND WHY?: SCHOOL MATHEMATICS, CONTEXT AND THE SOCIAL CONSTRUCTION OF “DISADVANTAGE”

Dalene M. Swanson

University of British Columbia

This paper compares the discourse and practice of school mathematics in two socio-economically different school contexts in post-apartheid South Africa. It addresses the relationship between constructed “difference” and “pedagogized disadvantage.” In other terms, it looks at the way in which certain students, spoken-of in terms of “deficit” and “disadvantage”, are afforded differentiated school mathematics discourse that situates them in terms of “failure”. Consequently, these socially constructed students are not provided with access to pedagogic or socio-economic empowerment. The paper examines the role of social context in the elaboration of social difference discourses and their recontextualization into mathematics in ways that recruit psychologizing positions, thus pathologizing students and producing disabling pedagogies.

A COMPARATIVE PERSPECTIVE.

The paper draws on two similarly conducted studies in South African secondary schools. Each study reports on one particular school. Each school is situated in a very different socio-economic context – one affluent, one impoverished. While critical discourse analysis was used to interrogate the range of positions and voices informing the two studies, the theoretical framework draws on the interrelated ideas of discourse, subjectivity, social context and ideology. It provides a sociological interpretation of the role of context and agency in the way in which mathematics is constituted in the two locations, the identities that are constructed in context, and, concomitantly, the ideological positions evoked, including the recontextualization of discourses of psychology in the mathematics classroom in different contexts. The paper compares the two schooling contexts in the two studies. Consequently, a comparison of the two studies permits an examination of the various ways in which these positions are differently or similarly realized across the two schooling contexts.

Location of the First Study and Research Intention:

A small-scale study was conducted within a historic and traditional, independent all-boys Anglican school in South Africa. This secondary school is located in the Western Cape region and has been multi-racial since 1978.

The study commenced during an early period of political transition (post – 1994), during a time of rapid and unprecedented socio-political and economic change in South Africa. These changes culminated in a new political dispensation for the country and have been reflected most poignantly in the educational arena. Whilst these changes posed new alternatives, they also heightened the difficulties faced today in post-apartheid South Africa in an increasingly globalized world, bringing

new focus and new emphases to the socio-economic realities of educational crisis in South Africa and in its future education.

The intention of the study was to examine the *construction of disadvantage* in relation to the discourse of school mathematics within the context of a South African independent school, with particular emphasis on the role of the categories of *race, class, culture and language* in assisting with the formulations and maintenance, (production and reproduction), of such constructions. The *construction of disadvantage* is understood here, to be the production and reproduction of social difference within a hierarchized social domain whose differentiated discourses serve to position individuals (subjects) in terms of deficit and disadvantage. In this way social *difference* is recontextualized (Dowling, 1993) into pedagogic and socio-economic *disadvantage*.

Focus of Study and Schooling Context.

More specifically, the focus of the study was the exploration of *subject positions* potentially available to the black male students of the “Black Scholarship Programme” at the school in their study of school mathematics. On an annual basis, a select number of black students “won” a scholarship to attend this independent school based on the results of an academic entrance examination and a committee selection. The “Black Scholarship Programme”, as it was termed, was financed by a multinational corporation and was designed to provide *advantage* for a select group of students from “disadvantaged communities”. “Disadvantage”, in this (South African) context, is synonymous with “black”, conflating race, class, language difference, cultural difference, “experiential deficit”, poverty and educational difference. These students were constructed in terms of social difference and spoken of in terms of “disability” or “failure”, which legitimized a differentiated distribution of mathematics discourse and practice to these students. These pedagogic practices, in turn, held them to positions of alienation and disadvantage. In this way, constructed difference and disadvantage was *recontextualized* (Dowling 1993, 1995, 1998) into pedagogic disadvantage so that these scholarship students were, in effect, provided with less access to the “regulating principles” (Bernstein, 1993, Dowling 1993, 1998) of mathematics discourse and practice than were other students of the dominant culture constructed in terms of “success”.

The study included an examination of the particular nature of the *schooling ethos and culture*, and its role in creating and maintaining *boundaries*, producing and reproducing forms of power and control that assisted in holding these black students to *positions of subordination*. It was proposed that the hierarchical and differentiating rituals and codes within the “stratified” school context (Bernstein, 1993), with pronounced vertical hierarchies, provided the means by which the Black Scholarship students were constructed as disadvantaged.

Particular emphasis was placed on the discourse of school mathematics within the *Academic Support Programme* of the school, designed to assist these black students “bridge the gap” in their academic knowledge and experience; and in the differentiated nature (through streaming) of the mathematics discourse (Dowling,

1993) available to the students of the Black Scholarship Programme within the *Mainstream Programme*. There was an examination of the power relations between these two discourses and other discourses within the social domain that shaped the way in which these students were positioned in terms of ‘deficit’ and ‘disadvantage’ in relation to other students within the school, and in the way in which psychologizing practices were recruited in terms of notions of ‘competence’, cultural orientation, self-concept and ‘ability’, thereby pathologizing these students and denying them access to enabling pedagogies.

Methodological Considerations.

In this paper, I interrogate the *deficit model* research tradition, where the student is the *object* of the research, context is *neutral* and gender, ethnicity and class become “social factors” that affect educational performance. These social factors are spoken of as possessing deficits which produce “failure”, and become ways of *pathologizing* students in terms of social difference. By contrast, the study places greater emphasis on *the social* and on the *role of context* in the situatedness and production of subjectivity. The study sought to move away from approaches which attempt to explain differences in performance on the basis of measured differences in cognitive or affective traits, or ethnic background. Such approaches, I argue, displace *the social* to secondary account and focus on the individual as an ensemble of abilities, attitudes, beliefs, perceptions and experiences. Through my research focus on *context, subjectivity, discourse, and ideology*, with an emphasis on post-structural theory and critical pedagogy, I sought to provide an alternative reading of educational difference through an examination of the *construction of disadvantage* in terms of the *subject positions* available to the students of the Black Scholarship Programme, in relation to school mathematics. The differentiated subject positions, which were afforded this group of students, worked concomitantly with the *unequal distributions* (Dowling, 1993, 1998) of mathematical discourse and practice to these students. In other terms, these students were held to positions of subordination in relation to other more “successful” students, which served to delimit their access to the “regulating principles” of mathematics discourse and practice and to its rules of evaluation.

Data Collection.

The students of the Black Scholarship Programme were interviewed in their initial year at the secondary school (grade eight) as were the two teachers of the Academic Support Programme. These semi-structured interviews were designed to establish a discourse on teaching and learning mathematics within this independent school, especially in relation to the Black scholarship students and their mathematics. The discussions were taped and transcribed and formed the basis of the analysis. The intention was to examine the various ways in which the teachers constructed the Black Scholarship students in relation to other students and their mathematics, and to compare it with the ways in which the Black Scholarship students constructed themselves and other students with respect to mathematics within the context of this independent school. Informal discussions with students of the Programme in their more senior academic years were also documented. Field notes were taken of

discussions with academic staff within the Mathematics Department and school documentation reflecting school policies and discussions within the school were used, where relevant, in relation to the students of the Black Scholarship Programme and mathematics. Archival material documenting the history of the school was researched and discussions with teachers with a long-standing career at the school were documented.

Findings of First Study

The school context and disadvantage

In the context of the research school, I argued that it was the specific agents of power and control that assisted in boundary formation and regulation within and between school discourses: “the social division of labour of discourses” (Bernstein, 2000). The relations of power between discourses, such as *Mainstream Mathematics* and *Academic Support* assisted in positioning subjects in terms of ‘dominance’ versus ‘subordination’ in relation to these discourses.

The research school possessed a highly ritualized social order and was described in terms of its many *differentiating* and *consensual* rituals (Bernstein, 1990, 1993, 2000), which reproduced difference in the school. This “ritualization of difference” allowed one to speak of the pervading ideological ethos of the school in terms of “the culture of difference”. As a consequence of the dominant discourses within the school (recontextualized from discourses within the social domain), difference was *stratified* and translated into deficit and disadvantage in a more explicit and visible way in the case of the students of the Black Scholarship Programme with respect to mathematics and in relation to other students within the school. It was the patterns of meaning, constructed through ritual and tradition at the school, which provided the resources for constructing disadvantage in such an explicit way, and consequently, constructions along the lines of race, class, cultural deprivation, experiential deficit, language difference, and intellectual disability were indexed over others. Consequently, pathologies of the scholarship students were normalized in this context. Positions of “success” became less available to the students through normalization, so that positions of resistance reinforced “disadvantage,” and disallowed possibilities for empowerment.

Pedagogic discourse and disadvantage

In the analysis, I argued that the power relations between the discourses of Academic Support and Mainstream Mathematics constrained options and delimited possibilities of successful engagement in mathematics. For the students of the Black Scholarship Programme, this meant that access to the *regulating principles* (Dowling, 1993) of “upper stream” mathematics was prevented, rather than facilitated, despite the Academic Support Programme. The *strong classification and framing* (Bernstein, 1993, 2000) of Mainstream Mathematics illegitimized and nullified the intended “advantages” of the *weakly classified* Academic Support Programme. The “regions of silence” between the discourses, prevented access to the realization rules (Bernstein, 1993) of mathematics. The students were thus subordinated along with the low status

of the bridging program. Their spatial separation from other “successful” students, both within the Mainstream and Academic Support, became a *physical and contextual* representation and demarcation of this subordinate positioning.

Disadvantage realized in pedagogic discourse

In the analysis, I argued that a differential distribution of mathematical discourse was produced across a hierarchical array of subject positions or voices (Dowling, 1993). To the *alienated voice* of the students of the Black Scholarship Programme was distributed recontextualized discourse that did not provide access to the regulating principles of mathematics at the school. These students were alienated from “upper stream” mathematics as a consequence of being placed with “lower set” students who carried constructions of unsuccessful, slow or disabled learners. Further, their presence in the Academic Support classroom with its *weak voice* (Bernstein, 2000) reaffirmed their position of subordination, where they were granted access to procedural practices and mere rules rather than the regulating principles of school mathematics.

First Study: Conclusion

In this way, *disadvantage produced disadvantage* - the students of the Black Scholarship Programme carried a construction of disadvantage, which became the means by which they were disadvantaged mathematically within the school, despite any attempts of theirs to locate positions of resistance. The selectivities and emphases that supported and assisted in the constitution of representations of “educational difference”, entered into the construction of disadvantage. This disadvantage was realized in pedagogic discourse and practice within the school. In other words, the construction of disadvantage worked empirically with the *pedagogizing of difference* in the research school, and perpetuated pathologizing practices that prevented the engagement with enabling pedagogies.

The Second Study and Research Intention

The school referred to in the second study was situated within an “impoverished” community in an informal settlement in the Western Cape region of South Africa. Research for this study was undertaken in mid-2001 over a three month period. The study was premised on similar methodological principles as the first study and served to extend the discussion on school mathematics and constructed “disadvantage”, from a critical sociological perspective, with a further emphasis on context, both schooling and the broader political context. A principle intention of the study, as with the first, was to examine the relationship between the ways in which students (and teachers) were socially constructed and the kinds of practices afforded the students in different socio-economic and educational contexts. The emphasis on the second study was to examine the relationship between constructed “disadvantage” and the pedagogizing of difference, but especially how this might be realized in-and-across contexts.

Data Collection

As in the first study, the data collection took the form of a set of interviews with groups of students, their teachers in separate interview sessions, as well as participant

observation. Some of the interviews were with individual students where this was the preferred method to the student. These interviews were taped and became, in part, the data of the narrative-based research. These were complimented with a set of observations of secondary mathematics classes across a range of grades and copious field notes were taken. The principal of the research school was also interviewed.

Findings of Second Study in relation to the First.

In the case of the second research school, the “failure” in school mathematics was more *visibly* established and less of a hierarchy was produced between “successful” and “unsuccessful” students in this context. In this way, the students tended to be homogenized in terms of “poverty”, and, consequently, race, class, “social problems”, “learning difficulties”, and other experiential deficits. Whilst the first study showed that hierarchies produced *within* the stratified research school strongly *reflected* hierarchies within the broader social and political domain, the second study showed how schooling within this “disadvantaged” community reflected discourse and practice that situated and pathologized the school and schooling context *more directly* in terms of the broader social and political context. Almost no positions of resistance with respect to school mathematics appeared to be available to the students in the second impoverished school compared with those constructed in terms of social difference in the independent school. In other words, the schooling community, being less empowered, was deeply embedded and oppressed by the existing social relations and political conditions of its place and time. Consequently, there appeared to be little possibility for contested terrain *within* the community that would enable its students to be provided with access to the regulating principles of mathematics and facilitate their pedagogic, socio-economic and political empowerment.

THE STUDIES: EDUCATIONAL SIGNIFICANCE

The two studies, therefore, propose an alternative reading of educational and social difference to that espoused within the deficit model approach, often supported by psychologistic modes of research engagement. They provide an understanding of the role of context in the production of subjectivity and the manner in which discourses within the broader social domain, as well as the schooling context, differentiate groups of students in accordance with social difference. To these students are distributed differentiated distributions of discourse and practice which are disempowering and situate them in the mundane. Different contextual realizations produce a difference in availability of positions of resistance. However, oppressive contextual features severely limit options and possibilities for transformative engagement with enabling pedagogies.

The studies serve to alert the education community to the contextual complexities of mathematics education in different South African schools and to the specific socio-economic and political realities that remain a challenge for the future. Further, the studies have critically important implications for other socio-political and geographic contexts where students from diverse communities, constructed in terms of social difference, are not well served in their mathematics learning within schools.

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