

COMMUNICATION, CONFLICT AND MATHEMATICS EDUCATION IN THE MULTICULTURAL CLASSROOM

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Background

One of the effects of globalisation in Denmark has been the transformation of the Danish society from being mono-cultural, to becoming increasingly multi-cultural. In the political debate the issues of multiculturalisation have been tackled from different perspectives ranging from a frontal opposition and a fear of the “foreign” to a conciliatory attitude that privileges cultural enrichment through multiculturalism (e.g., Hervik, 1999; Hussain, Yilmaz, O’Connor, 1997). In academic quarters multiculturalism has been given some attention in the form of research on the process of “integration”, in particular relation to the problems of bilingualism (e.g., Møller, 2001), of construction of identity (e.g., Mørck, 1998), of discrimination (e.g., Møller og Togeby, 1999), and of participation in the Danish labour market (e.g., Hummelgaard et al, 1995).

Within all these studies, some attention has been given to the implications of multiculturalism for the school system (e.g., Bomholt og Skovmand, 2000). Multiculturalism has not only represented a challenge to the organisation and management of schooling in Denmark, but also to the liberal pedagogical traditions and forms of socialisation that have dominated Danish schools and classrooms. We still need a better understanding of the dynamics of multiculturalism in the everyday of schools, and from perspectives that highlight the complex, conflictive nature of multiculturalism, but that, at the same time, emphasize the potentialities of multiculturalism for enriching society.

Furthermore, the issues of multiculturalism in schools have been left to general pedagogy and not very much attention has been given to the particularities of the mathematics classroom. In fact, in existing research and policy frames for mathematics education at all levels of the Danish school system, there is no particular mention of the challenge of multiculturalism for the teaching of mathematics – e.g., the current curriculum frame for school mathematics of the Ministry of Education (UVM, 1995), and the recent Competencies in Mathematics Education Project (KOM-arbejdsgruppen, 2002). Such challenges have been a clear focus of attention in other policy frames in countries such as the USA (NCTM, 2000).

Our project intends to illuminate this situation taking into account international experience in mathematics education research, as well as our previous experience in tackling the analysis of the mathematics classroom from communicative and socio-political perspectives.

We are only starting with our project and we are interested in discussing two aspects of our research design:

- Our theoretical framework based on a communicative and socio-political notion of conflict to approach the multiplicity of clashes emerging in a situation of cultural diversity.
- Our methodological design that builds on the key notions of collaboration teams between school leaders, teachers, students and researchers; the exploration of diversity in the organizational wholeness of the school life; and the reflection on a multiplicity of international cases and experiences as a source for both pedagogical and theoretical inspiration.

Theoretical framework

Our theoretical framework builds on four main elements. First, we want to re-elaborate the theoretical and empirical framework developed in *Dialogue and Learning in Mathematics Education: Intention, Reflection, Critique* (Alrø & Skovsmose, 2002). This project developed some conceptual relations between communication and learning in a monocultural classroom.

Second, we want to build on the idea that a person's foreground, in terms of the person's interpretation of his or her possibilities and expectations for the future, is decisive for his or her intentions in learning. The relevance of 'foreground' as an educational concept has been initially presented in Skovsmose (1994) and developed further in Alrø and Skovsmose (2002); Skovsmose (2002) and Valero (2003). This notion has provided a useful explanation for the behaviour and school performance of, for instance, South African black students. The perspective of 'foreground' has further been included in the critique of the classical perspective of ethnomathematics (Skovsmose 2002).

Third, we want to consider mathematics education as part of an institutional network of practices. Conflicts and possibilities in the multicultural classroom can be analysed with respect to the "Institutional Network of Mathematics Education Practices" (Valero, 2003). Such a network addresses the complexity of the social practices through which the learning and teaching of mathematics is carried out within the school organisation. Crucial notions such as 'power' and 'conflict' are essential in this kind of socio-political perspective on mathematics education.

Fourth, we want to draw on the perspective on social and political conflict that has been developed by Vithal (2000a, 2000b). Vithal shows how the notions of 'conflict' and 'dialogue' are pedagogical key concepts in a theory of critical mathematics education.

Out of these four inter-related theoretical elements we intend to bring forward a conceptualisation of multicultural mathematics education, in general, and of conflict in such situations, in particular.

Concerning conflict, much educational research considers the mathematics classroom to be free of conflict (Vithal & Valero, in print). Naturally, there can be obstacles to learning, and there can be emotional, behavioural, organisational, social and political conflicts, but conflicts –except for cognitive conflicts– are not normally considered to be essential elements of learning processes in mathematics. Our point is that conflicts can be potentials for learning. We want to see conflicts as both social and cognitive elements that intermesh and influence the process of mathematical learning. In this sense, our notion of conflict is *socio-epistemic*.

Of course, conflict can be understood in negative terms as something that should be avoided or solved. Our socio-epistemic notion of conflict, though, includes problematic/destructive elements as well as dynamic/constructive elements. For example, conflicts in a multicultural classroom are not necessarily solved by introducing a common, unifying language –Danish, for example– or by introducing a common contextualisation for a mathematical subject. Conflicts are twofold. They refer to contradictions, disagreements and problems that need to be solved, but they also include potentials for learning and development. And they point to new forms of inclusion that cannot be eyed in the monocultural classroom.

The duality of conflict is documented in a number of studies of the transition from a monocultural to a multicultural classroom as for instance in South Africa (e.g., Adler, 2001; Vithal, 2000a). These studies point to the problematic –sometimes almost racist– fact that conflict is related to what is ‘unfamiliar’ and ‘different’. This leads to an attempt to normalise and assimilate what is different in order to integrate. Here the potentials of conflict and diversity are neglected. In a South African context the multicultural classroom can make an entrance to tolerance and human accept and respect. It can contribute to the destruction of the idea about the divide between ‘them’ and ‘us’. This possibility may count for other multicultural classrooms in other contexts as well.

Conflict is a basic condition of human life. Conflicts are inevitably present in many interpersonal relationships; and their destructive/constructive character depends on the way they are handled. Conflicts can be expressed and handled in communication between the conflicting parties. Our communicative perspective on conflict and on the handling of conflicts aims at two things. On the one hand, it emphasises the importance of empowering the parties involved to be able to deal with conflict and to regain self-esteem and strength. On the other hand, it deals with empathy and recognition of the perspective of the other part. The combination of empowerment and recognition is a quality in human growth (Bush & Folger, 1994; Umbreit, 1995).

We foresee that a multicultural classroom is a social space of communication in which conflicts of multiple nature are constantly built and handled. Those conflicts can be:

- Conflicts related to the mathematical content and its contextualisation
- Conflicts related to intentions in learning and to students' background and foreground
- Conflicts in teachers' intentions of teaching and teachers' background and foreground
- Conflicts in the interpersonal relationships between teacher and students and between students
- Conflicts related to competencies in mathematics
- Conflicts related to the planning and organisation of teaching
- Conflicts related to family traditions
- Conflicts related to the social structures and the context of schooling

Methodological design

Although we do not have a concrete plan for the empirical research from which we will further develop our starting theoretical consideration, our methodological principles can be summarised in 3 points.

Creating pedagogical possibilities. In the project we want to collaborate with schools and their leaders, teachers and students as active partners within the investigation. This means that we do not look at these people as an 'object' of our studies. We want to include them in developing, analysing and evaluating data in order to create new possibilities for educational practice. Educational research can deal with 'what is the case' and 'what could be the case' (Skovsmose & Borba, 2000). But research can also consider possibilities of what does not exist yet. We find that the quality of such research depends very much on the quality of the collaboration between these people and researchers on the analysis of these three types of situations.

Empirical data. We want to analyse real episodes from the classroom, and we want to observe and videotape situations in multicultural classrooms, that are carefully planned together with the involved teachers. We also want to include interviews with school leaders, teachers and students in order to examine aspects of their background and foreground, as well as to grasp situations of practice that contribute to the unfolding of mathematics education in the school. The episodes will occur as examples from classroom communication, stories of teachers and students and situations of practice in the school. They will be presented in the form of 'educational novels'. These episodes are the subject of our analyses.

Co-reflection of analyses. In our former research the leaders, teachers and students involved have had the opportunity to comment on several of our analyses. We want to develop further this kind of *internal co-reflection* in this new project. We also want to present and discuss the analyses of episodes in quite different cultural contexts, e.g. a Brazilian, a South African, and a Spanish context. Together with the internal co-reflection, the *external co-reflection* can hopefully qualify our interpretations of episodes and improve the creation of pedagogical possibilities.

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