

## **Social Justice in International Collaboration: The Learner's Perspective Study (LPS)**

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The international project LPS joins collaborating countries for investigating "Mathematics Classroom Practice - The Learner's Perspective". LPS has collected a wide range of data to capture the practices and associated meanings in mathematics classrooms in twelve countries: Australia (Melbourne), China, PR (Shanghai), Germany (Berlin), Hong Kong & Macao, Israel (Beer Sheva, Tel Aviv), Japan (Tokyo), The Philippines (Manila), Sweden (Gothenburg, Uppsala), South Africa (Durban), Singapore, U.S.A. (San Diego), Czech Republic (Prague), and Korea (Seoul) (recently colleagues from Great Britain (Bristol), Norway (Oslo) and Portugal (Lisbon) have joined).

(<http://extranet.edfac.unimelb.edu.au/DSME/lps>)

Each country in LPS uses the same research design to collect videotaped classroom data for at least ten consecutive mathematics lessons and post-lesson video-stimulated interviews with either an individual or a small group of students, teacher interviews and student materials. LPS is guided by the conviction that the characterisation of practices of classroom mathematics must attend to the learner's practice with at least the same priority as that accorded to the teacher's practice. The methodology of data production in the LPS aims at documenting not just the obvious classroom events that might be recorded on videotape, but also the participants' (re)construction by interpreting the classroom events; in general LPS aims at integrating complementary analyses of the substantial international data set generated through the combined efforts of the participating researchers.

### *Description of the research methodology of the project*

The data gathering or production in LPS, building partly on techniques and types of analyses reported in Clarke (Clarke 2001) is a methodological advance compared to other studies that involve documenting classroom practice by videotaping: e.g. in contrast to TIMSS, in LPS sequences of lessons rather than just one single lesson from each teacher or classroom are documented. It is our conviction that teaching and learning can only be separated analytically, so the study design aims at giving voice to all participants. We also believe that the substance of a social practice like that found in a mathematics classroom cannot be documented without trying to reconstruct the meanings that the participants attribute to their actions. LPS allows parallel exploration of student's practices, of the corporate behaviour of the class as a whole and of the teacher practices, therefore it can address many new research questions not yet dealt with in other studies. The project has just compiled two volumes of books reporting about the first analyses and interpretations, which provide an insider's view as well as comparative accounts under specific themes that had been considered of mutual interest and worthwhile for in-depth collaboration (Clarke, D., Keitel, C., & Shimizu, Y. 2006; Clarke, D., Emanuelson, J., Jablonka, E. & Mok, I. 2006).

### *Research philosophies within LPS: Social justice and equality*

Research in LPS is based and deeply depending on equal collaboration of the members of the research teams from each participating country. Results are negotiated amongst the researchers and interpretations shared and adopted or refused. The project provides in-depth data for various analyses of classroom processes from the varied perspectives of teachers, learners, and mathematics. Thus the process of locating the learner's performance in different classroom cultures hopefully can enable the mathematics education community to interrogate

teaching and learner performance in a more in-depth way. The Learner's Perspective Study is guided by a belief that we need to collaborate and learn from each other.

LPS is also atypical insofar it is deliberately designed to be a project without hierarchy: partner groups have equal rights and support within the project, and decisions are only taken unanimously; partner colleagues can decide on their own analyses and interpretations, yet they must ask for reaction and that their data be verified by partners from other countries. Data are accessible to each and every partner country: when a set of data is compiled and processed, one can exchange for one data set from another country. It occurred that we have very interesting compilations of countries, although the assembling of countries did not follow any specific or explicit research methodologies, but used friendly contacts. Although the teachers were considered as partners and had access to the data of their classroom videos excluding video-stimulated-recall interviews with the individual students, they also could use some videos themselves to discuss with their students.

In contrast to other comparative studies (e.g. Hiebert et al. 2003, Stigler & Hiebert 1999), we are convinced that social practices in a classroom can only be comprehensively understood if the interpretation and construction of meaning not only of teachers but also of students are included in the data collection. Furthermore, what is considered as typical is not defined by any kind of sample representativeness; it is instead assumed that local criteria of "good teaching" can catch typical cases of classroom practice that may represent some kinds of norms of good teaching. Therefore, we did not especially search either for so-called innovative or especially ineffective teaching practices; in particular, we tried to analyse, reconstruct and possibly generate structures, not statistical generalisations.

#### *Constraints and chances in LPS*

The generating of the video-data has always been enormously time consuming, both materially and personally. But this aspect increased even more for LPS: because our data need to serve for very different aspects and analyses, we chose a very detailed and specified methodology, which is described and justified in detail in Clarke, Keitel & Shimizu (ch. 2, 2006). For purposes of general understanding of this discussion, only few features should be listed here: We used 3 cameras, with one for a changing students' focus group using video-stimulated-(recall)-technique and reconstructive interviews for each lesson (we had 1 to 4 students in a focus group who were interviewed after each lesson); one week of video-graphing was used to acclimate the students and teacher; no extra lessons were to be documented outside normal daily lessons; students' interviews (each focus group) were closely connected to the lesson. All participating researchers can use all existing data from other groups for their own aims and analyses, and compare with other countries. Student material or productions like texts, drawings, tests, and all teaching material like textbook pages and working sheets were collected and documented. All lessons and interviews are transcribed and translated into English as the language of the project.

#### *Diversity in structure – structures in diversity?*

Our research aims to identify ways in which role-related asymmetries and culturally sanctioned ways of interaction serve as an orientation for the participants in mathematical classrooms, and in particular within certain classroom events and interaction like setting a task or reasoning discourses. Episodes from classroom discourse and student interviews are interpreted in the course of a contrastive analysis. One goal of the ongoing studies is to identify links between similarities in students' agency and structure in differences (Jablonka 2002, 2003b,c,d, 2004, Jablonka & Keitel 2006, Begehr 2003, 2004, Keitel 2003, Keitel 2004). As the project also aims at identifying the ways in which practices of learners both afford and constrain specific teacher practices – including the realisation of the teacher's

goals or “scripts”, the project also recognized the extent to which teacher practices represent affordances and constraints on the students’ practices and goals. Conclusions are drawn as to whether teacher and learner practices are best seen as conflicting or as mutually sustaining – indeed this does significantly inform our theorizing on classroom practice.

When first starting to analyse classroom events or episodes to capture students’ reconstruction of teaching school mathematics, we looked for the following themes and possible aspects of teaching and learning patterns without defining them in detail. Preliminary analyses have been reported and published; however, the major task of comparison is in its infancy. Some of the preliminary themes are mentioned below:

- Forms and effects of classroom interactions (Jablonka 2002)
- Reasoning discourses in mathematics classroom practices (Jablonka 2003b,c, 2004a)
- Patterns of students’ participation in mathematics classrooms (Begehr 2004, 2006)
- Setting a task (Keitel 2006)
- Values and classroom interaction (Jablonka & Keitel 2006, Keitel 2004)
- Students' struggle for sense making (Keitel 2004)

#### *Students’ views and goals of schooling*

The identification of the students’ “culture of schooling” and the evidence (if any) of “student scripts”, analogous to the teacher scripts, are taken as characteristics of student classroom behaviour that determine the nature of their participation and subsequent achievement in the different countries. An indication of mutual accommodation or conflicts between and within such teacher and student scripts would be the interpretation of events by which actions of classroom participants (possibly unknowingly) conspire to sustain each others’ practices through their subscription to particular, culturally-determined, classroom norms (cf. Jablonka 2004, 2006). The reconstruction of the lessons by the students, and the identification of such a relationship between teacher and student scripts, allows us to compare with results of Goodchild’s “students goals” (Goodchild 2001) and hopefully improves our understanding of Brousseau’s “didactic contract” (Brousseau 1989, 1997).

**Summary:** The absence of the learner’s perspective in international comparative research called into question the adequacy of previous research to do more than describe teacher practice, lacking either associative or explanatory potential. The meanings which students ascribe to the actions of their teachers and their classmates are supposed to be as culturally-specific, and as significant for our understanding of classrooms, as the actions themselves. Therefore the research design was developed to support analyses intended to portray, to compare and to contrast teachers and their teaching, not cultures. The documentation of the practices of mathematics classrooms in other countries causes us to question our assumptions about our own practice. Therefore the essential characteristic of our study of mathematics classrooms is the commitment to an integrative approach.

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