

TEACHERS' KNOWLEDGE AND THE CREATION OF DIDACTIC SITUATIONS

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Aiming at explaining the relationship between teacher's comprehension of the content he/she teaches, his/her oral and written practice and possibilities of creating didactic situations, this paper presents results concerning the last stage of an investigative programme. It began in 1996 and was carried out by ten teachers of the 4th grade of six elementary schools in Pinhais, in the metropolitan area of Curitiba, Brazil. The different phases of the research process (1996-1999) include data on the observation of ten teachers in class, bimonthly meetings with a group of all 4th grade teachers of the city (n=50) and four workshops. For the workshops, ten teachers were responsible for the creation of the environment for the development of math's teaching/learning situations. At this stage, the ten teachers turned their schools into sites of pedagogical practice they had developed, submitting their proposals to teachers from other schools. The theoretical reference is based on authors who claim that there are different places where the mathematical knowledge can be developed. The planning of pedagogical practice is the specific teacher's area according to the didactic interactions (Perret-Clermont et al.,1982) and the role of representation in the conceptual field theory (Vergnaud,1994). As soon as the teacher perceives his/her understanding of mathematical contents, he/she will set a high value on the student's own conceptual process. The teachers' performance was reported based on ethnographic instruments (Erickson,1989). Analysis of the results corroborates the hypothesis that there is a teacher's need of conceptual understanding of the mathematical contents to be taught. This has to be done gradually so that the teacher creates his/her own practice (Krainer, 2000). There was a clear change in the pedagogical practice and a continuous improvement in conceptual comprehension of concepts as well as participation in the creation of teaching/learning situations. This made the identification of their oral and written activities possible. In 2000, the ten teachers and the researcher worked on the local curriculum as consultants. In 2001/2002, they were in charge of the service qualification programme at their schools, preparing and doing workshops. At the end of 2002, the ten teachers themselves carried out a project offering maths workshops to all 4th grade teachers of the city.

References

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