

THE DEVELOPMENT OF PERFORMANCE INDICES FOR THE ASSESSMENT OF STUDENTS' ABILITIES IN CULTURALLY ORIENTED SPACE AND SHAPE TASKS

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Curriculum change in South Africa requires that students engage with culturally oriented activities related to space and shape. Curriculum guidelines provide for assessment in 6 levels in a space and shape strand over grades 1 to 9. The particular specific outcome being addressed by the research reads as follows: Analyse natural forms, cultural products and processes as representations of shape, space and time (National Department of Education, 1997: 4). No guidelines are however provided for judging the developmental level at which the learner is engaging with such activities in terms of the mathematics embedded in the culturally oriented activities suggested.

The RADMASTE Centre has been engaged in developmental research (Gravemeijer, 1994) related to the implementation of an ethnomathematical approach in classrooms in South Africa for a number of years. An educative assessment framework (Wiggins, 1998) has been adopted in the development of tasks arising out of this research. These tasks were given to grade 7 and 8 students in well resourced suburban schools as well as in disadvantaged township (e.g., Soweto) schools.

This paper reports on a preliminary analysis of the responses of a sample of students on three of these tasks: Ndebele designs, house designs and map symbolism. The approach to the analysis was similar to that adopted by Sproule (1999) on culturally-based counting practices. The analysis has resulted in a tentative rubric involving performance indices and related assessment criteria. Learner performance in symmetry, scale, notation, symbolism, was identified in the tasks as a basis for the assessment criteria.

References

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