

Examining the Teaching and Learning Needs of Science and Mathematics Educators in South Africa

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Abstract : There has been increasing pressure on education researchers and practitioners at higher education institutions to focus on the development of South Africa's rural and peri-urban communities and improving their quality of life. Many tertiary institutions are obliged to review their outreach interventions in schools. To ensure that the support provided to schools is still relevant, a systemic evaluation of science educator needs is central to this process. These prioritised needs will serve as guide not only for the outreach projects of tertiary institutions, but also to service providers in general so that the process of addressing educators needs become coordinated, organised and delivered in a systemic manner. This paper describes one area of a broader needs assessment exercise to collect data regarding the needs of educators in a district of 45 secondary schools in the Western Cape Province of South Africa. This research focuses on the needs and challenges faced by science educators at these schools as articulated by the relevant stakeholders. The objectives of this investigation are two-fold: (1) to create a data base that will capture the needs and challenges identified by science educators of the selected secondary schools; and (2) to develop a needs profile for each of the participating secondary schools that will serve as a strategic asset to be shared with the various service providers as part of a community of practice whose core business is to support science educators and science education at large. The data was collected by a means of a needs assessment questionnaire (NAQ) which was developed in both actual and preferred versions. An open-ended questionnaire was also administered which allowed teachers to express their views. The categories of the questionnaire were predetermined by participating researchers, educators and education department officials. Group interviews were also held with the science teachers at each of the schools. An analysis of the data revealed important trends in terms of science educator needs and identified schools that can be clustered around priority needs, logistic reasoning and educator profiles. The needs database also provides opportunity for the community of practice to strategise and coordinate their interventions.

Keywords : needs assessment, science and mathematics education, evaluation, teaching and learning, South Africa

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