CHAPTER 3: RESEARCH DESIGN

This chapter will focus on describing the research design, unpacking the principles that inform the research approach or conceptual framework. The unique features that are inherent in the specific methodology will be elucidated and finally the data collection tools and analytical methods employed will also be discussed.

The Research Paradigm

The study is evaluative in nature and is situated in the qualitative research paradigm. This is contrasted from the conventional quantitative or agricultural – botany (classical) paradigm which fundamentally deals with pre-ordinate (pre and post - tests) experimental designs and relies on the replicability of the 'tests' involving deductive methods and quantitative data (Worthen and Sanders, 1987: p17). The classical (scientific) view of evaluation practices is that, evaluations need to be objective and describe in quantitative, empirical terms whether or not the goals of a curriculum are being achieved. This approach proved to be limiting and hence the development of the qualitative (ideographic) approaches to educational evaluation. The agricultural – botany approach cannot capture the individuality and unique characteristics of particular educational situations as it treats all situations as "nomothetic activity" (Eisner, 1985: 138). The study does not talk to curriculum design and development, nor is it about curriculum planning and development. It focuses on adjudicating the 'worth' of the curriculum innovation.

Illuminative evaluation, using anthropological tools seeks to … describe, interpret and take(s) account of the contexts in which educational innovation must function … (Parlett and Hamilton, 1976: p86). It focuses attention on the importance of classroom practice (learning milieu) by describing what actually happens in the classrooms. It looks for 'matches' and 'mismatches' between the learning milieu and the planned curriculum (i.e., the instructional system, comprising all that is planned and written down as curriculum). The planned

curriculum is essentially a set of documents that delineate the programme's … aims and objectives, content, teacher pedagogy and assessment practices … (SAIDE, 1999: p10). As such, the evaluative process seeks not only to look for relationships between phenomena. It asks the question 'why' these relationships exist. This evaluation is thus important for programme modification due to the increased responsibilities and resources that are now allocated to education and all its related activities. Evaluation thus, is used for accountability.

Illuminative evaluation, as with all evaluation approaches, aims to arrive at adjudications concerned with the efficiency and effectiveness of programs. Any program or process should be effected in a way that it is not wasteful of resources. It should also utilise such resources effectively and efficiently to avoid wastage and primarily, it should set out to perform or do what it is intended to (Farrant, 1964, Worthen and Sanders, 1987, SAIDE, 1999: 12). Curricular evaluations look at adjudications of worth, to evaluate or assess whether the curriculum is being implemented as intended; if comparative, to check the relative worth of curriculum; and test out "the goodness of fit between statements of content to be learnt and its actual accomplishment" (Tyler, 1949 cited in SAIDE, 1999). Illuminative evaluation draws extensively from anthropology and focuses attention on describing what happens in the classroom (Parlett and Hamilton, 1976). From its descriptive approach, it aims to ask the question "why" there exist relationships between phenomena.

As a qualitative paradigm, it reports the emic perspective to curriculum evaluation and is not overly dependent on reference to measurement and assumptions underpinning scientific research / evaluation, where there is emphasis on large sample sizes, randomisation of sample subjects, validity and reliability of the data, numerical confidence in the data etc. and the rigor with which these measurements ascribe to. It also … restores the "human face" to evaluations … (and) the evaluator's voice is one amongst many … (Parlett and Hamilton, 1976: 86). The challenge to its validity is to investigate the issues in depth and present an in-depth penetration or description of issues where the strength of the argument is explicit in the rigor with which the argument is presented and is not dependent on the numbers. This is achieved through the utilisation of all research tools, including ethnographic and scientific research tools / techniques. The triangulation of data sought also adds to the validity and rigor

of the analysis and findings of the study (Crowley and Vulliamy, 1984; Cohen and Manion, 1994).

As it brings the emic perspective to the research study, the researcher does not approach the project with preordained hypotheses that need to either be validated or refuted by the research findings. Illuminative evaluation recognises that curricular innovations cannot be separated from their associated learning milieu. The 'context' of the learning becomes an important aspect of the evaluation process.

Illuminative evaluation contextualises educational innovations. It leads to understanding and increased knowledge of a program or innovation in its own terms or context. By recording, describing and interpreting what actually happens in the classrooms and taking into account the contexts in which the innovation occurs given the instructional system (curriculum documents, learning sheets, educational catalogues, reports), the illumination is unearthed and any matches and mismatches are exposed between the intended and the actuality. With illuminative evaluation, emergent issues which would ordinarily be ignored (for example, in the agricultural – botany approach) may be focused on and may influence the direction of the study (SAIDE, 1999). As such, these emergent issues can be progressively focused on and may open up possibilities which would otherwise not be considered. It thus seeks to address a complex array of questions (Parlett and Hamilton, 1976). Additionally, the evaluator's voice is one amongst the many voices, whereby a collegial adjudication is arrived at. The evaluator is never the authoritative and only voice and needs to be seen as an honest broker during the process.

Research Problem

A problem based learning hybrid curriculum fashioned against the Adelaide model was introduced to the SOHS in 2001, in every department (Townsend, Winning, Wetherell, and Mullins, 1997). Inherent within this was the transformation of teaching and learning strategies where integrated, interactive learning was to take place in small, student centered

problem based learning groups and integrated learning sessions. Furthermore, assessment was to be continuous, utilising a variety of assessment tools and methods. The change from traditional curricular worldwide was prompted by several changes that the profession was undergoing worldwide driven primarily by reform in medical education (ADA, 1994; DePaola and Slavkin, 2004; Kersten, Vervoorn, Zijlstra, Snyders Blok and van Eijden, 2007; Aldred, Aldred, Walsh and Dick, 1998).

The reasons for undertaking such a study were informed by the fact that little had been done to evaluate the hybrid PBL curriculum within the discipline of prosthodontics. With any innovation, it is imperative to have it evaluated some time following the implementation of the change, after the innovation has been in place for a while. The evaluation is also needed to assess whether what was intended is being realised. Additionally the evaluation gives the stakeholders an opportunity to objectively review whether the innovation is effective, efficient and utilitarian. No extensive, formal evaluation of the teaching and learning activities in prosthodontics within the SOHS had been undertaken. There is generally, therefore, an absence of a systematic documentation of issues that relate to the prosthodontics curriculum and its effectiveness in achieving its intended aims as informed by the hybrid – PBL curriculum principles. The absence of this makes it very difficult to make any judgments about the strengths and challenges or possible shortcomings that the programme may have. Any judgment made would therefore be anecdotal and be devoid of any evidence that is the cornerstone of 'evidence – based' practice informing teaching and learning practices.

The main focus of the study was to evaluate whether and how a department had managed to move from a traditional, teacher centered, lecture - based pedagogy towards more interactive, student centered, small group focused and contextualised learning and teaching strategies and if it has been able to equip dental students adequately in the field of prosthodontics. It sought to reveal how the programme operated in its own terms, and how well it lived up to its intentions and whether these intentions were being realised. Therefore the study was to adjudicate if prosthodontics was being taught as intended in the hybrid – PBL curriculum, or if it remained much as before as a content focused discipline without having adopted the innovations' principles.

The study addressed the following research questions:

i) In what ways are the intentions of the prosthodontics programme within the hybrid PBL curriculum being realised, or not?

ii) What, if any, issues emerge during the observation phase?

In response to the first question, the study sought to establish how contemporary pedagogy informing PBL practice was been utilised within the discipline of prosthodontics to teach the subject (i.e. prosthodontics). It sought to establish how prosthodontics as part of a hybrid PBL curriculum was being taught. This was principally to ascertain how the principles informing problem based learning philosophy were being used in teaching prosthodontics; namely: problem solving, critical clinical reasoning, activation of prior knowledge, integration of knowledge, group dynamic, student centeredness.

With respect to the second question, any issues that emerged were to be taken cognisance of and if upon further probing, were seen as important to the programme, these were made available to the rest of the department through discussions with the staff members and at meetings within the department that discussed educational matters, specifically, the undergraduate prosthodontics programme.

The study thus has the potential to add the following benefits (if taken up):

a) Assist in refining the prosthodontic programme by identifying gaps in the pedagogy adopted or inherent in the hybrid PBL curriculum.
b) Provide evidence based baseline data that may assist the department to justify or inform their teaching practices.
c) Add some degree of improvement of educational practice to the prosthodontic programme at the SOHS (McMillan and Schumacher, 2006).
d) Assist other departments within the SOHS with their programmes to better fine tune these. It is important to note that, whilst the findings will not be generalisable to the other programmes in the SOHS, it may nevertheless be of benefit to these

disciplines by providing insights about issues and methodologies for investigating and evaluating such learning and teaching strategies in such curricular.

Therefore, the study may potentially add value to the whole SOHS hybrid PBL curriculum and not only be of benefit to the discipline under investigation. What is evident is the value it may inherently contribute to the discipline under review as it could assist in the 'fine tuning' of the programme.

Conclusion

The decision to use qualitative research methodology was made as there had been no studies done to evaluate how the curriculum innovation in and within the school was being realised. Instead there had been some studies which used quantitative methods to investigate certain aspects of this innovation. Additionally, the rigid quantitative scientific method of controlled experimentation ~~cannot~~ may not possibly be considered completely valid in an environment where there are 'contexts' that are multi – faceted and complex, therefore elude the 'tight control' that is expected of the quantitative research paradigm.