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Service-learning in MBA degree programmes in South Africa

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Chapter 4: RESEARCH METHODOLOGY

The methodological approach taken in this study was broad based to accommodate the number of different populations (stakeholders) sampled, the differential importances of the populations in the overall picture of the study, access to the populations, the nature of the data being sought and the limitations and delimitations of the study. The range and number of investigations made it necessary to consider this a meta-study (Zhao 1991; Glasmeier and Farrigan 2005) with a mixed methods design (Falconer and Mackay 1999; Chenail 2000; Roberts 2002; Creswell 2003; Robson 2003).

4.1 This research as a meta-study

The concept of "meta-study" (Zhao 1991; Patterson *et al* 2001; Glasmeier and Farrigan 2005) needs to be contextualised within the framework of this research. The term has been used interchangeably with the alternatives "meta-theory", "meta-analysis", "meta-method" and "meta-synthesis" (Glasmeier and Farrigan 2005) with the term "meta-analysis" having been most often used to describe the summarising of the results of a range of different studies (Robson 2003), and has traditionally been regarded as an analytical rather than a research method. Meta-analysis has typically been applied to quantitative studies (Robson 2003), particularly where small samples have been used, by pooling and weighting the findings of different studies to add validity and objectivity to findings, and to identify areas requiring further research; they are studies about studies (Egger *et al* 2003). Thus most meta-studies are temporal in nature and deal with studies with similar objectives and comparable findings over a period of time.

However, the term meta-study has been used in this context to alert the reader to the fact that the study as a whole consists of a number of different studies carried out in different populations of stakeholders, applying different research paradigms, with the intent of building a holistic model of the value of introducing Service-Learning into an MBA programme by taking into account the views of different stakeholders. This concept is hinted at by Zhao (1991:377) in his explanation of the prefix "meta", defining it as being used "in the sense of 'after', 'about' and 'beyond'". Zhao (1991)

goes on to elaborate that a meta-study is a study about other studies, transcending them and synthesising their results to establish trends and directions of research over time.

This study differs from his description in that the studies here are designed and implemented in a cross-sectional manner for the specific purpose of synthesis into a single proposed model. The approach more closely follows that described by Patterson *et al* (2001), in which they are quite clear that a meta-study is a valid research methodology and should not be confused with either quantitative or qualitative meta-analyses involving the pooling of either quantitative or qualitative data. Therefore, although "meta-study" has most often been reported to mean "meta-analysis" (*post hoc*), in this study it is meant as part of the research planning process.

4.2 The philosophical foundations of this research

The research approach taken can be contextualised within Creswell's (2003) representation of the sequence of decision levels in the research process illustrated in Figure 4.1. These are, firstly the philosophical basis or paradigm (Kuhn 1996) underpinning the knowledge claims, followed by aligned strategies of inquiry or approaches to the research and finally appropriate data collection and analysis design.

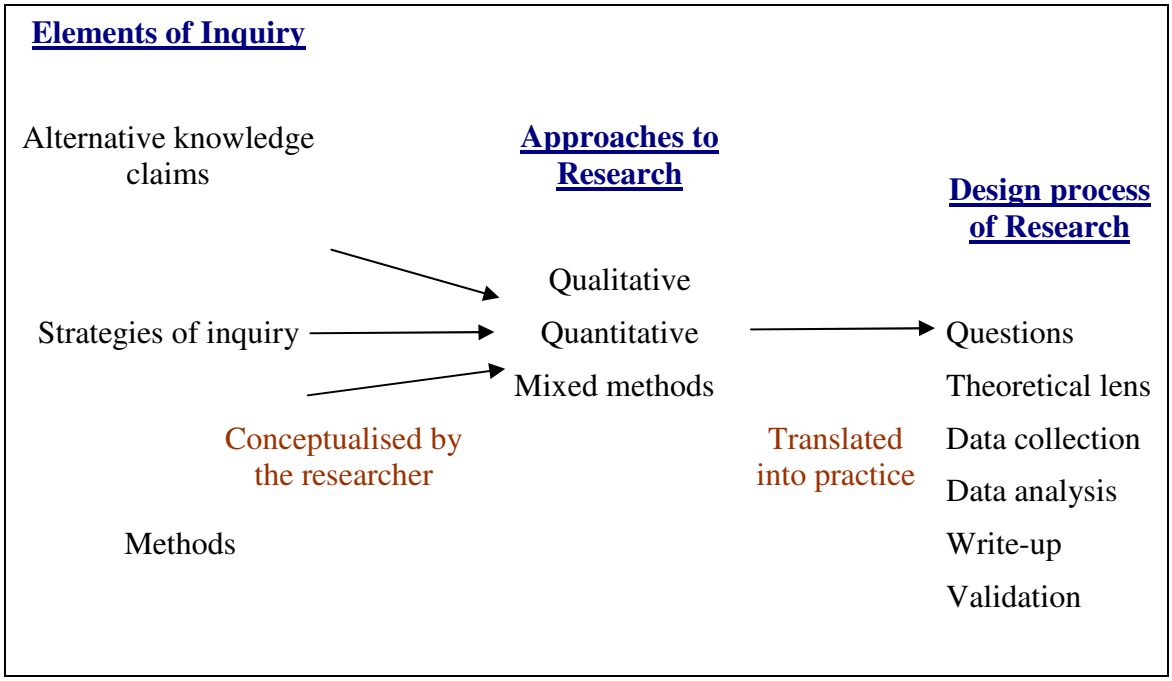


Figure 4.1 Creswell's (2003:5) model of research decision levels

The term "paradigm" was coined by Kuhn (1970) cited in Collins (1996) and in Kuhn (1996) originally to mean the sources of *differences* [emphasis added] in research arising in different disciplines, such as physics, sociology, psychology or astronomy, for example. In his later work, Kuhn (1996:42) refocuses his emphasis and describes paradigms as "the sources of *coherence* for normal research traditions"[emphasis added]. Thus it appears that he has moved from a perspective of analysis (Kuhn 1970) to one of synthesis (Kuhn 1996). This notion has great appeal as the foundation of this study, since its basic tenet is that of investigating several constructs - the meta-study approach described above (Patterson *et al* 2001) - from different perspectives with the intention of combining them into a new, coherent framework to offer the field of management education.

Kuhn (1996) further describes that, although shared rules and assumptions may be derived from paradigms, they are not necessary for research to be conducted. However, having assumptions and rules associated with paradigms does offer a tidy framework for scientific investigation, as well as offering a source of justification for decisions made in the research process. Collins' (1996) view that paradigms represent a way of thinking or frame of reference is both simple and useful – one that is taken as the default meaning of the word when used in this study.

Historically, the sociological matrix constructed by Burrell and Morgan (1979) with its clearly defined (Collins 1996), mutually exclusive (Jackson 1991) paradigms and their associated assumptions was long considered the perspective from which any research study could (and possibly should) be approached (Burrell and Morgan, 1979; Deetz, 1996).

However, the matrix has been the subject of much debate and criticism over the years (Gioia and Pitre 1990; Jackson 1991; Collins, 1996; Deetz, 1996; Lewis and Grimes 1999), particularly for their determined adherence to the objective / subjective debate. Deetz (1996) derides this polar view by arguing that it promotes a belief that only objective (quantitative) research elicits the "truth", and, by implication, that qualitative research is in its very nature invalid. This stance is supported by Lewis and Grimes (1999) in their discussion on multiparadigm perspectives, describing the empirical collection and analysis of data using different theoretical lenses as their basis.

In Creswell's (2003) model, objectivity in the postpositivist paradigm emphasises validity and reliability; relationships between variables and cause and effect are it its core and the methodological approach is quantitative. He describes two paradigms that make use of the qualitative enquiry mode, being, 1) Constructivism (based on socially constructed knowledge claims) with an ethnographically based enquiry mode, and 2) an Advocacy / Partcipatory knowledge claim basis, which primarily uses a narrative based design and has emancipation at its core.

Creswell's (2003) model is completed with the inclusion of the Pragmatic approach to research, which is based on the assumption that the context of the problem, and seeking a solution, is at the core of the research, rather than the confines of a single philosophical position. Thus aiming for the best understanding of the problem and the desired consequences of the research drive decisions about data collection and analysis, which may be either qualitative or quantitative. The nature of this research as a meta-study (Patterson *et al* 2001) is consistent with the pragmatic paradigm.

Krauss (2005) offers the complementary concept of realism (or critical realism), which, as a philosophical paradigm, concerns transcending issues of objectivity (external to individuals and therefore value-free) and subjectivity (internal reality which is value-laden) to recognizing that values exist, and that value-free observations are made by value-laden observers, leading to the conclusion that reality differs from peoples' perceptions of reality. He further describes the complementary roles of quantitative and qualitative research, as do others (Chenail 2000; Roberts 2002; Creswell 2003; Robson 2003), offering support for the mixed methods approach to conducting research, particularly in the socio-political framework of this research. Creswell (2003:12) summarises the pragmatic position by stating:

> Thus, for the mixed methods researcher, pragmatism opens the door to multiple methods, different worldviews, and different assumptions, as well as to different forms of data collection and analysis in the mixed methods study.

By combining the details of each of the elements of Creswell's (2003) structured research design, a comprehensive model of the decision levels can be created (Figure 4.2). This second model provides both an overall view as well as the detail inherent in the research design process, which has been followed in this study.

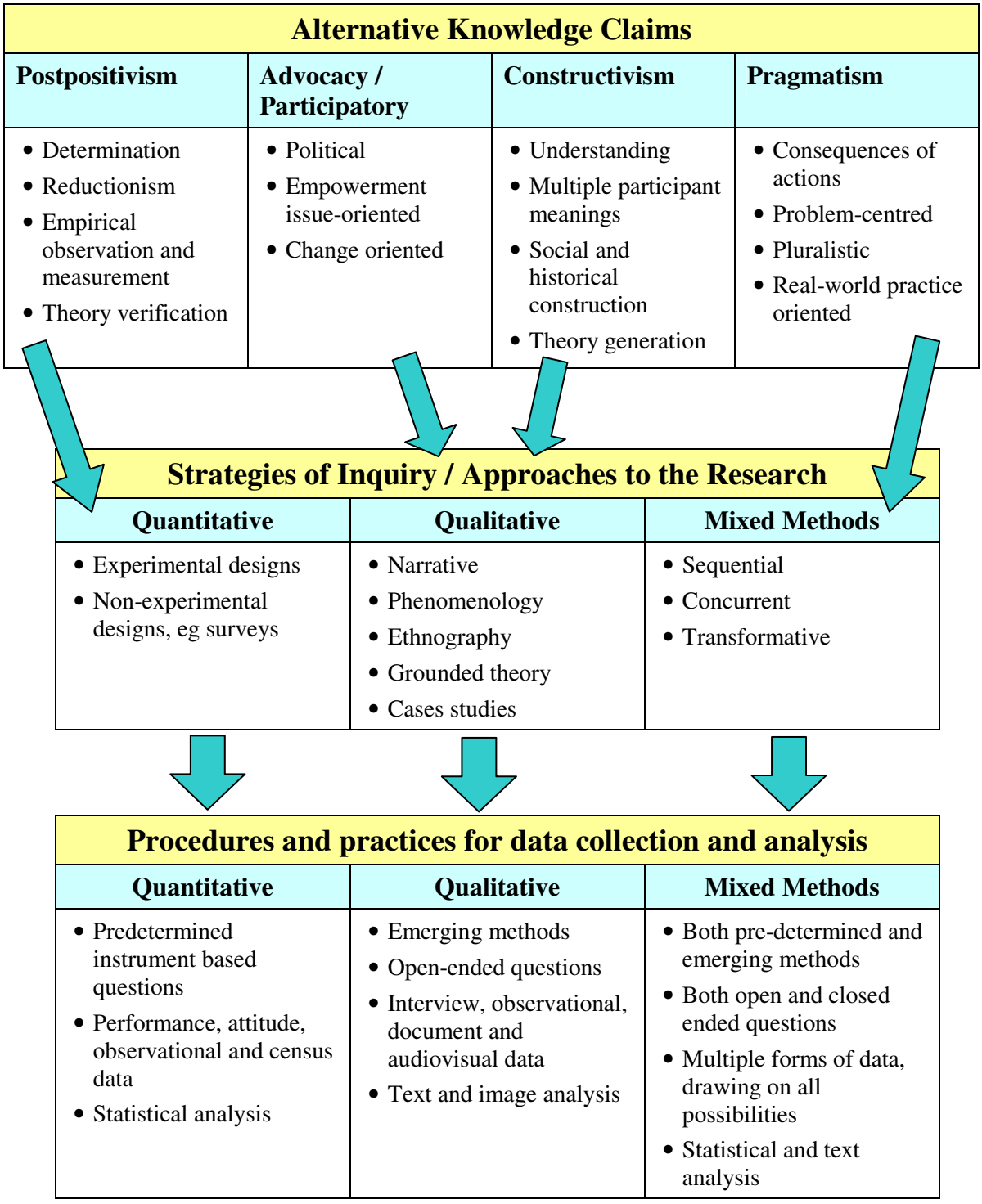


Figure 4.2 An elaboration and combination of the elements of Creswell's (2003) research process model

This research follows a pragmatic philosophical stance or paradigm, a mixed methods strategy of inquiry and a variety of quantitative and qualitative data collection and analysis tools as is suitable for the mixed methods approach. These tools will be elaborated for each part of the study.

4.3 Strategies of inquiry underpinning this research

The work of a number of authors support the multiparadigmatic (Lewis and Grimes 1999) mental model and mixed-method research approach (Gioia and Pitre, 1990; Miles and Huberman 1994; Falconer and Mackay 1999; Lewis and Grimes, 1999; Creswell 2003; Robson 2003), which yields both qualitative and quantitative data. Robson (2003), Creswell (2003) and Krauss (2005) all point out that that mixed methodology is a systematic, principled approach, better able to make sense of and extract meaning from "the real world", so that a more comprehensive understanding of the problem can lead to findings that can applied in a practical sense, as is the intention here.

In relation to this type of research, Creswell (2003) describes three broad strategies, viz. sequential, concurrent and transformative, although he does also demonstrate that there are many variations on the theme.

Little is published on the application of Service-Learning in MBA programmes, although Service-Learning itself, MBA education, and the Social Sector in South Africa are all well documented as described in the literature review. With this is mind, Creswell's (2003) transformative model appears to be the most appropriate. The overarching theoretical lens that he describes addresses the multiparadigm approach to the major contexts and researched entities investigated in the study as per Figure 4.3.

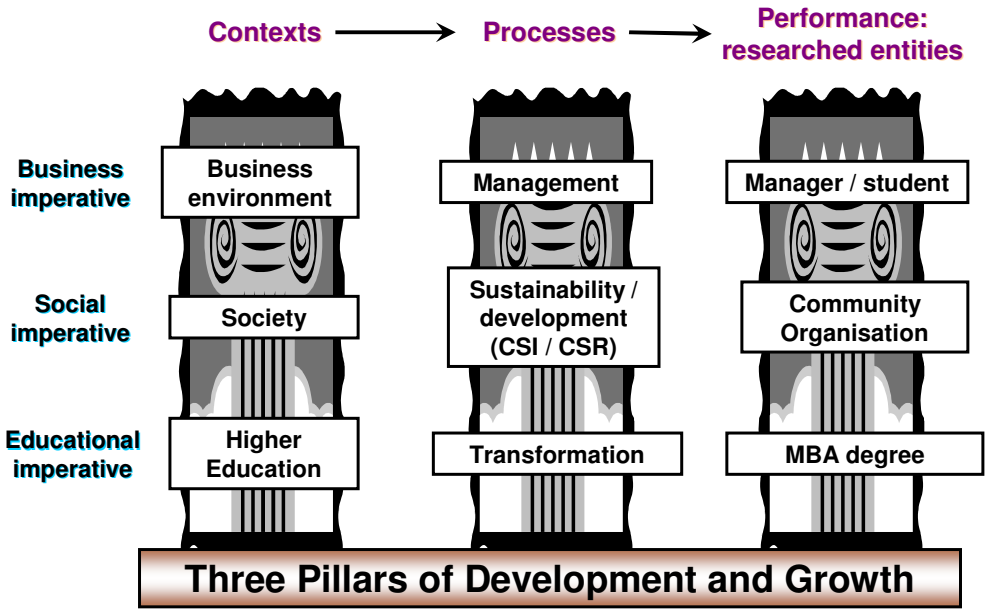


Figure 4.3 The contexts and the entities researched in this study

The entities actually being researched were firstly, a new pedagogy in the MBA degree, secondly, the community organisation, and thirdly, the management student, in two roles – that of manager in the business sector, and that of student in an MBA programme. Various hypotheses and propositions were contextually investigated using both quantitative and qualitative data collection methods. In some cases the data were collected concurrently and even within a single survey, and in others, data were collected sequentially, as in the use of meta-inquiry (Carlson and McCaslin 2003) prior to re-analysis of previously collected raw data to address Hypothesis 1.1.

The three-pillared approach (Figure 4.3) to this study allowed each of the contexts (the business context, the societal context and the higher education context) to be studied as units, but with overlapping investigative methods to bring them together into a holistic model for implementation. Since each context is relatively well documented, but the connections between them are not, the form of the study was to follow Creswell's (2003) nested approach to the mixed methods design.

The study as a whole was exploratory with a qualitative character as all populations were sampled on a convenience basis, which does limit generalisability (Creswell 2003; Robson 2003). It has some characteristics of a case study (Yin 1994) since the investigation focused on and gathered data from only two MBA courses (in depth), although this was supplemented with data from other sources and stakeholders which were gathered with a view to quantitative analysis. Quantitative techniques are still considered by many (King *et al* 1994; McBurney and White 2002; Roberts 2002; Robson 2003; Shaughnessy *et al* 2003; Thompson 2003) to add more scientific validity to studies, despite much discussion regarding ways in which equal and different types of validity can be integrated into qualitative research (King *et al* 1994; Bless and Higson-Smith 2000; Winter 2000; Pare 2002; Roberts 2002; Labuschagne 2003; McCaslin and Scott 2003; Shaughnessy *et al* 2003; Robson 2003; Jones 2004).

In this study both quantitative (seeking correlational and causational factors) (Miles and Huberman, 1994; Lind *et al* 2000; Leedy and Ormrod, 2001; Albright *et al* 2003; Robson 2003) and qualitative data (seeking stakeholder perceptions, analysing texts and evaluating projects) were sought (Chenail 2000; Creswell 2003; Morgan and Drury 2003; Robson 2003) and combined into an overall mixed methodological approach as

already described (Creswell 2003), resulting in a less linear and more spatial development.

Since Stacey's (2005) Normal Distribution Fitting Algorithm (NDFA) was published, it has been possible to transform ordinal Likert scale data into interval data with greater reliability and validity than correspondence analysis mrthod of Bendixen and Sandler (1995), so Likert type scales (Leedy and Ormrod, 2001; Robson, 2003) were also incorporated into questionnaires. This represents one method of quantifying essentially qualitative data. Neuendorf's (2002) quantitative approach to content analysis follows a similar principle, which has also been followed in this study. Stacey's (2005) transformation has been effectively summarised by Strasheim (2007:43) as follows:

> The Stacey (2005) method, which is based on a distribution fitting algorithm that minimises the Chi-square goodness-of-fit measure for estimating the parameters used in normalisation, has been developed as an alternative to rescaling ordinal level survey data. Stacey (2005) compared his method to the Bendixen and Sandler (1995) correspondence analysis approach for rescaling data, and against the method that assumes that the ordinal level scale is an interval level scale. Stacey (2005) found the distribution fitting approach to be accurate (reliable) and valid and that the method was superior to alternative approaches.
>
> The Stacey (2005) method considers the frequency distributions over a number of items that were used in a perception survey, for example, using an ordinal response scale, such as the Likert scale. The parameter estimation method includes the estimation of threshold values for the entire set of items, as well as two additional local and spread parameters for each item. The implied restrictions in the estimation procedure are that the overall mean across items is equal to zero, and the combined total variance across items is one. Furthermore, the mean and standard deviation parameters of each item, including the thresholds that are held fixed across items are estimated using a linear programming approach, and by minimisation of the Chi-square goodness-of-fit measure. The estimation uses the " Solver" add-in in Microsoft Excel.

Creswell's (2003) transformative process within the mixed methods approach encompasses both sequential and concurrent procedures, and both were used in this study. Sequential research allows for the findings of one part of the study to inform the next, so the model is not in conflict with the strongly encouraged action research (McNiff and Whitehead 2006) approach to Service-Learning research in tertiary educational institutions (Dumas *et al* 2000; Harkavy *et al* 2000; Jones-Evans *et al* 2000). However, most of the data were collected concurrently.

4.3.1 The action research aspects of the study

Although Creswell (2003) does not specifically mention action research in his model, it is accepted as a qualitative methodological approach (Robson 2003; Bringle and Erasmus 2005; McNiff and Whitehead 2006). It is considered particularly appropriate in developing countries (Bless and Higson-Smith 2004) where communities are often in urgent need of solutions, and where changes in practice are to be initiated (Robson 2003). The close interaction between researchers and subjects means that the needs of both parties are more likely to be met through joint efforts and co-operation (Bless and Higson-Smith 2004). These types of action research assumptions were the basis of the initial approach to the study.

Since Service-Learning is new to South African education, and had never before been implemented into an MBA programme in South Africa (and seldom in other countries around the world), it was necessary to be highly exploratory in the beginning in order to develop a workable model to serve as a foundation for further development of the methodology in the MBA context. Learnings from mistakes made in these initial interventions have been presented (Carmichael 2005) and were incorporated into subsequent implementations of the same programme, although they are not reported here.

Service-Learning was incorporated into four MBA courses (Organisational Design and Development) over two consecutive years before culminating in the implementation and data collection reported here. The knowledge claims of action research rest on assumptions that knowledge is uncertain and its creation (not discovery) is collaborative, is created through a process of trial and error and leads to provisional

rather than absolute answers (Bless and Higson-Smith 2004; McNiff and Whitehead 2006). This made it an ideal approach to take in building competence for delivering a Service-Learning course.

McNiff and Whitehead's (2006) description is similar to that of Creswell's (2003) advocacy / participatory paradigm, which is focused on bringing about change in practices. Creswell (2003) further describes the practical, collaborative nature of research of this type in that the inquiry is conducted *with* others, rather than *to* or *on* others, and the developmental process of the research is iterative and evolutionary. Once a workable model had been developed, the final implementation and findings constitute this formal report.

Existing questionnaires and guidelines were available for use, such as the Honey & Mumford (1992) Learning Styles Questionnaire and the JET / CHESP (Bender *et al* 2006) project questionnaires. These were used where appropriate to collect data in order to improve validity and reliability in this study.

The proposed approach in this research anticipates a "student-as-consultant" model based on that suggested by Kenworthy-U'Ren (2000) and Jones *et al* (2001) whereby students undertake their assignment, which would take the place of all three submissions in the normal system, within a community organisation. The objective would be to take the role of consultant to that organisation, on the assumption that the organisation would not normally be able to afford such a consultant, and to research and produce a report of value to that organisation, building organisational competence as part of the process. The competence transfer is essential as part of the sustainability aspect of this project.

The intervention would be selected on the basis of a needs analysis performed by the student as part of the project, in the context of the student's area of interest. It could involve, for example, preparation of a corporate strategy document, a marketing plan for the launch of a new product, an organisational development intervention, an operations efficiency analysis and recommendations, the development of a performance management system, a financial audit, the preparation of a workplace skills plan, an economic viability study, and so on.

The introductory section to the course pack for the ODD course, including the actual assignment given to students may be seen in Appendix 6. The three areas of particular interest are content learning, CCFO learning and personal growth.

4.4 Procedures for data collection and analysis used in this research

The relationship between the problem, sub-problem, hypothesis or proposition and data collection and analysis methods may be seen in full in the consistency matrix in Appendix 2. A loose copy of the consistency matrix can also be found in the plastic pocket inside the back cover, so that it may be removed and referred to whilst consulting this section of Chapter 4.

The first part of Appendix 2 states the problem, then each of its sub-problems. Alongside each sub-problem is the associated hypothesis or proposition, and next to each of these is a list of the data sources as well as the data collection and analysis methods utilised. The data collection methods are colour coded by population. Thus Problem 1, sub-problem 1.1, hypothesis 1.1 is addressed by re-analysing previously collected data. This previously collected data is in turquoise coloured text. Similarly, all data collected from Service-Learning practitioners is in pink text, that collected from community organisations is dark green, and so on.

The second part of Appendix 2 draws together all the data collection methods relating to a single population. Thus was done by aggregating all the turquoise texts together, all the pink texts together, then the dark green ones, and so on.

A total of seven different populations were investigated for this study, as follows:

- **Population 1: The existing expanded dataset relating to the perceived importances of the CCFOs and their perceived development through Service-Learning**
- **Population 2: Experienced Service-Learning practitioners from South Africa, the USA and the UK**
- **Population 3: Community organisations (Registered NPOs in the Gauteng area of South Africa only)**

- **Population 4: WBS Full-time and Part-time students' assignments relating to the Service-Learning course in ODD that they attended**
- **Population 5: The WBS Full-time and Part-time students attending the Service-Learning ODD course who completed the CHESP Questionnaire**
- **Population 6: All MBA students in South Africa who completed the Learning Styles questionnaire**
- **Population 7: Lecturer evaluation forms completed by the WBS Full-time and Part-time students attending the Service-Learning ODD course**

This approach is consistent with the principles of mixed methods research, where data are drawn from different stakeholders, often using a different set of assumptions in order to add richness and depth to the findings (Falconer and Mackay 1999; Roberts 2002; Creswell 2003; Krauss 2005; McElhoe *et al* 2006). In most cases a particular group of respondents contributed data to more than one proposition, so the colour coding is intended to assist the reader to trace the links between contributing data sources and a particular proposition.

Each population / data source is described in the following sections, along with the sampling methodology, the data collection tool, the data analysis method/s employed and any validity and reliability issues related to that particular set of data.

Following that, a description and justification of the instruments used to address each problem with its associated sub-problem and hypothesis or proposition is addressed in turn in the sections that follow.

4.4.1 The populations and samples investigated in the study

4.4.1.1 Population and sample 1: The existing expanded dataset relating to the perceived importances of the CCFOs and their perceived development through Service-Learning

The traditional meta-analytical (Zhao 1991; Egger *et al* 2003; Robson 2003; Glasmeier and Farrigan 2005) approach takes previously published results, then combines and subjects them to a weighted re-analysis. However, this first part of the study took the

form of raw data re-analysis as described by Zhao (1991). The approach he describes is to re-analyse a previously obtained set of raw data using a different method or for a different purpose. The raw data (n=54) obtained in the study by Carmichael and Sutherland (2005) combined with an additional 89 respondents (n=142) were used for this purpose, in the manner described by Egger *et al* (2003) for conducting cumulative meta-analyses. The data referred to above have two parts to it: the first part asked respondents to weight (using a fixed sum of 100) the seven assessable CCFOs according to their perceived relative importances to their businesses; this part was used to test Hypothesis 1.1.

In the second part all 142 respondents completed a Likert scale to evaluate the extent to which they perceived each CCFO to be developed during MBA study. These data were used to test Hypothesis 1.2.

Although the respondents were selected from two populations of managers who had attended courses (MBA programmes and Senior Executive Programmes (SEP)) at WBS over a number of years, the other factor that they all had in common was that they were all executives employed in a wide variety of both the business and the public sectors, and it was this aspect of their profile that was required for input. As previously observed (Carmichael and Stacey 2006) this convenience sample may influence generalisability and statistical inferences are not claimed, but the findings may be transferable usefully to other contexts (Robson 2003). However, since it is the purpose of this research to lay a foundation for implementing Service-Learning courses in MBA programmes, additional research in this area would be of value, particularly if continued meta-analyses (Egger *et al* 2003) were to take place.

An important baseline of this research was to add weight to the previously reported perceived importances of the CCFOs as generic management competencies (Carmichael and Sutherland 2005; Carmichael and Stacey 2006) with a larger sample. To anticipate whether this exercise would add value to the research, a meta-inquiry (Carlson and McCaslin 2003) was first conducted with 10 purposively selected captains of industry. The meta-inquiry questionnaire may be seen in Appendix 3.

Data from this population were used to test the following Hypotheses:

- Hypothesis 1.1: this involved a re-analysis of the expanded dataset (n=142) described above by applying the Kruskal Wallis one-way ANOVA test and the Tukey-Kramer multiple comparisons test to establish the significance of any differences between the perceived importances of the CCFOs.
- Hypothesis 1.2: Stacey's (2005) NDFA was used to re-scale the ordinal Likert scale data relating to the extent of improvement of the CCFOs during MBA and SEP study.

4.4.1.2 Population and sample 2: Experienced Service-Learning practitioners from South Africa, the USA and the UK

This population comprised all experienced Service-Learning practitioners, particularly those active in South Africa. The ideal population definition would have been all experienced faculty members delivering Service-Learning courses to campus-based MBA students in South Africa. However this population consists of three known practitioners, two having contributed to and participated in this study. Communication with higher education institutions revealed that, although there was a great deal of interest in Service-Learning within South Africa, and research activity was taking place, very few individuals had actually facilitated a Service-Learning course, and these were mainly undergraduate courses and only one had a management component. Thus random or even stratified random sampling was not possible.

It was therefore decided to select specific, experienced practitioners to form a sample able to offer expert opinion on the generic aspects of Service-Learning. The final sample consisted of known, experienced experts and heads of relevant departments from a range of South African universities plus selected experts from the United States and the UK. Those selected from overseas institutions were either mentors in the implementation of Service-Learning in South Africa through the JET / CHESP programme, or experienced practitioners known to the researcher. A total of 32 respondents made up the final sample. Data requested from the Service-Learning practitioners contributed to various propositions as follows:

- Hypothesis 1.2: completion of a Likert scale questionnaire regarding the extent of development of the CCFOs through Service-Learning. These data were rescaled

using Stacey's (2005) NDFA and plotted against the weighted perceived importances of the CCFOs from business and public sector respondents.

- Hypotheses 2.1: scoping the range of organisations that should be considered "community organisations" in the South African context by selection from a range of possible organisation types, with space to add any they felt were missing. Their opinions were presented in the form of descriptive, frequency count statistics.
- Proposition 3.3: answering an open ended question to identify the type of assessment methodologies that they used in Service-Learning courses that they conducted. The data were content analysed and presented as frequency counts along with comments offered by the practitioners.

The questionnaire to Service-Learning practitioners can be seen in Appendix 4.

4.4.1.3 Population and sample 3: Community organisations (Registered NPOs in the Gauteng area of South Africa only)

This population should theoretically be made up of all organisations in South Africa identified in the literature as being potential recipients of MBA students' services. These would include any number of types of informal and / or survivalist groups of varying sizes (Swilling and Russell, 2002) in addition to registered or non-registered NPOs, NGOs, Trusts, Section 21 companies, religious groups, etc. However, since the more traditional model is aimed at non-profit organisations only, and many of the other possible organisational types would not be registered or even known about, particularly those in rural areas with poor infrastructure, registered NPOs were selected as a sub-population to represent the defined population. Even here, the exact number of organisations is unclear; in 2005, the DSD (2005) estimated 100,000 organisations in the country, 53% of which were classified as informal or community-based organisations.

This sub-population definition included all non-profit organisations registered with the Department of Social Development within the Gauteng province of South Africa for reasons of convenience, since data were to be gathered by visiting selected NPOs and completing the questionnaire with a suitably senior person within that organisation. This

methodology was preferred because of the much higher return rate compared to that resulting from e-mailing questionnaires to potential respondents.

Although random sampling would have given a generalisable result, it would only have applied to this part, not the whole study, so would not have added value. Convenience and snowball sampling were carried out, both for consistency of sampling methodology within the sub-studies of this research, but also because of the logistical difficulty of amassing a population to sample from the DSD database. A list of all the registered NPOs can be accessed via the NPO Search Facility of the DSD (www.npo.gov.za/search.aspx) and selecting Gauteng as the province to search. However, because the facility forces searching to be conducted by area of activity, each of the 17 listed areas would have to be searched separately and the results downloaded into Microsoft Excel, which would give a total of 23257 organisations along with all their locations and contact information. The de-registered organisations would have had to be eliminated from the list, as well as those that appeared to be duplications. The integrity of the list was also found to be questionable because the search into the HIV / AIDS area resulted in zero organisations.

The final sample was drawn by reverting to a pure convenience methodology, ie contacting known NPOs, NPOs known to previous students, students participating in the research, and the balance of the sample by requesting recommendations from SANGOCO. A total of 34 usable responses were achieved.

Data from this questionnaire were used to test the following proposition:

- Proposition 2.2: the business needs of community organisations were inferred from this questionnaire to registered NPOs. They were requested to directly identify their business needs as well as answer questions relating to their structures and practices, from which additional, covert business needs could be inferred.

The Questionnaire to NPOs can be seen in Appendix 5.

4.4.1.4 Population and sample 4: WBS Full-time and Part-time students' assignments relating to the Service-Learning course in ODD that they attended

The population was defined as all current MBA students in South Africa.

The sample consisted of all MBA students taking the ODD course as part of their MBA programme at WBS during 2006; one full-time and one part-time class were included. These two classes were the only ones available for study, as it was neither permissible nor feasible to lecture a full course at competing business schools. The classes were briefed as to the nature of the course and its Service-Learning component, including the fact that this was a methodology popularised in the United States (although very infrequently in MBA courses), but new in South Africa. They were also informed that their assignments would be analysed, but that no individual information would be disclosed, only aggregated findings. Any students who objected would have their assignments excluded from analysis, but the pedagogy would nonetheless apply to the classes as a whole. The assignment used may be seen in Appendix 6.

The data gathered from the analysis of students' assignments contributed to the analysis of the following propositions:

- Proposition 2.1: students' syndicate assignments were analysed to determine and summarise the types of organisations they had selected to work with, to add to the data regarding the scope of community organisations received from the Service-Learning practitioners.

- Proposition 2.2: students' syndicate assignments were analysed to determine and summarise the types of interventions that they had implemented in the community organisations. Since the interventions were selected by agreement with the community organisation concerned, they were taken to reflect an unmet business need of the organisation and therefore contributed to the identification of community organisations' business needs.

- Proposition 2.3: the feedback from the community organisations to the students' interventions as part of their syndicate assignment submissions was content analysed and summarised to determine whether they did, in fact, receive business benefits from the student interventions.

- Proposition 3.1: students' syndicate assignments were evaluated to determine the extent of course content learning. This was supplemented by content analysis of the

feedback from the community organisations in which they worked as per proposition 2.3.

- Proposition 3.2: students' individual assignments were evaluated and assessed using Bloom's taxonomy of cognitive learning outcomes to determine the extent of CCFO learning achieved through implementing a Service-Learning course.

- Proposition 3.3: students' individual assignments were evaluated to determine the depth of reflection achieved for each CCFO. The "what, so what, now what" model of reflection (Bender *et al* 2006) was applied for this purpose. These findings supplemented the data received from Service-Learning practitioners regarding preferred assessment methodologies, and also student comments about assessment received from the JET/CHESP post-course questionnaire.

- Proposition 3.4: students' individual assignments were analysed to determine the general academic quality of their work, using the indicators of reference usage and report structure and integration. Any associations of these indicators with the achievement of a Bloom level of four or higher was tested.

- Proposition 3.5: students' individual assignments were analysed to determine whether there was any significant (alpha=0.05) correlation between the depth of reflection and the extent of cognitive development achieved in the individual assignments.

- Proposition 4.2: students' individual assignments were content analysed to determine and describe the personal experiences, growth and new perspectives that they achieved through attending the Service-Learning course.

4.4.1.5 Population and sample 5: The WBS Full-time and Part-time students attending the Service-Learning ODD course who completed the CHESP Questionnaire (Appendix 7)

This population is the same as that described as Population 4, but included only the students attending the last day of the course, at which the questionnaire was distributed. Students were not obliged to complete it, nor any part of it that they found objectionable.

These data were used to answer the following propositions:

- Proposition 2.3: descriptive and Likert scale data from the questionnaire were used to determine the benefits derived by community organisations from MBA student interventions
- Proposition 3.1: descriptive and Likert scale data from the questionnaire were combined with data obtained from syndicate assignment data and community organisation input to determine the extent of course content learning achieved by the students through participating in the Service-Learning course. These different sources of data were used for triangulation purposes and well as to complement one another.
- Proposition 3.3: students' opinions of the assessment methodologies applied in the Service-Learning course were described and compared with the input from the Service-Learning practitioners.
- Proposition 4.2: Descriptive content analysis from the open-ended questions revealed data regarding students' self evaluations of their personal growth, new perspectives and experiences on the Service-Learning course.

4.4.1.6 Population and sample 6: All current MBA students in South Africa

This population completed the 40-item Honey and Mumford (1992) Learning Styles Questionnaire ®, for which 300 licences were purchased. It comprised all current MBA students in South Africa, for the same reasons as those cited for Population 4 in Section 4.3.4.

The sample was selected, firstly by including four of the first five business schools who's MBAs were accredited by the HEQC in their first accreditation round in 2003; these are the first four in the list below. The fifth to be accredited, the University of South Africa, was excluded because their MBA programme (the Master in Business Leadership) is primarily an off-campus course, conducted via distance education, and thus fell outside of the scope of this study. The other three universities were selected on the basis of location, so that an MBA from each major city in South Africa could be

represented. The Heads of all the business schools approached were willing to participate in the study.

Business schools at each of the following universities participated in the study:

- the University of the Witwatersrand,
- the University of Pretoria, Gordon Institute of Business Science campus
- the University of Cape Town,
- the University of Stellenbosch
- the University of Pretoria, Pretoria campus
- the University of KwazuluNatal, Durban campus
- the University of the Freestate

Thus the sample consisted of an MBA class selected on a convenience basis (when it was convenient to visit the city concerned, what time of day classes were being held, and whether the lecturer for that class at that time would be willing to allow the questionnaire to be administered during their class). Those students not wishing to participate were free to exclude themselves.

The questionnaires (Appendix 8) were administered, completed and returned during class time, after an explanation to the students of the nature of the study and that their contribution would be aggregated for reporting purposes. They kept the explanatory booklet that was part of the questionnaire package, and only the raw data were collected for analysis.

- Completion of this questionnaire gave data relevant to Proposition 4.1

4.4.1.7 Population and sample 7: Lecturer evaluation forms completed by the WBS Full-time and Part-time students attending the Service-Learning ODD course

Post course evaluations are carried out for all courses conducted at WBS. These feedback forms consist of both a rating scale and open ended questions. All four evaluations generated from the two 2005 classes and the two 2006 classes were content

analysed for student opinion and suggestions for improvement to supplement the information obtained from the students' individual assignments and from the JET / CHESP questionnaire.

4.4.2 The hypotheses and propositions investigated in the study

Having defined all the populations, samples, sampling methodologies and analysis methods, the following section describes the data collection methods per hypothesis or proposition, since multiple data sources were used for each. The colour coding system has been maintained for ease of recognition of the contributing data source to any particular hypothesis or proposition. The link to the problem and sub-problem has also been maintained in the tabular presentations at the beginning of each new section.

4.4.2.1 Problem 1, Sub-problem 1.1, Hypothesis 1.1

<table>
<tr><td colspan="3"><u>Problem 1:</u> Correlate the perceived importance of SAQA's CCFOs to players in the business sector with the extent of their development through Service-Learning</td></tr>
<tr><td colspan="2"><u>Sub-problems:</u></td><td><u>Hypothesis 1.1</u></td><td><u>Data collection & Methodology</u></td></tr>
<tr><td>1.1</td><td>Establish the relative perceived importances of SAQA's CCFOs to players in the business sector</td><td>H_0: There are no significant differences between the perceived relative importances of SAQA'S CCFOs to players in the business sector
H_A: There are significant differences between the perceived relative importances of SAQA'S CCFOs to players in the business sector</td><td>• Re-analyse the CCFO importances dataset from Carmichael and Sutherland (2005), expanded to include another 89 respondents (n = 142) by applying the Kruskal-Wallis one-way ANOVA test and the Tukey-Kramer multiple comparisons test to establish the significance of any differences.</td></tr>
</table>

A meta-inquiry (Carlson and McCaslin 2003) was conducted as a starting point for investigating whether it would be worthwhile pursuing the importance of SAQA's CCFOs as generic management meta-competencies (Carmichael and Sutherland 2005). Since a small homogenous group of individuals able to provide input relevant to the

construct under investigation is required (Carlson and McCaslin 2003), ten captains of industry from around the country were selected specifically for their status, to give input into their perceptions of the overall and the relative importances of SAQA's seven assessable CCFOs to the business sector.

The rationale for this was to add weight to the convenience sample utilised in the original study (Carmichael and Sutherland 2005) and to support the inclusion of a further dataset to increase the number of respondents for analysis. The profile of the participants in the meta-inquiry is seen in Table 4.1.

Table 4.1 Profile of the business leaders participating in the meta-inquiry

	Industry / sector	Position	# of employees in SA	Annual turnover in South Africa
1	Banking	Senior Manager	> 10000	> R50m
2	Engineering	CEO	2001 - 10000	> R50m
3	Entertainment	Senior Manager	2001 - 10000	> R50m
4	Copyright administration	Admin Director	< 500	> R50m
5	Management consulting	CEO	< 500	R10m – R20m
6	Quantity Surveying	Partner	< 500	> R50m
7	Technology	Director	501 - 2000	> R50m
8	Steel distribution	Director	2001 - 10000	> R50m
9	Management consulting	Director	< 500	< R2m
10	Education & Training	Director	< 500	< R2m

The positive findings from the meta-inquiry supported the analysis of the expanded dataset referred to above. Creswell (2003) recommends this approach when using a sequential process in mixed methodology, allowing for one analysis to be carried out to inform or develop a subsequent one.

The combined data were found to be not normally distributed, so were analysed by applying the non-parametric Kruskal-Wallis one-way ANOVA test and the Tukey-Kramer multiple comparisons test to establish the significance of any differences

between the perceived importances of the different CCFOs. The overall importance of the constructs was inferred by including an "other" category in the list of CCFOs to be weighted, to allow any further suggestions to be stated. No reasonable alternatives or additions were proposed, as described previously (Carmichael and Stacey 2006).

4.4.2.2 Problem 1, Sub-problem 1.2, Hypothesis 1.2

Problem 1: Correlate the perceived importance of SAQA's CCFOs to players in the business sector with the extent of their development through Service-Learning			
Sub-problem:		***Hypothesis 1.2***	***Data collection & Methodology***
1.2	Establish the extent to which SAQA's CCFOs are perceived to be differentially developed through Service-Learning	H_0: There is no positive correlation between the perceived development of SAQA'S CCFOs through Service-Learning and the perceived requirements of players in the business sector for the CCFOs H_A: There is a positive correlation between the perceived development of SAQA'S CCFOs through Service-Learning and the perceived requirements of players in the business sector for the CCFOs	• Apply Stacey's (2005) Normal Distribution Fitting Algorithm (NDFA) to re-analyse the Likert scale dataset from Carmichael and Sutherland (2005), expanded to include another 89 respondents (n = 142). • Apply Stacey's (2005) NDFA to analyse the Likert scale data relating to the development of SAQA's CCFOs through Service-Learning (Population = experienced Service-Learning practitioners: expert opinion) • Correlate the perceived importances with the perceived development of the CCFOs

Two datasets were used to test Hypothesis 1.2. The first utilised the same dataset (n=142) that was subjected to re-analysis for Hypothesis 1.1, except that the Likert scale data were used, not the weight data. These Likert scale data were rescaled using Stacey's (2005) NDFA technique and plotted against the importances data (n=142) obtained from Hypothesis 1.1. in order to draw a correlation coefficient (r) and a coefficient of determination (r^2) (Allan 1982). This plot provided a base against which to compare the evaluations from Service-Learning practitioners, since the latter sample was so small (n=32).

The second dataset was drawn from the Likert scale evaluation of CCFO development through Service-Learning, from Questionnaire 1, and completed by experienced Service-Learning practitioners (n=32).

The Likert data were also rescaled using Stacey's (2005) NDFA technique and plotted against the importances data used to test Hypothesis 1.1. The correlation coefficient r, and the coefficient of determination, r^2, were established from the plot.

4.4.2.3 Problem 2, Sub-problem 2.1, Proposition 2.1

Problem 2: Evaluate the extent of matching between the business needs of community organisations and the types of support that could be supplied by MBA students.			
Sub-problem:		***Proposition 2.1***	***Data collection & Methodology***
2.1	Define the scope of "community organisations" relevant in the South African context	The scope of "community organisations" relevant in the South African context extends beyond the non-profit sector	• Descriptive statistical identification of the scope of "community organisations" relevant to the South African context by questionnaire to established Service-Learning experts (Population = experienced Service-Learning practitioners: expert opinion). • Summary statistics of students' selection of community organisation types for their assignments (Population = student syndicate assignments)

The colour coding system indicates that, for Proposition 2.1 to be addressed, data were drawn from the panel of expert Service-Learning practitioners (the pink text) and from the student syndicate assignments (maroon text). The intent was less to triangulate, and more to obtain a wider range of opinion into defining the scope of "community organisations" and to identify who should be targeted as potential beneficiaries of MBA Service-Learning implementation.

4.4.2.4 *Problem 2, Sub-problem 2.2, Proposition 2.2*

Problem 2: Evaluate the extent of matching between the business needs of community organisations and the types of support that could be supplied by MBA students.			
Sub-problem:		***Proposition 2.2***	***Data collection & Methodology***
2.2	Identify the business needs of community organisations in terms of skills development and expert support	The business needs of community organisations include skills development, expert support and basic management functions.	• Content analysis of community organisations identification of their business needs (Population = community organisations) • Summary statistical analysis of student intervention types undertaken through their assignments (Population = student syndicate assignments)

Data regarding the identification of the business needs of community organisations were gathered directly from the selected NPOs and these data were supplemented by analysing the needs identified and interventions conducted by the student syndicates in implementing their assignments.

4.4.2.5 *Problem 2, Sub-problem 2.3, Proposition 2.3*

Problem 2: Evaluate the extent of matching between the business needs of community organisations and the types of support that could be supplied by MBA students.			
Sub-problem:		***Proposition 2.3***	***Data collection & Methodology***
2.3	Identify the business benefits of MBA Service-Learning to community organisations	Community organisations derive business benefits from MBA Service-Learning students	• Content and summary statistical analysis of reports from community organisations in response to student interventions from student assignments (Population = student syndicate assignments) • Descriptive and Likert-scale analysis (applying Stacey's (2005) NDFA) of the standard CHESP post-course questionnaire on student experiences of a Service-Learning course (Population = MBA S-L students at WBS)

Both student and community organisation opinion were sought to provide input into this proposition as it was important to identify any gaps in perception between the two groups.

4.4.2.6 Problem 3, Sub-problem 3.1, Proposition 3.1

Problem 3: Evaluate the extent and general academic quality of student assignments in terms of both functional and CCFO learning			
Sub-problem:		***Proposition 3.1***	***Data collection & Methodology***
3.1	Evaluate the extent of functional course content learning achieved by MBA students as reflected in their assignments	MBA students course content learning in Service-Learning courses meets educational standards	• Descriptive statistical analysis of course content learning from students' syndicate assignments (Population = student syndicate assignments) • Descriptive statistical analysis of comments from community organisations as part of feedback from syndicate assignments (Population = student syndicate assignments) • Descriptive and Likert-scale analysis (applying Stacey's (2005) NDFA) of the standard CHESP post-course questionnaire on student experiences of a Service-Learning course (Population = MBA S-L students at WBS)

Academic learning is foundational to any successful pedagogy, and it is emphasised in Service-Learning that academic credit be awarded for learning, not service. It was thus critical to evaluate the extent of course content learning achieved by the students, both by direct analysis of their assignments, and supported by the feedback given by the community organisations in which they worked. Students' self evaluations from the Likert scale analysis of the CHESP questionnaire were also included in the analysis for further richness and depth.

4.4.2.7 *Problem 3, Sub-problem 3.2, Proposition 3.2*

Problem 3: Evaluate the extent and general academic quality of student assignments in terms of both functional and CCFO learning			
Sub-problem:		***Proposition 3.2***	***Data collection & Methodology***
3.2	Evaluate the extent of CCFO learning achieved by MBA students as reflected in their assignments	MBA students learn the CCFOs through participating in Service-Learning courses	• Evaluation of the level (Bloom's taxonomy) of cognitive development of the CCFOs through assessment of student individual assignments (Population = student individual assignments)

The nature of the students' individual assignments, being structured reflective journals, made Bloom level analysis by CCFO an appropriate method of assessing the extent to which they had learned the generic skills embodied within the CCFOs. Analysing the assignments in this way also allowed differences in learning between the CCFOs to be established. The assignments were analysed by carefully reading through and seeking evidence of the depth of cognitive reasoning found in the content of that particular section of the assignment. The appropriate Bloom level was then allocated to each CCFO for each assignment and captured for statistical analysis.

4.4.2.8 *Problem 3, Sub-problem 3.3, Proposition 3.3*

Problem 3: Evaluate the extent and general academic quality of student assignments in terms of both functional and CCFO learning			
Sub-problem:		***Proposition 3.3***	***Data collection & Methodology***
3.3	Describe the preferred assessment methodologies used in an MBA Service-Learning course	Reflection with reflective journals are considered to be the most effective assessment methodology for Service-Learning courses	• Descriptive statistical analysis of the perceptions of the most effective assessment methodologies for Service-Learning Learning (Population = experienced Service-Learning practitioners: expert opinion). • Content analysis of student comments on assessment methodology from the standard CHESP post-course questionnaire on student experiences of a Service-Learning course (Population = MBA S-L students at WBS)

Problem 3: Evaluate the extent and general academic quality of student assignments in terms of both functional and CCFO learning			
Sub-problem:		***Proposition 3.3***	***Data collection & Methodology***
			• Evaluation of the depth of reflection achieved by students for each CCFO from their individual assignments (Population = student individual assignments)

The literature reveals that reflective journals are almost invariably used to assess students in Service-Learning courses. This needed to be confirmed in the South African context, so input from both Service-Learning practitioners and students was sought.

Based on the assumption that reflective journals should be kept as an important component of Service-Learning courses in South Africa, they were utilised in this implementation and were the foundation of the individual assignments. These assignments were analysed to establish the depth of reflection for each CCFO in a manner identical to that carried out for proposition 3.2, by carefully reading through and seeking evidence of the depth of reflection using the "what, so what, now what" model (Bender *et al* 2006) found in the content of that particular section of the assignment. The appropriate depth of reflection was then allocated to each CCFO for each assignment and captured for statistical analysis.

4.4.2.9 Problem 3, Sub-problem 3.4, Proposition 3.4

Problem 3: Evaluate the extent and general academic quality of student assignments in terms of both functional and CCFO learning			
Sub-problem:		***Proposition 3.4***	***Data collection & Methodology***
3.4	Evaluate the general academic quality of students' Service-Learning assignments	The general academic quality of student assignments reflects the integrated and appropriate use of references and follow a logical report structure	• Descriptive statistical analysis of the academic quality indicators and any associations with the achievement of Bloom level 4, from students' individual assignments (Population = student individual assignments

The students' individual assignments were analysed for their general academic quality using a small number of indicators and establishing whether the presence of the indicators lead to the achievement of a Bloom level of four or higher.

4.4.2.10 Problem 3, Sub-problem 3.4, Proposition 3.5

Problem 3: Evaluate the extent and general academic quality of student assignments in terms of both functional and CCFO learning			
Sub-problem:		***Proposition 3.5***	***Data collection & Methodology***
3.4	Evaluate the general academic quality of students' Service-Learning assignments	The depth of reflection by students is positively correlated with the extent of cognitive development as measured by Bloom's taxonomy for each CCFO	• Chi-square correlation of the depth of reflection with the extent of cognitive development as evaluated from the student individual assignments (Population = student individual assignments)

In order to establish whether deeper reflection resulted in a higher order of cognitive learning, a Chi-square correlation was conducted on the analyses of these two variables from the students' individual assignments.

4.4.2.11 Problem 4, Sub-problem 4.1, Proposition 4.1

Problem 4: Relate MBA students' preferred Learning Styles to the context of Service-Learning and describe their understanding, experiences, personal growth and insights from attending a Service-Learning course on their MBA programme			
Sub-problem:		***Proposition 4.1***	***Data collection & Methodology***
4.1	Relate MBA students' preferred Learning Styles to the context of Service-Learning	MBA students' Honey and Mumford (1992) learning styles profiles will not conflict with the reflection requirements of Service-Learning	• Descriptive and comparative statistical analysis of the Honey and Mumford (1992) Learning Styles Questionnaire applied to MBA students (population = MBA students in South Africa)

The Honey and Mumford (1992) Learning Styles questionnaire was selected to analyse MBA students' preferred learning styles because it makes use of a reflective

component, which has been established to be important as an assessment methodology in Service-Learning courses. The model also closely follows Kolb's acclaimed participative learning cycle (Kolb *et al* 1971; Knowles 2000), giving it high face validity. The findings were analysed descriptively, comparing medians of the different styles (since the data are ordinal), using the non-parametric Kruskal Wallis one-way ANOVA test. Universities were compared with one another using the same test.

4.4.2.12 Problem 4, Sub-problem 4.2, Proposition 4.2

Problem 4: Relate MBA students' preferred Learning Styles to the context of Service-Learning and describe their understanding, experiences, personal growth and insights from attending a Service-Learning course on their MBA programme			
Sub-problem:		***Proposition 4.2***	***Data collection & Methodology***
4.2	Describe MBA students' experiences, personal growth and insights from attending a Service-Learning course	MBA students experience personal growth and new perspectives from attending a Service-Learning course and are able to articulate insights to contribute to further MBA Service-Learning course development.	• Content analysis of students' personal experience descriptions in individual assignments (Population = student individual assignments) • Content analysis of student personal experience descriptions from the standard CHESP post-course questionnaire on student experiences of a Service-Learning course (Population = MBA S-L students at WBS) • Content analysis of post-course lecturer evaluations and student comments

Students' experiences were gathered directly from the students themselves from three different sources; their assignments, by direct questions in the JET / CHESP questionnaire, and from their course evaluations. The different data sources were used for triangulation purposes as well as to gain greater understanding of their experiences through different media and by asking different questions.

4.5 Validity

> The intention of this work is to highlight some of the issues surrounding the use and nature of the term 'validity' and to establish that 'validity' is not a single, fixed or universal concept, but rather a contingent construct, inescapably grounded in the processes and intentions of particular research methodologies and projects.
>
> (Winter 2000:1)

Validity in a mixed methods study such as this one requires consideration to be taken of both quantitative and qualitative issues (Creswell 2003), as well as how they are integrated with one another. A useful aspect of mixed methods research is that validity can be enhanced through triangulation of findings gathered from different sources (Greene *et al* 1989; Chenail 2000; Winter 2000; Roberts 2002; Creswell 2003; Robson 2003; Onwuegbuzie and Leech 2004). It can be seen in the preceding sections, and summarised in the consistency matrix in Appendix 2, that this has taken place.

4.5.1 Internal validity

Internal validity rates the credibility of the research (Miles and Huberman 1994) through establishing the logic of the links made between the independent and the dependent variables (McBurney and White 2004) and issues of cause and effect can be proven to be present where they are claimed. In order to achieve this, as many extraneous variables as possible should be controlled for in order to avoid confounding (Allan 1982; Egger *et al* 2001; Bless and Higson-Smith 2004).This is particularly difficult to attain when carrying out research in social contexts (McBurney and White 2004) because of the large number of "real world" variables that could influence outcomes.

Internal validity is improved by triangulating findings (Winter 2000; Roberts 2002; Creswell 2003; Robson 2003) and allowing them to complement one another and possibly overcome weaknesses inherent in any one method of data collection – they should offset one another's biases (Greene *et al* 1989). This has taken place in this study by gathering data from different sources and using different methods, with the objective

of building a richly textured picture of how it *may* be possible to introduce Service-Learning into an MBA course. Connell *et al* (2001) and Onwuegbuzie and Leech (2004) describe how the development of a conceptual framework through linking qualitative findings to quantitative results can itself add validity to a study. It is the purpose of this study to construct such a framework upon which further research may, and should, be conducted.

Qualitative findings in mixed methods research may be used to provide context to (Robson 2003) and explain quantitative results from another part of the study (Onwuegbuzie and Leech 2004); quantitative results can be included to add validity to qualitative findings, compensating in part for the fact that these findings would not normally be generalisable (Robson 2003; Onwuegbuzie and Leech 2004).

Data gathering using questionnaires was conducted face to face, usually with respondents in groups, eg in MBA classes, which resulted in a high response rate, reducing non-response bias (Robson 2003). In this way it was possible to gather data from more than 30 respondents in all cases (with the exception of the lecturer evaluation forms, which were given already summarised), thus meeting the requirements of the central limit theorem (Lind, Mason & Marchal, 2000) and enabling statistical analyses to be carried out.

Another validation technique is the quantification of qualitative data (Neuendorf 2002; Caracelli and Greene 1993) and *vice versa*. These methods have been incorporated into the research results and discussion.

One of the problems with some of the populations and samples in this research is that they are very small, for example Service-Learning practitioners, simply because there are very few in the country. The practical significance (Onwuegbuzie and Leech 2004), or value of the study is greatly enhanced through the use of mixed methods, and the study has high face validity since not only do the different data sources allow triangulation, but also meet the criteria for complementarity (where mixed methods are used to measure overlapping yet different aspects of a phenomenon) and expansion (extending the breadth of an inquiry) described by Greene *et al* (1989), and later by Caracelli and Greene (1993) who carried out some of the pioneering work in mixed methods research.

In order to enhance both content and face validity (Leedy & Ormrod, 2001; Robson, 2003), questionnaires were kept to a minimum and existing questionnaires were used where possible, such as the JET / CHESP questionnaire. In addition, care was taken to see that all aspects of the meta-study were covered (Bless and Higson-Smith 2004) and that data were gathered to investigate each hypothesis and proposition. The consistency matrix in Appendix 2 has assisted in ensuring that the instruments used gathered the data required in a manner obvious to participants and observers alike (Bless and Higson-Smith 2004). Use of descriptors instead of numbers for the Likert scales in the questionnaires in which they were used also improved internal validity (Krosnick, 1999), since misunderstandings were less likely. Where qualitative data were gathered, opposing views have all been recorded and reported, for the same reason (Miles and Huberman 1994).

The consistency matrix in Appendix 2 also makes clear the links between the theory and the instrument, leading to better construct validity (McBurney and White 2004).

Thus much has been done to improve the internal validity of this study, even though generalisation to other contexts is generally not sought in exploratory research (Falconer and Mackay 1999), although transferability to other similar contexts is anticipated and should be researched further for social and economic reasons in South Africa.

4.5.2 External validity

It has been pointed out that there is often an inverse relationship between internal and external validity (generalisability) (Leedy and Ormrod 2001; Robson 2003; McBurney and White 2004), and that research conducted in a real-world context has higher external validity than one that is laboratory based. This research was conducted very much in the real world, albeit under fairly structured circumstances, in that the MBA classes implementing the Service-Learning interventions were almost under (non-controlled) experimental conditions.

The representivity of the various samples, having been selected on convenience bases, reduces external validity. However, since this research is exploratory, further investigation into each part of the study, should take care to increase external validity

issues and report on the replicability of the study, even if this takes place in several different studies.

A useful suggestion has been made by Sim (1998) in differentiating empirical (probabilistic) generalisation from theoretical generalisation. In referring to the latter concept, he states (1998:350):

> Here the data gained from a particular study provide theoretical insights which possess a sufficient degree of generality or universality to allow their projection to other contexts or situations which are comparable to that of the original study.

He goes on to emphasise the conceptual nature of such generalisation as opposed to one of empirical representivity, and cautions the researcher to clarify the theoretical framework of propositions on which such a generalisation is made. Thus a degree of analytical or theoretical generalisation was possible, which may be useful as a starting point for future research.

4.6 Reliability

Only repeated application of this research will lead to a valid evaluation of its reliability. However certain aspects of the study can be shown to be reliable, such as the Honey and Mumford (1992) Learning Styles inventory, which has been used repeatedly and widely over many years. Reliability was built in as far as possible through establishing congruence between the research problem, the literature reviewed, the hypotheses and propositions put forward and the data collection methods used (Miles & Huberman, 1994), and by being available when respondents requested clarity (Krosnick 1999).

Reliability could have been improved in the student assignment evaluations through the use of multiple raters followed by testing multi-rater reliability (Robson 2003), although this would have been excessively time consuming for an exploratory study. However, it would be highly recommended in future research of this nature.

The published literature on research methodologies does highlight several areas in this study where empirical generalisability is not possible and sample bias is likely to be

present. However, it is anticipated that the findings contain sufficient grounds for theoretical generalisation and will be transferable to similar contexts and be implemented to the benefit of MBA / manager students, civil society and higher education.

4.7 Limitations and delimitations of the study

4.7.1 Limitations of the study

a. Service-Learning is a relatively recently introduced pedagogy into mainstream higher education in South Africa, and the number of experienced practitioners is small. Although this did limit the sample size, respondents did include the heads of Service-Learning and community engagement departments in South African universities as well as a number of their more experienced staff. Experienced faculty from the United States and the United Kingdom were also included, making the small respondent pool (n = 32) a group of experts in the field.

b. There has been limited application of Service-Learning in post-graduate business education, particularly in the case of MBA programmes both around the world and in South Africa, severely limiting the literature base, although literature on management education in general has been referred to extensively.

c. The CCFOs have not been validated.

d. Only WBS students could be used because of the place of employment of the researcher being at that institution.

4.7.2 Delimitations of the study

a. Only campus-based MBA programmes were investigated, excluding distance and e-learning MBAs from the study.

b. No attempt was made to compare Service-Learning to other pedagogies: the approach was similar to that seen in medical research, which establishes that

a medication works in the way intended before investigating whether it is better than other available medications.

c. Because of the exploratory nature of the research, sampling methodology was non-probability based (King *et al* 1994; Robson 2003; Shaughnessy *et al* 2003; Bless and Higson-Smith 2004), mainly using a convenience or snowball method. The sampling methodology was kept consistent through the research because of the large number of populations sampled. Where possible country-wide data were collected, but this was not feasible for all samples, so data collection was restricted to Gauteng in some instances. In the case of the actual implementation of Service-Learning into the two MBA courses analysed, all the data from the two classes were utilised. Although this type of sampling does reduce generalisability, the findings are intended to provide a platform for further research, having established that it is worth doing so.

d. This study is not intended to be an exhaustive study of management competencies.

e. This study makes no attempt to validate the CCFOs.