BUILDING A SCHOOL HALL: OPPORTUNITIES FOR SERVICE-LEARNING AND PARTNERSHIPS IN AN ENGINEERING FACULTY

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BUILDING A SCHOOL HALL: OPPORTUNITIES FOR SERVICE-LEARNING AND PARTNERSHIPS IN AN ENGINEERING FACULTY

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DECLARATION

I declare that

BUILDING A SCHOOL HALL: OPPORTUNITIES FOR SERVICE-LEARNING AND PARTNERSHIPS IN AN ENGINEERING FACULTY

is my own work, that all the sources I have used or quoted have been indicated and acknowledged by means of complete references and that this work has not previously in its entirety or in part been submitted at any other higher education institution for a degree.

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ABSTRACT

The purpose of this research was to investigate service-learning opportunities and possible collaboration between higher education students and lecturers located in the department of the Built Environment and the school community in a project that involved the building of a school hall. The school halls are generally needed as they accommodate a wide range of school and community activities and serve as bridges that link the school and the wider public. The study also attempted to develop a framework to guide the implementation of service-learning projects in third-year courses of the National Diploma: Building which include quantity surveying, construction technology and construction management.

The study made use of literature that describes the civic roles and social responsibilities of higher education in general and the expected role of higher education in socio-economic development of the South African communities in particular. Literature on the need for increased participation, collaboration, partnership formation and development of service-learning programmes in order to address the socio-economic and educational developmental needs of both communities and students was also consulted. Reference was also made to literature on building projects and the building process.

The researcher used qualitative approaches and data production methods to get information from the school teachers, learners, students and lecturers through

interviews in order to establish if the participants were willing to work together in the school building project and how they thought the school and the higher education institution could benefit from such collaboration. An observation schedule and photographs were also used to gather information relating to the process of building a school hall. The opportunities for service-learning projects were investigated through matching the activities of the building process with the curriculum documents of the National Diploma: Building and interviewing the lecturers and students in a higher education institution.

The research findings indicated that there were opportunities for service-learning as some of the activities of the building process could be linked to the learning outcomes and the course content of subjects such as quantity surveying 111, construction technology 111 and construction management 111. The research findings also revealed that there was possible collaboration between the school and the higher education institution in terms of the school building project, and that such collaboration could benefit both the school and the higher education institution. Although the participants generally expressed their willingness to work together, concerns were raised with regard to logistical and other potential difficulties that could result from the planning, implementation and evaluation of service-learning projects.

The study therefore highlights the opportunities for service-learning and possible collaboration and partnerships between schools and higher education institutions

through service-learning and calls for the involvement of more partners such as government departments and the private sector in order to increase educational benefits for school learners, teachers, students, lecturers and South African communities.

THIS THESIS IS DEDICATED

TO

MY MOTHER

AGNES NOZIPHO REBE

AND

MY BROTHER

MAKHOSANDILE REBE

ACKNOWLEDGEMENTS

I am thankful to God Almighty for giving me the strength to complete this study

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Ntombembasa Rebe

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DEFINITION OF TERMS

School community

The school teachers, parents and learners who are involved in a school community building project.

Service-learning

An involvement of students in a school community building project while developing their academic skills and commitment to the school community. This type of community service is combined with academic teaching, learning and assessment practices that promote critical, reflective thinking and civic responsibility of students. In service learning both the students and communities benefit from the service rendered.

A higher education service-learning project

A curriculum-linked project in which students in higher education engage in building activities of a school community hall and in structured opportunities intentionally designed to promote student learning and development.

Reciprocity

An idea/notion that every individual, organization and entity involved in service-learning functions as both a teacher and a learner. This implies that students learn from academics and the community. The academics should also learn from the students and the community. In the same way the community should also learn from the academics and students.

Reflection

The process of deriving meaning and knowledge from community experience. In this process both academics and students engage in a thoughtful and thought-provoking process that consciously connects learning with experience. The students doing service-learning are expected to bend the metaphorical light of their experiences back onto their minds to make careful considerations about what their experiences were all about: what did they see, who did they meet, why is there a need for such services and how service experiences are linked to the course outcomes?

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CHAPTER 1

INTRODUCTION

1.1 RESEARCH CONTEXT

1.1.1 Global calls for Higher Education and Civic Engagement

The idea that higher education institutions and their students should be involved in civic engagement originated from the United States of America when the presidents of the colleges and universities established the Campus Compact in 1985 in response to a sense that a generation of youth was entering society apathetic and isolated from their communities and that the students saw no clear connection between the knowledge they acquired through education and the broader public good. The Campus Compact helped to develop the service movement that today thrives on campuses around the country and on satellite campuses in many parts of the world and urges colleges and universities to motivate students to participate in their communities and acquire learning in the context of striving to better their world.

Recently, an international conference on Civic Engagement of Higher Education Institutions organized by Tufts University and held at the city of Talloires, France in September 2005, has taken the civic agenda even further. The conference

resulted in the adoption of the Talloires Declaration (2005) which spelt out the global Civic Roles and Social Responsibilities of Higher Education. The declaration was signed by Vice Chancellors from all the continents on 17 September 2005, and distributed to all South African Higher Education Institutions by Higher Education South Africa (HESA). Globally, Higher Education Institutions have pledged to expand civic engagement and social responsibility programmes in an ethical manner, through teaching, research and public service, and establish partnerships with government and other sectors to strengthen policies that support higher education's civic and socially responsible efforts that aim at sustaining social and economic gains for the communities. From the Talloires Declaration, it is evident that the participants of the conference believe that higher education institutions exist to serve and strengthen the society of which they are part, and that they have a responsibility to empower those who are less privileged.

1.1.2 Transformation of Higher Education and Community Development in South Africa

The need for community development in South Africa, coupled with the need to transform the South African education system has resulted in the publication of the White Paper on the Transformation of Higher Education in 1997 (Department of Education 1997). In line with global trends, the White Paper on Education and Training (1997) calls on all South African Higher Education Institutions to show

greater responsibility and commitment by promoting human resource development through programmes that are responsive to the social, political, economic and cultural needs of the country and to promote and develop social responsibility and awareness amongst students of the role of higher education in social and economic development through community service programmes.

Taking its cue from the White Paper on the Transformation of Higher Education, the Joint Education Trust (JET) in partnership with the Ford and Kellogg Foundations, launched the Community-Higher-Education-Service Partnerships (CHESP) initiative in 1998 and supported South African Higher Education Institutions to engage in the development of communities through the development of appropriate institutional policies, strategies, organizational structures, and accredited mainstream academic programmes. Although it is acknowledged that community engagement can take on many different forms and shapes within the context of higher education, the JET/CHESP initiative encourage South African higher education institutions to embark on service-learning. Service-learning is regarded as community engagement that is also a scholarly activity. Service-learning is defined as a course-based, credit-bearing educational experience in which students participate in an organized service activity that meets identified community needs and reflect on the service activity in such a way as to get further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility (Bringle and Hatcher 1995). It is argued that community engagement, as a

scholarly activity, is of critical importance both in shaping the students and future citizens and in producing knowledge that is most relevant and useful to the South African context.

Increasing calls for the development of relevant education programmes in South Africa and for using teaching and learning strategies that are in line with the current South African education reforms (Department of Education 1997) have resulted in the realization that the integration of service-learning into higher education pedagogy and research is one strategy that could develop a variety of skills, values and attitudes in students, thereby preparing them to be efficient and effective in the world of work and to participate as active, responsible citizens in building their country. Service learning is now regarded as an approach that has the potential to integrate students' community service experience with academic study so that learning is enhanced and a recognized community need is met (Bringle and Hatcher 1996).

1.1.3 Partnerships for Community Development and Service-Learning

There is a growing belief that co-operative generation and application of knowledge and expertise could contribute to finding solutions to local, national and international demands. This belief has resulted in increasing calls for greater cooperation and partnerships between higher education and other relevant stakeholders within society so as to ensure an effective response to the

challenges faced by the South African communities. Central to the CHESP approach in South Africa is the development of partnerships between communities, higher education institutions and the service sector in planning, implementing and evaluating service-learning programmes or projects.

1.1.4 School halls as a developmental need in the Western Cape

The development needs of the schools in the Western Cape include the building of school halls that could be used for a variety of activities. In response to this need, the Western Cape Education Department compiled a list of schools that require school halls. The Garden Cities' Archway Project was conceived to help alleviate the vast backlog of 780 school halls in the Western Cape. This project works on the premise that a school hall is vital in the development of young people's true potential as it is a forum for developing talents (Cape Argus Commercial Feature, 29 March 2004).

The school hall could benefit the school and community in many ways as it could accommodate a wide range of school and community activities. For example, on rainy days, the school could have its assembly in the hall as the hall could accommodate a large number of learners. The hall could be used for conducting memorial services for the learners, teachers and community members who passed away. The hall could also be useful for indoor games such as basketball and table tennis and for learners who would like to watch other learners when

playing. The hall could also be used for exhibiting learners' woodwork and art work, award presentations and parents' meetings. The school could generate money by allowing the community to hire the school hall for various activities such as funerals, church services, weddings and graduation ceremonies for pre-school children.

The Garden Cities' Archway Project and the introduction of service-learning in higher education have created the need to develop appropriate guidelines for the planning and implementation of the service-learning programme in the department of Built Environment. A practical building project could benefit third-year students who have registered for the National Diploma: Building. These students study a range of subjects that include the following:

- **Construction Management** that familiarizes students with basic modern management concepts and principles, and acquaints them with the present status and future of the building industry and its administrative processes.
- **Quantity surveying** that prepares students to translate the architect's and engineer's drawings and specifications into a document which is capable of being accurately priced by building contractors. This course also aims at enabling students to produce accurate measurements for bill production, interim monthly valuations and final account settlement.

- **Construction Technology** that equips students with the knowledge of materials and construction methods used in the erection of multi-storey buildings constructed of steel or reinforced concrete. The students also learn about the characteristics and uses of the various materials and protective coatings required in the construction processes.
- **Price analysis and estimating** that enables students to control the financial management of the building process efficiently by analyzing individual items of construction cost in conjunction with bills of quantities, drawings and specification. Various methods of estimating during the design stage are also examined.
- **Structures and concrete** that provide students with the knowledge needed to manage sites where structural and concrete works are performed (Department of Built Environment 2006).

The Garden Cities' Archway Project and the introduction of service-learning in higher education have also created the need for the establishment of sustainable partnerships (Bringle and Hatcher 1996). Since service-learning is a fairly new concept in South Africa, not much has been done to develop guidelines for the planning, implementation and evaluation of service-learning programmes and for possible collaboration that could lead to the establishment of partnerships, especially in the field of Engineering. Higher Education institutions use to be isolated from the life of their surrounding communities and disengaged from the democratic purposes of society.

In addition, there are few studies that pay attention to effective planning and implementation of service-learning programmes and projects which involve the building of school halls and the establishment of partnerships in South Africa. Such studies are necessary, especially for students in the Engineering Faculty, as the building of school halls and houses is in great demand and crucial for the development of South African communities. It was against this background that an investigation into the possibility of partnership formation between higher education and the school building project was conducted in this study.

The objective of this research is to develop a framework to guide the implementation of service-learning projects in a wide range of courses that include construction management, quantity surveying and construction technology. The framework intends to place emphasis on the importance of forming partnerships and addressing the community needs when developing service-learning programmes or projects. The proposed research is an attempt to build a research base to guide further initiatives.

1.2 PROBLEM STATEMENT

The focus of this research is on the building project of a school hall with the purpose of investigating opportunities for service-learning and possible collaboration between higher education students and lecturers located in the department of the Built Environment and the school, using qualitative research approaches.

1.3 RESEARCH QUESTIONS

The following research questions were identified to guide the research activities:

1. How do the different groups (higher education and school) conceptualize collaboration within a school community building project?

2. What is the process of building a school hall?

3. How can higher education contribute to communities and schools in terms of the building project?

4. What can schools/communities contribute to student learning and development?

1.4 RESEARCH ASSUMPTION

The research questions were based on the assumption that the higher education institution does not offer service-learning programmes for the school building project and that no partnerships have been established between the institution and the school.

1.5 THE RESEARCHER'S INTEREST IN A SCHOOL HALL

The researcher's interest in the building of a school hall was based on the following two roles that the hall plays, as described by Day and Parnell:

- The school hall plays a significant role as it unifies the whole being of the school and serves as a focal point for school activities such as drama, music and exhibitions.
- The school hall plays a bridging role as it serves as a link between the school and the wider public (2002: 156).

1.6 DELIMITATION OF THE STUDY

The study was limited to one community school in Langa and one higher education institution (University of Technology) in the Western Cape. Only school teachers and learners in the technical department which offers subjects such as brick laying and technical drawing for grades 10 to 12 were interviewed. In the higher education institution, the lecturers and students in the department of Built Environment were selected for the interviews as the building of the school hall could involve service-learning activities from this department.

1.7 THE STRUCTURE OF THE STUDY

The research report is set out in five chapters. The first chapter is the introduction which provides background information and rationale for the study. The chapter documents how student involvement in civic engagement originated in the United States of America and spread to the rest of the world, including South Africa, and how the need for community development and transformation in the South African higher education system made it possible for the Joint Education Trust to facilitate the introduction of service-learning in South African higher education institutions. The importance of working collaboratively through the establishment of partnerships between higher education institutions, relevant communities and the service sector is stressed and the necessity for building school halls in the Western Cape is also highlighted in this chapter.

The second chapter is the literature review that calls for higher education institutions to transform education and demonstrate greater responsibility and commitment to the socio-economic needs of the communities by developing service-learning programmes that are responsive to the social, political, economic and cultural needs of the country. The chapter also stresses the need for establishing partnerships between higher education and society and examines the importance of introducing service-learning to promote both student and community development. Attention is also paid to literature that focuses on building projects in schools.

Following the literature review is the third chapter which describes the methodology and the research procedures that were followed by the researcher when conducting the research. The chapter locates the study within the qualitative research paradigm and discusses the research design, site and participant selection, data sources, production methods and the research process. The chapter also describes how data was analyzed, interpreted and verified. The limitations of the study are also outlined in this chapter.

The fourth chapter is the presentation of the research findings. The chapter is divided into four sections. The first section describes how school teachers, learners, the service-learning officer, lecturers and students conceptualized collaboration in terms of the school building project while the second section focuses on the process of building a school hall. The third section describes the match between the activities of the building process and the curriculum of the National Diploma: Building and maps the opportunities for service-learning projects. The final section reflects on the responses of the school teachers, learners, the service-learning officer, lecturers and students with regard to possible contribution of higher education to the school and communities as well as possible contribution of the school and communities to student learning and development.

Chapter 5 presents the summary of the research findings and conclusions. This final chapter also puts forward some recommendations on what should be done for effective planning, implementation and evaluation of service-learning projects

in an engineering faculty. The significance of the study is also highlighted in this chapter.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

This chapter deals with literature that focuses on the expected role of higher education in civic engagement and community development, and on the importance of cooperation, collaboration and partnerships between higher education and society. The literature on service learning and community building projects was also reviewed.

2.2 EXPECTED ROLE OF HIGHER EDUCATION IN CIVIC ENGAGEMENT AND COMMUNITY DEVELOPMENT

From an international conference on Civic Engagement held at Talloires in September 2005 it became clear that higher education institutions are expected to serve and strengthen the society in which they are located and that they have a responsibility to empower those who are less privileged. The Talloires Declaration that was the outcome of the conference documented the civic roles and social responsibilities of higher education (Talloires Declaration 2005). The Declaration was circulated to all South African higher education institutions by Higher Education South Africa (HESA) to enable South African higher education institutions to collaborate in worldwide civic work.

According to the Talloires Declaration (2005) Higher Education Institutions in the world have pledged to:

- Expand civic engagement and social responsibility programmes in an ethical manner, through teaching, research and public service.

- Embed public responsibility through personal example, policies and practices of our higher education institutions.

- Create institutional frameworks for the encouragement, reward and recognition of good practice in social service by students, staff and their community partners.

- Ensure that the standards of excellence, critical debate, scholarly research and peer judgment are applied as rigorously to community engagement as they are to other forms of university endeavor.

- Foster partnerships between universities and communities to enhance economic opportunity, empower individuals and groups, increase mutual understanding and strengthen the relevance and responsiveness of university education and research.

- Raise awareness within government, business, media, charitable, not-for-profit and international organizations about contributions of higher education to social advancement and well being. Specifically, establish partnerships with government to strengthen policies that support higher education's civic and socially responsible efforts. Collaborate with other sectors in order to magnify impacts and sustain social and economic gains for our communities.

- Establish partnerships with primary and secondary schools, and other institutions of further and higher education; so that education for active citizenship becomes an integral part of learning at all levels of society and stages of life.

- Document and disseminate examples of university work that benefits communities and the lives of their members.

- Support and encourage international, regional and national academic associations in their efforts to strengthen university civic engagement efforts and create scholarly recognition of service and action in teaching and research.

- Speak out on issues of civic importance in communities.

- Establish a steering committee and international networks of higher education institutions to inform and support all their efforts to carry out the Declaration.

Several studies also highlight the need for higher education institutions to show greater responsibility and commitment to social and economic development of the communities (Thomas, 1998; Boyer 1997; Bringle, Hatcher and Games 1997; Holland 1997).

In line with international trends, the Education White Paper 3 (1997) calls on all South African higher education institutions to:

- Demonstrate social responsibility and commitment by promoting human resource development through programmes that are responsive to the social, political, economic and cultural needs of the country.

- Promote and develop social responsibility and awareness amongst students of the role of higher education in social and economic development through community service programmes.

- Conduct feasibility studies and develop pilot programmes that explore the potential of community service in enhancing learning in higher education.

The expectation of South African higher institutions to contribute to socio-economic development corresponds well with the national vision of a transformed, democratic and responsive system of higher education as documented in the National Plan for Higher Education (2001). The Higher Education Quality Committee (HEQC) of the Council on Higher Education (CHE) also identifies academically-based community engagement as one of the three areas for the quality assurance of higher education along with teaching and research (HEQC Discussion Document 2003). This means that community engagement is now regarded as one of the core functions of South African higher education institutions.

2.3 PARTNERSHIPS BETWEEN HIGHER EDUCATION AND SOCIETY

According to Erasmus, Fourie and van der Westhuizen (2003: 5) the introduction of community engagement in South African higher education has brought along

the need for increased participation, cooperation, collaboration and partnerships between institutions of higher education and all sectors of society. Partnerships are regarded as important as they build mutual trust, accountability and transparency in higher education. Higher education institutions are now challenged to have a more open system of knowledge generation, application and production in dynamic interaction with community interests.

A substantial body of literature (Teichler 2000; Foster and Stephenson 1998; Garrick and Kirkpatrick 1998; Teichler 1998; Birch 1998) also highlights the need for world wide participation and involvement of many interest groups in addressing the socio economic needs of communities. According to Wessels (2000) the collaboration of all the stakeholders could address the socio economic problems in South Africa. Kiely and Nielsen (2003) also states that a service learning programme depends on the level of collaboration and the willingness to make a commitment to develop and maintain a long term relationship.

To enhance understanding on how to develop healthy university-community partnerships, several studies (Bringle and Hatcher 2002; Arriaga 2001; Torres 2000; Katz and Beach 2000) conceptualize partnerships as relationships and explore phases of interpersonal relationships which include initiation, development, maintenance and dissolution. From the analysis of these phases these studies identified implications for practice that could assist the facilitators for service learning in developing and maintaining healthy partnerships.

Also stressing the importance of partnerships and collaboration Marais, Yang and Farzanchkia (2000) recommend that adults and young people should work collaboratively in the design of service learning. They view the relationship between young people and adults as a mentoring relationship in which the adult has power, experiences, resources and skills to give to a young person. In contrast Hubbard (1998) recommends partnerships in which adults and young people share learning and leadership and contribute experiences, resources and skills equally. He further argues that these partnerships allow the youth and adults to become co-creators of community.

In an attempt to show how the school community could benefit from partnerships with higher education Bernardt writes:

> higher education institutions can become partners in the school's improvement efforts by helping them develop and achieve a vision, mission and plan, and possibly perform in the role of external change agent or school coach (1999: 153).

2.4 DEFINITION OF SERVICE LEARNING

Research has shown that different definitions of service learning stem from different interpretations and understandings of the concept as well as from the diversity of what is labeled 'service learning' in programmes (Furco 1996). Various definitions of service learning include the following:

> Service-learning is a method under which students learn and develop through thoughtfully organized service that: is conducted in and meets the needs of a community and is coordinated with an institution of higher education, and with the community; helps foster civic responsibility; is integrated into and enhances the academic curriculum of the students enrolled; and includes structured time for students to reflect on the service experience (American Association for Higher Education 1993: 54).

> Service-learning seeks to engage individuals in activities that combine both community service and academic learning. Because service-learning programs are typically rooted in formal courses (core academic, elective, or vocational), the service activities are usually based on particular curricular concepts that are being taught (Furco 2002: 25).

> Service-learning is a teaching method which combines community service with academic instruction as it focuses on critical, reflective thinking and civic responsibility. Service-learning programs involve students in organized community service that addresses local needs, while developing their academic skills, sense of civic responsibility and commitment to the community (Campus Compact 1993: 27).

> Service-learning is a "course based, credit-bearing educational experience in which students participate in an organized service activity that meets identified community needs, and reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility (Bringle & Hatcher 1995:113).

While there is still confusion about the definition of service learning, there is general consensus that the major components of service learning include active participation, thoughtfully organized experiences, focus on community needs and community coordination, structured time for reflection, opportunities for application of skills and knowledge, extended learning opportunities and

development of a sense of caring for others (Tsang 1998; Troppe 1996; American Association for Higher Education 1993; Billig 2000; Tenenbaum 2000). From the definitions mentioned above it is clear that service-learning improves student learning, addresses community needs, facilitates public debate and dialogue, and creates campuses that are true partners with their communities.

Various studies (Kiely and Nielsen 2003; Stanton, Giles and Cruz 1999; Furco 1996) have distinguished service learning from community service, internships and volunteerism. These studies indicate that service learning benefits both the students and the community while other forms of community engagement benefit either the community or the students.

2.5 TYPOLOGIES OF SERVICE LEARNING

Various authors have noted diversity in service learning courses (Heffernan 2001; Eyler, Dwight and Giles 1999; Furco 1996). These authors make a distinction between the following four types of service learning:

service-LEARNING in which the learning goals are primary and service outcomes secondary. In these courses there is limited service which adds a dimension to an academic experience without being a significant part of the course.

SERVICE-learning in which the service goals are primary and learning goals secondary as is the case with volunteer service courses.

Service learning in which service and learning goals are separate.
These courses may capture student enthusiasm and interest, but the students are left to make academic connections themselves.

SERVICE-LEARNING in which service and learning goals are of equal weight and each enhances the other. In these programmes learning and service are in balance and study and actions are explicitly integrated.

2.6 INTEGRATING COMMUNITY SERVICE WITH THE CURRICULUM

Several studies suggest that it is possible to link community service to the curriculum. Tsang gives a brief description of the integration of service activities with the curriculum in an engineering field and states that there is a paradigm shift in engineering undergraduate education with inclusion in the curriculum of "softer skills (1998:13).

Tsang, Martin and Decker point out that implementing service-learning project into the engineering curriculum consists of the following steps:

- Identify community need that matches course learning objectives, or vice-versa.
- Form partnerships.
- Create and implement solutions.
- Evaluate solution for continuous improvement, and
- Reflection (1997:15).

Rothman (1998) also documents how community service is linked to the curriculum of various disciplines such as architecture, business education and health fields.

2.7 KEY CONCEPTS OF SERVICE LEARNING

Literature mentions reciprocity (Jacoby 1996) and reflection (Bringle and Hatcher 1996) as important concepts in service learning. With regard to reciprocity studies stress the importance of reciprocal learning and service. Reciprocity suggests that every individual, organization, and entity involved in service-learning functions as both a teacher and a learner (Jacoby 1996, 35). Reflection is seen as playing a central role in the process of learning through community experience. The studies claim that effective reflection engages both teachers and students in a thoughtful and thought-provoking process that consciously connects learning with experience.

2.8 BENEFITS ASSOCIATED WITH SERVICE LEARNING

The following benefits that are associated with service learning have been documented (Robinson 2000; Tenenbaum 2000; Lerner 1999; Meichenbaum and Biemiller 1998; Yoder, Retish and Wade 1996).

- The students make sense of their experiences and connect them to their academic work. They see how the course subject matter can be used in their everyday life, and connect service and learning through reflection.

- The students explore career options, receive practical job training and apply their classroom- based skills by making some products for the community.

- The students develop competencies such as decision-making, problem solving, leadership, negotiating, self-esteem, and a sense of civic responsibility when they meet real community needs.

- The students develop leadership skills and cultural awareness through attending coordinated workshops and listening to presentations on diversity.

- Students with learning disabilities become more engaged and active when service learning is used as an instructional strategy for them.

From the benefits documented above it is clear that service learning could promote personal, intellectual and social growth in students as they could learn

to apply their skills and knowledge to identify and meet the needs of the school community.

2.9 PROBLEMS RELATED TO SERVICE-LEARNING

The following problems that relate to service learning have been highlighted (Gerber and Heet 2000; Perusek 1995; Johnson 1995):

- Service learning demands proper co-ordination of activities
- It is time-consuming and labour-intensive
- Some of the service learning courses have been characterized by lack of efficient administration and communication on matters based on curriculum planning and assessment
- Service learning requires funding which is not always available.
- Service learning can easily become politicized because of its activist nature.

2.10 RESEARCH ON SERVICE-LEARNING

The lack of research on the community dimensions of service-learning has been noted as a glaring omission in the literature. Mitchell and Rautenbach point out that the research should focus on community-higher education partnerships which should be "problematised and not assumed as appropriate mechanisms for development" in the South African context (2005: 111). Research on service-learning in South Africa, conducted by the Evaluation Research Agency (ERA)

from 2001 to 2002, revealed that one reason why some SL programmes failed in South African higher education institutions is that the intervention did not address the real community need (Mouton and Wildschut 2002). This study indicated that the SL courses were designed in such a way that the students and academics were the main beneficiaries and that the communities were not involved in the development and delivery of the SL courses. Day (2005) suggests that for community research to be successful there should be collaboration between the community and the researcher. Emphasizing the need for service-learning to benefit the communities Conrad and Hedin point out that:

> More and better qualitative research is needed to provide deeper understandings and texture to our knowledge of how service-learning can benefit our communities more productively (1997: 54).

2.11 BUILDING PROJECTS IN SCHOOLS

Upgrading of schools has been noted by literature as a world-wide phenomenon and a variety of school building projects has been documented. The Palo Alto Weekly of 27 August 1999 lists a number of school building projects in North California. In Ireland the progress on Mayo Schools' Building Project has been documented (Local News Friday 7 September 2001). In the Western Cape partnerships have been established between the WCED and the Cape Property Development Company to help alleviate the vast backlog of 780 school halls in the Western Cape (Cape Times 13 September 2004: 3). This research explores

service-learning opportunities for the building of school halls in the Western Cape.

2.12 IMPORTANCE OF THE SCHOOL HALL

According to Day and Parnell the school hall unifies the whole "being" of the school and serves as a central point for drama, music and other school activities. These authors further describe the school hall as a facility that could be used by the wider public if it is "open, accessible and inviting" and point out that the hall is not only used as a source of income but also as a means to increase public exposure (2002:156). The school hall is regarded as a heart of the school and a bridge between the school and the wider public.

2.13 THE BUILDING PROCESS

Much has been written on the process of building a school hall (World Book Encyclopaedia 1992; School Building Committee 2001; Department of Built Environment 2006. These sources document the stages of the building process as follows:

- **Planning** that involves the architect who makes drawings, specifications and blueprints and provides information on size, materials and how the building is to be built.

- **Initial site works and setting out**, which follows a full set of construction drawings and involves activities such as clearing and setting out the site, establishing a datum level and leveling sloping sites.
- **Digging trenches and building foundations** for supporting the building.
- **Building the superstructure** which involves the building of outer walls and piers and interior construction that involves the building of floors, inner walls, windows and doors as well as activities such as plumbing, electrical wiring and insulation.
- **Building a roof** by using timber called rafters, nailing a sheathing (inner layer) and adding the final layer of slate or tiles or roofing asphalt. The roof seals the top of the building and provides suitable internal environment.

2.14 CASE STUDIES OF SERVICE-LEARNING AND BUILDING PROJECTS

The following case studies of service-learning and building projects have been documented in the field of engineering:

According to Rothman (1998: 140) students from the Arizona State University designed and built a low-cost house together with the residents of Guadalupe, Arizona. The students and residents first met to discuss the ideal house and then spent fifteen weeks building it together. In another project the staff and students of Clemson University, South Carolina worked together with the Westview Homes Residents' Association to purchase dilapidated homes, repair them, and

then resell them to community members at a reduced price. Rothman further states that "while the students' work provided small-scale repairs it helped to build larger relationships among community residents" (1998: 141).

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

As stated in the first chapter the primary focus of the research was an investigation of service-learning opportunities in an engineering faculty. The research design was intended to identify service-learning opportunities in a community project which involves the building of a school hall. In order to conduct the investigation, a variety of data collection and production methods were used. This chapter analyses and reflects upon these methods. Data analysis and interpretation as well as the limitations of the study also form the subject of this chapter.

3.2 DESCRIPTION OF THE RESEARCH DESIGN

The research design is a plan or a blue print of how one intends to conduct the research (Babbie and Mouton 2002). In the same light, Leedy (1993) defines it as a plan, a common sense and the clear thinking necessary for the management of the entire research endeavor. He further explains it as a "matter of thinking, imagining and thinking some more" (Leedy 1993:125). Supporting the same view, Kweit and Kweit (1981) define the research design as a strategy, the plan,

and the structure of conducting a research project. All the definitions suggest that the research design focuses on the end product and the logic of the research.

In this study the research design was used to plan the logic of the research undertaken in a school and a higher education institution. The study was located within the qualitative research framework with the purpose of contributing to a research-based understanding of how the building of a school hall could provide service-learning opportunities in higher education.

The research design attempted to find answers to the following four research questions:

1. How do the different groups (higher education and school) conceptualize collaboration within a school community building project?

2. What is the process of building a school hall?

3. How can higher education contribute to communities and schools in terms of the building project?

4. What can schools/communities contribute to student learning and development?

The following methods associated with qualitative methodologies were used for each research question:

Research question 1: How do the different groups (higher education and school) conceptualize collaboration within a school community building project?

To find the answers to research question 1 the researcher conducted **interviews** with school teachers, learners, the service-learning projects officer, lecturers and students. The interviews aimed at finding out if the higher education institution and the school were willing to work together.

Research question 2: What is the process of building a school hall?

To find the answers to research question 2 the researcher made use of the following data gathering methods:

- **Observations** of the building process
- **Photographs** of the building process

Various school hall project activities were identified.

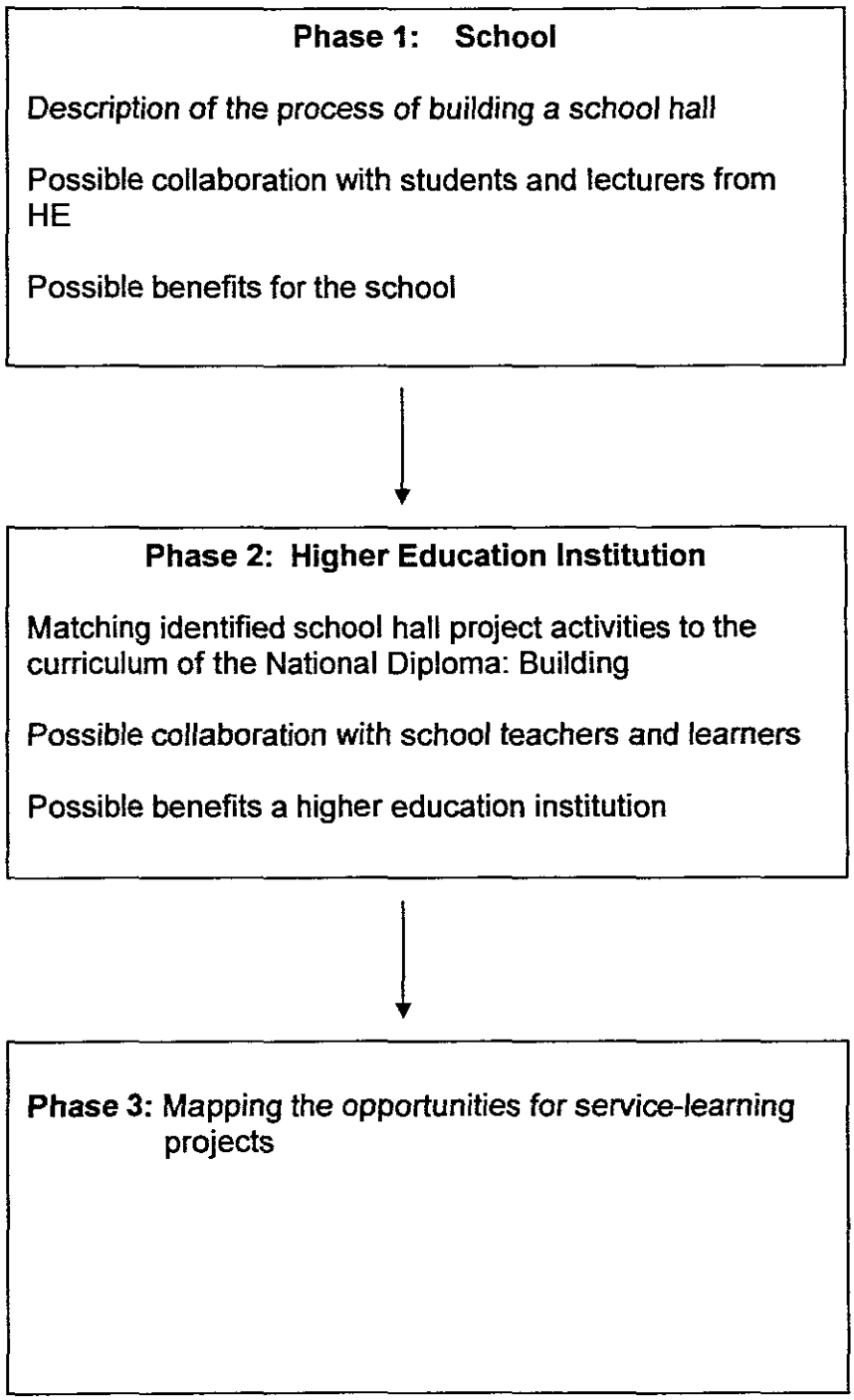
Research question 3: How can higher education contribute to communities and schools in terms of the building project?

After an investigation into the process of building a school hall the researcher consulted the **curriculum documents** of the National Diploma: Building and matched the school hall project activities that were identified with the sections of the curriculum. The researcher also conducted **interviews** with school teachers and learners to find how they could benefit from the involvement of students and lecturers in the higher education institution.

Research question 4: What can school/communities contribute to student learning and development?

The matching of identified school hall project activities to the curriculum of the National Diploma: Building was followed by an investigation into possible benefits for students in terms of learning and development. **Interviews** were conducted with the service-learning projects officer, lecturers and students to find out how they could be involved in the building project and how they could benefit from their involvement.

The research design is represented diagrammatically as follows:



3.3 REASONS FOR USING THE QUALITATIVE APPROACH IN THE STUDY

As mentioned earlier in the study, the researcher made use of qualitative approaches. One advantage of using qualitative research is that it enables the researcher to develop a better understanding of the social phenomenon by providing opportunities for the researcher to "go directly to the social phenomenon under study and observe it as completely as possible" (Babbie and Mouton 2001: 309). In qualitative research socially constructed knowledge is not considered to be a matter of deriving abstract principles, but rather about uncovering the historical, structural and value bases of social phenomena (Green 1990; Popkewitz 1990).

In this study the main social phenomenon was the school hall and the research aimed at gaining a deeper understanding of its building process and how the building process could be linked to the curriculum. Another social phenomenon was the higher education institution and the purpose of the research was to investigate service-learning opportunities for the building process of the school hall.

Other reasons for using the qualitative approach have been documented in several studies (Babbie and Mouton 2001; Charmaz 1995; Stern 1980). These reasons which could be regarded as the key ways that distinguish qualitative studies from quantitative studies include the following:

3.3.1 Qualitative research is conducted in the natural setting of social actors.

In this study the natural setting was the school as well as the higher education institution. The social actors in the school were the teachers and learners whilst in a higher education institution they were the lectures, the service learning officer and students.

3.3.2 *Qualitative research emphasizes process rather than outcome.*

The study places emphasis on the research process that starts with an investigation on the building process, then proceeds to the matching of the building activities to the curriculum documents and finally ends with mapping of service learning opportunities.

3.3.3 The primary aim is in-depth descriptions and understanding of actions and events.

In this study the description of actions and events in the research process includes the description of the building process, the relationship between the building process and the curriculum, and possible involvement of lecturers and students in the school building project.

3.3.4 Understanding social action in terms of its specific context is more important than attempting to generalize the findings.

In this study the research aimed at understanding the social actions and events in the context of teaching, service-learning and community development.

3.4 SITE AND PARTICIPANT SELECTION

3.4.1 Site selection

The following two sites were selected for the purpose of this research

3.4.1.1 The school

One high school in Langa was selected because it was engaged in the process of building a school hall and it also offers technical subjects such as Bricklaying, Electricians work, Woodwork and Technical drawing for grades 10 to 12 learners.

3.4.1.2 A higher Education institution

The selection of one higher education institution in the Western Cape was based on the fact that it is the only university of technology that plans and implements service learning in a wide range of departments including the department of the Built Environment.

3.4.2 Participant selection

The research participants were selected from two sites. Site A was the school and site B was a higher education institution.

3.4.2.1 Selection of participants in Site A (School)

In site A the research participants were school teachers and their learners

3.4.2.1.1 School teachers

The selection of school teachers was based on the following criteria:

- School teachers who were involved in the teaching bricklaying and plastering for grades 10 to 12.
- School teachers who received training and qualified to teach bricklaying and plastering.

3.4.2.1.2 School learners

The selection of school learners was based on the following criteria:

- The learners who had registered for bricklaying and plastering.
- The learners who were in grade 12.

3.4.2.2 Selection of participants in Site B (Higher Education institution)

In site B the research participants were the lecturers, the service learning officer and the students.

3.4.2.2.1 Lecturers and the service-learning officer

Staff selection was based on the following criteria:

- Academic staff that coordinated service learning for the institution.
- Academic staff that are lecturers in the department of the Built Environment.

3.4.2.2.2 Students

Student selection was based on the following criteria:

- Students who had registered for the National Diploma: Building.
- Students who were in their third year of study.

3.5 THE RESEARCH PROCESS

Before the research process started it was necessary for the researcher to take into consideration the ethics of the research that are discussed below.

3.5.1 Research Ethics

Permission to execute the investigation was sought from the director of the research centre in the Western Cape Education Department (Appendix 6). The Western Cape Education Department granted permission (Appendix 7) subject to the following conditions:

- Respondents used during the investigation should not be identifiable in any way from the researcher's results.
- No research should be conducted in schools during the fourth term.
- Educator's programmes should not be interrupted.

The participants were informed that their participation was voluntary and they could withdraw anytime if they wished to do so. It was also mentioned that the personal names of the participants would not be published in the research.

The researcher also sought permission from the higher education institution through the service-learning office (Appendix 8) which was also granted (Appendix 9).

3.5.2 Data collection / production methods

Data collection and production was conducted in the following two phases:

3.5.2.1 Phase 1: Observations, Photographs and Interviews

During the first phase observations of the building process were made (Appendix 1) and photographs taken from the 17th of August 2005 to mid September 2005. The aim of the observations and photographs was to gather information relating to the description of the stages and activities of the building of the school hall. According to Babbie and Mouton (2001) observations are used by qualitative researchers to become more personally involved in their research and more critical towards their methodology. Photographs are also used to collect visual data about situations and events. They constitute a more subjective selection of data than video material (Babbie and Mouton 2001).

The interviews with school teachers and learners were conducted during the first two weeks of September 2005. Three school teachers (Appendix 2) and six grade 12 learners (Appendix 3) from the technical department were interviewed. The three classes that were considered had learners who studied bricklaying and plastering. Two learners and one teacher were interviewed from each class. The use of the interviews aimed at finding out if the school teachers and learners were willing to work together with lecturers and students in the building project and how they thought the school and the higher education institution could benefit from such collaboration.

3.5.2.2 Phase 2: Curriculum documents and interviews

In a higher education institution the curriculum documents for the National Diploma: Building were consulted during the last two weeks of September 2005 in order to match the activities of the building process and the students' learning outcomes as set out in the curriculum documents of the third year programme for the National Diploma: Building. The use of documents is recommended for qualitative research (Babbie and Mouton 2001). Interviews were also conducted during the last two weeks of September 2005 with three lecturers, one service learning officer and six third year students. The lecturers and students who were interviewed were in the department of the Built Environment. The aim of using interviews was to find out if the lecturers and students were willing to work together with school teachers and learners and how they thought the higher education institution and the school could benefit from such collaborative efforts.

Semi-structured interviews were used to gather information from both the school and the higher education institution. According to Cohen and Manion (1989) semi-structured interviews are less formal and they allow the interviewer to modify the sequence of questions, change wording, explain questions and add to the questions. These authors further state that the interviewer can also probe for more specific answers to clarify and eradicate any misunderstandings. In this study an attempt to eradicate misunderstandings was done through the use of the home language of the respondents as some of the learners felt

uncomfortable in expressing themselves in their second language (Elliot 1991) points out that a semi-structured interview allows the researcher to start with the unstructured part in order to establish a climate in which the person being interviewed should feel comfortable to respond more freely to the questions asked.

From the above discussion it is clear that a variety of data gathering methods (interviews, observations, photographs and the curriculum documents) were used in this study.

3.6 DATA ANALYSIS

According to Bell (1993) collected data mean very little until they are systematized, analyzed and interpreted. In this study the analysis of data was characteristic of qualitative research in that it was interpretative. Data was not coded in a manner that allows statistical analysis but was analyzed qualitatively.

Data collected by means of observations and the curriculum documents (observational data) was written down and the responses of the interviewees (verbal data) to the conceptualized collaboration between the school community and the higher education institution and their mutual contribution were recorded, transcribed, summarized and organized into different themes (thematic analysis) using the following units of analysis:

3.6.1 Conceptualized collaboration within the school community building project.

3.6.2 Existing favourable factors for partnership formation.

3.6.3 Stages of the building process

3.6.4 Possible ways in which HE could contribute to the school building project.

3.6.5 Possible contribution of the school community building project to student learning and development.

3.7 DATA VERIFICATION

According to Bell (1993) the procedure for collecting data should always be assessed as to what extent it is likely to be reliable and valid. The use of multiple research methods has been mentioned as one strategy of promoting qualitative research validity (Burke 1997:292-293). In an attempt to improve validity of this research a variety of data gathering methods was used.

The data relating to the conceptualization of collaboration between the higher education institution and the school was gathered through the use of interviews with school teachers, learners, lecturers, the service learning officer and students. The responses to the interviews conducted in a higher education institution were compared with the responses of the school community. The responses of the lecturers were compared with the responses of the students

with regard to the existing favourable factors for collaboration and partnership formation. The research findings from the observations which related to the stages of the building process were compared with findings from the photographs. The responses of the lecturers and the students to the interviews on subjects or courses that could provide service-learning opportunities were compared with findings that resulted from the match between the activities of the building process and the learning outcomes and course content as set out in the curriculum document of the National Diploma: Building. Finally the responses of the school teachers were compared with the responses of the learners with regard to how service-learning could benefit the school while the responses of the lecturers were compared with the responses of the students with regard to how service-learning could benefit the higher education institution. The aim for comparing the data from various data sources was to find similarities and differences in responses and to improve the validity and reliability of the study.

3.8 LIMITATIONS OF THE STUDY

The only limitation of the study was related to the manner in which one question was phrased. The question that attempted to find answers on existing favourable factors for the establishment of partnerships between higher education institution and the school community in terms of the building project (question 3 in appendices 4 and 5) was not understood well by the students in higher education. Consequently, the researcher could not get the expected relevant

answers to the question. However, this limitation did not have much impact on the study as the main objective of exploring opportunities for service-learning and partnerships between the school and higher education was achieved.

CHAPTER 4

THE RESEARCH FINDINGS

4.1 INTRODUCTION

As indicated in chapter 3 the purpose of the study was to investigate service-learning opportunities in an engineering faculty for a project that involved the building of school halls. This chapter presents the findings that resulted from such an investigation.

The chapter is divided into four sections. The first section focuses on how collaboration is conceptualized by the school teachers, learners, the service-learning officer, lecturers and students in terms of the school building project (Appendices 2-5), while the second section deals with the process of building a school hall (Appendix 1 and Photographs). In the third section attention is focussed on the match between the activities of the building process and the curriculum of the National Diploma: Building as well as on the opportunities for service-learning projects. The fourth section reflects on the responses of the school teachers, learners, the service-learning officer, lecturers and students with regard to possible contribution of higher education to the school and communities as well as possible contribution of the school and communities to student learning and development (Appendices 2-5). A brief analysis and interpretation is given after each section.

4.2 RESPONSES TO POSSIBLE COLLABORATION BETWEEN A HIGHER EDUCATION INSTITUTION AND THE SCHOOL BUILDING PROJECT

The following section gives a brief description of how the school teachers, learners, the service-learning officer, lecturers and students responded to the questions on possible collaboration and partnerships in terms of the school building project.

4.2.1 Responses from the School (Site A)

The responses from the school are divided into two sections. The first section documents the responses from the school teachers and the second section deals with the responses of the learners to the interviews.

4.2.1.1 Responses of school teachers

The school teachers were asked to respond to the questions that are written as themes below.

4.2.1.1.1 Involvement of higher education students in a school building project

When the teachers were asked if they would like students from a higher education institution to be involved in the school building project, the majority of the school teachers indicated that they would love to work with the students. Some of the teachers raised concerns with regard to working with students, indicating that there could be problems around the coordination of activities, supervision of the students and fitting of the activities of the building process in the rigid school timetable.

4.2.1.1.2 Explanation on how students could work together in a school building project

Explaining how the students could work together with the school in the building project; the teachers pointed out that the students could act as mentors to the school learners whilst sharpening their practical skills for the careers for which they were studying in a higher education institution.

4.2.1.2 Responses of the learners

4.2.1.2.1 Learners involvement in a school community-building project

When the learners were asked if they would like to be involved in the school building project, most of them indicated their willingness to be involved but some of the learners mentioned that they would not like to spend most of their study time to the building project as they would like to give attention to other subjects in order to pass their examinations.

4.2.1.2.2 Explanation of how learners could work together with students in the school building project

Explaining how the learners could work together with students in the school community building project, the learners mentioned different ways of working together. The learners said that the electricians work class could observe how the installation of electricity is done and try to install electricity on their own. They also mentioned that the bricklaying and plastering class could share their ideas and skills

taught to them in the lower grades and at the same time get new ideas from the students of a higher education institution. The learners further stated that the woodwork class could work together to measure, cut, join and polish wood with appropriate tools.

4.2.2 Responses from a Higher Education Institution (Site B)

The responses from a higher education institution are also divided into two sections. The first section deals with the responses of the service learning officer and the lecturers to the interviews. The second section focuses on the responses of the students.

4.2.2.1 Responses from lecturers and the service-learning officer in a higher education institution

The service learning officer was grouped together with the lecturers as she was also a lecturer involved with service learning activities before she was seconded to the position of service learning officer. The service learning officer and the lecturers were requested to respond to the questions outlined as subheadings below.

4.2.2.1.1 Involvement of higher education students in a school building project

When the lecturers and the service-learning officer were asked if they would like to involve their students in the school building project most of them expressed their

willingness to involve the students but some of the lecturers indicated that time constraints and other responsibilities that they had could make it impossible for them to participate fully in service-learning projects. The lecturers also mentioned that they would need funding and more time to plan the integration of the building activities with the curriculum as well as assessment tasks for the students. They also indicated that they would need guidance with regard to the planning, implementation and evaluation of service-learning projects as they would be expected to align the curriculum with project activities.

4.2.2.1.2 Explanation on how students could work together with the school in the community building project

Explaining how students in higher education could work together with the school in the school building project the lecturers and the service learning officer said that the students could share knowledge and skills and exchange ideas with one another. They also stated that the students could assist with the interpretation of plans, expose community members to the tools of education and at the same time see how their skills and theory can play out in terms of their future careers in the building field. The students could also use the opportunity to market their fields of study amongst the school children. It was further mentioned that the students could use notice boards to display electronic newsletters of construction in progress, attend technical meetings, interact with all role-players, discuss and give comments on building and construction plans.

4.2.2.1.3 Favourable factors for the establishment of partnerships between *a higher education institution and the school building project*

The following factors were mentioned by the lecturers and the service learning officer as favourable factors for partnership formation:

- There is institutional support for service learning and buy in from the government and community.

- The goals for service learning are transparent and well documented in official documents that deal with educational transformation.

- National workshops are conducted to enable lecturers to plan and develop service learning programmes and prepare students for service learning activities.

- The institution is providing human and financial resources for the planning and implementation of service learning activities.

- The need to re-curriculate or adapt the existing curricular in order to make service learning relevant to the needs of the community has been realised.

- There are opportunities for research as little research has been done on the role of service learning and partnerships in community development.

4.2.2.2 Responses of the students

4.2.2.2.1 Involvement of higher education students in a school building project

When the students were asked if they would like to be involved in the school community building project the majority of them expressed their interest and willingness to participate. Some of the students mentioned that the time for their involvement in the school building project could make them fail other courses while some students wanted to know how they would be assessed if they became involved.

4.2.2.2.2 Explanation on how students can work together with the school community in the building project.

Giving an explanation on how students could work together with the school community in the building project they indicated that they could share the knowledge and expertise that they gained from their courses with the school community. They also mentioned that they believed that there are things that they could also learn from the school and community.

4.2.2.2.3 Favourable factors for the establishment of partnerships between a higher education institution and the school community.

Responding to the question on factors that were favourable for the establishment of partnerships between a higher education institution and the school community the students pointed out that the University of Technology in which they studied, valued experiential learning and community development. The students further stated that both experiential learning and community development need the establishment of partnerships. They also mentioned that the building project could bring together the parents, learners, students and lecturers and lay the foundation for partnership formation. Some of the students mentioned teambuilding and willingness to learn as favourable factors for the establishment of partnerships. These responses indicated that these students did not fully understand the question.

From the responses of the school teachers, learners, the service-learning officer, lecturers and students it became clear that there was possible collaboration and partnership formation between the school and the higher education institution in terms of the school building project.

These research findings are in line with Wessels, Mosime & Seitheisho's (2000) claim that the collaboration of all the stakeholders could possibly address the needs of South African communities. The research findings also highlight the need for the development of an on-going relationship between the school community and the higher education institution. This relationship could develop into partnerships which

could address more developmental needs of the school community. The research findings correspond well with increasing calls for partnerships between higher education and society (Kiely and Nielsen 2003; Bringle and Hatcher 2002; Arriaga 2001; Torres 2000; Katz and Beach 2000;) as documented in Chapter 2.

What also became evident from the responses of the participants who were interviewed was that although they were willing to work together they recognized potential problems or logistical and practical difficulties that were associated with the planning and implementation of service-learning projects. These research findings concur with literature that documents problems that are associated with service-learning (Gerber and Heet 2000; Perusek 1995; Johnson 1995) as described in Chapter 2.

4.3 THE BUILDING PROCESS

4.3.1 The research findings from observations

The researcher observed the following four steps or activities of the building process:

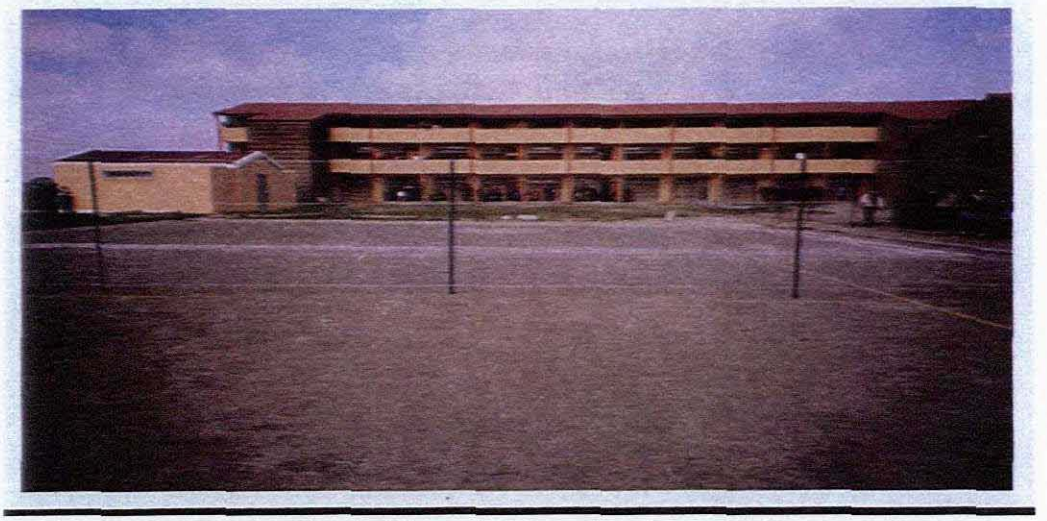
1. Planning of how the building is to be built. This involved the interpretation of the drawings or building plans.
2. Initial site work and setting out – site clearance. This involved the preparation of the site for construction activities such as setting out the building, establishing a datum level and levelling a site which is sloping.
3. The foundations involved the digging of holes or trenches and pouring of concrete in the footings.

4. Building of outer walls and interior construction which involved the building of floors, inner walls, windows and doors and activities such as electrical wiring, plumbing and insulation, and the building of the roof which involved the building of the frame with steel and putting up of the metal sheets.

4.3.2 *The research findings from the photographs*

The researcher also took the following photographs that showed different stages in the process of building a school hall.

4.3.2.1 Photograph 1: Planning to build a school hall

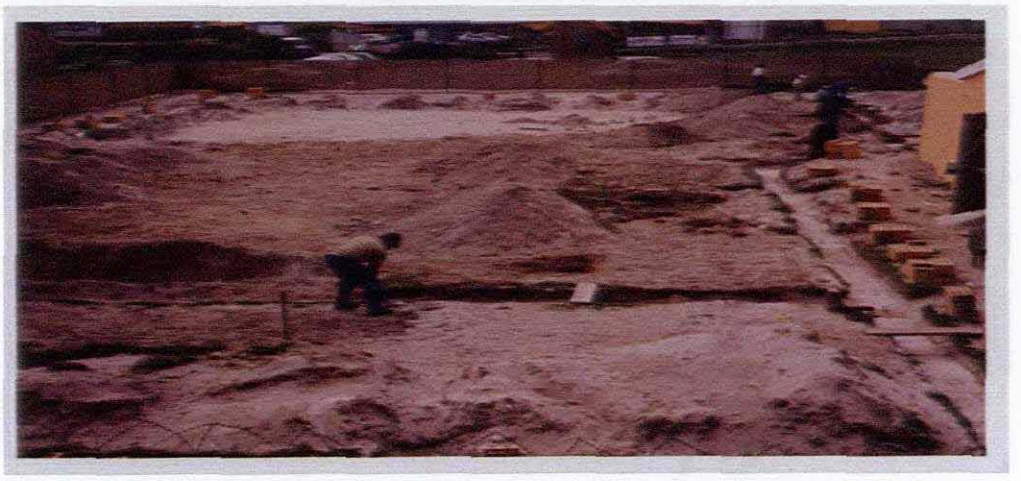


The white lines in the first photograph show how the plan or drawings of the school hall on paper were interpreted and measured on the ground in front of the double-storey building that consists of classrooms.

4.3.2.2 Photograph 2: Initial site work and setting out

The second photograph shows how the site was prepared for construction activities.

4.3.2.3 Photograph 3: Laying the foundation



The third photograph shows the digging of holes or trenches and pouring of concrete in the footings.

4.3.2.4 Photographs 4 and 5: Building walls and the roof

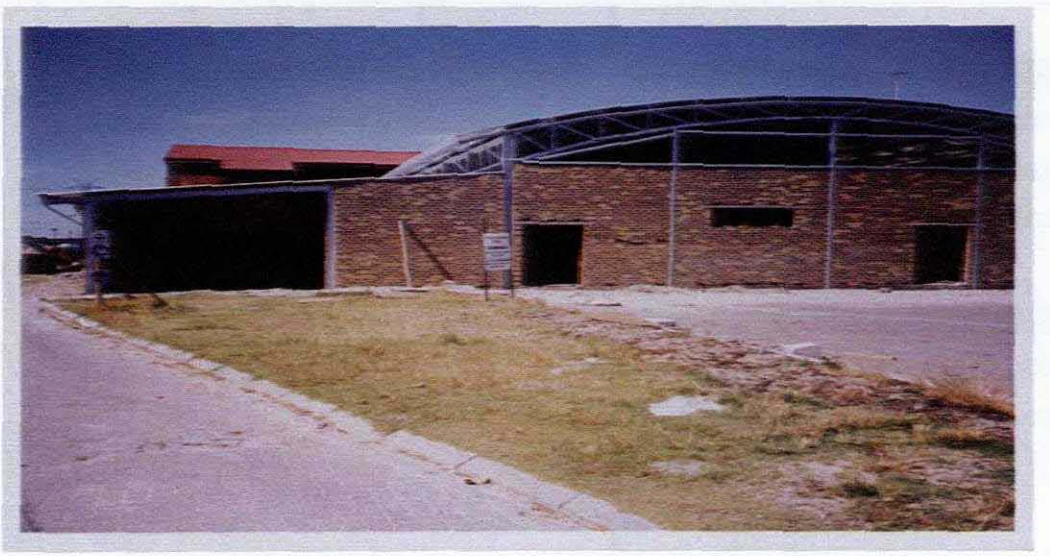
The discussion on the activities shown in photographs 4 and 5 has been combined because the school hall was built in a way that was different from the building process described in literature. Studies on the building process document five stages of the building process and split the building of the walls from the building of the roof. The roof is built after the walls have been completed. This was not the case with the building of the school hall. The roof was built simultaneously with the walls as shown in the following 2 photographs.

Photograph 4

Photograph 5

Photographs 4 and 5 show the building of outer walls, the roof and interior construction.

4.3.2.5 Photograph 6: The school hall that is close to completion



The research findings from observations and photographs on the steps or activities of the research process are similar to the description of the stages of the building process which is documented in literature (Department of Built Environment 2006; School Building Committee 2001; The World Book Encyclopaedia 1992) and discussed in Chapter 2. The only difference is in the number of stages in the building process. There were four stages that were observed and photographed while the literature presents five distinct stages.

4.4 OPPORTUNITIES FOR SERVICE LEARNING

4.4.1 Match between the activities of the building process and the curriculum documents for the National Diploma: Building.

THE BUILDING PROCESS	SUBJECT, LEARNING OUTCOMES AND COURSE CONTENT AS SET OUT IN THE CURRICULUM DOCUMENT
1. Planning of how the building is to be built. This involved the interpretation of the drawings or building plans.	**Quantity Surveying III (BQSR30)** The students are expected to translate the architects and engineer's drawings and specifications into a document that could be used for building. **Construction Management (BCMR30)** The students are expected to perform planning techniques on construction projects. **Course content** Application of planning procedures.

2. Initial site work and setting out – site clearance. This involves the preparation of the site for construction activities such as clearing the site, setting out the building, establishing a datum level and levelling a site which is sloping.	**Construction Technology III (BCTR 32)** The students are expected to gain knowledge of materials and construction methods. **Course content:** Demolishing and setting out **Quantity Surveying III (BQSR30)** measurements of buildings in respect of earthworks, framed structures and structural steelwork
3. The foundations involved the digging of holes or trenches and pouring of concrete in the footings.	**Construction Technology III (BCTR 32)** Students are expected to have a thorough understanding of foundations and piling technology in the building construction process. **Course Content**: Foundation & Piles
4. Building of outer walls and interior construction which involved the building of floors, inner walls, windows and doors and activities such as electrical wiring, plumbing and insulation	**Construction Technology III (BCTR32)** Students are expected to retain wall construction. **Course Content** • Classification of the process used in the construction and retaining of the walls. • Terminology and components of various types of walls. • The site excavation process in retaining walls.

5. Building of the roof which involved the building of the frame with steel and putting up of the metal sheets.	**Construction Technology III (BCTR32)** Students are expected to identify steel structures and the role that it plays in the *building construction.* **Course Content:** Steel structures – Steel frames

4.4.2 Responses of the lecturers with regard to opportunities for service-learning

When the lecturers were asked to mention the subjects or courses in the National Diploma: Building which could provide service-learning opportunities if linked to the building project they pointed out that Construction Technology 111, Quantity Surveying 111 and Construction Management 111 were the most appropriate subjects for the development of service-learning projects.

4.4.3 Responses of students with regard to opportunities for service-learning

Construction Technology 111, Quantity Surveying 111 and Construction Management 111 were also mentioned as favourable subjects for service-learning by the students.

From the matching of the curriculum documents with the activities of the building process and the responses of the lecturers and students it became clear that the activities of the building process could be linked to the learning outcomes and course content of subjects such as Construction Technology 111, Quantity Surveying 111 and Construction Management 111, thereby providing service-learning opportunities.

These research findings correspond with the academic nature of service-learning that has been documented in several studies. The linking of community service activities to the curriculum has been documented as one of the characteristics that distinguish service- learning from other forms of community engagement. According to Stanton, Giles and Cruz (1999) service-learning is a scholarly activity because community service is integrated into mainstream academic programmes and research. Sharing the same view Bringle and Hatcher define service-learning as

> a course-based, credit-bearing educational experience in which students participate in an organized service activity that meets identified community needs, and reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility (1995: 113).

Tsang (1998) describes how service activities could be integrated with the curriculum in an engineering field while Tsang, Martin and Decker (1997) list the steps for implementing service- learning projects in an Engineering faculty as described in Chapter 2.

The discussion above indicates clearly that service-learning aims at the following:

- **Community development** as the student is provided with opportunities to render meaningful service that aims to better the communities.
- **Student development** as the student is provided with opportunities to meet the learning outcomes of the course and the critical cross field outcomes.
- **Staff development** as opportunities are created for experiential learning that aims at improving classroom teaching.

The discussion also indicates that service-learning is a teaching and learning strategy that could assist in the achievement of academic excellence as well as scholarship within the new paradigm of responsiveness.

4.5 BENEFITS FOR SCHOOLS, COMMUNITIES AND HIGHER EDUCATION

4.5.1 How collaboration in the building project could benefit the school and community

4.5.1.1 Responses of school teachers

When the teachers were asked to mention possible benefits for the school and community when they collaborated with a higher education institution in a school

building project they responded by saying that students who had registered for the national diplomas and degrees in architectural technology, built environment, civil and electrical engineering could work collaboratively with the school teachers and assist the learners of the technical department who have to do their practicals on the building site. The teachers also pointed out that the learners could see how the theoretical component can be applied in the practical field and be able to discuss the new knowledge they had gained. The learners could integrate theory learnt in the classroom with practice, get first hand experience and be exposed to the latest materials and technology.

4.5.1.2 How learners could learn from their involvement in the school building project

When the learners were asked what they could learn from their involvement in the school building project they stated that through their involvement they would gain some experience and more knowledge. They also mentioned that they would develop practical and work-related skills and other skills such as communication and group work. The learners also indicated that through their involvement in the project they could have an idea of what is expected of them in a higher education institution as they would be exposed to various career pathways that they could take in a higher education institution.

4.5.2 How collaboration in the building project could benefit the higher education institution

4.5.2.1 Responses of the lecturers

4.5.2.1.1 How students could learn from their involvement in the school building project.

The lecturers mentioned that the students could develop a variety of skills from their involvement in the building process as they could serve as mentors to the learners and advisors to the community. Such skills included team building and group work skills, communication skills, presentation skills and practical skills that were related to the building process. The students could also understand their course content better as they would be provided with opportunities to integrate their theoretical component of the course with practice. It was also stated that the students would be provided with opportunities for reflecting and evaluating their actions on the building site when they returned back to their classes. The students could also understand their communities better and develop civic responsibility.

4.5.2.2 Responses of the students

4.5.2.2.1 How students could learn from their involvement in the school building project.

Describing what they could learn from their involvement in the school building project the students pointed out that they could learn how to work together as a team, and how to integrate theory with practice. The activities that could provide learning

experiences for the students included the interpretation of building plans, measuring and setting out the building site, working with cement, sand and concrete, and bricklaying. The students also mentioned that they would learn more about the communities and their diverse cultures.

From the responses of the school teachers, learners, lecturers and students it became clear that service-learning could be beneficial to all the research participants. The research findings on the potential benefits of service learning for all the concerned parties correspond well with literature that stresses the need for service-learning to benefit not only higher education institutions but also the communities (Conrad and Hedin 1997; Mouton and Wildschut 2002).

The research findings on the benefits of service learning are also in line with the benefits that are associated with service-learning and which have been documented by several authors (Robinson 2000; Tenenbaum 2000; Yoder, Retish and Wade 1996; Lerner 1999; Meichenbaum and Biemiller, 1998) as indicated in Chapter 2.

As stated in the previous chapter a variety of data gathering methods were used in order to find similarities and differences in the responses of the school teachers, learners, lecturers and students to the interviews as well as in the curriculum documents, photographs and the researcher's observations. From the similarities and differences in responses the researcher was able to draw conclusions and put forward some recommendations which are documented in Chapter 5.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

The research findings that were documented in Chapter 4 resulted from an investigation that attempted to explore opportunities for service-learning and possible contribution, collaboration and partnership formation between the school community and a higher education institution in terms of the school building project. The aim of this chapter is to present a summary of the research findings, conclusions and recommendations. This chapter is divided into three sections. The first section deals with the summary of the findings and conclusions; the second section puts forward some recommendations and the last section highlights the significance of this study.

5.2 SUMMARY OF THE RESEARCH FINDINGS AND CONCLUSIONS

The summary of the research findings was made possible by comparing the research findings from different data sources and draw similarities. The following section focuses on similarities in responses to a variety of data collection instruments that were used. The section on the summary of the research findings is subdivided into three parts.

The first part highlights the similarities between the responses of the school teachers, learners, lecturers, the service-learning officer and the students with regard to possible collaboration, partnership formation and benefits. The second part describes the similarities in the data that was collected through the use of photographs and the researcher's observations with regard to the stages during the process of building a school hall. The third part pays attention to the similarities between the responses of the lecturers and students and the findings that were obtained through matching the activities of the building process with the curriculum documents in order to establish the subjects or courses that could provide service-learning opportunities when linked to the school building project.

5.2.1 Possible collaboration, partnerships and benefits

5.2.1.1 Similarities between the responses of the school teachers, learners, lecturers and students with regard to possible collaboration and partnership formation .

With regard to the opinions of the research participants in site A (the school), the following similarities could be identified between the responses of the school teachers and learners to the interviews:

Both the school teachers and learners indicated their interest and willingness to work in a school building project together with the students and lecturers of a higher education institution. Some of the teachers raised concerns indicating that there could be problems around the coordination of activities, supervision of

higher education students and fitting of the activities of the building process in the school timetable. Some of the learners also expressed concerns with regard to the time-consuming nature that the building project could have and the negative impact it could have on other subjects.

An examination of data relating to the research participants in a higher education institution (site B) highlighted the following similarities:

The lecturers, the service learning officer and the students also indicated their willingness to work together with the school community in building the school hall. The lecturers and the service-learning officer pointed out that it could not be easy for them to give the necessary attention needed for planning and implementing service-learning projects due to time constraints, lack of funding and other responsibilities while some of the students stated that their fear was to fail other courses if they could be involved in the building project as they would not have sufficient time to focus on them. Concerns were also raised about the way the lecturers could assess the students' involvement in the building project.

5.2.1.2 Similarities between the responses of the lecturers and the students with regard to favourable factors for the establishment of partnerships

Both the lecturers and the students identified the factors that were favourable for working together in the school building project. The factors that were mentioned as favourable for collaboration and partnership formation between the school

community and the higher education institution included institutional support for service learning, emphasis on experiential learning and buy-in from the government and community.

5.2.1.3 Similarities between the responses of the school teachers and learners with regard to possible benefits for the school

Both the school teachers and learners stated that the school could benefit from collaborating with the higher education institution in the school building. It was pointed out that the involvement of the learners in the building project could benefit the learners in terms of their curriculum enrichment and exposure to various career pathways in a higher education institution. The school could also benefit in terms of having a big hall.

5.2.1.4 Similarities between the responses of the lecturers, the service-learning officer and students with regard to possible benefits for the higher education institution

The lecturers, the service-learning officer and students mentioned that the higher education institution could benefit from its involvement in the school building project. It was stated that the involvement of the students in the building project could benefit the students as it could enhance their understanding of course content and help them develop a variety of skills. The school building project could also provide opportunities for the higher education institution to develop

educational programmes that could be relevant and responsive to the needs of the society.

From the similarities in responses outlined in the above section the following conclusions could be drawn:

- There is possible collaboration and partnership formation between the school and the higher education institution.
- There are favourable factors for collaboration and partnership formation between the school community and the higher education institution.
- There are potential problems and logistical difficulties that are associated with the planning, implementation and evaluation of service-learning projects.
- The school community could benefit from working together with the higher education institution in the school building project.
- The higher education institution could also benefit from the joint intervention with the school in the building project.

5.2.2 Similarities in the data that relates to the stages of the building process and collected through the use of observations and photographs

The research findings from both the researcher's observations and photographs indicated that the building process has the following stages:

- Planning of how the building is to be built which involved the interpretation of the drawings or building plans.
- Initial site work and setting out which involved the preparation of the site for construction activities
- The foundations which involved the digging of holes or trenches and pouring of concrete in the footings.
- Building of outer walls, interior construction and the building of the roof.

5.2.3 Similarities between the responses of the lecturers, students and curriculum documents with regard to the subjects or courses that could provide service-learning opportunities

From the responses of the lecturers and students it became clear that the subjects that were seen as having the potential to provide service-learning opportunities in the National Diploma: Building were construction technology 111, construction management 111 and quantity surveying 111. These findings were similar to the research findings that resulted from the perusal of the curriculum documents. The curriculum documents indicated that the stages of the building process could be aligned to some of the learning outcomes and course content of the subjects that have been mentioned above as indicated in 4.4.1 of Chapter four.

The conclusion that could be drawn from the responses of the lecturers, students and the curriculum documents are the following:

- There is a match between the activities of the school building project and the curriculum documents of the National Diploma: Building.
- The subjects that could provide service-learning opportunities for the third-year students were construction management, construction technology and quantity surveying.

5.3 RECOMMENDATIONS

Since it seemed possible to plan and implement service-learning projects in the department of the Built Environment, since there are potential problems and logistical difficulties that were associated with the planning, implementation and evaluation of service-learning projects and since service-learning was seen as beneficial to both higher education and the school community, the development of service-learning projects needs to be encouraged by all the relevant stakeholders through the following ways.

- The higher education institution should consult and plan the development of service-learning projects with the school to enable each party to express its views and concerns about its involvement in the project.

- When planning service-learning projects, attention should be given to the manner in which the learning outcomes and course content are linked to the activities of the building project or needs of the community.

- The planning of assessment tasks and assessment criteria should be discussed with the students and the school before the students go out to the school building site.

- The higher education institution should have clear service-learning policies that could inform the schools and the students about what is expected of them. This means that the roles, responsibilities and expectations of the various stakeholders should be clarified and confirmed from time to time.

- The higher education institution and the school should have an efficient administrative system which could enable each and everybody involved in the project to get information on whom to contact when there is a need to do so.

- The lecturers should prepare the students well for the implementation of service learning activities by providing them with the necessary skills and knowledge needed for the project

- All the parties involved should be informed about the roster or timetable, issues of confidentiality and ethical issues.

- During the implementation of service-learning there must be proper co-ordination of activities, strict supervision and good communication between the various stakeholders.

- The lecturers and teachers involved in service-learning projects should be given less responsibilities in order to give more time to the planning, implementation and evaluation of service-learning projects.

- Time for reflection should be allocated so that the students, lecturers and the community partners could reflect on their experiences and plan for the improvement of future service-learning activities.

- Workshops need to be conducted to guide and assist the lecturers to plan, implement and evaluate service-learning projects as they would be expected to align the curriculum with project activities.

- There should be good working relationships, trust and a shared vision between the school community and the higher education institution in order to maintain and strengthen partnerships.

- The university needs to hire professional staff skilled in understanding communities and acting as liaisons among diverse constituencies. These

professionals could provide lecturers and students with a better understanding of communities, including information on community needs.

- An advisory committee for service learning should be established to monitor partnerships and guard against inappropriate dependency and power differences in decision making.

- The higher education institution should provide funding for the implementation of service-learning projects

- More partners such as the government departments and the private sector should be involved in financing service learning projects in order to increase educational benefits for school learners, teachers, students, lecturers and communities.

5.4 SIGNIFICANCE OF THE STUDY

Since there is a growing interest in service-learning, the study could be a useful and valuable contribution to our understanding of service-learning. It could also lead to the development of effective service-learning modules or programmes that could be responsive to the needs of the society. Higher education institutions could benefit as they may be engaged in curriculum renewal and offer effective service learning programmes that could contribute to community empowerment

and student development. This research could also encourage stronger links between the higher education sector and communities, stimulate debate on the role of higher education in community development, highlight the importance of service-learning and facilitate the establishment of partnerships. The study could add value to ongoing National Research Foundation (NRF) -funded research in higher education institutions in the Western Cape, which aims to prepare graduates, through under-graduate teaching and learning programmes and methodologies, to be effective in the world-of-work and society.

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APPENDIX 1: OBSERVATION SCHEDULE FOR THE BUILDING PROCESS OF THE SCHOOL HALL

ACTIVITY OF THE BUILDING PROCESS	DESCRIPTION OF THE ACTIVITY
Step 1:	
Step 2:	
Step 3:	
Step 4:	
Step 5:	

APPENDIX 2: INTERVIEW QUESTIONS FOR THE SCHOOL TEACHERS

The development needs of the schools in the Western Cape include school halls that could be used for a variety of activities. In response to this need, the Western Cape Education Department compiled a list of schools that require school halls and approached the Garden Cities' Archway Project to assist in the building of these school halls. At the same time the government is encouraging all South African higher education institutions to involve their students in community development through service-learning. This research is conducted to investigate the possibility of partnership formation and collaboration between higher education and the school building project. To assist with this research please respond to the following questions:

1. Would you like students from a higher education institution to be involved in the school community- building project?

2. If yes, explain how you think the students could work together with the school in the building project.

3. How do you think the school and communities could benefit from the collaboration in the building project?

APPENDIX 3: INTERVIEW QUESTIONS FOR THE LEARNERS

The development needs of the schools in the Western Cape include school halls that could be used for a variety of activities. In response to this need, the Western Cape Education Department compiled a list of schools that require school halls and approached the Garden Cities' Archway Project to assist in the building of these school halls. At the same time the government is encouraging all South African higher education institutions to involve their students in community development through service-learning. This research is conducted to investigate the possibility of partnership formation and collaboration between higher education and the school building project. To assist with this research please respond to the following questions:

1. Would you like to be involved in the school community- building project?

2. If yes, explain how you think you could work together with students from a higher education institution in the school community-building project.

3. What do you think you could learn for being involved in the school community-building project?

APPENDIX 4: INTERVIEW QUESTIONS FOR LECTURERS AND THE SERVICE LEARNING OFFICER IN A HIGHER EDUCATION INSTITUTION

The development needs of the schools in the Western Cape include school halls that could be used for a variety of activities. In response to this need, the Western Cape Education Department compiled a list of schools that require school halls and approached the Garden Cities' Archway Project to assist in the building of these school halls. At the same time the government is encouraging all South African higher education institutions to involve their students in community development through service-learning. This research is conducted to investigate the possibility of partnership formation and collaboration between higher education and the school building project as well as service-learning opportunities. To assist with this research please respond to the following questions:

1. Would you like to involve your students in the school community- building project?

   _____

   _____

2. If yes, explain how you think your students could work together with the school community in the building project.

   _____

   _____

   _____

   _____

   _____

   _____

   _____

3. What factors do you think are favourable for the establishment of partnerships between higher education institutions and the school community in terms of the school community- building project?

4. Which subjects or courses of the National Diploma: Building could provide service-learning opportunities if linked to the building of the school hall?

5. How do you think the higher education institution could benefit for being involved in the school building project?

APPENDIX 5: INTERVIEW QUESTIONS FOR STUDENTS IN HIGHER EDUCATION INSTITUTION

The development needs of the schools in the Western Cape include school halls that could be used for a variety of activities. In response to this need, the Western Cape Education Department compiled a list of schools that require school halls and approached the Garden Cities' Archway Project to assist in the building of these school halls. At the same time the government is encouraging all South African higher education institutions to involve their students in community development through service-learning. This research is conducted to investigate the possibility of partnership formation and collaboration between higher education and the school building project as well as service-learning opportunities. To assist with this research please respond to the following questions:

1. Would you like to be involved in the school community- building project?

2. If yes, explain how you think you can work together with the school community in the building project.

3. What factors do you think are favourable for the establishment of partnerships between higher education institutions and the school community in terms of the school building project?

4. Which subjects or courses of the National Diploma: Building could provide service-learning opportunities if linked to the building of the school hall?

5. How do you think you could learn for being involved in the school building project?

APPENDIX 6: LETTER SEEKING PERMISSION FROM WCED TO CONDUCT RESEARCH

No. 6 Kempleigh Court
Middel Street
Bellville
7530
14 July 2005

Dr Ronald Cornelissen
Research Unit
Western Cape Education Department
Private Bag X9114
CAPE TOWN
8000

Dear Dr Cornelissen

I am a registered M.Tech: Education student at the Cape Peninsula University of Technology (Bellville Campus) and the topic of my research is: **Investigating service-learning opportunities in higher education for a school community building project.**

I hereby seek permission to conduct my research at a school in Langa, and the research will be conducted from July to September 2005. The name of the school and the participants will not be published.

Thanking you in advance.

Yours faithfully

Miss N Rebe
(Student number: 201140071)

APPENDIX 7: LETTER GRANTING PERMISSION TO CONDUCT RESEARCH

Navrae
Enquiries
IMibuzo Dr RS Cornelissen

Telefoon
Telephone
IFoni (021) 467-2286

Faks
Fax
IFeksi (021) 425-7445

Verwysing
Reference
ISalathiso 20050815-0054

Wes-Kaap Onderwysdepartement

Western Cape Education Department

ISebe leMfundo leNtshona Koloni

Miss N. Rebe
Isilimela Comprehensive Schools
Washington Street
LANGA
7755

Dear Miss N. Rebe

RESEARCH PROPOSAL: INVESTIGATING SERVICE LEARNING OPPORTUNITIES IN HIGHER EDUCATION FOR A SCHOOL COMMUNITY BUILDING PROJECT.

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **16th August 2005 to 23rd September 2005.**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December 2005).
7. Should you wish to extend the period of your survey, please contact Dr R. Cornelissen at the contact numbers above quoting the reference number.
8. A photocopy of this letter is submitted to the Principal where the intended research is to be conducted.
9. Your research will be limited to the following schools: **Isilimela Comprehensive School.**
10. A brief summary of the content, findings and recommendations is provided to the Director: Education Research.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:

    The Director: Education Research
    Western Cape Education Department
    Private Bag X9114
    CAPE TOWN
    8000

We wish you success in your research.

Kind regards.

for: **HEAD: EDUCATION**
DATE: 16th August 2005

APPENDIX 8: LETTER SEEKING PERMISSION FROM THE HIGHER EDUCATION INSTITUTION TO CONDUCT RESEARCH

No. 6 Kempleigh Court
Middel Street
Bellville
7530
15 July 2005

The Service-Learning Office
Cape Peninsula University of Technology
PO Box 1906
Bellville
7535

Dear Sir/Madam

I am a registered M.Tech: Education student at the Cape Peninsula University of Technology (Bellville Campus) and the topic of my research is: **Investigating service-learning opportunities in higher education for a school community building project.**

I hereby seek permission to conduct my research in a higher education institution, and the research will be conducted from July to September 2005. The name of the institution and the participants will not be published.

Thanking you in advance.

Yours faithfully

Miss N Rebe
(Student number: 201140071)

APPENDIX 9: LETTER FROM THE HIGHER EDUCATION INSTITUTION GRANTING PERMISION TO CONDUCT RESEARCH

CAPE PENINSULA
UNIVERSITY OF TECHNOLOGY

22 August 2005

Miss N. Rebe
No. 6 Kempleigh Court
Bellville
7530

Dear Miss N. Rebe

RESEARCH PROPOSAL: INVESTIGATING SERVICE-LEARNING OPPORTUNITIES FOR A SCHOOL COMMUNITY BUILDING PROJECT

It is with great pleasure to inform you that the service-learning office has consulted the relevant department and faculty which accepted your application to conduct research.

We wish you well in your studies

Yours truly

Ms J. Scheepers
The Projects Officer
Community Engagement/Service-Learning
Cape Peninsula University of Technology
Tel: 9596868/9