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**THE DEVELOPMENT OF  
A FRAMEWORK FOR  
THE EDUCATION AND  
TRAINING OF  
UNDERGRADUATE  
PHYSIOTHERAPY STUDENTS**

Compiled by

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WITH PROFOUND GRATITUDE FOR THE  
HEALTH TO COMPLETE THIS STUDY

A FRAMEWORK  
FOR  
EDUCATION AND TRAINING  
FOR  
PHYSIOTHERAPISTS

MARIA WICHURA KRAUSE

*THIS THESIS IS PRESENTED TO MEET THE REQUIREMENTS*

*FOR THE DEGREE*

*Philosophiae Doctor in Physiotherapy*

*in the Faculty of Health Sciences*

*at the*

*University of the Free State*

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## SUMMARY

Higher education and health care have undergone profound changes over the past decade, world-wide but particularly in South Africa. Physiotherapy as a profession cannot stand apart from this, and therefore the education and -training of professional physiotherapists need to be taken under scrutiny.

The purpose of this research was to develop a framework with a view to making a contribution to physiotherapy education and training and health care.

The research comprised a literature survey (examining educational and health requirements, needs and trends), interviews with physiotherapy educators in the United Kingdom, (to investigate aspects of their education and training), and departmental workshops in the Faculty of Health Sciences, University of the Free State (to reflect on and brainstorm the physiotherapy curriculum of the Department of Physiotherapy of this University). The physiotherapy curricula of a number of institutions offering physiotherapy education and training were studied as well. The literature survey paid attention to the transformation of the health care system in South Africa, the transformation of higher education and academic and educational requirements in South Africa, national and international trends in physiotherapy education, and the physiotherapy requirements of the population of South Africa. Based on the results of these exercises, a measuring instrument for the education and training of professional physiotherapists was compiled.

The Delphi technique was employed as research method to test the measuring instrument. The Delphi technique is used to gain expert opinions on a matter or research problem. Delphi comprises submitting a questionnaire/research instrument to a panel of experts to elicit opinions and ideas. The instrument is implemented over a number of rounds until an acceptable degree of consensus is reached regarding the questions that were asked.

In this study the instrument was converted into a checklist, comprising statements which were to be rated on a 5-point rating scale, and an opportunity for respondents comment on the statements. Seven domain experts were selected as respondents.

Two rounds of the Delphi technique were required before acceptable consensus was reached and a final framework for the development of a physiotherapy education and training programme could be compiled.

In short this framework comprises a vision and a mission for professional physical therapy, the objectives of physiotherapy education and training and definitions of physiotherapy as a profession and the physiotherapist as a qualified, registered professional health care worker. This is followed by the exit level outcomes of a physiotherapist education and training programme, as well as the specific and critical (non-context specific) outcomes that should be achieved to obtain a qualification. The themes that ought to be covered in order to be able to reach the outcomes are described, as well as requirements for the education and training progress and structure, in which aspects such as teaching and training approaches, student selection, recognition of prior learning, mobility and portability are attended to.

This framework, which is the result of an in-depth and comprehensive study of higher education demands and requirements, the history of physiotherapy as health care profession and current needs of and trends in the profession, and the demands and requirements of health care in South Africa with special emphasis on physiotherapy, has the potential to be used over the wide front of physiotherapy education and training. The framework has been designed in a way which will enable institutions offering physiotherapy education and training to use it in developing innovative curricula. Through this a contribution can be made to physiotherapy education and training specifically, but also to health care.



## OPSOMMING

Hoër onderwys en gesondheidsorg het oor die afgelope dekade ingrypende veranderinge ondergaan, wêreldwyd en in Suid-Afrika. Fisioterapie as profesie kan nie hiervan ontkom nie, en daarom moet die onderwys en -opleiding van professionele fisioterapeute opnuut in oënskou geneem word.

Die doel van hierdie navorsing was om 'n ontwikkelingsraamwerk daar te stel met die oog daarop om 'n bydrae te maak tot fisioterapie-onderwys en -opleiding, en daarmee ook tot gesondheidsorg.

Die navorsing het die volgende behels: 'n literatuurstudie, waartydens ondersoek ingestel is na onderwys- en gesondheidsvereistes, -behoefte en -tendense; onderhoude met fisioterapiedosente in die Verenigde Koninkryk om aspekte van hul onderwys en opleiding te ondersoek; en departementele werkwinkels in die Fakulteit Gesondheidswetenskappe, Universiteit van die Vrystaat, om te besin oor die fisioterapie kurrikulum van die Departement Fisioterapie aan hierdie universiteit. Die fisioterapie-kurrikula van 'n aantal ander instellings in Suid-Afrika is ook bestudeer. In die literatuurstudie is aandag geskenk aan die transformasie van die gesondheidsorgstelsel in Suid-Afrika, die transformasie van die hoër onderwysstelsel en akademiese en onderwyskundige vereistes, nasionale en internasionale tendense in fisioterapie-onderwys en -opleiding, en die behoeftes van die bevolking van Suid-Afrika ten opsigte van fisioterapie. Op grond van die resultate van hierdie oefeninge is 'n instrument vir die onderwys en opleiding van professionele fisioterapeute daargestel.

Die Delphi-tegniek is hierna gebruik as navorsingsmetode om die instrument te toets. Die Delphi-tegniek word aangewend om deskundige menings oor 'n saak of navorsingsprobleem in te win. Delphi behels dat 'n vraelys of navorsingsinstrument aan 'n paneel van deskundiges voorgehou word om uit te vind wat die individuele menings en idees is. Die instrument word vir 'n

aantal rondtes geïmplementeer totdat 'n aanvaarbare mate van konsensus bereik is ten opsigte van die vrae wat gevra is.

In dié studie is die instrument omskep in 'n vraelys, bestaande uit stellings wat op 'n 5-puntskaal beoordeel moes word, en 'n geleentheid is ook aan respondente gebied om opmerkings aangaande die stellings te maak. Sewe domeindeskundiges is as respondente geselekteer.

Twee rondtes van die Delphi-tegniek was nodig voordat aanvaarbare konsensus bereik is, en 'n finale raamwerk vir die ontwikkeling van 'n fisioterapie-onderwys- en opleidingsprogram daargestel kon word.

Kortliks behels die raamwerk, wat die finale uitkoms van hierdie studie is, 'n visie en missie vir professionele fisioterapie, die doelwitte vir fisioterapie-onderwys en -opleiding, en definisies van fisioterapie en die fisioterapeut as gekwalifiseerde, geregistreeerde professionele gesondheidswerker. Dit word gevolg deur die verskillende tipes uitkomste wat bereik moet word om 'n kwalifikasie te behaal. Die temas wat gedek moet word ten einde in staat te wees om die uitkomste te bereik, word beskryf, asook die vereistes vir die onderwys- en opleidingsproses en -struktuur, waar aandag geskenk word aan aspekte soos onderrig- en opleidingsbenaderings, keuring van studente, erkenning van voorafleer, mobiliteit en oordraagbaarheid.

Die raamwerk, wat die resultaat is van 'n intensiewe en omvattende studie van hoëronderwyseise en -vereistes, die geskiedenis van fisioterapie as gesondheidsorgprofessie, huidige behoefte wat deur fisioterapie aangespreek kan word en tendense in die professie, asook die eise en vereistes van gesondheidsorg in Suid-Afrika, met spesifieke verwysing na fisioterapie, het die potensiaal om oor 'n wye front in fisioterapie-onderwys en -opleiding aangewend te word. Die raamwerk is so ontwikkel dat dit instellings wat fisioterapie-onderwys en -opleiding aanbied in staat sal stel om dit te gebruik in die ontwikkeling van innoverende kurrikula. Hierdeur kan 'n bydrae gelewer word tot fisioterapie-onderwys en -opleiding spesifiek, maar ook tot gesondheidsorg en die welsyn van die bevolking.

## KEY ITEMS

Physiotherapy

The South African Society of Physiotherapy

Education and Training Programme

Framework

Outcomes-based Programme

Community-based Programme

South African Qualifications Authority

National Qualifications Framework

Delphi Technique

Community Health Care Needs

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# **CHAPTER 1**

## *Orientation to the study*

---

### 1.1.1 Introduction

Political emancipation in South Africa has gone beyond social reform. Change in higher education is prevalent, and to ensure accreditable education and training in health sciences, revised curricula have become essential.

Transformation is not new to universities in South Africa. The transition to a new millennium involved some of the greatest political, socio-economic and technological steps in history and created new opportunities and challenges for higher education in South Africa.

Many changes occurred, and are still occurring in education and training for health sciences as well: the focus has shifted from hospital-based to community-based education, with an emphasis on primary care. Education and training institutions are faced with a paradigm shift from traditional content-based and teacher-centred teaching methods to student-centred and outcomes-based teaching and learning. Education and training also have to be delivered within a programme-based approach; diversification and access to programmes have to be promoted and facilitated, and learning systems in South Africa have to become more flexible to meet the criteria for qualifications laid down by the South African Qualifications Authority (SAQA) (Strydom, 1998).

Against the backdrop of changes in higher education (and health sciences education in particular), the socio-political changes taking place in South Africa, changing health needs of the population of South Africa, and international trends in health sciences education, the time has arrived for

policy- and decision-makers to reconsider the education and training health care professionals are receiving. It is currently essential to ensure that programmes satisfy national and international needs and requirements. In addition, ensuring that the programmes are in line with what the professional bodies overseeing the professions require, an attempt must be made to maintain high quality education and training relevant to the needs of the people and times, and on a par with what is offered elsewhere.

### **1.1.2 Orientation and statement of the problem**

The difficult question facing educators in South Africa today is how to attend to the problems of historically disadvantaged academics and students without compromising quality in research and higher education, and what yardstick is to be used to measure quality.

These two problems, namely:

- the maintenance of high quality education and training, and
- a yardstick to measure high quality education and training, are internationally reinforced by the following statements:

*“Around the world higher education institutions are becoming increasingly aware of the importance of quality considerations in the proposals for and operation and delivery of teaching and research programmes” (cf. Dowling, 1999).*

*“Quality is easily recognised, but very difficult to define - there is no standard definition for quality, but there is a need for a definition to be decided on, fitting the circumstances in which it is to be used” (cf. Verkleij, 1999:2-6).*

South Africa has an additional problem of having to cope with the legacy of *apartheid* and the deleterious effect it had on, amongst others, higher education.

Physiotherapy as a profession has grown out of a need for clinical services. Through personal experience stretching over forty years of clinical work and lecturing the researcher has witnessed a change in physiotherapy practice. In the 1960's physiotherapy was mainly practised in health institutions and the physiotherapy subjects consisted of basic disciplines such as kinesiology, electrotherapy and massage applied to medical and surgical conditions.

Through professional evolution, inspired by innovative research and public awareness of the positive results that could be obtained through physiotherapy intervention, changes have taken place. The profession has progressed to the extent that intervention through basic physical techniques can no longer suffice.

The role of the physiotherapist has also changed. With the inception of physiotherapy in South Africa the service was "*vocational*" and clinically orientated, with the qualification being a diploma (National Physiotherapy Committee, 1998:20). "*Today physiotherapists are products of a university education. Not only are they expected to acquire discipline-specific skills, but also skills common to all university graduates*" (Hunt, Higgs, Adamson & Harris, 1998). This is clearly demonstrated in the new documents referring to The Minimum Standards for Physiotherapists and the new Scope of Practice for Physiotherapists (HPCSA, Form 2002, Appendix 1D: HPCSA, Eales, Dec. 2001, Appendix 1E).

In the document stating what the Minimum Standards for the Training of Physiotherapy Students should consist of (Appendix 1D) reference is made to subjects that have, over the last two decades, either expanded clinically or have gradually been introduced into the curriculum. These subjects include, among others, neurological conditions, the treatment of patients in intensive

care units, and physiotherapy in the community. However, no mention is made of orthopaedic-manipulative techniques.

The new role of the professional physiotherapist is clearly demonstrated in these documents. Reference (cf. Appendix 1E) is made to the holistic approach to health care that the physiotherapist must now assume. A physiotherapist is required to master new skills such as problem solving and clinical reasoning as well as the ability to assess and evaluate an individual's needs and communicate collaboratively with associated professions. In addition the physiotherapist is placed in the new sphere of being a first line practitioner.

In university programmes for physiotherapists, learning outcomes include education and training. To contextualize this, education is described as "*the systematic instruction, schooling, or training of children or young people, or, by extention, instruction obtained in adult life; the whole course of such instruction received by a person. Also, provision of this, as an aspect of public policy*" (Oxford Dictionary, 1993). Training is described as "[t]he act as process in or for a particular skill, profession, occupation, etc." (Oxford Dictionary, 1993). These two requirements merge the academic requirements (specific outcomes) and practical skills (critical outcomes) a physiotherapy graduate must possess.

In health services, community health care needs are mainly addressed through primary health care. In the education and training of physiotherapy students these needs can best be attended to by means of community-based education and training (CBET). However, CBET is poorly developed in certain areas in South Africa. In addition very little research has been done on the actual needs of underprivileged communities. Only recently has a survey been performed to ascertain the health status and health care needs of all communities in South Africa (Department of Health, 1999:1). According to the records offered by the HPCSA approximately 80% of physiotherapists work in private practice or in large centres and 20% in government service. This uneven distribution of physiotherapy services results in underprivileged

clients in rural and remote areas being denied comprehensive physiotherapy services. CBET for physiotherapy students is directly influenced by poor physiotherapy service delivery in rural and remote areas. Due to this uneven distribution of clinical services there is a dearth of physiotherapists, whether in public service or private practice, in remote and rural areas who can offer supervision and training to physiotherapy students. CBET for physiotherapy students in remote and rural areas is directly influenced by this factor.

The extent to which practical experience and competencies are to play a role in primary health care in a physiotherapy education and training programme is not stipulated by the Professional Board for Physiotherapy, Podiatry and Biokinetics and is therefore not standardised in South Africa. The Professional Board for Physiotherapy, Podiatry and Biokinetics however, does state that a physiotherapist must be able to use the skills and competencies that have been acquired during education and training for assessing, educating and counselling comprehensively in all four areas of health care delivery (SASP, 1995:1). However, the Professional Board for Physiotherapy, Podiatry and Biokinetics does not state to which extent these competencies and skills (*cf.* Chapter 2) can and must be employed, or the weighting required of exit-level outcomes to graduate as a physiotherapist. Mention is only made to the minimal total hours of clinical practice over the four years as being 1000 hours (Appendix 1D).

This information does not offer the physiotherapy educator sufficient direction regarding the application of physiotherapeutic skills or the strategies required to compile a framework for the education and training of physiotherapy students. In short specific exit-level outcomes are lacking.

Impacting on this issue are the changing demands and challenges the new health services dispensation in South Africa is enforcing on higher education. The proposed health sector dispensation is based on a common vision, which reflects the principles of the Reconstruction and Development Programme (RDP) for South Africa, of which cognicance shall have to be taken.

The vision states:

- *“The health sector must play its part in promoting equity by developing a single, unified health system.*
- *The health system must focus on districts as the major locus of implementation, and emphasise the primary health care (PHC) approach.*
- *The three spheres of government, NGO’s and the private sector will unite in the promotion of common goals.*
- *The national, provincial and district levels will play distinct and complementary roles.*
- *An integrated package of essential PHC services will be available to the entire population at the first point of contact”*  
(Department of Health, 1997:2).

In addition the National Plan for Higher Education gives effect to the vision for the transformation of the higher education system in South Africa (Republic of South Africa, 1997). This plan provides an opportunity and challenge to chart a path that locates the higher education system as a key engine driver and contributor to the reconstruction and development of the South African society. The national plan intends to develop a threefold higher education system stating:

- *“Human resource development: the mobilisation of human talent and potential through lifelong learning contributing to the social, economic, cultural and intellectual life of a rapidly changing society.*
  
- *High level skills training: the training and provision of labour force to strengthen this country’s enterprises, services and infrastructure. This requires the development of professionals and workers with globally equivalent skills, but who are socially responsible and conscious of their role in contributing to the national development effort and social transformation.*
  
- *Productivity, acquisition and application of new knowledge: national growth and competitiveness is dependent on continuous technical improvement and innovation, driven by a well-organised vibrant research and development system which integrates the research and training capacity of higher education with the needs of industry and of social reconstruction” (Republic of South Africa 1997a:12; Republic of South Africa, 2001:8).*

Against this backdrop the National Qualifications Framework (NQF) (NCHE, 1996), is attempting to co-ordinate and reconstruct higher education for all citizens (advantaged and disadvantaged) in a higher education system. The main aim of the system is to make education and training more relevant and accessible, whilst still maintaining quality.

By implication the threefold criteria for higher education and the requirements stipulated by the NQF and the RDP shall have to be merged with the exit-level outcomes for new graduate physiotherapists should any meaningful transformation in physiotherapy education be desired by the profession.



Abundant literature is available on all these topics, however, what is not available is a uniform framework to guide and assist policy-makers and programme directors. This was identified as a deficiency and it was decided to address the deficiency with an in-depth scientific study.

## **1.2 AIM AND OBJECTIVES**

### **1.2.1 Aim of the study**

The main aim of the study was to develop a framework for undergraduate programmes for the education and training of physiotherapists in South Africa, and, emanating from that, to make proposals to the Professional Board for Physiotherapy, Podiatry and Biokinetic, the Standards Generating Body for Physiotherapy and higher education institutions in the country regarding education and training of physiotherapists.

### **1.2.2 Objectives**

In order to achieve the aim of the study the following objectives were pursued:

- Investigating the current situation with regard to physiotherapy education and training programmes.
- Identifying the factors that will influence the design of physiotherapy education and training programmes.
- Developing a research instrument for the implementation of the Delphi technique.
- Developing a framework for physiotherapy education and training based on the key findings from the research instrument.

### 1.3 THE RESEARCH PROCESS

This study was constructed to compile an education and training framework for undergraduate physiotherapy students in South Africa. A qualitative study was performed. Based on a literature survey, interviews with physiotherapy educators in the United Kingdom and workshops in the Physiotherapy Department of the University of the Free State, a research instrument was compiled.

To ensure the comprehensiveness of the different findings and validity of the study, triangulation was applied. This involved comparison of the results of two or more different methods of data collection (Mays & Pope, 2000:4). In this study data was collected from semi-structured interviews, document analysis and departmental workshops. Triangulation relies on the assumption that any weakness in one method will be compensated for by strengths in the other. The researcher looked for patterns of convergence to develop or corroborate an overall interpretation (Mays & Pope, 2000:4).

The strategy of purposeful sampling was applied with the selection of universities visited in the United Kingdom, and with the selection of domain experts. This strategy seeks information – rich cases which can be studied in depth. The aim of this strategy is to capture or describe the central themes or principle outcomes that cut across a great deal of participation or programme variation (Patton, 1990:172).

An element of quantitative research was built into the research instrument by means of bipolar scales or as better known, the Likert scale. A 5-point scale was used with 1 being the most positive and 5 the most negative. The research instrument was validated by means of the Delphi technique.

Seven domain experts were purposefully sampled as panellists. The purposeful sampling was based on their clinical experience and/or involvement in education and training of physiotherapy students. It was decided to use the Delphi technique to gain stability of the opinions of the group rather than individuals with regard to the statements in the research instrument (Linstone & Turoff, 1975:263). The Delphi technique was implemented on two occasions.

From the responses obtained from the research instrument the final framework was developed. A nomenclature pertaining to the study is offered in Appendix 11A.

#### **1.4 ARRANGEMENT OF THE REPORT OF THE STUDY**

This report of the research has been arranged in the following chapters:

In **Chapter 1** the topic is introduced and an orientation regarding the problem is provided, followed by the statement of the problem and the aims and objectives of the study.

**Chapter 2** is devoted to the literature review. Factors influencing curriculum design in general and in South Africa in particular are described. These include factors pertaining to higher education and to health sciences, and health care needs and services. The current changes in education and training in South Africa and the health care needs in South Africa are taken into account. The curricula of physiotherapy programmes of other universities, in the United Kingdom and South Africa, are taken under scrutiny and described. Information collected from semi-structured is also offered.

In **Chapter 3** the research methodology is explained.

**Chapters 4** describes the key findings and interactions as identified in higher education and health sciences.

In **Chapter 5** the analysis and interpretation of the responses and comments received from the domain experts is offered.

**Chapter 6** contains the final, processed data from the measuring instrument, which by implication comprises the final Framework for the Education and Training of Undergraduate Physiotherapy Students.

**Chapter 7** is devoted to summary, conclusion, recommendations and limitations of this study.

For reference purposes the Harvard Reference System has been used throughout this study.

## **1.5 CONCLUSION**

From the identified problem it became clear that the many and varied changes health care and health sciences education are undergoing in South Africa and in other parts of the world, compel policy-makers and educators to think anew about the curricula for education and training programmes. The final framework is offered in a form that can be of benefit to undergraduate physiotherapy education and training in universities and training institutions in South Africa, and has the potential to assist the process of benchmarking for acceptance of South African students' qualifications in overseas countries.

## **CHAPTER 2**

### *Factors influencing programme design*

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#### **2.1 INTRODUCTION**

This study was aimed at developing a framework for an undergraduate physiotherapy education and training programme, and in order to establish a sound basis for the programme, it is necessary to take a brief look at the history of physiotherapy education and training in South Africa, and investigate the factors impacting on its development.

This chapter serves as an orientation with regard to the present position of the physiotherapy profession and health care in South Africa. The requirements for student training as related to the present higher education dispensation and the National Health Care philosophy and strategy in South Africa are also attended to.

The historical background to the profession in South Africa will first be attended to, providing background information contextualising the present factors influencing the education and training in health care professions, with special reference to physiotherapists in South Africa.

## 2.2 HISTORICAL DEVELOPMENT OF PHYSIOTHERAPY EDUCATION AND TRAINING IN SOUTH AFRICA

The first physiotherapy training in South Africa was a diploma course instituted at the University of the Witwatersrand in the 1940s. A National Diploma in Physiotherapy was first offered in Pretoria in 1949. The University of Cape Town instituted a diploma in 1957 and gradually the other universities such as Durban, the Medical University of South Africa (Medunsa) and Bloemfontein followed suit (National Physiotherapy Committee, 1998:20).

In the 1950s the University of the Witwatersrand converted its training from a diploma course to a four-year Bachelor of Science degree course, and in 1966 the University of Stellenbosch followed suit. Following international trends and in accordance with the World Confederation for Physical Therapy, the remaining five institutions offering physiotherapy changed to four-year degree courses by 1980, joined by the University of the Western Cape (UWC) to bring the number of institutions offering physiotherapy training in the country to a total of eight (National Physiotherapy Committee, 1998:20).

This development of education and training for the profession of physiotherapy in South Africa was a direct result of the development of physiotherapy in other countries especially the United Kingdom, as well as for, the need for physical rehabilitation in South Africa. Physical rehabilitation was urgently required world-wide after the first world war. To meet these demands the first recognised physiotherapy department was established in the United States of America in 1916 (Cilliers, 1979:10). Realising the need in South Africa the national organisation for masseurs and medical gymnasts held the inaugural meeting of the South African Society of Massage and Medical Gymnastics in December 1924.

In 1932 the Society changed its name to the South African Society of Physiotherapists and after the Second World War the name was changed to the present – The South African Society of Physiotherapy (SASP) (National Physiotherapy Committee, 1998:13).

The SASP was a founder member of the World Confederation of Physical Therapy and from 1963 to 1970 was represented on the Executive Committee.

Membership of the SASP has always been open to all physiotherapists; the only requirement of membership being a professional qualification in physiotherapy that is registrable. All qualifications at South African training institutions were registrable with the South African Medical and Dental Council (SAMDC). In 1973 the Professional Board for Physiotherapy under the umbrella of the SAMDC was established with compulsory registration for all physiotherapists.

After 1994 the SAMDC underwent major changes that corresponded with the changes taking place in all the professional boards. An Interim SAMDC was appointed and in 1999 the Health Professions Council of South Africa (HPCSA) was constituted in terms of the Health Professions Act 1974. Twelve professional boards were established for the various professions as professions that were grouped together with the HPCSA being the umbrella council. Physiotherapists must now register with the Professional Board for Physiotherapy, Podiatry and Biokinetics. This board assumes responsibility for implementing policy decisions for the HPCSA and addressery operational issues (Health Professions Council of South Africa, 1999).

Concurrently, similar developments were taking place in other countries. In 1920 physiotherapists in the United Kingdom (UK) were granted a Royal Charter and the Chartered Society of Physiotherapy (CSP) was established (CSP, 1996:s.p.). In 1960 the Physiotherapists' Board was established under the Council for Professions Supplementary to Medicine and the Privy Council. *"In 1992 all physiotherapy education and training in the United Kingdom was transferred to the university sector. Subsequently advances have been made towards physiotherapy becoming an bio-psychosocial profession, and new methods of health care delivery have resulted in physiotherapists operating with greater autonomy in an increasingly greater range of settings"* (CSP, 1996:s.p.). *"The developments in the UK, and to a lesser extent developments in the United States of America (USA), were directly responsible for the way in which physiotherapy training in South Africa was initially approached. However, government policy and the physiotherapeutic community needs in South Africa gradually developed in a way that increasingly diverged from the initial, historical, United Kingdom-based models of the 1940s"* (National Physiotherapy Committee, 1998:20).

Initially the training courses, based on the British model, entailed clinical training that occurred exclusively at the large training hospitals attached to the medical schools in which the Departments of Physiotherapy were based. In the Western Cape these hospitals catered for all races, but in the other provinces there were separate hospitals for blacks and whites. Students of the historically white universities treated patients of all races, but those at Medunsa and the University Western Cape received their clinical training with black patients. During the late 1980s partial integration started taking place in the physiotherapy departments. There is no evidence that integration was pro-active or based on the principles of human rights, but rather that it was expedient and occurred in response to staff and/or space constraints (National Physiotherapy Committee, 1998:20).



In the 1960s training became available to black students with the Establishment of University Colleges for Non-white persons (University Education Act 45 of 1957). The SASP (South African Society for Physiotherapy) lobbied for the opening of all universities to students of all races (National Physiotherapy Committee, 1998:8). The SASP was also instrumental in the upgrading of all training courses to a four-year Bachelors degree in Science or a Bachelors degree in Physiotherapy.

In 1985 physiotherapists were granted primary contact status when the regulation requiring medical referral of patients was abolished. Physiotherapists now not only work in close collaboration with the medical practitioner, but may also evaluate patients scientifically, arrive at a physical diagnosis, plan and implement treatment and make decisions regarding termination of physiotherapy treatment. The SASP has stressed educating its members regarding the increased professional, legal and social responsibilities implicit in primary contact status (National Physiotherapy Committee, 1998:16).

Today, according to information obtained from the eight training institutions, clinical training in South Africa no longer takes place in the teaching hospitals only, but for the past couple of years has moved increasingly to secondary hospitals, community health centres, clinics, special schools, schools, geriatric centres and other community settings - including both peri-urban and, where possible, rural facilities. Although it is still deemed necessary to qualify physiotherapists whose education and training are internationally acceptable, the scope of practice in South Africa today differs from that of the UK, and dictates the contents of the training programme (*cf.* Appendix 1E).

A variety of bodies, councils, societies and persons were instrumental in the changes that took place and are still taking place in physiotherapy as profession and physiotherapy training in South Africa, and their influence had to be taken cognisance of in developing the measuring instrument for this study.

In the following literature survey the data impacting on the compilation of the measuring instrument have been analysed. This formed one of the methods used for the collection of raw data for the process of triangulation.

The literature survey will be addressed under four sections, namely:

- transformation of the health care system in South Africa (*cf.* 2.3);
- transformation of education and training in South Africa (*cf.* 2.4);
- national and international trends in physiotherapy education (*cf.* 2.5);
- physiotherapy requirements of the population of South Africa (*cf.* 2.6).

### **2.3 TRANSFORMATION OF THE HEALTH CARE SYSTEM IN SOUTH AFRICA**

Health care is a pressing social and political issue in South Africa. A great deal of change has occurred over the past couple of years in health care education and training and health care delivery. Tertiary education institutions in South Africa have been responding to the socio-political changes since 1994 and shall have to continue to respond if they want their education and training to remain relevant.

### 2.3.1 Levels of health care

*According to the White Paper on health care in South Africa every effort should be made to ensure the improvement in the quality of services at all four levels of health care. Health teams and workers should develop a caring ethos and commit themselves to the improvement of the health status of their communities. One of the main goals in the restructuring of the health sector in South Africa is to unify the fragmented health services at all levels into a comprehensive and integrated National Health Service (Republic of South Africa, 1997).*

Health care services in South Africa are divided into four functional levels, namely:

- Selfcare
  - The patient cares for his own health, when it suits him and where he finds himself (Republic of South Africa, 1997).
  
- Primary care
  - This is the first type of contact the patient has with a trained health care worker and this can be a medical practitioner, a nurse or a community health worker e.g. any member of the health team. It takes place at fixed hours at an out-patient department of a hospital, a clinic, private practitioner, factory clinic, mobile clinic, etc. (Republic of South Africa, 1997).
  
- Secondary care
  - The patient gets admitted to a health facility, hospital or clinic. It functions on a 24-hour basis at a general hospital and 12 to 16 hours at day hospitals. The care is rendered by medical practitioners, nurses and ancillary health services

(Physiotherapists, occupational therapists, radiographers, laboratory technicians, etc.) (Republic of South Africa, 1997).

- Tertiary care
  - Highly sophisticated health care usually only available in a national institute or academic hospital, e.g. cardio-thoracic surgery, neurosurgery, plastic surgery, amniotomomy under ultrasonic vision, computed tomography, whole body scan, radiation therapy etc. The care is rendered by highly trained members of the health team (Republic of South Africa, 1997).

All four levels of health care include promotive, preventive, curative and rehabilitative aspects of care.

According to Parker this four-level model, although not a perfect fit in every aspect, may be helpful in conceptually differentiating functional levels of care, and can be applied in divergent situations. *"This model is still in use today"* (Parker, 1974:18).

### **2.3.2 Levels of prevention**

The prevention of illness, disease and disability is divided into three main levels world wide and in South Africa, namely:

#### **2.3.2.1 Primary prevention (promotive and preventive)**

At this level the main emphasis is on the promotion of health.

## **Promotitive**

Primary prevention attends to aspects of health care before any pathology is present. At this level the main aim is to obtain physical, social and psychological well-being for all citizens to improve their quality of life. The responsibility to achieve this rests with the individual or the community through volunteers and political associations or bodies outside the public sector.

## **Preventitive**

Specific prevention also takes place before any pathology is present and aims to protect the individual and community against specific diseases. The individual and workers at Primary Health Care level are responsible to achieve this.

### **2.3.2.2 Secondary prevention (curative)**

At this level a diagnosis of specific pathology has been made and the emphasis is on early prevention of further complications and the treatment of the condition.

## **Early diagnosis and treatment**

The main aim at this level is to resist the duration and degree of morbidity and to prevent the spread of communicable diseases. The service is offered by the private and public sector.

## **Limitation of disability**

The aim at this level is to prevent complications and death and improve existing disability. The service is offered by the private and public sector.

### **2.3.2.3 Tertiary prevention (curative and rehabilitative)**

At this level the main aim is to restore the individual to the highest functional level possible. The emphasis is on curative and rehabilitative intervention to achieve optimal mental, cognitive, physical and social levels for social integration and independence of the individual.

To achieve this the individual, community health worker, organisations, industries and private/public sectors are responsible (Republic of South Africa, 1997).

### **2.3.3 Primary health care (PHC)**

The World Health Organisation defines primary health care as follows: *"Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process"*

(WHO, 1978:3-4; WHO, 1987). The PHC concept was first mentioned in relation to health care in South Africa in 1976 by Minister van der Merwe, the then Minister of Health of South Africa, and re-introduced in South Africa in 1988.

In South Africa this concept has become the cornerstone for the current government's health philosophy as documented in the Government Gazette in which the transformation of the health system of South Africa is spelt out (Republic of South Africa, 1997).

The impetus of the primary care movement partly springs from the humanistic wish for access to and continuity of care for all, and partly from a pragmatic reality (Miller, 1983:1). Primary health care is defined differently by different people, and primary care sites vary widely in philosophy, organisation and as regards the health provider roles. Thus there is no one primary care model (Miller, 1983:6). In South Africa the PHC approach went through a process of evolution. It now extends beyond the narrow, clinical use of the term: it is more than medicine. To explore the question, "What is primary care?" several perspectives must be taken into account. Within society many different systems are involved in activities directly affecting the health of people. Aspects such as road and city planning, education and welfare programmes, agriculture and energy resources are all inextricably bound to the health and disease status of individuals and groups (Parker, 1974:17). Certain organisations and labour force configurations, however, combine to form a health care system of a community, each with its own or a variety of tasks and responsibilities. These subgroups are concerned with matters such as planning or activities to protect people from hazards in the environment, whilst others may be geared to educational and promotive approaches to medicine and health care (Parker, 1974:18).

To reinforce the PHC approach Bradshaw states that “[T]he health of a nation is determined by many factors. Demographic, socio-economic and environmental factors interact with individual behaviour and health service interventions resulting in a desired health profile” (Bradshaw, 1997:s.p.). “Health surveys carried out in South Africa (cf. Medical Research Council s.a.; Department of Health, 1997; Bradshaw, 1997) revealed numerous health problems. According to the Department of Health one of the most important is “[t]o extend basic primary care to all who need it will be particularly important in the pursuance of the goal of Health for All by 2000, a more comprehensive approach, including more preventive and health promotion initiatives, is needed in South Africa to achieve the desired health profile” (Department of Health, 1997).

As early as 1988 De Beer, Buch and Mavrandonis (Medical Research Council, 1988:88) stated that a National Health Service in South Africa should be built around the principle of the primary health care approach developed by the WHO. De Beer *et al.* (Medical Research Council, 1988:88-89) identified ten often overlapping obstacles to the transformation of the then health system to a national health service based on a primary health care approach. They are:

- absence of political will;
- resistance from the private sector;
- difficulty of expanding the service to meet increased demands;
- demand for tertiary care;
- demand for curative care;
- expectations of the affluent and powerful;
- power of professionals;
- a legacy of unequal resource distribution;
- legacy of fragmentation; and
- nature of health service management.



De Beer *et al.* (1988:88-89) suggested that these ten obstacles could only be addressed by a democratic government that is accountable to the majority. Van Niekerk and Sanders (1997:s.p.) asserted that to strengthen the capacity of health personnel to implement and manage a PHC-based system would require attention from both the health and education sectors. According to these authors the knowledge and skills of personnel employed in the public and private sectors should be broadened and deepened, and those undergoing formal training in health sciences institutions should achieve appropriate and significant competencies in PHC (van Niekerk & Sanders, 1997:s.p.).

The National Progressive Primary Health Care Network (NPPHCN, 1994) was instrumental in putting health and related issues on the agenda for the first democratic elections in South Africa in 1994. When the present government came into power in 1994, these obstacles were addressed and a set of policy objectives and principles to address the needs of all the people of South Africa was drawn up, upon which the Unified National Health System of South Africa was based (African National Congress, 1994:43).

The mission statement for the health system of South Africa as stated by the Ministry of Health is as follows:

*"To provide leadership and guidance to the National Health System in its efforts to promote and monitor the health of all people in South Africa, and to provide caring and effective services through a primary health care approach"* (Department of Health, 1997:6).

### 2.3.4 Community-based rehabilitation (CBR)

The levels of health care and prevention serve as a useful framework in defining the physiotherapeutic role in the community and in designing physiotherapeutic outcomes for the present health care system in South Africa. Community-based rehabilitation (CBR) must be planned and delivered at all levels of health care and prevention (WP Branch Subcommittee s.a.:4). In order to comprehend CBR the concepts of a community and rehabilitation must be defined. According to the SASP a community is "*a group of people with common characteristics, concerns, interests, liabilities, living space, ownership, etc.*" (WP Branch Subcommittee s.a.:2). It is stated in this document that although a community can be demarcated geographically, it cannot be assumed that people necessarily form a community because they are living in the same area.

According to the WHO rehabilitation is "*a process aimed at enabling persons with disabilities to reach and maintain their optimal physical, sensory, intellectual, psychiatric and/or social functional levels, thus providing them with the tools to change their lives towards a higher level of independence*" (WHO, 1994:s.p.). According to this definition rehabilitation may include measures to provide and/or restore functions, to compensate for the loss or absence of a function, or for a functional limitation. The rehabilitation process does not involve initial medical care; it includes a wide range of measures and activities from more basic and general rehabilitation to goal-oriented activities, for example, vocational rehabilitation (WHO, 1994:s.p.).

The major objective of CBR is to ensure that people with disabilities "*are able to maximise their physical and mental abilities, have access to regular services and opportunities and achieve full social integration within their communities and their societies*" (ILO, UNESCO & WHO, 1994:s.p.). CBR belongs to the community and should be considered an element of the social, educational and health policy at all levels, i.e. district/local, provincial and

national, but particularly at the most decentralised level of the public sector, i.e. district level (ILO, UNESCO & WHO, 1994:s.p.).

For a CBR programme to be effectively implemented in a community, three factors must come together: the articulation of a need for CBR, a response from within the community indicating readiness to meet this need and participate in this level of service, and the availability of support from outside the community. If one of these factors is lacking, CBR will fail. One cannot expect community involvement without a perceived need, and there should be no support in terms of finance or services to the community unless the community is willing to respond to the support (ILO, UNESCO & WHO, 1994:s.p.).

Articulation of a community's needs should be followed up by sound management. Management of a CBR programme will allow each community to determine its priorities with regard to the rehabilitation and social integration of people with disabilities. If a programme does not address the needs identified by those most concerned with disabilities, it cannot be effective. To identify and assess the needs of the disabled members of a community, the support-givers outside the community need to have health care and managerial skills (ILO, UNESCO & WHO, 1994:s.p.).

In order to ensure the community responds to the needs it perceives, CBR activities must be discussed with the community leaders, who will eventually decide on the activities they will undertake. This should be done in consultation with disabled people, their families and their organisations. Arguments based on purely technical considerations are not likely to impress a community (ILO, UNESCO & WHO, 1994:s.p.).

### 2.3.5 The role of the academic health service complexes (AHSCs)

In 1997 the *White Paper for the Transformation of the Health System of South Africa* was published by the Ministry of Health (Department of Health, 1997). The object of the *White Paper* was said to be the presentation of a set of objectives and principles upon which a unified national health system could be built (Department of Health, 1997:s.p.).

In the above-mentioned document it is stated, *inter alia*, that Academic Health Service Complexes (AHSCs), in which physiotherapy education and training departments are housed, are essential national resources as they play “an important role in educating and training health care workers; caring for the ill; creating new knowledge; developing and assessing new technologies and protocols; evaluating new drugs and drug usage; and assisting in the monitoring and improvement of health care quality” (Department of Health, 1997:91).

A number of principles are set out in the *White Paper* which were adopted with a view to enhancing the role of AHSCs in the development of health in South Africa. One of these is the principle which states that

*“[T]he curricula of AHSCs will be revised to place greater emphasis on the needs of the communities, in accordance with primary health care principles”* (Department of Health, 1997:91).

Through this statement it becomes clear that by making available support to a community for primary health care CBR needs to be part of a government's health care policy. A government policy which promotes community efforts in favour of people with disabilities will contribute to the communities' willingness to participate in CBR programmes. It is essential for trainee health care

workers (including physiotherapists) at undergraduate level to be exposed to the government health care policy and its implications (Republic of South Africa, 1997:23).

### **2.3.6 The role of physiotherapy in the community**

The South African Society of Physiotherapy describes the role of physiotherapy in the community with regard to CBR, as *"the scientific use of movement techniques based on physiological principles, supplemented where necessary by massage, manipulation, electrotherapy and other physical supportive measures. Advice to and education of the individual and the family and household for the prevention and treatment of injury, disease and dysfunction, and the facilitation of normal physiological processes and functional activities are included"* (WP Branch Subcommittee s.a.:6). These modalities are used to assist rehabilitation and develop and restore function, including the achievement of personal independence and a meaningful place in the community.

The SASP recommends that the inclusion of certain outcomes in the curriculum is essential to prepare graduates to perform effective community work and as such shall have to be integrated into the measuring instrument for this study.

The student must be able to demonstrate:

- organisational and management skills;
- interpersonal and communication skills;
- problem-solving skills;
- the ability to devise low-cost aids and adaptations;
- the ability to communicate with health organisations;
- the ability to be involved in a community;

- professional behaviour in employing basic medical ethics and codes of behaviour;
- the ability to work as a member of a multi-disciplinary team; and
- the ability and a willingness to market the profession (WP Branch Subcommittee s.a.:9-10).

### 2.3.7 Health promotion

In the Government Gazette No. 17910 that *"[h]ealth teams and workers at all levels should develop a caring ethos and commit themselves to the improvement of the health status of their communities. They should not only be responsible for the patients who attend their facilities, but also have a sense of responsibility towards the majority of the population in their catchment areas"* (Department of Health, 1997:7). This statement puts a responsibility on training institutions to adapt their curricula to ensure that they train students in accordance with these principles and also to ensure that they come up to these expectations in the services they render during the course of their training.

The aim of health promotion, as mentioned above, is to improve the health of all the people of the country through creating a social, political, economic and physical environment conducive to health. To achieve this, the following objectives need to be pursued:

- *"To contribute to the development and achievement of a healthy nation, national health goals and targets;*
- *to promote standards of excellence in health promotion practice, drawing on both international and local experience;*
- *to promote and develop health promotion activity in government and civil society; and*

- *to develop a skilled cadre of health promoters*" (Department of Health, 1997:108).

According to the Department of Health (1997:108) health promotion in South Africa will be developed in accordance with the principles that underpin the WHO's movement of *Health for All by the year 2000*, namely:

- *"Equity: everyone should have similar opportunities to health and, therefore, certain target groups will have to be prioritised, e.g. low-income families, rural people and women.*
- *Empowerment and respect: health promotion activities should be designed to increase and enhance the control that communities and individuals have over their own health - in the process, traditional values and beliefs will be respected.*
- *Participation: communities and individuals will be involved as respected partners in the planning and implementation of health promotion programmes.*
- *Intersectoral activity: multidisciplinary, inter-agency collaboration will be undertaken wherever relevant and possible.*
- *Standards of practice: the highest standards of practice, incorporating the above principles and based upon researched needs and adequate evaluation, will be encouraged."*

It is clear that with special reference to education and training programmes for physiotherapists the health promotion approach needs to be reflected in the research process and learning outcomes for the final framework.

## **2.3.8 Statutory and professional aspects**

In discussing factors influencing education and training programmes in health care, statutory and professional aspects need to be attended to, as health professionals have to register with these bodies and therefore meet their requirements.

### **2.3.8.1 *The Health Professions Council of South Africa***

The Health Professions Council of South Africa (HPCSA) is a statutory body which regulates the physiotherapy activities of the former Health Sciences Councils of the Republic and formerly independent Ciskei and Transkei. The aims of the Council, which, through the Physiotherapy Board of the Council, have a bearing on physiotherapy and physiotherapy education, and therefore have to be taken cognisance of here, include the following:

- *to assist in the promotion of health of the population of the Republic;*
- *to control and administer all matters in connection with the training of persons in, and the methods of putting into practice this training, as regards the diagnosis, treatment or prevention of physical or mental defects, diseases or deficiencies in the human being;*
- *to promote liaison in the field of training in the Republic as well as elsewhere, and to improve the standards of such training;*



- *to advise the Minister on statutory amendments to support the universal norms and values of the medical profession, with greater emphasis on professional practice, democracy, transparency, equity, accessibility and community involvement"* (The Interim Medical and Dental Council of South Africa, 1995:1-2).

The primary functions of the Council and the eleven professional boards (each dealing with matters pertaining to the specific professions which are represented on the Council) in broad terms relate to training and maintenance of standards of professional practice. The following function is particularly relevant to this study (The Interim Medical and Dental Council of South Africa, 1995:2):

- *"Recognition of professional qualifications - Educationally the work of the Council and the boards encompasses the recognition of qualifications for registration, laying down of minimum standards of training, inspection of training, and conducting certain examinations."*

By implication the Council plays a role in the profession, resulting in it regulating training too.

The former Medical and Dental Council of South Africa (MDCSA) also stated clearly that there is no formal interaction between the Council and the Department of Education, and that no person or educational institution (excluding a university or a technikon) may offer training qualifying a person to be registered with the Council in any category unless such training is approved by Council (The Interim Medical and Dental Council of South Africa, 1995:3).

Questions which arose from the above-mentioned discussion document were whether Council should become deeper involved in training, e.g. by introducing a system of accreditation of training institutions.

The compilation of new programmes, therefore, is not monitored by the Council, but the Council will have to recognise the final professional qualifications and approve the training courses (programmes) in order to allow qualified physiotherapists to register with the Council (The Interim Medical and Dental Council of South Africa, 1995:2). Therefore, although the Council is not prescriptive as regards curricula, principles laid down by the now Health Professions Council of South Africa (HPCSA) are taken into account in the deliberations regarding the creation of a new physiotherapy programme.

The attributes of health care professionals identified in the Yaounde Declaration (1994), recommended reforms in health sciences education proposed at the Edinburgh World Summit (1993) and recommendations formulated at the Cape Town Conference (1995) are also taken cognisance of in planning the programme and laying down guidelines for what to incorporate in an innovative programme (HPCSA, 1999:2-3). Among the most important principles are those of early clinical contact as norm, the liability to respond to community needs, a curriculum based on national health needs, the importance of lifelong active learning, and an emphasis on preventive and promotive health care (HPCSA, 1999:2-3). Although the Yaounde Declaration refers specifically to the training of doctors the same principles could be applied to the education and training of physiotherapists.

#### **2.3.8.2    *The South African Society of Physiotherapy***

The South African Society of Physiotherapy (SASP) is a professional society, the main business of which is described as representing the Physiotherapy Profession, serving the interests of its members, and important, promoting optimal physiotherapy care to all (SASP, 1998:1). It thus is clear that this society will be influenced in the physiotherapy education and training programmes offered, and therefore it is necessary to attend to the objectives

of the SASP and to determine the guidelines and requirements of the SASP for physiotherapy training.

In a draft constitution (SASP, 1998:1) published by the Society the following is stated:

The SASP defines a physiotherapist as *"a person who is in possession of a qualification registerable as such with The Professional Board for Physiotherapy, Podiatry and Biokinetics of the Health Professions Council of South Africa and would therefore be recognised by the Society for the purpose of treating any condition within the defined scope of physiotherapy"* (SASP, 1998:1).

No clear definition of physiotherapy could be obtained from the SASP or the HPCSA. After the compilation of the measuring instrument for this study the HPCSA issued a new Scope of Practice: Physiotherapists and Physiotherapy, Assistants (Appendix 1E). Although the definition of physiotherapy for the measuring instrument was based on definitions from dictionaries and brainstorming in a departmental workshop it compares very favourably with the new Scope of Practice. The final definition for the framework was constructed according to the contributions obtained from the Delphi process.

Information offered by the SASP for private practitioners describes what a physiotherapist can do (Government Gazette 3 December 1976) and was not considered suitable for a definition of physiotherapy.

The adoption of the new SASP Constitution in 1996 allowed for the formation of a Division of Education. The main task of this Division is to guide the training of physiotherapists and to make proposals for a core curriculum in accordance with the educational and professional requirements of the country.

Physiotherapy training programmes must equip those entering the profession to play an effective role in comprehensive health care. Such training programmes must therefore take cognisance of the changing needs and attitudes of society, changes in the health care system, technological advances and the evolving needs of the profession. It is therefore imperative that the curricula or programmes be reviewed from time to time in order to adapt to changing circumstances (SASP, 1992:3). The professional outcomes that will have to be reflected in the framework for physiotherapy education and training that is to be compiled in this study, can be based, among others, on the following statements of the South African Society for Physiotherapy (SASP):

A recent version of the mission statement of the SASP reads as follows:

*"The SASP affirms that:*

- *It provides a structure within which the needs of its members are met.*
- *It strives to ensure the quality of physiotherapy services to all peoples throughout South Africa.*
- *It does not discriminate on grounds of race, colour, creed, national origins, social status or gender in the practice of physiotherapy or in the administration of its organisation.*
- *It safeguards the welfare of its members and makes representation against any form of discrimination against its members.*
- *It acts as a planning, development and information resource to its members, to other health professions, to health planners at all levels and to the general public.*

- *It supports unequivocally the provision of unitary health service and encourages all progress made in the integration of health care services" (South African Society of Physiotherapy, 1999:1).*

Physiotherapy students are encouraged to become members of the SASP. Reference in this mission statement to members therefore also applies to students. The aspects mentioned in the mission statement of the SASP shall have to be integrated in the planned framework to ensure relevance in the eyes of the SASP.

According to the SASP the need for social upliftment and empowerment, together with the acknowledged need for improved health care and rehabilitation, demands a reassessment of the services provided by physiotherapists. It is stated that "*the training of physiotherapists must equip them to play an effective role in comprehensive health care, including promotive, preventive, curative, rehabilitative and educative aspects, as well as in research*" (National Physiotherapy Committee, 1998:12).

### **Objectives of the SASP**

The objectives of the SASP that are of relevance to education and training to ensure the development of the physiotherapy student as a responsible and accountable professional are formulated as follows:

- *"To further the professional needs and interests of its members (to enable them to function optimally as professionals);*
- *to ensure the quality of physiotherapy services to all peoples of South Africa through the development of physiotherapy education, practice and research;*

- *to ensure professional integrity and the highest ethical standards of practice;*
- *to oppose any discrimination on the grounds of race, colour, creed, national origins, social status or gender in the practice of physiotherapy or in the administration of its organisation;*
- *to safeguard the welfare of its members, and represent the interests of its Members in their relationships with government, employing bodies, and other national and international organisations;*
- *to act as a planning, development and information resource to its Members, to other health professions, to health planners at all levels and to the general public" (SASP, 1995:1):*

These objectives were taken cognisance of and addressed in the measuring instrument in the form of "goals for physiotherapy".

According to the SASP (1998:1) the broad goals of physiotherapy education and training are the following:

- to equip those entering the profession with skills which are appropriate and relevant to the needs of the people of the profession; and
- to ensure that practising physiotherapists are empowered to respond to the changing needs of the country and their own continuing educational needs.

## **Strategies of the SASP**

The strategies by means of which these objectives are to be achieved are also spelt out by the SASP:

- *to identify and implement realistic and equitable criteria for the selection of students;*
- *to determine and provide a curriculum which is relevant to the physiotherapy needs of the country;*
- *to provide appropriate clinical experience in the relevant aspects of physiotherapy practice;*
- *to encourage and motivate professional attitudes and ethical standards of practice;*
- *to evaluate the performance of students objectively and fairly, on an ongoing basis throughout training;*
- *to enable students to complete the course successfully on a cost-effective basis;*
- *to instil in students a desire for continuing physiotherapy education and research, in order to meet the changing health needs of society and achieve professional self-realisation;*
- *to instil in students a pride in their profession and in their professional organisation;*

- *through the Division of Physiotherapy Education of the SASP, to provide educational programmes in accordance with the health needs of the country and the educational needs of the profession;*
- *to develop and implement quality assurance and accreditation (SASP, 1998:1).*

These strategies shall also have to be interwoven in the measuring instrument in order for the final framework to ensure relevance in this eyes of the SASP.

The SASP also endorses the commitment to Primary Health Care (PHC) as declared by the World Health Organisation (WHO) at Alma Ata (SASP, 1992:1), and acknowledges and accepts the definition thereof as adopted by the World Health Organisation (WHO).

Physiotherapy operates in all four areas of PHC, namely promotive, preventive, curative and rehabilitative (SASP, 1992:1), and according to the philosophy of PHC physiotherapy services can be practised effectively in any environment, that is, in the community, but also in any institution, be it at primary, secondary or tertiary level, in accordance with the principles of PHC.

The SASP elaborates on this statement and explains the function of the physiotherapist in South Africa at all four levels of PHC as follows (SASP, 1995:1&2):

### **Promotive care**

*An integral part of the physiotherapist's scope of services is to promote health care at all levels. At the PHC level, the physiotherapist should be involved in education programmes directed at maintaining a healthy lifestyle, for example, sport for the disabled and back care education. Promotive care is*



also directed at those persons who have received rehabilitative or curative care at secondary and tertiary levels and required maintenance at a PHC level or facility such as a clinic or from a support group. Care at this level can be given by a physiotherapist, physiotherapy assistant or a generic worker.

### **Preventive care**

Physiotherapy plays a key role in the prevention of acquired injury or impairment occurring at work, home or recreation. This may involve ergonomic consultation, professional advice to sports clubs and lifestyle centres, schools, clinics and services for the elderly. Physiotherapy can also intervene directly in breaking the chain of impairment/ disability/ handicap by implementation of self-management, appropriate education or treatment programmes, for example, the management of cerebral palsy. Preventive care can be carried out by the physiotherapist, physiotherapy assistant or generic worker.

### **Curative care**

Physiotherapy expertise lies in the ability to assess and to treat musculo-skeletal, respiratory and neurological disorders. In the main, curative procedures would occur at a secondary or tertiary level, however, this does not preclude intervention at a primary health care level where basic facilities exist. This care may be rendered by a physiotherapist or a physiotherapy assistant.

## **Rehabilitative care**

*Rehabilitation is the essence of physiotherapy and is an integrated process which can include primary, secondary and tertiary care. The physiotherapist's role within the rehabilitation team is directed towards the restoration of optimal physical and functional independence. This can only be achieved once the patient has accepted full responsibility for his/her own ongoing management and has been integrated into the community. The physiotherapist has an independent role in the rehabilitation of certain conditions, e.g. soft tissue injuries. In more complex cases such as in spinal injuries or neurological disorders rehabilitation requires a multidisciplinary approach. The expertise of the physiotherapist is essential in the effective physical rehabilitation and may be done by the physiotherapist, physiotherapy assistant, caregivers, family members or volunteers.*

It became clear from the recent literature (SASP, 1992; Van Niekerk & Sanders, 1997; Department of Health, 1997) that primary health care needs to play an important role in health care and provision in South Africa, and throughout the research these aspects have been taken into account to ensure that they will be reflected in the modules of the proposed curriculum.

### **2.3.8.3 Division of Education – SASP**

The SASP has a Division of Physiotherapy Education which is the umbrella body providing guidance regarding all aspects of education. The group of physiotherapists who have the portfolio for undergraduate education have applied to be appointed on the Standards Generating Body of SAQA. These appointments were made in 2001. The researcher serves on this body, a function which has assisted her with this study and, *vice versa*, this study has contributed to her involvement in the SGB.

The SGB for physiotherapy has convened a series of workshops since 1999. These workshops were designed to gather information, pool ideas on the direction of the physiotherapy curriculum and develop broad guidelines for curriculum development for existing and future providers of physiotherapy education. A curriculum framework for the education and training of physiotherapy assistants has already been compiled. The SGB is currently working on a postgraduate education and training programme for physiotherapists.

#### ***2.3.8.4 The National Physiotherapy Committee***

In 1997 the Truth and Reconciliation Commission and the Health Care Sector requested that as broad a group of professionals as possible should make a submission to the Truth and Reconciliation Commission (TRC) and that this submission should represent an honest, searching reflection of whatever aspects the report should cover. The submission of the physiotherapy profession was developed and documented by the National Physiotherapy Committee (1998:24).

According to the National Physiotherapy Committee (1998:24) there are inadequacies in existing physiotherapy courses that should be addressed. Thus it was recommended that course content should include information on the following issues:

- *More specific knowledge on the needs, expectations, behaviours and beliefs of the diverse cultural groups;*
- *education relating to the identification of clients who have been subject to human rights violations - including abuse to woman and children as well as those who have been tortured whilst in custody or detention;*

- *more specific education on the assessment and treatment of the victims of torture;*
- *information on routes of referral and report of these clients, as well as avenues for protest and advocacy; and*
- *further development of communication and interpersonal skills, team management and community development skills with a focus on adult learning (National Physiotherapy Committee, 1998:24).*

In the submission to the Truth and Reconciliation Commission (National Physiotherapy Committee, 1998) it is mentioned more than once that there are three basic issues that need to be addressed urgently by the profession and training institutions, namely:

- The lack of underlying human rights ethics being taught;
- too few trained black physiotherapists; and
- too few strategies that will encourage and enable all the members of the profession to work together in a collaborative partnership.

In this document (National Physiotherapy Committee, 1998:20) it is stated that to date physiotherapists have been trained in professional ethics and in curative or mainly medically-based rehabilitative, preventive and promotive care, rather than enabling physiotherapists to work with and in communities. The document also stated that the physiotherapist's goal might be more effectively achieved by enabling his or her clients to deal with their daily challenges successfully and empowering people to take control of their own lives by taking responsibility of their own health and well-being.

## 2.4 TRANSFORMATION OF EDUCATION AND TRAINING IN SOUTH AFRICA

### 2.4.1 Trends in education and training

Worldwide, including in South Africa, health professions education and higher education in general are undergoing major changes. Over the past couple of years there has been a general trend in the HPCSA and the SASP to revise both physiotherapy training and service delivery, and to move to a primary health care approach, the aim being to facilitate health care for all. Recent changes in the higher education system in South Africa have made a new approach mandatory (SAQA, 1997:3).

#### **2.4.1.1 Development, structure and functions of SAQA, the NQF, and associated bodies and structures**

As mentioned in Chapter 1, the political changes taking place in South Africa has a direct influence on higher education. A number of challenges and principles for higher education were proposed in the Draft White Paper on Higher Education (Republic of South Africa, 1997:9-14; 2001:10), among which the following:

- higher education needs to become more responsive to social needs and interests;
- institutions should become more innovative in their teaching, research and delivery of services; and

- conditions must be created to facilitate the adaptation and improvement of higher education enabling it to contribute to the common good of society through the production and application of knowledge, the building of human capacity, and the provision of lifelong learning opportunities.

Cognisance has been taken of all these challenges in the designing of the instrument. Curricula and educational programmes are the mechanisms by means of which the conditions and requirements of the Department of Education, as put forward in the Draft White Paper on Higher Education (Republic of South Africa, 1997a) can be satisfied and reached. In developing (or reviewing) curricula the following should be attended to:

- Mutual respect for diverse religious and value systems, cultural and language traditions;
- multi-lingualism and informed choices regarding the language of learning;
- co-operation, civic responsibility and the ability to participate in all aspects of society; and
- an understanding of national, provincial, local and regional developmental needs (Lubisi, Wedekind, Parker & Gultig, 1997:7).

It is now clear that an outlook emphasising acquisition of skills or competencies is replacing that which has been based on the acquisition of knowledge as the sole purpose of education. It is also clear that learners can no longer cope in the traditional way with the amount of once-off knowledge at their disposal. The solution to such a dilemma is equipping learners with skills that will enable them to be lifelong learners (Tisani, 1998:48).

It is against this background that the goals, and subsequently the exit-level outcomes for physiotherapy education and training were compiled.

As early as in 1990 there was a universal discontent with the nature and quality of education and training in South Africa. The perception that South Africa needed national standards for education and training took root in the late 1980s and the idea of a National Qualifications Framework (NQF) for South Africa arose in a ferment of debate, research and policy formation for education and training in the early 1990s (SAQA, 1997:3). In 1992 the National Education Policy Renewal Strategy emphasised the importance of integrating education and vocational training into a coherent system (SAQA Ministerial Committee, 1995:9). The idea was mooted in many forums, but it was developed in earnest in the National Training Initiative which involved representatives from labour, management, government and providers of education and training (SAQA, 1997:3). Much deliberation and the exchange of ideas followed, and agreement was reached on the concept of transparent national standards, understood as specific descriptions of learning achievements, agreed upon by all major stakeholders. The standards, it was decided, would be housed within a qualifications framework designed to promote lifelong learning, integrate education and training, recognise prior learning and allow for portable, flexible credits and qualifications with exit level outcomes (SAQA, 1997:3).

The NQF is underpinned by a set of principles which require qualifications to be:

- *credible both in South Africa and around the world;*
- *coherent in that they provide clear learning pathways;*

- *relevant in that they take into account changing knowledge, technology and occupational structures;*
- *quality focused in terms of nationally agreed learning outcomes and assessment criteria;*
- *flexible enough to be gained anywhere and at any age and in ways other than through formal education;*
- *accessible in providing appropriate entry points and multiple pathways to the qualification;*
- *portable in that they recognise the importance of generic and transferable skills;*
- *responsive to the rapidly changing needs and diversity of South African society and its economy;*
- *reflective of the needs of both learners and providers of learning;*
- *progressive in that learners can progress through the eight levels of the NQF;*
- *articulated so that learners' achievements are recognised across providers;*
- *effective and efficient in the use of resources, in order to minimise cost barriers to learning; and*
- *appropriate in that they are "fit for purpose" (Phillips, 1996:8).*



These principles were used as the foundation for the compilation of the physiotherapeutic goals used in the measuring instrument of this study.

The Act on Higher Education, Act 101 of 1997, is asserted to be the end product of in-depth reflections, arguments and discussions, and the ideas and inputs of a variety of stakeholders in and experts on higher education in the RSA, as well as experts from other countries (Steyn, 1999:3). Two sentences in the preface to the Bill (Republic of South Africa, 1997b:2) have specific relevance here. It is stated that it is "*desirable to:*

- *establish a single, co-ordinated higher education system, which promotes co-operative governance and provides for programme-based higher education;*
- *restructure and transform programmes and institutions to respond better to the human resource and economic needs of the Republic of South Africa."*

This Act was preceded by the White Paper on Higher Education Transformation (Republic of South Africa, 1997a) in which the challenges awaiting higher education were listed. The White Paper stipulates the following: "*The programme-based approach, through ensuring greater articulation between the different tiers in the higher education system, promoting flexibility and diversification in the range of programmes offered and fostering co-operation between institutions will result in structural changes and a reconfiguration of the institutional landscape...*" (Republic of South Africa, 1997a:18).

The success of the outcomes-based education and training system which was instituted by SAQA depends on the development and maintenance of education and training standards (Olivier, 1998). Negating standards will be detrimental to the system as well as to the economic development of the

country as a whole. It is therefore important that those involved in education, training and human resource development should understand the ways in which traditional education and training approaches must be capitalised on, while, at the same time, the ability to learn in various situations is reinforced by building the capacity of learners with the aim to promote lifelong learning (Olivier, 1998:ix). According to Olivier (1998) "*Learners should not be seen as jars to be filled, but rather as lamps to be fuelled, in order to provide light.*"

The Higher Education Act introduced a new education and training dispensation, of which the South African Qualifications Authority (SAQA), the National Standards Bodies (NSBs) and Education and Training Quality Assurance Bodies (ETQAs) are the core drivers (Olivier, 1998:ix). The Act states clearly that all education and training should be outcomes-based, using new terminology referred to by Olivier (1998:x) as "*SAQA-ish*". The new system is called the outcomes-based education and training system (OBET), with outcomes being defined as "*the contextually demonstrated end-products of the learning process*" (Republic of South Africa, 1998:4), and is primarily aimed at building the country into an international role-player through the enhancement of a culture of lifelong learning (Olivier, 1998:ix).

According to the *White Paper on Education and Training* (Republic of South Africa, 1997a:21) the National Qualifications Framework (NQF) will be "*the scaffolding on which new levels of quality will be built*". This "*scaffolding*" (NQF) has eight qualification levels. It was said that each level would be described in terms of registered statements of essential outcomes. The framework that was established gives recognition to general education and training (GET) (level 1 and lower), further education and training (FET) (levels 2 to 4), and higher education and training (HET) (levels 5 through 8). See Appendix IIIA, Addendum B (Cosser, 1998). Table 2.1 (p.43) depicts a schematic representation (diagram) of the three bands of the NQF (General, Further and Higher Education and Training), its levels and sub-levels, and indicates some of the providers at various levels, as well as the phases within

school in the GET band (Casazza, 1998). The current Bachelor of Science Degree in Physiotherapy is registered at level 7 by the South African Qualifications Authority. In the light of suggestions that have been made by the National Plan for Higher Education in South Africa (Republic of South Africa, 2001:23) to increase graduate outputs by encouraging mobility, portability and various exit-levels level 6 has also been offered. Should a physiotherapy student be able to obtain a degree in three years in the future the degree can be registered at level 6. For the purpose of completeness both levels are included in this study.

The level descriptors of levels 6 and 7 read as follows:

Level 6:

- Systematic and coherent introduction to, and incipient specialisation in one or several fundamental or applied disciplines, with detailed knowledge of the discipline and an awareness of the variety of contexts in which it may apply;
- introduction to the principles and concepts underpinning the field of study, to techniques of self-directed work and learning, and to basic research and the identification of key elements of problems and selection of appropriate methods for their resolution;
- the development of skills and attitudes needed to comprehend and evaluate new information, concepts, and evidence from a range of sources;
- analysis of information under minimal guidance, application of data;

- reformatting a range of information towards the achievement of a given purpose;
- progressive study of the literature in the field(s) to a level which provides a basis for effective application of knowledge in a professional context;
- effective communication in a format appropriate to the discipline and clear and concise reporting of practical procedures in a variety of formats;
- effective interaction within a learning group, and development of professional working relationships within the discipline (Cosser, 1998) (*cf.* Table 2.1).

Level 7:

Introduction to the frontiers of knowledge, with an awareness of the provisional state of knowledge; mastery of theoretically sophisticated subject matter with a comprehensive knowledge of the field of study:

- independent analysis of new and abstract data and situations deploying a wide range of techniques appropriate to the field of study, and transformation of abstract data and concepts towards the achievement of a given purpose;
- critical review of evidence supporting conclusions (including reliability, validity and significance), and investigation of contradictory information;
- critical evaluation of the literature pertaining to the field of study;

- specialisation; confident deployment of complex problems, and the appropriate skills and knowledge to their solution;
- effective engagement in debate in a professional manner and context, with production of detailed and coherent reports;
- effective interaction within a learning or professional group, with recognition or demonstration of leadership;
- negotiation within a learning or professional context, and management of conflict (Cosser, 1998) (*cf.* Table 2.1).

In a chapter on health resources in the *South African Review* (van Niekerk & Sander, 1997:s.p.) it is stated that one of the main issues in the health care policy is about where the responsibility of the training of health care practitioners should reside - in the Department of Health or the Department of Education, or the professional council, or a combination of these and other stakeholders. The Act (Act 101 of 1995) envisaged a major restructuring of higher education, the most important aspect of which was said to be the transformation of higher education into a unified system. The Minister of Education, in accordance with the Act, is now advised by the Council on Higher Education (CHE), which was established in 1997 in terms of the Act. The Council, in terms of the Act, has the executive functions of quality promotion, institutional quality audit and programme quality assessment (Jacobs, 1999:9).

Standards will be set by the Standards Generating Bodies (SGBs) and coordinated by the National Standards Bodies (NSBs) that have been appointed by SAQA for this purpose (Jacobs, 1999:8).

**TABLE 2.1: The NQF levels**

<b>NQF Level</b>	<b>Band</b>	<b>Types of Qualifications and Certificates</b>		<b>Locations of learning for units and qualifications</b>		
8b 8a	Higher Education and Training	Doctorates Further Research Degrees		Tertiary/ Research/ Professional Institutions		
7		Higher Degrees professional Qualifications		Tertiary/ Research/ Professional Institutions		
6		First Degrees Higher Diplomas		Universities/ Technikons/ Colleges/ Private/ Professional Institutions/ Workplace, etc.		
5		Diplomas Occupational Certificates		Universities/ Technikons/ Colleges/ Private/ Professional Institutions/ Workplace, etc.		
<b>Further Education and Training Certificates</b>						
4	Further Education and Training	School/ College/ Trade Certificates Mix of units from all		Formal High Schools/ Private/ State schools	Technical Community/ Police/ Nursing/ Private colleges	RDP and Labour Market Scheme Industrial Training Boards/ Union Workplace, etc.
3		School/ College/ Trade Certificates Mix of units from all				
2		School/ College/ Trade Certificates Mix of units from all				
<b>General Education and Training Certificate</b>						
1	General Education and Training	Senior Phase	ABET Level 4	Formal Schools (Urban/ Rural/ Farm/ Special	Occupation/ Work-based Training/ RDP/ Labour Market schemes/ Upliftment/ Community Programmes	NGOs/ Church/ Night school/ ABET Program/ private providers/ Industry Training Boards/ Union/ Workplace, etc.
		Intermediate Phase	ABET Level 3			
		Foundation Phase	ABET Level 2			
		Pre-school	ABET Level 1			

SAQA also promotes student mobility through the maintenance of a data base of education and training credits attained by all learners nationally. It will be the responsibility of the Education and Training Quality Assurance Bodies to collect such data and pass it on to SAQA for record keeping (Jacobs, 1999:8).

In order to facilitate student mobility and credit portability modularisation of learning programmes is indicated. This will necessitate a programme-based approach to education and training. The rationale for a programme-based approach, according to Steyn (1999:4) included the following:

- *A programme-based approach enhances the meaning and coherence of the training. Fragmentation has always been the result of highly autonomous lecturer-based and departmentally isolated course designs and presentations.*
- *A programme-based approach will counter act content overload, because the notional hours have been calculated per programme.*
- *In a programme-based approach unplanned overlapping between subjects and courses is eliminated. A programme may have a broad focus and extend across the boundaries of disciplines, academic structures and even institutions.*
- *A programme must include fundamental, core and elective modules, thus the mastering of short-term (sometimes obsolete) knowledge and skills is countered and the development of generic and lifelong learning skills is promoted.*
- *In learning programmes articulation with other programmes is indicated and the level at which knowledge and skills are mastered, is specified. Progression therefore takes place in a planned way.*
- *Multi-disciplinary perspectives in a programme equip the learner for an interwoven reality - the principle of the world as a set of interrelated systems in which problem-solving contexts do not exist in isolation.*

- *A programme approach which consolidates expertise and resources within and outside the institution promotes optimal utilisation of resources.*
- *Staff members develop an entrepreneurial and team approach and obtain ownership of the learning programmes.*

The six programme elements that should be attended to are:

1. *Curriculum specialisation in one or more of the twelve organising fields*
2. *A planned combination of critical and specific outcomes*
3. *A demonstration of applied competence in learners*
4. *A basis for further learning, with the incorporation of credits as well as entry and exit opportunities*
5. *Added value in terms of personal enrichment, provision of status, recognition, enhancement of marketability and employability*
6. *Advantages added to the community and economy - delivery of high-level person power, increased productivity and addressing inequalities (SAQA, 1997:15).*

At a workshop of the SASP a document was generated in which the following statements regarding a programme were made (Education Board, 1999:s.p.):

- *A programme can be defined as a purposeful and structured set of learning experiences designed to enable learners to achieve pre-specified exit level outcomes.*
- *The purpose of the programme gives rise to its learning outcomes and structure (not the nature of the disciplines which it comprises).*



- *A coherent combination of units of learning (modules or unit standards) expressed in an outcomes-based format, leads to one or more qualifications, which serve an academic and/or vocational purpose.*
- *A programme should have recognised entry and exit points (qualifications).*
- *A programme usually comprises core modules and elective modules.*

To comprehend the deeper meaning of the above-mentioned elements and statements, SAQA-ish explanations must first be attended to.

In an outcomes-based education and training programme the curriculum design process starts with the intended learning achievements, that is, the outcomes. Outcomes-based learning implies that learners must demonstrate the achievement of an outcome, as well as involvement in the learning process (Olivier, 1998:2).

Since outcomes-based curricula emphasise a holistic and integrated approach to learning, which entails mastering the content, competencies and processes within a specific context, it will also have an influence on how and what learners will learn and achieve (Olivier, 1998:2).

#### **2.4.1.2 Quality assurance and setting of standards**

Quality assurance is imperative for any learning programme to assure international recognition of the programme. The programme must also satisfy the taxpayer that higher education institutions are managing the effective and efficient expenditure of state subsidies (Jacobs, 1999:7).

Quality assurance may be of an internal or external nature, and here a distinction appropriate: Traditional external moderating of student assessment strictly is no more than a revised form of internal quality assurance. Quality assurance in its modern guise occurs in three different formats, namely state-owned quality assurance systems, independent or statutory quality assurance systems, and internal or institution-owned quality assurance systems (Jacobs, 1999:7). The first-mentioned system is often considered by higher education institutions to be synonymous with unnecessary state intervention in their autonomous affairs, while the internally owned system is often regarded as being ineffective as it does not have any power to effect change.

Against this backdrop, and in order to ensure national and international credibility, the SAQA Act prescribes that the NQF should establish a quality assurance management system, which should ensure:

- *stakeholder involvement;*
- *mechanisms for registration, accreditation, moderation and auditing, and*
- *maintenance of the quality of unit standards (Olivier, 1998:10).*

Quality assurance will be the responsibility of the National Standards Bodies (NSBs), Standards Generating Bodies (SGBs) and the Education and Training Quality Assurance Bodies (ETQAs), which have the ability, capability and management infrastructure to establish and maintain standards. The ability to establish and maintain standards within the NQF will to a great extent determine the success of this universal assignment (Olivier, 1998:10).

#### **2.4.1.3 Qualifications, credits and outcomes**

In order to facilitate accreditation of a qualification, notional learning hours will be described as credits. A unit standard of one credit is equivalent to 10 notional learning hours (a notional hour means "*the learning time that it is*

*conceived it would take an average learner to meet the outcomes defined, and includes concepts such as contact time, time spent in structured learning, in the workplace, and on individual learning"* (Republic of South Africa, 1998:4). SAQA makes the assumption that 1 200 notional hours (i.e. 120 credits) constitute one academic year (Olivier, 1999:15; SAQA: Act 1997). The allotment of relevant credits to ensure even and correct accreditation will have to be taken into account in compiling new education and training programmes. Programmes are divided into modules.

Modules have different functions in each learning programme. Modules may contain fundamental, core and/or elective learning. Fundamental learning is aimed at basic or generic (critical cross field) outcomes, core learning is aimed at the competencies which constitute the core of the qualification, that is, the specific learning which is compulsory in situations contextually relevant to the particular qualification, and electives are selected additional credits at the specified level to ensure that the purpose of the qualification is achieved. The idea of specialisation can also be brought in here with competencies related to specialised areas, or else competencies that broaden the core (Department of Education, 1998:39). In a physiotherapy learning programme the core learning mainly constitutes the discipline-specific competencies, referred to as the specific learning outcomes, and fundamental learning as critical outcomes.

#### **2.4.1.4 Recognition of prior learning (RPL)**

The recognition of prior learning is defined as a process of managing the collection, organisation and presentation of non-customary evidence for assessment (Phillips, 1996:45; SAQA: Act, 1997) with a view to broadening accessibility.

Currently the only exit in the B.Sc. Physiotherapy training programme is qualification after four years' sequential education and training. Exit prior to qualification will leave a student with no credits that could be employed professionally. Admission to the present course is also very competitive. Entrance requirements entail an endorsed further education and training certificate (NQF level 4), with mathematics at standard level. Selection occurs mainly on the basis of academic merit, resulting in the selection of the top academic achievers.

SAQA advocates recognition of prior learning as part of admission guidelines. This enables persons of all ages, backgrounds and attitudes to receive formal recognition for skills and knowledge they possess, even if they have not come by these by means of formal education and training programmes. RPL attempts to acknowledge all learning, community work and leisure activities through an open and transparent approach to assessment (Department of Health, 1997; Phillips, 1996:4).

The flexibility inherent in the NQF will enable this to occur through verification of knowledge, skills and attributes people have gained through informal learning experiences (Phillips, 1996:4; SAQA Act, 1997).

With this in mind the present selection criteria for the programme for professional physiotherapists needs to be amended as well as the exit levels. Credits need to be awarded in the course of the programme for recognition in a professional or academic field, other than only at the final exit of a four year degree programme (Higher Education Act, 2001:25).

#### **2.4.1.5 Outcomes-based education and training**

In a programme-based curriculum the academic disciplines are not taught and learned because they form part of the scientific structure, but because they facilitate specific learning outcomes which contribute to achieving the

outcomes of the programme. Concepts, theories, methods and knowledge structures fulfil an instrumental role in realising specific competencies, and are imbedded in such learning outcomes. Knowledge, skills and values/attitudes are an integrated part of the applied competence (SAQA, 1997/1998).

In accordance with the regulations of the South African Qualifications Authority Act, Act 58 of 1995, the programme that is to be developed based on the results of this research, will be an outcomes-based education and training programme. Although it has been said that the movement to outcomes-based education and training (OBET) in South Africa offers such an enormous challenge to educators that it may be called a paradigm shift, the concept is not entirely new. Good educators have always measured the value of their instruction in terms of that with which the learners leave the teaching-learning situation - in other words, instruction has been evaluated by assessing the outcomes (Lubisi *et al.*, 1997:11).

In outcomes-based education and training the focus is on what the learners know and can do. Curriculum development for OBET therefore takes as point of departure the proposed results of learning in terms of knowledge, skills and values, rather than the contents of that which has to be studied. These proposed outcomes have to be stated explicitly. The aim of such explicitly stated outcomes is to direct the instructional and learning process, and it makes possible the appropriate evaluation of the process, and ultimately the outcomes (Nel & Bezuidenhout, 1998:20). This principle has to play an important role in developing a new programme.

An outcomes-based approach to education and training has implications for methodology. Specific outcomes may vary, but they must be underpinned by critical outcomes. This means that the instruction and learning must be directed towards understanding, and acquiring abilities and skills, rather than memorising information. The ability to solve problems, communicate

effectively, work in groups, etc. cannot be developed except by practising those activities, and constantly refining performance in response to assessment of progress (Lubisi *et al.*, 1997:26).

In contrast to a contents-based learning programme, the emphasis in outcomes-based learning is on the outcome (result) of the learning process, that is, the competence (interaction between skills, knowledge and values/attitudes) of the learner as a result of the learning. Competence is defined as *the capacity for continuous performance within specified ranges and contexts resulting from integration of a number of capabilities* (Nel & Bezuidenhout, 1998:21). The Human Science Research Council (HSRC) (1995:54) defines competence as *"the integrated application of capabilities within specified contexts"*. When registering a programme with SAQA it is required that the exit-level outcomes and the specific outcomes of programmes be stated (Steyn, 1999: 2). The exit level outcomes are explained as to be a description of the total capability of the learner, that is, what will the learner be able to do once the training has been successfully completed? In other words, here the requirements of, e.g. the professional board, will come into play. The specific outcomes deals with the abilities of a learner, that is, the specific outcomes a learner has to achieve to do what is expected in the exit level outcomes.

#### **2.4.1.6 Learning outcomes**

Learning outcomes contain three integrated elements, namely

- knowledge and understanding (knowledge of the contents - *know that*; concepts and theories - *know why*);
- doing (skills and abilities - *know how*); and
- attitudes and values (Steyn, 1999:11).

As outcomes play such a crucial role in education and training, attention needs to be paid to the formulation thereof before commencing with the development of education and training programmes. Learning outcomes have to be formulated for a qualification, i.e. the exit level outcomes, as well as outcomes for each module and each year of study, e.g. in the physiotherapy undergraduate programme.

According to Bezuidenhout (1999:2; cf. Olivier, 1998:25) a well-formulated outcome should contain the following:

- An action word (verb), and answers the question: What will the learner be able to do as a result of the learning?
- An object, and answers the question: With what? In connection with what?
- Conditions/ context, and answers the question: Under which conditions? / In what context?

*Example:* Students will be able to prepare (action word) a patient (object) for a physical examination (context).

The action word (verb) must be chosen with care, because it describes the action the students will eventually have to perform, and it also indicates at which cognitive level this action is to be performed. The same verb will be used in the evaluation to measure whether the students have achieved the outcome. For example, if the outcome states that students will be able to *name* some things, it cannot be expected of them in the evaluation to *describe* or *analyse* those things.

As stated above in formulating outcomes it often is difficult to find the correct verb to describe accurately what will be expected of students and also ensure that the outcome is measurable (can be evaluated). Literature recommends making use of Bloom's taxonomy (Bloom, 1956) in deciding on a verb (action word) for questions or objectives, and the same will apply to outcomes (Goodwin, Sharp, Cloutier & Diamond s.a:1-2; Bezuidenhout, 1999:3).

In the outcome: *The students will be able to describe the structure of bone*, the action word is describe. It is possible to measure a student's ability to describe something. On the other hand, if the action word were to *understand* the structure of bone, it would be more difficult to measure. How does one measure understanding? - By asking the person to describe. Therefore, tell the students they will have to be able to describe (Bezuidenhout, 1999:4; Lubisi *et al.*, 1997:14).

To add clarity to the outcome, conditions must be stated, such as time constraints, use of materials or special situations. A performance standard or criterion in terms of which it will be measured may also be added. Standards and criteria may be described in terms of, for example, the following: Time within which the task has to be completed; the number of mistakes allowed; the conditions under which the task must be completed, etc. (Bezuidenhout, 1999:4; Olivier, 1998:25-26).

Below are the levels of the taxonomy, a brief explanation of each, and examples of outcomes which require the use of thinking skills at each level.

- ***Level 1: Knowledge reproduction***

This level has a bearing on the memorisation, remembering and recalling of information. No insight or understanding is required.



- **Level 2: Understanding**

This level represents the basic level of understanding, that is, learners know which ideas or information is transmitted to them and can use it. They do not necessarily understand the full implications thereof.

- **Level 3: Application**

At this level students must be able to use abstract ideas, principles or theories in concrete situations to solve problems.

- **Level 4: Analysis**

This level entails analysing the different elements of a concept to expose the relationship between the elements.

- **Level 5: Synthesis**

Synthesis refers to putting together parts to form a new whole, pattern or structure; combining into a whole.

- **Level 6: Critical evaluation**

Critical evaluation refers to assessment by the learner. The five mentioned levels will all be applied here (*cf.* Bloom, 1955; Bezuidenhout, 1999:3-4).

Outcomes are seen as being of two kinds, namely critical cross-field education and training outcomes (in short, critical outcomes) and specific outcomes. The critical (essential) outcomes describe the proposed results of education and training in the broader sense of the word. These are broad and people-directed skills and competencies. The aim of critical outcomes is

to direct educational activities towards the development of learners within a social and economic environment (Olivier, 1998:17).

Specific outcomes refer to the more clearly defined aspects of the educational process and are context-related. They are related to competence and skills in respect of the concepts, methods, history and theory of a discipline (Lubisi *et al.*, 1997:11). A third group of outcomes is the career outcomes, which empower people for a specific career (e.g. the profile of the graduate, determined for instance, by a professional board) (Nel & Bezuidenhout, 1998:21).

As the critical outcomes have to inform the specific outcomes, and as the number of credits required for fundamental knowledge, i.e. critical outcomes knowledge, has to be specified when registering a programme with SAQA, it was regarded important to take a closer look at these outcomes to make an informed decision as to whether they should be offered as such in, for example, an orientation module, but also to ensure that they are imbedded in the other modules of the proposed new programme.

### **(i) Critical outcomes**

Critical outcomes are generic and cross-curricular. They are not restricted to any specific learning content, but they inform the formulation of specific outcomes in individual areas of learning for all learners at all levels of the National Qualifications Framework (NQF). Critical outcomes are working principles for learning, and as such they are supposed to direct learning, training and education practices and the development of learning programmes and materials (Lubisi, *et al.*, 1997:11). The critical outcomes include, but are not limited to:

- a) *"Identifying and solving problems in which responses display that responsible decisions using critical and creative thinking have been made;*
- b) *working effectively with others as a member of a team, group, organisation, community;*
- c) *organising and managing oneself and one's activities responsibly and effectively;*
- d) *collecting, analysing, organising and critically evaluating information;*
- e) *communicating effectively using visual, mathematical and/ or language skills in the modes of oral and/ or written persuasion;*
- f) *using science and technology effectively and critically, showing responsibility towards the environment and health of others;*
- g) *demonstrating an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation;*
- h) *contributing to the full personal development of each learner and the social and economic development of society at large, by making it the underlying intention of any programme of learning to make an individual aware of:*
  - i. *reflecting on and exploring a variety of strategies to learn more effectively;*
  - ii. *participating as responsible citizens in the life of local, national and global communities;*

- iii. *being culturally and aesthetically sensitive across a range of social contexts;*
- iv. *exploring education and career opportunities;*
- v. *developing entrepreneurial opportunities” (Republic of South Africa, 1998:8).*

All the specific outcomes should flow from these critical outcomes, hence their importance in a curriculum development exercise such as this research was aimed at. Curriculum development then should begin with the formulation of and agreement on critical outcomes as they should be addressed in the programme concerned, and these then should inform the subsequent curriculum development process (Lubisi *et al.*, 1997:11).

## **(ii) Specific outcomes**

Specific outcomes are context-specific, and enable the learner to be capable of demonstrating that he/she can gain the qualification concerned. These outcomes are informed by the critical outcomes, but are formulated within the context in which they are to be demonstrated. They describe the competence which learners should be able to demonstrate in specific contexts and particular areas of learning at certain levels. When these outcomes are formulated, attention should be paid to the knowledge, skills and attitudes the learners should have before they can move on to the next level of education and training, or before they exit the programme. These outcomes serve as basis for evaluation and the assessment of learners' progress, and thus, of the learning process and learning programmes. Therefore it is crucially important that detail concerning the level of complexity, scope and learning context should be included in the formulation of specific outcomes; if not,

assessment cannot be fair, transparent, valid and reliable (Bezuidenhout, 1999:1; Lubisi *et al.*, 1997:13).

### **(iii) Career/vocational outcomes**

The third group of outcomes - career or vocational outcomes describe how the learner who has successfully completed the programme, should 'look', that is, it should be a description of the attributes of the qualified person. Requirements of professional councils and the faculty or university concerned should be reflected in these outcomes, as well as the critical outcomes at the particular exit level (points where students may leave the programme and receive some or other qualification) and the specific outcomes required to obtain the qualification (Bezuidenhout, 1999:1).

In the programme to be developed there will have to be:

- an emphasis on activity-based learning, with opportunities for learners to explore ideas and approaches to learning and to practise skills;
- co-operative as well as individual learning contexts, in order that learners can develop skills in working collaboratively in a group and individually, and develop the ability to recognise when each mode is appropriate;
- an emphasis on formative evaluation, so that the importance of the processes and developmental nature of learning as well as the end products can be realised;
- an integration of theory and practice, and manual and mental learning where practicable, as well as an integration of classroom learning and application to the broader society (Lubisi *et al.*, 1997:26).

It is now clear that an outlook that emphasises acquisition of skills or competencies is replacing that which has been based on the acquisition of knowledge as the sole purpose of education. It is also clear that learners can no longer cope in the traditional way with the amount of knowledge at their disposal. The solution to such a dilemma is equipping learners with skills that will enable them to be lifelong learners (Tisani, 1998:48). The passing of the South African Qualifications Act as well as the establishment of the National Qualifications Framework (NQF) has introduced an outcomes-based education and training system, and by following the principles of this approach, it is hoped that the new physiotherapy curriculum which is designed in this study on the basis of the findings of research, will be relevant in current times and successfully address the educational issues facing higher education in the country. Physiotherapy is a dynamic profession where new knowledge and methods are developed continually, and it is of paramount importance to train students who have the skills to integrate theory and practice contextualising their knowledge, skills and attitudes into real-life situations, and who are equipped to be lifelong learners.

The demands of the future and the situation in South Africa as a developing country require that education and training programmes, while necessarily diverse, should be educationally transformative. Thus it is required that these programmes be well-planned, coherent and integrated; they should be value adding, building contextually on learners' existing frames of reference; they should be learner-centred, experiential and outcomes-oriented; they should develop attitudes of critical inquiry and powers of analysis; and they should prepare students for continued learning in a world of technological and cultural change. It is also stressed that it is vital that qualifications obtained in South African higher education should be internationally recognised (NCHE, 1996; Department of Health, 1997:91; Higher Education Bill, 1997[b]).

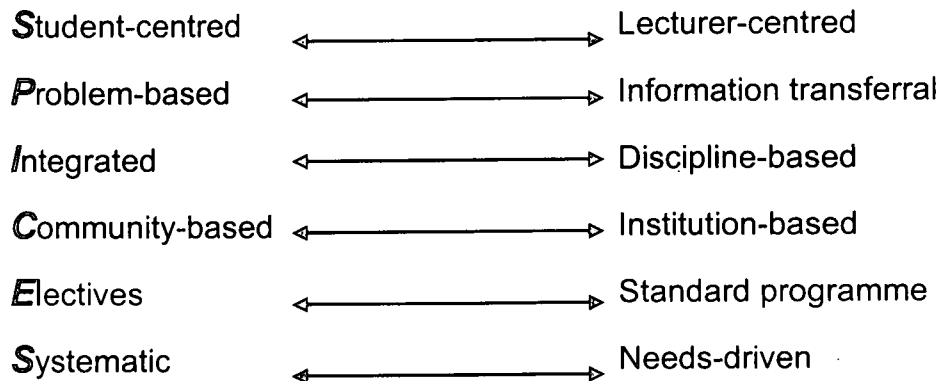
For an institution to be allowed to award qualifications, the programme leading to such a qualification has to be registered with SAQA. Thus registration is subject to a number of definite conditions, as set forth in the Regulations under the SAQA Act (Republic of South Africa, 1998).

#### **2.4.2 Educational strategies for health sciences education**

Development of a framework, with which this study is concerned, is a process of designing and establishing a new curriculum. For the purpose of this report, curriculum could be defined as a selection of educational contents, formally organised in a specific sequence to constitute a programme which gives functional coherence and is aimed at students acquiring certain knowledge, skills and attitudes. This boils down to the planning of content, methods and evaluation to determine whether the goal (outcome) has been reached.

One of the phases in curriculum development has to do with determining the didactic course of teaching-learning (that is, the methods used). The important question to answer here is: Which educational strategies should be followed in the curriculum? (Nel & Labuschagné, 1996:5). Health care education and training are going through profound changes and this will and should influence physiotherapy education and training. Health care workers are 'learners for life' and they should already be prepared for this from their early study years onwards, therefore serious attention should be given to educational strategies. To adapt to changing demands and circumstances in education and health care requires changes in approaches and strategies.

In the innovative approaches to health sciences education a number of strategies are receiving increasing attention. These have been put on various continuums and a model for educational strategies has been established, called the *SPICES model* (Harden 2000). Each of the strategies mentioned in this model represents the starting point of a continuum extending between two extremes. It can be depicted as follows:



(Harden, 2000 *s.p.*; Nel & Labuschagné, 1996:10).

On the left-hand side is the more modern, **SPICES** approach, on the right the more traditional.

Briefly the strategies entail the following (Nel & Labuschagné, 1996:57-64):

In the student-centred strategy the student is the central or key figure in the educational process. Under guidance of the lecturer the students actively participate in the educational process and develop independence which is required to prepare them for accepting responsibility for lifelong learning. Other advantages of a student-centred approach are:

- students learn more self-discipline,
- the students learn to utilise more and a greater variety of resources;
- they learn to make decisions; and
- they learn to assess their own work (Nel & Labuschagné, 1996:12).



Students entering the university often have the idea that the lecturer is the 'ultimate source of knowledge' and that they come to university 'to be taught' and not to learn. These two notions are immediately refuted if a student-centred approach is followed. When students accept ownership for their learning, they are more motivated and they get an opportunity to actively participate in the teaching-learning process. The responsibility this entails facilitates inter- and independence which are of cardinal importance in life-long learning, which is a prerequisite for successful practice as physiotherapist.

Problem-based learning is a strategy where a professional (health) problem is used as stimulus for learning (*cf.* PBL, 2.4.2.1). Problem-based learning aims at establishing an integrated body of knowledge related to the problem, developing problem-solving skills, and developing clinical thinking skills (Nel & Labuschagné, 1996:7); the development of self-directed learning skills thus is encouraged through confronting students (*learners* is preferred now to indicate that the responsibility for gaining knowledge and skills lies with the individual, that is the learner) with professional problems (Dolmans & Schmidt, 1994:372).

Problem-based learning typically involves students working together in small groups. Active participation in the teaching-learning process empowers students to exert some influence on what and how they learn, and to test and deepen this learning through discussion and debate. Problem-based learning contextualises knowledge and promotes the development of skills and confidence in self-directed learning (Usherwood & Primhak, 1996:341).

By utilising clinical problems as basis for studies the relevance and importance of the material students have to study become clear immediately, because they recognise the material as needed to understand and manage the problem. Immediate use of knowledge (application) strengthens and

consolidates the learning process. The inter-disciplinary nature of problems is aimed at promoting the integration of learning contents and inter-disciplinary co-operation. A primary goal of education is to help students to develop into independent learners who will accept active responsibility for their learning for a lifetime of continuing professional education in order to be able to stay abreast of developments in health sciences (Nel & Labuschagné, 1996:22).

In an integrated approach study material is organised in a way that makes it possible to combine subjects/ topics which are traditionally offered in separate academic courses or disciplines (Nel & Labuschagné, 1996:34). In physiotherapy integration is important, especially in the clinical applications.

A community-based education activity is an educational activity that takes place within a community or in any variety of health services settings at the primary and secondary care level. An educational programme, or curriculum, can be called community-based if, for its entire duration, it consists of an appropriate number of learning activities in a balanced variety of educational settings (WHO, 1987).

The rationale for community-based education (CBE) can be summarised in a number of distinct points, such as:

- *“Community-based education may contribute to the solution of the problem of equity in service delivery”* (Harris, 1982:57; Erney, 1991:234-236; Magnus & Tollan, 1993:250-253).
- *“The closer the resemblance between the situation in which something is learned and the situation in which it is applied, the better the performance. CBE provides unique opportunities for learning in an environment that typically resembles what students will encounter in later professional life.”*

- *“CBE makes health services available in the community as soon as students are exposed to the community.”*
- *“CBE may equip students with competencies which they will never learn otherwise, e.g. leadership skills, the ability to work in a team, and the capability to interact with the community” (Magzoub, 1993:11, 17; Schmidt, Neufeld, Noorman & Ogenbode, 1991:66).*

Given the new priorities in South Africa for a holistic approach to health and the need to further develop a comprehensive health care system, the basic premises of traditional South African health education need to be revised. From the outset in the curriculum review process it was accepted that one of the premises that should underlie the new curriculum, should be that of training students to be capable to respond to the most basic community needs and working in partnership with other health science professionals on development projects to achieve a multi-sectoral approach to health service delivery.

The following principles which were adopted in 1988 for medical education were taken cognisance of in deliberations on a new physiotherapy curriculum:

- *The curriculum should be based on community rather than tertiary care experiences;*
- *the curriculum should be integrated by presenting a series of problem solving exercises rather than isolated special subjects;*
- *there should be emphasis on small group learning;*
- *the curriculum should represent the health care needs of the region;*

- *students should be recruited from the communities the institution serves, on the basis of community commitment and selected on the basis of potential rather than academic merit (Medical Research Council, 1988:48).*

In a traditional standard programme students go through a stereotyped, standard, prescribed course. All the students therefore are subjected to exactly the same course as regards content and methodology, whereas with an elective strategy room is left for more flexibility in the curriculum, allowing students some choices, especially if they want to study a specific topic or subject in more depth (Nel & Labuschagné, 1996:56).

Of particular importance are the following goals of an elective strategy:

- *To allow students more freedom and choices within the curriculum;*
- *to provide an opportunity for students to develop personal interests;*
- *to afford students more opportunities to take responsibility for their own learning;*
- *to encourage student participation in decision-making in the curriculum development process;*
- *to encourage closer contact between student and lecturer (Nel & Labuschagné, 1996:56).*

The last strategy in the SPICES model is that of a systematically structured curriculum. In this strategy the programme is planned in a way that will ensure that each student receives ample exposure to everything he/she will need to complete the programme successfully (Nel & Labuschagné, 1996:60). *“With an opportunistic strategy, on the other hand, the learning*

*experiences of the students will be mainly determined by the material available and to a lesser extent by the interests of staff members” (Harden, 2000:s.p.).*

The outcomes-based approach fits well into the above-mentioned strategy, as the outcomes that students have to achieve are spelt out clearly. In this way it is ensured that students will have sufficient exposure and the stated outcomes will all be reached, even though provision is made for different ways to do so, that is, learning programmes should be structured and needs driven but flexible (Lubisi *et al.*, 1997:8).

Educational strategies used in health sciences education is a very topical issue. The curriculum in health sciences education, and in particular the educational strategies used, were addressed in the WHO's Edinburgh Declaration (Medical Education, 1988:481-482), and thereafter at other congresses on health sciences education. It is clear that expectations with regard to educational strategies are high and that traditional systems *per se* will no longer suffice. Changed and changing circumstances have to be considered and the time is ripe now to ensure that the changes required to keep in step with innovations in educational strategies in health science education are made (Nel & Labuschagné, 1996:64).

The development of a framework for the education and training of physiotherapists is a task that cannot be completed once and for all, but it is a dynamic process. Programmes, implemented by training institutions, should be tested and questioned on an ongoing basis; it is a cyclic process which should be repeated time and again to be adapted every time in the light of experiences or new information or innovative thinking on the matter. That much became clear from this literature review of the process of data review, and the process which is to culminate in an innovative framework for physiotherapy education and training. The framework will also not be regarded as fully completed once this research report sees the light, because

in the implementation process it will be tested and adapted again as time goes by, and circumstances will dictate changes in medical education which will impact on this cyclic process.

#### **2.4.2.1 Problem-based learning (PBL)**

*"Problem-based learning is a pedagogic process championed by the University of McMaster, Ontario, and has been used since the 1960's. The process uses problems as the starting point for student education. In medical education these problems are usually clinical and integrate basic science with clinical thinking" (BMJ, 1996). According to Boud and Feletti PBL "[is] the most significant innovation in education for the profession for many years" and "the most important development since the move of professional training into educational institutions" (Boud & Feletti, 1991).*

*Harvard Medicine School found that students allocated to PBL reflected more on their learning, memorised less than their peers, and preferred active learning. Their interpersonal skills, psychosocial knowledge and attitudes towards patients were better than students in traditional pathways. The PBL students felt more stimulated, challenged and satisfied. They reported significantly greater autonomy, more innovation and involvement and were more sure of themselves in handling uncertainty (BMJ, 1996; Academic Medicine, 1999).*

At the beginning of 1996 the National Commission on Higher Education made recommendations in a working document to health education institutions. They were recommended to revise their curricula in order to equip health care students and health personnel educators with the knowledge, competency and attitudes to respond to health care needs in South Africa.

It was also recommended that higher education should play specific roles in the fields of continuing education for professional health care personnel and should ensure the relevance of courses to the health needs of the population, This being in order to produce appropriately skilled and orientated persons for the national health care services (National Commission on Higher Education, 1996). Furthermore a strategic objective for Higher Education is to produce graduates with the skills and competencies to meet the human resource needs of the country (National Plan for Higher Education, 2001:18).

Against this background, and given the historic development of PBL, it became clear that to satisfy the recommendations made by the National Commission on Higher Education the PBL process offered the best teaching strategy. This teaching method made it possible to achieve exit-level outcomes such as the development of skills and competencies that meet the human resource needs of the country and the development of problem-solving skills to encourage students to be life-long learners.

## **2.5 NATIONAL AND INTERNATIONAL TRENDS IN PHYSIOTHERAPY EDUCATION**

### **2.5.1 Introduction**

*“As the world has entered a new century, the rapid changes that continue to sweep over the global village are increasing, and new challenges and opportunities are facing health sciences education and training all over the world. To meet those challenges head-on and successfully, physiotherapy educators shall need to share experiences and exchange ideas and communicate new initiatives. In looking at the health sciences scene, one cannot afford to have a narrow focus and waste time on re-inventing the wheel - rather we should look about us and learn from others in setting the stage for success now and in the new millennium” (Kisil & Chaves, 1995:13).*

Health care services are going through a period of irreversible change. *"In the industrialised world, scientific discoveries and technical advances emphasise what is possible in the most sophisticated centres and suggest that for individuals virtually no aspect of ill health is too challenging to be met and overcome (Oswald, 1996:37). Throughout the world, economic and political considerations are fuelling an active, explicit and continuing debate about the purposes of health care and the organisation of health care services. This involves the identification of priorities for patients and services and a review of the competencies and attributes desired of those who are trained in the health care sciences"* (Oswald, 1996:37).

### **2.5.2 Characteristics of global trends**

In a description of a strategic framework for the future development of academic health sciences centres in Canada, a former dean of a medical school listed a number of trends in health care and health professions education that characterise the changing health care scene (MacLeod, 1996:15). This list, which is presented in adapted and abridged form in Table 2.2, illustrates a phenomenon which is now accepted as inevitable by all who are actively engaged in health professions education, and can clearly be seen in academic and health care changes in South Africa.



**TABLE 2.2: The changing health scene: Prominent trends in health care and health professions education**

FROM	TO
Independent decision-making Disciplinary isolation in education	Group decision-making Interdisciplinary and multi-professional educational initiatives
Physician-driven health care Independence in care	Multi-professional balance Co-operation and collaboration with multi-disciplinary and multi-sectoral groups
Specialist domination	Blended primary, secondary and tertiary care team approach
Primarily institutional focus Curative care Male dominance	Community-based balance Health promotion, disease prevention Gender equality

*The health care of the future is in some sense already with us in South Africa: it is widely acknowledged worldwide that the scientific possibilities of health sciences outstrip the capacity to pay for them, especially in a developing country such as South Africa, while technical innovation is moving patient care out of institutions and towards primary care (Oswald, 1996:39).*

### **2.5.3 Critical outcomes**

The **critical** outcomes (as mentioned below) required in South African education and training (Olivier, 1998:17) “bear a very close resemblance to what is expected of education and training in other countries. In order to remain effective, health care practitioners will require a number of specific personal competencies and attributes which they must begin to embrace as undergraduates”. These include:

- *The ability to take responsibility for their own learning, since the size and rate of change of the health sciences data base require every health care practitioner to embark on a lifetime of self-directed education.*

- *The skills to take advantage of sophisticated information technology to ensure efficient updating of their knowledge. Centralised repositories of knowledge will give way, for those who can use the equipment, to detailed sources available in offices throughout the world.*
- *The attitudes appropriate to ensure constant re-evaluation of their understanding, skills and attitudes. Without flexibility and self-awareness, health science professionals will be at sea among the choices and pressures which will threaten to overwhelm them.*
- *The possession of critical reasoning skills to evaluate evidence and to provide a secure foundation for rejecting, as well as accepting, solutions and suggestions.*
- *The skills and attitudes which promote effective work in teams. More than ever, effective health care will depend on well-structured teams, whose members have defined and agreed roles.*
- *A high level of communication skills, with particular emphasis on obtaining and giving information, negotiating and counselling. These skills are fundamental to the effective exercise of responsible choice, which will be increasingly crucial to patients and health care professionals.*
- *A sound base in ethical decision-making. Without a firm grasp of ethical principles, choices, far from being a liberating force, will lead down paths towards inhumanity, inequality, irrationality and exploitation (Oswald, 1996:39; SAQA, 1997:3).*

## **2.5.4 Specific international trends**

*"The curricula for physiotherapy education and training, as is the case with other health sciences, vary from one country to another. The contents of the curricula are also influenced by the socio-cultural tenets of each society"* (Amosun, 1994:60). Because of the continuous developments in the field of health care, there is a constant evaluation of the curricula to reflect the many changes occurring in the philosophy, knowledge and practice of physiotherapy.

In order to obtain first-hand information regarding specific trends in education and training, three in the United Kingdom universities, namely Brunel, Nottingham and Hatfield were visited in the course of the research. The head of the department of each of these universities was interviewed on the basis of a questionnaire (Appendix 1A), and their curricula were obtained for use in the study.

The data collected from the semi-structured interviews in the United Kingdom has been compared to education and training in South Africa and is offered in the same sequence as the format of the questionnaire.

The condensed curricula of overseas universities and South African Universities are given in Appendix II.

### **2.5.4.1 History**

The training of physiotherapists at the older, established universities in the UK started in the late 1920s and was hospital based. From 1980 onwards almost all training moved to universities and a three-year Bachelor of Science (Honours) degree in Physiotherapy was instituted at universities. Historically, training in South Africa followed the same pattern, except for the Bachelor of

Science (Honours) degree being a four-year degree. This is mainly because in South Africa basic disciplines are taught in the Bachelor of Science degree, while in the UK these disciplines are taught in a post-matriculation year. The learning modules in the programme for professional physiotherapists in South Africa are sequential with qualification being the only professional exit.

The University of Hatfield (UK) started training physiotherapy students in 1992. A three-year Bachelor of Science (Honours) course is offered with exit levels after the first and second years, bearing credits that can be used professionally.

All the UK universities (except Hatfield) follow the core curriculum as stipulated by the Chartered Society of Physiotherapy. No university trains assistants; they are trained in the hospitals, as is the case at present in South Africa.

#### **2.5.4.2 Selection policy**

The UK has a central selection system, and, like in South Africa, more applications than could be accepted are received. A selected number of top candidates' applications are sent to each university for final selection. Academic merit, recognition of prior learning and an interest in people are the criteria for final selection. Some universities have a quota system according to which  $\frac{1}{3}$  of the selected students must be mature students, i.e. people who are several years post matric;  $\frac{2}{3}$  school leavers; and 25% of these male. Universities are pressurised to select more ethnic students. The dropout rate, as is the case in South Africa, is only 1%. Currently each South African university is responsible for their own student selection. Some universities are required to apply a quota system.

### **2.5.4.3 Course content**

The Universities of Brunel and Nottingham offer integrated, sequential courses in modules based on themes. Hatfield University offers a course based on systems with exit points after the first and second years. The courses are outcomes-based, and the qualification is nationally and internationally accepted. All the courses are based on the core curriculum as stipulated by the CSP, with the initial modules attending to fundamental knowledge and skills, which are similar to the critical outcomes prescribed in the South African education and training system. The initial modules focus on the practical application of core knowledge and skills, with those of the final year concentrating on clinical practice and elective specialisation modules.

### **2.5.4.4 Instructional methods**

None of the courses in the UK universities that were visited are completely problem-based. The instructional methods used reflect a move away from teacher-centred to problem-based approaches, with a variety of innovative teaching strategies being used, such as practical classes, small-group tutorials, patient presentations and as much audio-visual technology as possible. These teaching methods are very similar to the methods used in South Africa, except that there is a dearth of information technology such as computers, at some universities.

### **2.5.4.5 Contact time**

It was not possible to determine the exact number of contact hours students have with lecturing staff, but on an average it seems that students have approximately 15-20 hours formal and informal (tutorials) contact time per week. This compares favourably with the situation at UFS, where students spend approximately 40 notional hours per week on their studies during the

four years of the programme (notional hours are contact time plus self-study time).

#### **2.5.4.6 *Clinical practice***

The universities that were visited all have structured clinical blocks, each addressing a specific clinical theme - the same as in South Africa. The CSP stipulates that students must do 1000 hours clinical work before they qualify. The number of hours clinical practice required for South African undergraduates is also stipulated by the HPCSA as being 1000. Clinical placements in the UK can be very far from the university, forcing students to reside close to the clinical placement.

#### **2.5.4.7 *Evaluation and accreditation of physiotherapy***

##### **Evaluation**

The universities visited in the UK are internal evaluations for quality assurance and accreditation of physiotherapy programmes. External evaluations are performed by academics from other universities. Internal evaluations are conducted the academic staff, clinical colleagues, and in occasion by students as well as the accrediting body of the CSP.

##### **Accreditation**

Every five years each training centre is evaluated and accredited by the CSP. South Africa has a very similar system, albeit that national accreditation is not yet part of the system.

#### **2.5.4.8 Lecturer qualifications**

**Most** of the universities visited in the UK insist on a M.Sc. (Master of Science) qualification as minimum requirement for a lecturing post in physiotherapy, while others employ academic staff with a bachelor's degree (B.Sc.). The tenure system was not applied at all at Hatfield University, while at the other universities staff can be tenured after a period of 1 year to 4 years. South African Universities do not have a tenure system. However, in some cases lecturers can only be appointed permanently after two years of teaching. Due to a lack of postgraduate qualifications not all lecturers have an M.Sc. degree in **South Africa**.

#### **2.5.4.9 Institutional budget and facilities**

Funding for physiotherapy training in the UK is obtained through annual negotiation with the National Health System. This ultimately determines the annual student intake. The number of bursaries available to students are becoming fewer and smaller annually, making it very difficult for students from lower income backgrounds to enter higher education. Enrolment in a physiotherapy course costs £5,500 to £6000 per year, definitely beyond the means of lower income groups.

Although South African physiotherapy departments do not have to negotiate directly with the Department of Health for funding, the budget for higher education is decreasing.

## **2.6 PHYSIOTHERAPY REQUIREMENTS OF THE POPULATION OF SOUTH AFRICA**

### **2.6.1 Introduction**

The 1998 the Department of Health initiated the South African Demographic and Health Survey (SADHS), and this was the first of its kind to be conducted in South Africa since the 1994 democratic national elections. This survey collected information on adult health conditions; sexual, reproductive and women's health; maternal and child health; adult, maternal, child and infant mortality; fertility and contraceptive use. The field work of the study was carried out between January and September 1998 (Department of Health, 1999:v).

### **2.6.2 Survey objectives**

The primary objective of the SADHS was to provide up-to-date information on fertility and childhood mortality levels; fertility preferences; awareness and use of contraceptive methods; breast-feeding practices; maternal and child health; awareness of HIV/AIDS; chronic health conditions among adults; dental health; and habits of lifestyle that affect the health status of adults. Various anthropometric indicators such as height, weight, blood pressure and pulmonary flow were measured for adults. The survey results were intended to assist policy makers and programme managers in evaluating and designing programmes and strategies for improving health services in the country (Department of Health, 1999:1). It therefore stands to reason that the findings of the survey are important for the purposes of this study too, as these are aspects that have to be taken cognisance of in designing programmes for the training of health care workers. The aspects of the demographic and health survey that have a direct bearing on the delivery of physiotherapy services (for which the education and training programme must



prepare the students) are women and child health, HIV/AIDS, chronic conditions and diseases of lifestyle.

### **2.6.3 Study design of the SADHS**

The SADHS employed a nationally representative, two-staged sample, selected from the 1996 census data. Each of the nine provinces in the country was stratified into urban and non-urban groups. A total of 972 primary sampling units was selected. Fieldwork in three sample points was not implemented and the questionnaires for another three sample points were lost in transit, thus the data file contains information for a total of 966 points (Department of Health, 1999:1).

Three types of questionnaires were used: a household, a woman's and an adult health questionnaire. The questionnaires were pre-tested in all the major ethnic groups and in official languages. In 1997 a unit for Health Systems Research and Development of the University of the Free State conducted the research and recruited 175 candidates for involvement in the field work. Participation in the project was based on suitability with regard to several areas including education, maturity, field work experience and language spoken (Department of Health, 1999:2-3). These field workers were then trained by staff of the Medical Research Council, the University of the Free State, the Human Sciences Research Council and Macro International. A total of 12,247 households across South Africa were successfully interviewed in the survey (Department of Health, 1999:4).

### **2.6.4 Key findings of the survey**

Table 2.3 depicts the statistics collected through the survey that have a direct bearing on physiotherapy service delivery.

**TABLE 2.3: Incidence of health related practices and selected diseases of the respondents**

<b>HEALTH-RELATED PRACTICES AND DISEASES</b>	<b>%</b>
Births without medical assistance	16
Adults who smoked	24
Adolescents who smoked	10
Adults suffering from asthma - males	7
- females	9
Adults suffering from hypertension - males	11
- females	13
Adults suffering from overweight - males	29
- females	55
Adults suffering from obesity - males	11
- females	29
Breast-feeding (babies 0-3 months)	10
Breast-feeding exclusively (4-6 months)	2
Awareness of HIV/Aids - females	97

(Department of Health, 1999)

The key findings of the survey indicate that in 16% of all births the mothers did not receive any medical assistance during delivery (Department of Health, 1999:s.p.). This could have a direct influence on the number of children with cerebral palsy - children who will require physiotherapeutic services. With regard to smoking, the findings of the survey indicated that 24% of all adults, and 10% of adolescents smoked. This has a bearing on medical conditions such as emphysema, asthma, hypertension and cardiac conditions. In these cases physiotherapeutic care is necessary at the levels of preventive, promotive, therapeutic and rehabilitative care, which constitutes a large proportion of the physiotherapists' health care work and therefore needs to be attended to in training. The reported prevalence of asthma (7% of men, 9% of women), hypertension (11% of men, 13% of women), overweight (29% of men, 55% of women) and obesity (9% of men, 29% of women) among adults also has significance for physiotherapeutic training. The information on asthma and smoking is important and relevant when designing educational programmes, because pulmonology is a major subject in the physiotherapy training programme and physiotherapists have a major role in the rehabilitation of patients in this field. Symptoms of chronic bronchitis were

also reported frequently, and in all these pulmonologically related conditions low levels of education were common (Department of Health, 1999:31). This presents a challenge to the educational role of physiotherapists in the community. The findings on the prevalence of hypertension, overweight and obesity are relevant and important for physiotherapy training, as these are all conditions treated by physiotherapists. Overweight and obesity often result in musculoskeletal problems such as focal pain, back pain and cardiovascular problems which are also treated by physiotherapists.

The survey also revealed that breast-feeding among South African women is very low, and supplementation of breast milk with other liquids and foods begins early. Of all children aged 0-3 months, only 10% receive exclusive breast-feeding, while half of them are bottle-fed. Among those 4-6 months old, less than 2% are exclusively breast-fed, but more than one third are bottle-fed (Department of Health, 1999:12). Breast-feeding has a direct influence on the health status of an infant and influences paediatric health, which constitutes a large part of the physiotherapist's work.

In the survey it was found that the awareness of HIV/AIDS is high; 97% of women age 15-49 said that they had heard about the disease. However, it was clear that they needed more detailed information to change behaviours and prevent further infections. The findings about awareness and knowledge of HIV/AIDS (Department of Health, 1999:13) are important for the physiotherapist, because an awareness of the extent of sexual health of the community is necessary in the counselling role of physiotherapists and this information needs to be conveyed to students during their training.

The SADHS findings about violence against women (Department of Health, 1999:21) also proved valuable in the planning of the measuring instrument. Physiotherapists need to be aware of the extent of violence against women in order for them to be able to identify such cases and support the victims with advice and counselling.

### **2.6.5 Key findings from the White Paper for the transformation of the Health System in South Africa**

Aspects of the populations' health status that have a direct bearing on the physiotherapy profession and are discussed in the White paper for health are disability, HIV/AIDS and chronic diseases. Other conditions and problems that are attended to in the White Paper are child, adolescent, oral, mental, environmental and occupational health, as well as substance abuse and sexually transmitted diseases.

As mentioned, physiotherapeutic intervention plays a role at all four levels of health care and prevention and as such could be involved in the treatment of any medical condition or problem.

The underlying philosophy of the Alma Mata declaration is comprehensive care including curative, preventive, promotive, and rehabilitative care within the context of, amongst others, community participation and intersectoral collaboration (Department of Health, 1997:34). However, to prevent overloading of this dissertation only disability, HIV/AIDS and chronic diseases will be discussed

The problems related to disabilities are stated as follows:

- *Ineffective legislation, lack of policy and inadequate health care programmes deprive people with disabilities of opportunities to function independently in the community of their own (Department of Health, 1997:128).*

According to the White Paper on Integrated National Disability Strategy approximately 5% of the South African Population is disabled.

The White paper acknowledges the fact that the provision of care for people living with HIV or AIDS is largely the responsibility of the Department of Health at all four levels of health care.

The Department of Health will therefore undertake to:

- compile management protocols for men, women and children;
- plan strategies to improve tuberculosis control;
- plan guidelines for the delivery of care at the appropriate level, along a continuum from home to hospital to hospice, with appropriate discharge and referral patterns;
- encourage training of health care workers to provide appropriate care (Department of Health, 1997:69).

The goals for the treatment of chronic diseases are to reduce morbidity and mortality associated with chronic diseases and improve the treatment and care of these patients (Department of Health, 1997:130).

### **2.6.6 Conclusive remarks**

Neither the SADHS report nor the White Paper offered information on musculo-skeletal conditions, sports injuries or neurological conditions, which encompass a large proportion of the physiotherapists' work, and need to be taken cognisance of in planning. In designing a programme for the education and training of physiotherapists it is important to take into account the relevance between the South African situation and international training.

## 2.7 IN SUMMARY

From the literature studied it is clear that there are national and international similarities in the trends in higher education, including physiotherapy education. With regard to the higher education situation in South Africa, aspects that need particular attention when restructuring a (physiotherapy) programme, are that the programme needs to be outcomes-based, relevant to the education and health needs of South Africa today, student-centredness needs to be emphasised, and students have to be prepared to become lifelong learners. It is important that the programme meets the requirements of SAQA, thus ensuring that it can be registered on the National Qualifications Framework, and preparing our students for lifelong learning and the professional field where life skills (*cf.* critical skills) may very well be a deciding factor in their success rate.

Health and education are dynamic fields, and the changes of the past few years have compelled education and training institutions to take a new look at their preparation of health care practitioners. The literature survey reported in this chapter has clearly identified the forces, external and internal, which Departments of Physiotherapy have to account for in developing an innovative programme for physiotherapy training in South Africa. The framework shall have to ensure that the graduates of the department will be fully equipped to fulfil their role in our country and assist in reaching the WHO's ideal of health for all, whilst remaining internationally competitive.

## **CHAPTER 3**

### *Research design, method and techniques*

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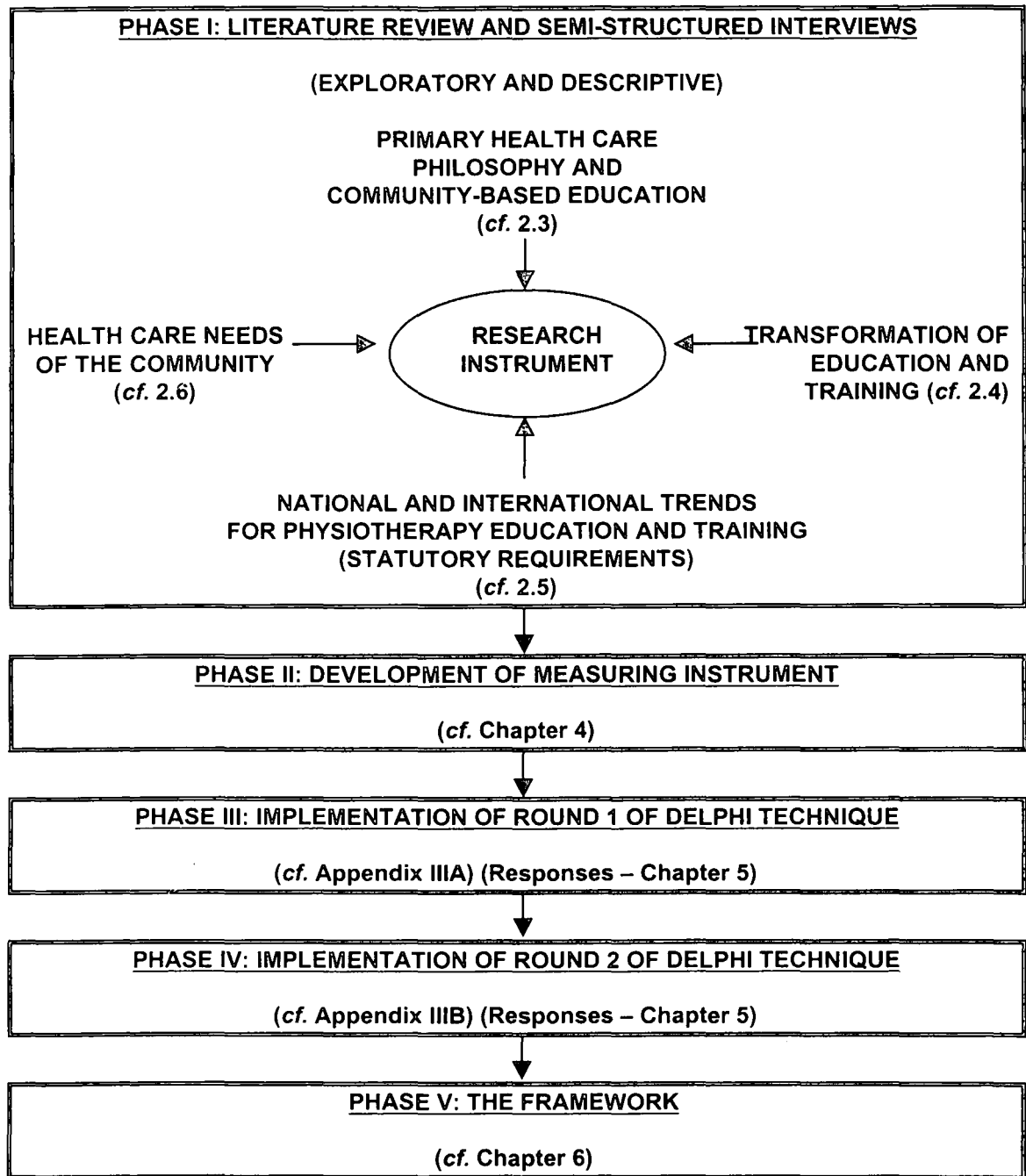
#### **3.1 INTRODUCTION**

In planning a research project it is of extreme importance that the researcher decides beforehand what kind of data will be required to solve the research problem, that is, the researcher has to decide which methods and techniques would serve the purpose of the research best (Leedy, 1993:127). Leedy (1993:127) further states that all data will reach the researcher either as words or as figures. In planning this study it was decided to use the survey method with a qualitative research design, the aim being to explore, describe and develop. Various research techniques were used, namely a literature survey, workshops, semi-structured interviews, a questionnaire and the Delphi technique. Triangulation was used to compare the data collected from the various research techniques (Mays & Pope, 1996:4) in order to ensure credibility and dependability.

The process of open coding has been used to identify the goals for physiotherapy education and training that have emerged from the raw data. The raw data has been broken down into manageable chunks. "A scheme or 'audit trail' by which to identify the data chunks was employed. Unnecessary data has been discarded and relevant data has been grouped into conceptual, descriptive, multi-dimensional categories which form the preliminary framework for analysis. These categories will gradually be modified or replaced during the subsequent phases of the research process. The categories, or goals, will be compared or combined in new ways as the big picture begins to assemble" (Strauss & Corbin, 1990).

The research techniques that were used for this study were chosen because they provided the researcher with information from expert individuals and expert groups (Firestone, 1987:16). As values differ from person to person, from community to community and from time to time (Oberholzer, 1968:12), it is important to gain information from the perspectives and experiences of persons based on what they regard as important, which makes its applicability within a wider context more reliable. During the course of the research role players made inputs at various stages. On two occasions the process of purposeful sampling was applied: when universities were selected to interview in the United Kingdom; and when domain experts were selected for the Delphi technique. "*Purposeful sampling seeks information-rich people or cases that can give depth to the study* (Patton, 1990:169). The decision to stop sampling must take into account the research goals, the need to achieve depth through triangulation of data sources, and the possibility of greater breadth through examination of a variety of sampling sites (Hoepfl, 1994:5). Figure 3.1 provides a diagrammatic depiction of the research process.





**FIGURE 3.1: The Research Process**

## **3.2 THE FRAMEWORK**

### **3.2.1 Definition and format of a framework**

A framework can be defined as "*a structure for supporting, defining or enclosing something ... used as the basis for something being constructed*" (The Reader's Digest Illustrated Oxford Dictionary, 1998). The broad parameters of physiotherapy as a discipline, which can be described as a health care profession that emphasises the use of physical approaches in promoting, maintaining and restoring a person's physical, psychological and social well-being, constitute the remaining constant, and the framework will form a scaffolding onto which outcomes, themes and requirements can be pegged.

### **3.2.2 The background of the framework**

The rate of change in higher education and the health sciences dispensation has been rapid and relentless. The background of the framework reflects the range of external influences that have emerged over the past couple of years in physiotherapy education and practice and which have been taken into account in this study. Political change in South Africa has been reflected in documents stipulating reform in health care professions and higher education and forms the cornerstone for this study. To meet these stipulations it has become necessary to revise education and teaching curricula and teaching strategies. Health professionals have become more aware of the health and environmental status of communities. There has also been a global move away from traditional outdated curricula. The background underlying this framework thus can be found in an endeavour to address these changes and developments in constructing a framework which reflects an holistic approach to physiotherapy in an integrated programme of learning with a student-

centred focus, based on knowledge, skills and attitudinal outcomes, and lifelong learning.

### **3.2.3 The composition of the framework**

The proposed framework was compiled from the broad parameters of physiotherapy obtained during the exploratory and descriptive phases of this study. The framework will be the final product of the research and will be derived from the data obtained through the research instrument. It consists of a set of professional outcomes and specific outcomes with indications of the critical outcomes which inform the professional and specific outcomes the fundamental knowledge and skills required, a specification of core discipline knowledge, and a peg for electives (cf. Olivier, 1998; Lubisi et al., 1997; Hicks, 1995). Furthermore the framework provides for major themes and requirements for education and training. Various exit levels (for a three- or a four-year programme) can be accommodated within the framework by adjusting the outcomes.

## **3.3 THE RESEARCH PROCESS**

The research was conducted in five phases (cf. Figure 3.1)

Phase I was the exploratory and descriptive stage. Multiple methods of data collection were used, namely a literature survey, semi-structured interviews and departmental workshops. This technique is called triangulation and is used to enhance the consistency of data gathering. The process of open coding was used to look for patterns of convergence and to corroborate an overall interpretation. This process is a genuine test of the truthfulness or validity of the study. The test relies on the assumption that any weakness in one method of data collection will be compensated by strengths in another (Mayes & Pope, 1996:4).

The South African documents that were analysed for the literature survey concentrated on transformation and reform in health care and higher education. The documents from national and international training institutions that were analysed addressed the course content and teaching strategies of the respective institution. Data was collected from these documents.

Data was also collected from the checklist that was used for the semi-structured interviews in the United Kingdom.

The researcher used the process of open coding to identify themes or patterns of convergence to compile the Goals for Physiotherapy Education and Training.

**Phase II:** In phase II the measuring instrument was developed. The goals were re-examined and superimposed on the level descriptors compiled by SAQA (cf. Appendix IIIA, Addendum A), and the job profile of the physiotherapist (cf. Appendix IIIA, Addendum B). The process of axial coding was used to make connections between the identified themes and build a conceptual model which constituted the initial development of the measuring instrument (Hoepfl, 1994:8).

The information was used to compile Vision and Mission Statements and then the goals were translated into exit-level outcomes for the graduate physiotherapist. Specific and critical outcomes were compiled from the exit-level outcomes.

The Vision and Mission Statements, goals, exit-level outcomes and specific and critical outcomes were used for the measuring instrument.

This research process took place in workshop 3 (cf. 3.4.2.3).

**Phase III** entailed the implementation of the Delphi technique. The expert judgement of the domain experts, or Delphi technique panellists, was obtained and analysed by means of the Likert scale. Revisions were made in preparation for round 2 of the Delphi technique.

**Phase IV** entailed the implementation of round 2 of the Delphi technique. The data obtained from the domain experts were analysed and as consensus was reached in each statement of the research instrument, the study progressed to phase V.

**Phase V** was the development of the final framework. The framework was based on the analysed data obtained in phases III and IV.

## **3.4 THE RESEARCH DESIGN**

### **3.4.1 Design, aims and method**

This qualitative study was designed with the aims to explore, describe and develop, and the survey method was used.

Descriptive research gives an accurate account of the characteristics of a particular individual, situation or group, and is a means of discovering new meaning, describing that which exists and of categorising information (Burns & Grove, 1993:29). According to Leedy (1989:140-141) the descriptive survey method in research is based on looking into a phenomenon. Such a

phenomenon may be viewed in different ways, for example by means of questionnaires, interviews, observations and inventories.

The problem addressed in this study did not lend itself to precise analytical techniques, but could benefit from subjective judgements on a collective bases (Critchler & Gladstone, 1998:431).

### **3.4.2 Research techniques**

Various techniques were used to collect information, develop the research instrument and judge the content of the responses. The research extended over five years in which time the following techniques were employed:

#### **3.4.2.1 Literature survey**

An in-depth literature survey was done. A three-step process was followed:

- A variety of relevant documents addressing health care and higher education transformation were identified by means of a network search in a library;
- these documents were analysed and critically reviewed for significant information;
- finally a written report (*cf.* Chapter Two) was generated from the knowledge gained.

The variety of widely recognised research resources included government reports, with a focus on those from the Departments of Health and Education. Reports on transformation of the HPCSA, journals, books and government gazettes were also used. In addition any literature or information that had a bearing on the research problem and findings was used. In Chapter 4 reference has been made to literature that supports the key findings of the research. Where no literature could be found no reference has been given.

The purpose of the literature study was to:

- highlight the research problem;
- verify the significance of the research problem; and
- collect and analyse data which could serve as a baseline for the development of the research instrument.

### **3.4.2.2 Interviews**

In 1998 the researcher visited the programme director and heads of departments of three universities in the United Kingdom. The three universities that were visited are all highly acclaimed educational institutions for physiotherapists; they were also extremely interested in the outcome of this project.

The decision to interview Nottingham, Brunel and Hatfield Universities was made on the recommendation of the Chated Society of Physiotherapy (CSP) of the United Kingdom. According to the CSP both Nottingham and Brunel Universities follow the Curriculum Framework as compiled by the CSP and are therefore representative of the physiotherapy curriculum followed by the majority of United Kingdom Universities. Hatfield University follows a new outcomes-based and intergrated curriculum similar to the new trends in

higher education. It was suggested by the CSP that these three universities would be able to give a holistic perspective of the education and training of physiotherapists in the United Kingdom. These visits were done with the confidence that credibility of a study depends less on the sample size than on the richness of the information gathered. Credibility can also be enhanced by triangulation of the data (Patton, 1990:11). The richness of the data gathered from these interviews was a great contribution to this study. The following process was followed:

- An interview format in the form of a checklist was compiled to guide the interviews (see *cf.* Appendix 1A).
- Directors of Physiotherapy programmes were contacted and interviews were diarised (see *cf.* Appendix 1B).
- The interviews were conducted in a semi-structured way, so as to obtain the maximum amount of information.

The checklist was used as an interview guide and consisted of specific topics pertaining to the research. The checklist was prepared to ensure that the same information was obtained from each person, with no predetermined response. Open-ended questions were asked to allow for individual variations (Patton, 1990:172). The interviewer was free to probe and explore within the predetermined areas of enquiry. The checklist also helped to make good use of limited time. Once again the process of open coding was used. Themes or similarities between the United Kingdom and South African Universities impacting on education and training were identified (Hoepfl, 1994:7).



The semi-structured interviews were conducted along the following guidelines (cf. Appendix 1A):

- Aim of the programme
- Selection policy
- Course content
- Instructional methods
- Contact time
- Clinical practice
- Evaluation and assessment
- Lecturer qualifications
- Institutional budget and facilities.

The purpose of these interviews was to

- collect data for the development of the research instrument;
- enable reflection on individual institutional training strategies; and
- ensure international content validity of the framework.

This information was analysed, summarised and compared to the South African situation (cf. 2.5.4.1 to 2.5.4.9). The information has also been integrated into the measuring instrument (cf. Appendix 111A and 111B).

### **3.4.2.3 Departmental workshops**

As early as 1996 it became clear to the Department of Physiotherapy of the University of the Free State that forced educational evolution was influencing their training strategies and pro-active planning was essential. A process of discussion and lectures on transformation of higher education given by the Department of Education and Development of UFS, followed. In 1999 the Department of Physiotherapy embarked on a set of three workshops to plan for the future. The workshops formed one of three sources of data collection

which was used for the process of triangulation. The workshops were also used to translate raw data into conceptual models that were used for the measuring instrument.

The workshops took place concurrently with the analysis of the documents used for the literature survey and the semi-structured interviews that took place in the United Kingdom. These were the three prevailing forms of data collection that were used for this study. This background knowledge placed the Department in a position where firsthand national and international information impacting on higher education in health professions could be employed for the restructuring of their learning programme.

The following process was followed:

- The aims of the workshops were defined;
- pressing issues related to the transformation of higher education in health sciences were identified ;
- appropriate guest speakers were invited to contribute;
- the way forward for addressing the issues related to higher education transformation was decided on.

It was decided that the following aspects were to be addressed in the workshops:

- To expose the academic staff to the Requirements for higher education as stipulated by the SAQA Act;
- to ascertain the current situation with regard to physiotherapy curricula in South Africa;

- to convert an outdated curriculum to a problem-based, community-based, integrated programme;
- to compile new vision and mission statements, including departmental values for the department;
- to compile exit-level-, specific- and critical outcomes, based on the Goals for Physiotherapy Education and Training that emanated from the literature study and semi-structured interviews;
- to compile learning outcomes for each study year of the new programme.

The first workshop was held in 1999.

### **Workshop 1**

This workshop was used as an information and training session for the academic staff.

Before embarking on restructuring the programme for Physiotherapy Education and Training it was necessary to introduce the staff to the SAQA Act. Due to workshops and lectures on the transformation of higher education that had been offered to the staff by the Faculty and the Department of Education and Development of the UFS, the SAQA act was not entirely new to all the staff.

In addition the current education and training scenario with regard to physiotherapy curricula in South Africa had to be ascertained. This was done in order to prevent reinventing the wheel.

The following procedure was followed:

- Programme directors from two South African universities offering physiotherapy programmes visited the UFS department and their current programmes were discussed;
- the other universities offering a Physiotherapy course were telephonically contacted and their programmes were discussed or the programme was drawn off the Internet;
- the newly appointed programme director for UFS programme was invited as guest speaker at the workshop; his topic was the background and implementation of the SAQA Act;
- a training session followed under the guidance of the guest speaker to practice the writing of learning outcomes.

Due to this workshop being an information and training session, no results were produced.

## **Workshop 2**

Three months later the following workshop was held.

In preparation for the assignments for the workshop the following information was offered and discussed with the staff:

- The CORE document in which the job profile of the physiotherapist is described (cf. Appendix IIIA, Addendum A);
- the level descriptors as compiled by SAQA (cf. Appendix IIIA, Addendum B);

- the Goals for Physiotherapy education and Training as previously identified by the researcher from the literature survey and the semi-structured interviews in the United Kingdom.

The following assignments were given and completed:

- Re-examining and modifying the goals.
- Modifying the Vision and Mission Statements for the Department of Physiotherapy of the UFS as compiled by the researcher.
- Identifying values for the Department of Physiotherapy of the UFS.

The new Vision and Mission Statements were used in the measuring instrument for this study. The values were specifically compiled for the Physiotherapy Department of the UFS and were therefore not used in the measuring instrument for this research. It was felt that each department has their own set of values.

### **Workshop 3**

In the previous two workshops the groundwork for workshop 3 was done. Two members of the campus staff who are experienced in the compilation of learning outcome for higher education institutions were invited to contribute and facilitate the workshop.

The participants of the workshops were divided into small groups and the following assignments were given to them:

- Based on the information and outcomes of the previous two workshops modify exit-level outcomes for an undergraduate physiotherapy programme as compiled by the researcher.
- Translate the exit-level outcomes into specific and critical outcomes.
- Compile learning outcomes for each year of a four-year undergraduate physiotherapy programme.

The exit-level, specific and critical outcomes were used for the measuring instrument of the study.

These workshops assisted the researcher to consolidate the data that had already been collected by means of open coding, and was offered to the staff in the form of goals for physiotherapy education and training.

The exit-level, specific and critical outcomes were used in the measuring instrument of this study.

The workshops also offered the opportunity for experienced lecturers to examine and contribute to the measuring instrument.

Subsequently the Department of Physiotherapy of the UFS has embarked on follow up workshops, but the outcomes thereof have not been used for this study. The learning outcomes for each study module have been compiled and refined. Curriculum development is a dynamic process and as such the Physiotherapy Department of the UFS is constantly revising their education and training programme.

### **3.4.2.4 The research instrument**

The research instrument was used for data collecting from domain experts (cf. Currier, 1990:117-149) and was designed on the basis of data collected by means of the literature survey, the semi-structured interviews and workshops, and reflection thereof. It comprised open and closed questions and was aimed at eliciting opinions and comments from the domain experts (Currie, 1990:133). Section I of the instrument orientated the domain experts with regard to the study, and section II was offered as checklist. The checklist comprised five components (Appendix III A), namely:

- Components pertaining to programme development for the education and training of physiotherapists.
- Main themes for physiotherapy education and training.
- General themes for physiotherapy training and education.
- Requirements for the education and training process and structure for physiotherapists.
- Other requirements pertaining to qualifications.

The purpose of the research instrument was to:

- employ a data-gathering procedure;
- follow a systematic data collecting process (Currier, 1990:117-149).

#### **Validity of the research instrument**

The validity of the research instrument refers to the ability of the instrument to measure what it is supposed to measure (Currier, 1990:117-149).

**Content validity**

Content validity is a measure of how well an instrument measures the content of a particular trait or body of knowledge (Currier, 1990:172).

The content validity of the instrument was assured by:

- The comprehensive literature survey;
- the workshops held with subject experts;
- the interviews held with subject experts from acclaimed universities abroad;
- ensuring that the sample (domain experts) is composed of particularly knowledgeable physiotherapy educationists and clinicians, and
- the Delphi technique.

**Face validity**

Face validity is concerned with the way the instrument appears to the participant (Bless & Higson-Smith, 1995:139).

The instrument was developed over a period of eight months. The instrument was offered to members of three departments of the Faculty of Health Sciences, UFS, for evaluation and criticism. The Department of Biostatistics assessed the statical correctness of the method in which the Likert scale was offered. The Department of Education and Development assessed the correctness regarding the use of the terminology pertaining to the National Plan for Higher Education. The School of Nursing assessed the overall appearance and understandability of the instrument. Appropriate adjustments were based on the comments from the Departments. This constituted the pilot study for this research.



### **The reliability of the research instrument**

Reliability refers to the accuracy and consistency of a research instrument (Burns & Grove, 1993:339). Albeit that absolute reliability can never be attained, instruments used should produce a high level of consistency when used by different people. If a valid instrument leads to the same observations when used on different test subjects under different circumstances, it is a reliable instrument (Mouton & Marais, 1989:79). Therefore, reliability is achieved when the same method (the research instrument), used at different times, by different people (domain experts) produces the same results. Reliability is influenced by four variables, namely the researcher, the subject, the research instrument and the research content (Mouton & Marais, 1989:79).

The reliability of this instrument was assured by the way in which the panellists who participated in the Delphi process were selected. The panellists were also anonymous to one another.

#### **3.4.2.5 The Delphi technique**

The Delphi technique is generally used to determine the judgement of a group of experts and to gain feedback without the necessity of meeting (Burns & Grove, 1993:386).

In the Delphi technique a panel of experts, who are not aware of who the other experts are, respond to intensive questions and checklists, and from repeated feedback consensus on a subject is eventually reached (Crisp, Pelletier, Duffield, Adams & Nagy, 1997:116-118). The panellists were anonymous to one another.

The research instrument, as a prototype for the development of the framework, was submitted to national and international training centres for "structured brainstorming" as opposed to a rigid positivistic scientific exercise (Hugh & McKennu, 1994:1221-1225). The aim was to guide a group of opinions towards a final decision. The Delphi technique, as described by Waltz and Bausell (1983:87-88) was used in the following way:

- A panel of experts (domain experts) had been selected and were requested to respond to a checklist designed to elicit opinions for the proposed framework for physiotherapy programmes.
- The responses were analysed and where deemed feasible, incorporated in the checklist which was then returned to the domain experts.
- Each member of the panel had the opportunity to once again respond to the adapted checklist, based on the combined previous responses of the domain experts.
- This process was repeated until the domain experts reached consensus on the contents of the checklist.

Several different 'types' of Delphi techniques have been developed and identified. The type most suited to this study is the Classic Delphi. In the Classic Delphi a large number of unbiased experts use facts to reach consensus in their predictions or forecasts of future events (Crisp *et al.*, 1997:116-118). This corresponds with what was envisaged in this study.

### **The rationale for using the Delphi technique**

- The research problem did not lend itself to precise analytical techniques, but could benefit from subjective judgements reached on a collective basis (Critchler & Gladstone, 1998:6).
- The opinions of more experts were needed than can effectively interact in a face-to-face exchange (Murry & Hammonds, 1995:423-436).
- Time, cost and logistics would make frequent meetings of all the domain experts unfeasible (Hugh & McKennu, 1994:1221-1225).
- The Delphi process has been used widely for education in nursing to identify and prioritise procedures (Forte, Ritz & Balistracci, 1997:51-55), which correspond with those of physiotherapy.

An enormous amount of literature has been generated to establish the reliability and validity of the method (Crisp *et al.*, 1997:116-118). Iteration, with the use of an evaluation panel, is the most fundamental component of Delphi studies and ideally structured for this research.

This study relied heavily on people's views, opinions, feelings and beliefs in their own natural settings. The experts for the survey were selected for their special involvement and experience in physiotherapy education. Both national and international experts were used.

### **Assumptions and appraisals**

The Delphi method rests on two assumptions. One is the assumption that group decisions are usually more valid than decisions made by a single person. Further, decisions are more valid if the group is composed of experts in the field (Brooks, 1979; Lanford, 1972; Martino, 1983 in Murry &

Hammonds, 1995:423-436). A second assumption is that while group decision-making can be more reliable, numerous problems could arise when group members meet face-to-face. For example, group effectiveness can be diminished by domineering group members, group bias, and group think (Martino, 1983; Martorella, 1991; Somers, Baker, Isbell, 1984 in Murry & Hammonds, 1995:423-436).

Therefore, to capitalise on the strength of group decision-making while at the same time eliminating problems associated with face-to-face meetings, the Delphi method relies on anonymity among group members.

### **Contract validity**

*The selection of a panel of domain experts is a subjective exercise. The issues are the nature of the interest of the teaching participants, and the depth and range of expertise (Gibson & Muller, 1990:35). The main consideration in selecting the panel should be to ensure a 'diversified' group of advocates and referees to avoid uniformity of responses (Gibson & Muller, 1990:35). The process of selecting experts is critical to the Delphi, and serves to authorise the Delphi's superiority of validity over other less painstaking and vigorous survey procedures (Clayton, 1997:373).*

A total of seven domain experts were used in this study. Burns and Grove (1993:344) believe that at least five and not fewer than three experts should be selected when content-related validity is to be determined.

*In the selection of the domain experts a purposive or judgmental sample was used. This kind of sampling is often used with the belief that a researcher's knowledge about the population and its elements can be used to hand-pick the subjects to be included. In purposive sampling the researcher might choose subjects who are judged to be typical of the population in question, or particularly knowledgeable about the issues under study. Researchers often*

*use purposive sampling when they want a sample of experts, as in this case where an assessment is the topic (Polit & Hungler, 1993:179).*

The domain experts were chosen from people who have a bearing on physiotherapy education and training, as well as clinical practice. To obtain representation of a wide selection of people with knowledge and experience in the education and training of physiotherapy students and physiotherapeutic professional needs, certain criteria were applied.

One or more of the following criteria was required for selection on the panel:

- The participants had to be qualified physiotherapists, therefore clinicians.
- preferably they had to have some involvement in teaching physiotherapy;
- preferably they had to be involved in the development of instructional programmes;
- preferably they should be in possession of a postgraduate qualification.

The final panel consisted of seven people. One expert was chosen out of the following seven domains:

- Experienced physiotherapy lecturers attached to South African universities, namely

Department of Physiotherapy  
University of Cape Town

Department of Physiotherapy  
University of Durban-Westville

Department of Physiotherapy  
University of Pretoria

- An experienced physiotherapy lecturer from a university in the United Kingdom, namely

Department of Physiotherapy and Chair of  
Rehabilitation  
Brunel University

- The clinical practitioner appointed by Government to develop education and training programmes in South Africa, the Chairman of the Standards Generating Body for Physiotherapy.
- A representative of the Physiotherapy Society of South Africa, namely the President: SA Society of Physiotherapy
- The Chairman of the Professional Board for Physiotherapy, Podiatry and Biokinetics.

Following communication by telephone or a letter, the seven selected domain experts agreed to serve on the panel. The measuring instrument was sent to them in November 2000.

### **3.5 METHOD OF DATA ANALYSIS**

A 5-point Likert scale was used in the research instrument (*cf.* Appendix IIIA). By using bipolar scales an element of qualitative research was built into the research instrument. A 5-point scale was used with 1 being the most positive and 5 the most negative.

Using the responses of the seven domain experts, consensus was considered satisfactory with five corresponding answers. Thus, with no more responses on a specific side of the scale, it was considered that consensus had been reached. Where only six of the domain experts responded to a specific statement, four or more on the same side of the scale was considered consensus. With a response of five out of seven, 70% consensus was reached and with four out of six, 67% was reached. According to Raskin (1983:77) this is an acceptable percentage. The Department of Biostatistics, UFS, also agreed with these percentages.

Results were summarised by frequencies since the sample consisted of only seven members (Fleiss, 1981:s.a; Bryman & Burgess, 1994). There is, however, no statistical test of significance to determine if results "*count*" (Eisner, 1991:39).

### **3.6 ETHICAL CONSIDERATIONS**

The advancement of knowledge through research must not be at the cost or detriment of those who are the subjects of the research. Polit and Hungler (1993:353) state that "...when humans are used as subjects in scientific investigations ... great care must be exercised in ensuring that the rights of those humans are protected". As the domain experts only needed to assess the questionnaire as a prototype for the design of physiotherapy education and training programmes, it is not believed that the rights of the domain experts or the students who will be educated and trained according to programmes based on the framework, will be impeded in any manner. The students were not the respondents of this research.

The research proposal was submitted to the Ethics Committee of the University of the Free State to gain permission for the research and to obtain an ETOVS (Ethics Committee of the University of the Free State) number (*cf.* Appendix IV).

### **3.7 CONCLUSION**

It is believed that the research design and research process sufficed in addressing issues concerning university and physiotherapy education with a bearing on programme design, content selection, teaching and learning.



## **CHAPTER 4**

### ***Key findings and interactions from Phases I and II of the research process***

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#### **4.1 INTRODUCTION**

After a national and international literature survey, interviews with physiotherapy programme directors in the United Kingdom (UK), and workshops in the Department of Physiotherapy, UFS, it is clear that major changes have taken and are still taking place in the planning for and organisation of health care. Most institutions offering health professions education realise that independent subjects with outdated aims and objectives, put together to form a course, and after completion of the course a qualification, can no longer meet the demands that health care is placing on the education and training of health professionals.

*“Currently it is expected of physiotherapy graduates to have gained discipline-specific technical competencies and generic skills together with vocational skills and attributes that will empower them to be valuable members of a changing and challenging world of work and society”* (Hunt, Higgs, Adamson & Harris, 1998:264). By implication, these expectations are transferred to educators of health care professionals, including physiotherapy educators.

#### **4.2 PHASE I OF RESEARCH PROCESS**

Three methods of data collection took place in phase I of the research process. The technique of triangulation was used to ensure the comprehensiveness of the key findings. Documents were analysed, data was

collected from the semi-structure interviews in the United Kingdom and departmental workshops were held. From the data sources patterns of convergence were looked for to develop or corroborate an overall interpretation.

The method of open coding was used to compare and combine the data and convert it into discrete categories in preparation to assemble the "big picture".

The data that was collected from the document analysis and semi-structured interviews will be offered in the same sequence as in Chapter 2.

#### **4.2.1 Transformation of the Health Care System in South Africa**

The main trends that have been identified as necessary for transformation of the health care system have been summarised as follows (*cf.* 2.3):

- Primary health care must be aggressively addressed and applied to community-based rehabilitation and service delivery, and must include community involvement and empowerment.
- Teaching strategies which emphasise the development of cognitive, psychomotor and communication skills in institutionally-based environments must be revised to also develop organisational, managerial and communication skills in students.
- Problem-solving skills must be applied clinically and in research projects to encourage an enquiring mind and to develop lifelong learning skills.

- Racial discrimination in health care and education and training must be eradicated.
- Team work must be encouraged.
- Equity and empowerment must be respected in all communities.
- The highest standards of practice and professional integrity must be encouraged.
- The needs of the members of the profession must be met to prepare them to play an effective role in comprehensive health care (including promotive, preventive, curative, rehabilitative and educational aspects), as well as in research.
- Service-delivery must be effective in order to provide health care for all.

#### **4.2.2 Transformation of education and training in South Africa**

A framework for educating and training physiotherapists must reflect the requirements of the South African Qualification Authority (SAQA), the statutory body, which is the Health Professions Council of South Africa with the Professional Board for Physiotherapy, Podiatry and Biokinetics as a subsidiary, as well as the competency profile for employment. The National Qualifications Framework requires physiotherapists to function at levels 6 or 7 of the level descriptors (Appendix IIIA, Addendum B: Cosser, 1998:19-26) and at levels 6 or 7 of the CORE document (Appendix IIIA, Addendum A: Department of Public Service Administration, 1999) depending on the length and the outcomes of the programme.

To meet these requirements the following trends have been identified as essential for an education and training programme (*cf.* 2.4):

- To identify and solve problems in which responses display that responsible decisions have been made by using critical and/or creative thinking
- to work effectively with others as a member of a team, group, organisation and/or community;
- to organise and manage oneself and one's activities responsibly and effectively;
- to collect, analyse, organise and critically evaluate information;
- to communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation;
- to use science and technology effectively and critically, showing responsibility towards the environment and health of others;
- to demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation.

In order to contribute to the full personal development of each learner it must be the intention underlying any learning programme to make an individual aware of the importance of:

- Reflecting on and exploring a variety of strategies to learn more effectively;
- participating as responsible citizens in the life of local, national and global communities;
- being culturally and aesthetically sensitive across a range of social contexts;

- exploring education and career opportunities, and developing entrepreneurial opportunities.

#### 4.2.3 National and international trends in physiotherapy education

The rapid changes sweeping over the global village with regard to education and training became evident during the interviews in the United Kingdom where data was collected, and from the curricula of other universities that were studied.

The changes that were identified in education and training show a close resemblance to the current changes taking place in South Africa (*cf.* 2.5). These include:

- The ability of students to take responsibility for their own learning, since the size and rate of change of the health sciences database require every health care practitioner to embark on a lifetime of self-education.
- The skills to take advantage of sophisticated information technology to ensure efficient updating of their knowledge. Centralised repositories of knowledge will give way, for those who can use the equipment, to detail sources available in offices throughout the world.
- The attitudes appropriate to constant re-evaluation of their understanding, skills and attitudes. Without flexibility and self-awareness, health science professionals will be at sea among the choices and pressures which will overwhelm them.

- The possession of critical reasoning skills to evaluate evidence and to provide a secure foundation for rejection as well as acceptance, solutions and suggestions.
- The skills and attitudes which promote effective work in teams. More than ever, effective health care will depend on well-structured teams, whose members fulfil defined and agreed roles.
- A high level of communication skills, with particular emphasis on obtaining and giving information, negotiating and counselling. These skills are fundamental to the effective exercise of responsible choice, which will be increasingly crucial to patients and health care professionals.
- A sound grounding in ethical decision-making, without which a liberated work force will follow a path towards inhumanity, inequity, irrationality and exploitation.

#### **4.2.4 Physiotherapy requirements for the population of South Africa**

The health-related practices and diseases as identified by the South African Demographic and Health Survey (SADHS) and the White Paper for Health that have a direct bearing on physiotherapy service delivery, and thereby the disciplines for teaching are the following (*cf.* 2.6):

- People who smoke and suffer from related and unrelated chest conditions constitute 25% of the population. The treatment of chest conditions constitutes a large proportion of a physiotherapist's work.

- At least 12% of the population suffer from hypertension and 42% from overweight, with 60% suffering from obesity. Medical, neurological and skeletal (orthopaedic) problems are directly related to these statistics.
- Sixteen percent (16%) of births take place without assistance. The number of complications arising from these births was not assessed, however, it is accepted that the risk factor associated with an unattended birth is high.
- Five percent (5%) of the South African population is disabled. The need for physiotherapy as the major rehabilitation profession is clearly seen in this statistic.
- The White Paper for Health acknowledges the need for the provision of health care for people living with HIV or AIDS, which is once again a major area of physiotherapy services.
- Most of the chronic conditions and problems discussed in the White Paper for Health would benefit from physiotherapeutic intervention.

#### **4.2.5 Development of the goals of physiotherapy education and training**

By the complex method of open coding the above-mentioned key findings were translated into a conceptual presentation which the researcher called Goals for Physiotherapy Education and Training.

The Goals, CORE document (Addendum A) and Level Descriptors (Addendum B) were used in workshop 2 to compile the new Vision and Mission Statements for the Department of Physiotherapy, UFS. The Goals were also re-examined and modified.

Although the stages of analysis are described in linear fashion, in practice the research occurred simultaneously and repeatedly.

The Goals, Vision and Mission Statements were used for the measuring instrument and are as follows:

#### ***4.2.5.1 Goals for physiotherapy education and training***

- (i) To ensure quality physiotherapy services to all the people of South Africa through the development of physiotherapy education, practice and research.
- (ii) To provide educational programmes which can satisfy the health needs of all the people of the country and the educational needs of the profession.
- (iii) To equip those entering the profession with skills which are appropriate, affordable and relevant to the needs of the people of the country.
- (iv) To contribute to the development and achievement of a healthy self-reliant nation.
- (v) To ensure professional integrity and the highest ethical standards of practice.



- (vi) To oppose any discrimination on the grounds of race, colour, creed, national origin or gender.
- (vii) To encourage the development of interpersonal, negotiative, leadership and conflict management skills at all four levels of health care, i.e. promotive, preventive, curative and rehabilitative, and to practise effectively in any environment in accordance with the principles of Primary Health Care.
- (viii) To develop communication and interpersonal skills, team management and community development skills with a focus on adult learning.
- (ix) To instil in students the desire for continuing physiotherapy education and research.
- (x) To develop students' ability to document scientific, clinical reports.
- (xi) To teach multi-disciplinary perspectives in a programme.
- (xii) To ensure a programme-based approach to education and training.
- (xiii) To identify and solve problems by using critical and creative thinking.
- (xiv) To contribute to the full personal development of each learner.
- (xv) To have an understanding of the changing health care policies, nationally and internationally.
- (xvi) To develop and implement quality assurance measures and the accreditation of programmes.

- (xvii) To promote a standard of excellence in health practice, drawing on both international and local experience.

#### ***4.2.5.2 Vision for physiotherapy education and training***

Learners who obtain a qualification in professional physiotherapy will be equipped with discipline-specific technical competencies and generic skills, as well as the required vocational attributes to make them valuable members of the physiotherapeutic work environment. The learner should have gained the ability to function professionally and with interdisciplinary and inter-cultural collaboration, and pursue continuing evidence-based physiotherapy practice.

#### ***4.2.5.3 Mission statement for physiotherapy education and training***

To train and educate physiotherapists who will be competent to render a professional service, that is, who have the necessary knowledge, skills, professional thinking, behaviour and attitudes to pursue their profession as physiotherapists and managers in all the ramifications of physiotherapy and health care.

A definition for the physiotherapy profession and a physiotherapist was also compiled.

#### **4.2.5.4 Definition of the profession**

Physiotherapy is a health care profession, which emphasises the use of physical approaches in the maintenance and restoration of an individual's physical, psychological, and social well-being, encompassing variations in health status. Through the use of manual therapy, therapeutic exercises and the application of electro-physical modalities, as well as problem-solving and clinical reasoning skills, the physiotherapist must be capable of applying health promotion (in himself) appropriately in response to the varied needs of individuals and communities, at all four levels of health care (self-care, primary, secondary and tertiary care).

#### **4.2.5.5 Definition of a physiotherapist**

A physiotherapist is a person who is in possession of a qualification which can be registered and recognised by the Professional Board for Physiotherapy, Podiatry and Biokinetics of the Health Professions Council of South Africa for the purpose of practicing independently and treating any condition within the defined scope of the physiotherapy profession.

## **4.3 PHASE II OF THE RESEARCH PROCESS**

### **4.3.1 Development of the competencies/exit-level outcomes for physiotherapy education and training**

Workshop 3 was considered as part of phase II of the research process. The ground work for phase II was done in workshop 1 and 2, given the data previously collected.

The process of axial coding was used to seamlessly converge the transformation requirements as stipulated by the Departments of Health and Higher Education with the identified Goals for Physiotherapy Education and Training.

Emanating from this action the following competencies or exit-level outcomes were compiled, from which the specific- and critical outcomes were compiled.

#### **4.3.1.1 *Exit-level outcomes***

The exit-level outcomes of the programme entail the capabilities constituting the overall competence required of learners who have completed a four-year Bachelor of Science degree in Physiotherapy. These demand of learners, on completion of the programme, to be able to demonstrate:

- (i) a sound knowledge and understanding of health care, the promotion thereof, and the prevention, management and treatment of disease and injury relevant to physiotherapy;

- (ii) knowledge of the normal structure, functions and development of a person as a whole and as an individual within the context of the family and community;
- (iii) a sound knowledge of the relevant physical sciences (physics, chemistry), biological sciences (anatomy, physiology), and behavioural sciences (psychology) which underpin physiotherapy practice;
- (iv) the ability to apply manual therapeutic techniques, exercises and the application of electro-physical modalities;
- (v) a well-founded knowledge of diseases and pathological processes as the basis of physiotherapy practice;
- (vi) an understanding of physiotherapeutic principles and problem-solving and decision-making, with due consideration of ethical aspects,
- (vii) the ability to confidently use physiotherapeutic scientific terminology;
- (viii) proficiency in basic clinical skills within the parameters of physiotherapy practice, including the ability to take a history, perform a physical examination and assess a person's mental state, interpret the findings, diagnose and treat diseases and injury,
- (ix) the desire to prevent disease and promote health;

- (x) the ability to apply professional reasoning as an integral part of physiotherapeutic practice;
- (xi) the ability to utilise diagnostic and treatment aids, as well as the services of other health professions,
- (xii) the ability to work as a member of a team rendering safe health care services;
- (xiii) appropriate attitudes and behaviour patterns to ensure quality health care; a commitment to health care and a responsibility with regard to the physical, mental and social well-being of the community;
- (xiv) the ability to palliate suffering with empathy and within ethical norms and guidelines;
- (xv) an awareness of the importance of primary health care and a community-oriented approach to health care;
- (xvi) an aptitude for being a lifelong learner (continuing professional development);
- (xvii) a sensitivity to and knowledge and understanding of the health needs of the country, and the ability to satisfy international standards of excellence;
- (xviii) the ability to be effective managers of health;
- (xix) the ability to render a service as members of the health team;
- (xx) the ability to act as advocates for their patients and communities;

- (xxi) effective communication skills;
- (xxii) critical thinking;
- (xxiii) the ability to apply social and behavioural sciences in the physiotherapy profession.

#### **4.3.1.2 Specific outcomes**

The specific outcomes set for a programme for professional physiotherapists constitute the abilities that will enable the learner to be capable to achieve the exit-level outcomes stated above. These include:

##### **□ Knowledge outcomes**

On completion of the programme the students must demonstrate:

- (i) knowledge and understanding of normal human development, structures and pathological conditions;
- (ii) knowledge of the principles of manual therapeutic exercises and electro-physical modalities as understood in preventive, promotive, therapeutic and rehabilitative health care;
- (iii) the ability to master the knowledge required to identify, diagnose and treat complex physiotherapeutic health care problems;
- (iv) the ability to master the fundamental and core knowledge required to work as a physiotherapist at the four levels of service delivery, i.e. tertiary, secondary, primary and self-care;

- (v) a sound knowledge of professional clinical practice in the public and private sectors;
- (vi) knowledge about the health policy of the country as well as global trends and issues in health care;
- (vii) knowledge of the essential acts and regulations concerning the health care dispensation, labour system and relevant areas having a bearing on physiotherapy practice as a profession;
- (viii) knowledge of the roles of the other members of the multi-disciplinary health care team;
- (ix) mastery of the knowledge required to evaluate and apply the principles of the health care dispensation of the country as relevant to physiotherapy.

□ **Skills outcomes**

On completion of the programme the students must demonstrate:

- (i) mastery of the clinical skills required to be able to practise preventive, promotive, therapeutic and rehabilitative physiotherapy;
- (ii) the ability to use relevant diagnostic and analytical skills;
- (iii) the ability to work as members of the multi-professional health care team;
- (iv) problem-solving and communication skills required to professionally counsel and communicate with patients;



- (v) the technological and clinical skills required for effective and efficient practice in the field of physiotherapy and health care;
  - (vi) the ability to respond to the varied needs and the safety of the patient;
  - (vii) communication skills pertaining to health care delivery and work in the health care team;
  - (viii) well-developed research and managerial skills at undergraduate level;
- **Attitudinal and behavioural outcomes**

On completion of the programme the students must:

- (i) maintain the personal, ethical and professional standards applicable to physiotherapy;
- (ii) have a desire to ensure patient care of the highest possible quality;
- (iii) use a holistic approach to patients in a varied social milieu;
- (iv) be confident to deliver health care services at all levels;
- (v) have a community-oriented and primary health care oriented approach in service rendering;
- (vi) show respect for patients and colleagues, without prejudice with regard to background, race, culture, gender, way of life, etc.;

- (vii) recognise human and patients' rights;
- (viii) demonstrate a positive approach to self-directed lifelong learning;
- (ix) have gained an awareness of personal limitations and demonstrate a willingness to seek help when necessary;
- (x) demonstrate a positive attitude towards change and functioning within the uncertainties of the times;
- (xi) demonstrate a positive approach towards continuing meaningful professional development.

#### **4.3.1.3 Critical outcomes**

Although these outcomes have to be attended to at all levels of the programme, more time should be spent on fundamental learning and critical skills during the initial period of training to ensure that students from different educational backgrounds are sufficiently prepared and have the necessary grounding for the programme. During the course of the programme the critical outcomes (fundamental knowledge and skills) should be attended to in an increasingly integrated manner; they should never be regarded as 'completed', but need to spiral to higher levels as the programme proceeds. These outcomes include:

- (i) The ability to identify and solve problems, with special reference to the management of health care and patient issues within the field of physiotherapy;
- (ii) the ability to make informed and responsible decisions through critical thinking;

- (iii) the ability to work in a team or group, and as a member of an organisation or community;
- (iv) the ability to manage and organise the self and own activities responsibly and effectively;
- (v) the ability to collect, analyse, organise and critically evaluate information (research abilities);
- (vi) the ability to communicate effectively and use language and managerial skills in oral and written persuasion in physiotherapy practice,
- (vii) the ability to be informed of scientific language as related to the profession;
- (viii) the ability to utilise science and technology critically and effectively, with responsibility towards the environment and the health of others;
- (ix) understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation, and demonstrating this understanding through the ability to establish relationships and using a holistic and creative approach in dealing with patients and health care problems;
- (x) the ability to explore a variety of strategies to learn more effectively (resource-based learning);
- (xi) the ability to participate as responsible members in the life of their communities, and, in particular, to act as role models with regard to health care;

- (xii) cultural sensitivity, especially within the context of health care;
- (xiii) the desire to explore educational and career opportunities, and show an independent entrepreneurial spirit.

#### 4.4 CONCLUSION

The key findings as offered in this chapter formed the foundation for the data used to compile the Goals for Physiotherapy Education and Training. From this information a definition for the Physiotherapy Profession and a Physiotherapist, as well as new Vision and Mission Statements were developed.

In phase II of the research process the competencies or exit-level outcomes for a physiotherapist were identified based on the outcomes from phase I of the research process. Emanating from this process specific and critical outcomes were compiled. With this information the measuring instrument was developed.

In phase III the Delphi technique was implemented and then again in phase IV. Phase V is the final framework.

## **CHAPTER 5**

### *Analysis and interpretation of responses from phases III and IV of the research process*

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#### **5.1 INTRODUCTION**

Based on the information collected in phase I of the research process, the research instrument was developed (phase II of the research process).

The research instrument was sent to domain experts (phase III of the research process and round I of the Delphi technique). Each domain expert was required to assess the statements on a 5-point Likert scale and offer a comment if they wished to. With seven responses from the domain experts a rating of 5 responses on either side of the Likert scale was considered consensus. Where there were only 6 responses from the domain experts, a rating of 4 was considered consensus. The research instrument consisted of two sections. In section I the domain experts were orientated with regard to a nomenclature and the aspects which influence education and training of physiotherapists in South Africa. Section II was offered in the form of a checklist for analysis and comments from the domain experts.

The analysis is offered in table form followed by the domain experts' comments and then a discussion of the comments. After the heading of each table a number is offered in square brackets. These numbers, of each section, refer to the actual numbers as they appear in the research/measuring instrument (Appendix IIIA and IIIB).

The domain experts were requested to interpret the Likert scale as follows:

On the basis of the following explanations, please indicate the extent to which the statement is in agreement with your opinion. Please encircle the applicable number in the margin in response to each question.

THE FOLLOWING 5-POINT SCALE APPLIES

- 1 = The more negative opinion (e.g. the description is totally wrong; I definitely disagree; is not at all necessary).
- 2 = Not completely negative, but not positive.
- 3 = Expressedly neutral or "not sure".
- 4 = More positive, but not completely in agreement or positive.
- 5 = The most positive opinion (e.g. the description fits 100%: agree fully; absolutely necessary).

The domain experts were also requested to comment on the information offered in the measuring instrument.

All the comments returned after round 1 of the Delphi process as well as the ratings, were taken into account. With this information the checklist was revised and sent to the domain experts for round 2 of the Delphi process. Because there were only three questions where the domain experts did not reach consensus they were only required to re-assess those questions.

## 5.2 ANALYSIS AND INTERPRETATION OF THE RESPONSES ON THE RESEARCH INSTRUMENT - ROUND 1 OF THE DELPHI PROCESS (APPENDIX IIIA)

### 5.2.1 Vision for physiotherapy education and training

**TABLE 5.1: Responses of domain experts on the vision [2.1.1]**

	Likert Scale				
	1	2	3	4	5
<p>Learners who obtain a qualification in professional physiotherapy will be equipped with discipline-specific technical competencies and generic skills, as well as the required vocational attributes to make them valuable members of the physiotherapeutic work environment. The learner should have gained the ability to function professionally and with interdisciplinary and inter-cultural collaboration, and pursue continuing evidence-based physiotherapy practice.</p> <p><b>Comments from domain experts</b></p> <ul style="list-style-type: none"> <li>◦ Relevant and sufficient</li> <li>◦ Evidence-based practice is essential and should be embedded in all learning outcomes</li> <li>◦ Good vision</li> <li>◦ Lifelong learners essential</li> <li>◦ Preparation for improving students' knowledge and skills prior to acquiring post-graduate research and skills is necessary</li> </ul>				3	4

**Interpretation**

*The domain experts were in agreement with the vision. Aspects that they emphasised as being very relevant were that education and training must be evidence-based and that students must be encouraged to be lifelong learners.*



## 5.2.2 Mission statement for physiotherapy education and training

**TABLE 5.2: Responses of domain experts on mission statement [2.1.2]**

	Likert Scale				
	1	2	3	4	5
<p>To train and educate physiotherapists who will be competent to render a professional service, that is, who have the necessary knowledge, skills, professional thinking, behaviour and attitudes to pursue their profession as physiotherapists and managers in all the ramifications of physiotherapy and health care.</p> <p><b>Comments from domain experts</b></p> <ul style="list-style-type: none"> <li>◦ Research in clinical areas must provide an evidence-based foundation for practice;</li> <li>◦ Competence and academic achievement of a newly qualified physiotherapist should be defined;</li> <li>◦ Progression from novice to expert should be defined to encourage continuing professional development</li> <li>◦ Relevant</li> </ul>				5	2

### Interpretation

Consensus was reached, indicating that the domain experts were in agreement with the mission statement. According to the comments clinical areas must provide for an evidence-based foundation. It was therefore decided to include "evidence-based" in the mission statement in the final framework. Another comment was that the level of competency and development from a novice to an expert must be defined. It would be difficult to include the competency and development of a novice in a mission statement. According to the Oxford Dictionary (1978:559) a mission is a "task to be performed; person's vocation or diversely appointed work in life", and a

*mission statement informs this task. It is therefore difficult to address aspects such as competency and development in a mission statement. An attempt was made to address these aspects in the goals, as well as specific and critical outcomes.*

### 5.2.3 Definition of the profession

**TABLE 5.3: Responses of domain experts on definition of the profession [2.1.3]**

	Likert Scale				
	1	2	3	4	5
<p>Physiotherapy is a health care profession, which emphasises the use of physical approaches in the maintenance and restoration of an individual's physical, psychological, and social well-being, encompassing variations in health status. Through the use of manual therapy, therapeutic exercises and the application of electro-physical modalities, as well as problem-solving and clinical reasoning skills, the physiotherapist must be capable of applying health promotion appropriately in response to the varied needs of individuals and communities, at all four levels of health care (self-care, primary, secondary and tertiary care).</p> <p><b>Comments from domain experts</b></p> <ul style="list-style-type: none"> <li>◦ There should be other settings, such as industry and corporate education</li> <li>◦ Relevant and sufficient</li> <li>◦ A wider role should be included, e.g. health promotion and terminal care</li> <li>◦ The supportive role of the therapist is important</li> <li>◦ Communication skills should not be left out</li> <li>◦ Education of the patient is necessary to make the patient independent and responsible</li> <li>◦ It is necessary to provide a cadre of physiotherapists who are interested in research techniques and modalities in preparation for clinical practice.</li> </ul>		1	1	2	2

## **Interpretation**

*Although only four ratings were on the positive side of the scale, only six panellists responded to this statement, therefore it could be considered that consensus was reached.*

*The panellists were of the opinion that the definition should be wider and include more. An attempt was made in the final framework to include as many of the suggestions as possible without losing the essence of the definition of the profession.*

*In the final framework the last sentence was changed to:*

*All facts pertaining to client care are addressed in a caring and supportive manner to approach a health care problem holistically. Service delivery can be preventive, promotive, curative or rehabilitative.*

*It was decided that this definition included health care promotion in all its facets such as care of the terminally ill, being supportive and communicating with a patient. Reference to problem-solving and clinical reasoning skills includes research techniques.*

## 5.2.4 Definition of a physiotherapist

**TABLE 5.4: Responses of domain experts on definition of a physiotherapist [2.1.4]**

	Likert Scale				
	1	2	3	4	5
A physiotherapist is a person who is in possession of a qualification which can be registered and recognised by the Professional Board for Physiotherapy, Podiatry and Biokinetics of the Health Professions Council of South Africa for the purpose of practising independently and treating any condition within the defined scope of the physiotherapy profession		1	1	1	4
<b>Comments from domain experts</b>					
<ul style="list-style-type: none"> <li>• SAQA accreditation is required</li> <li>• Not sure of the definition of "Scope of Practice"</li> <li>• Add "practice independently"</li> </ul>					

### Interpretation

*Consensus was reached. Some of the respondents were unclear as to what the "Scope of Practice" is. The job profile was offered in the Code of Remuneration (CORE) document and the Level Descriptors in section I of the measuring instrument. The last gazetted scope of practice is in the 3 Dember 1976 Government Gazette No. 5349. Because of the age of the document it was not used for this research.*

*It was felt that the above-mentioned documents would offer sufficient clarity for an experienced physiotherapist on the **Scope of Practice** or competencies required by a physiotherapist. This was not the case. Because consensus had been reached the domain experts were not required to respond again in the second round of the Delphi technique.*

A new **Scope of Practice** has seen the light since the measuring instrument was compiled and is offered in Appendix IE.

One respondent suggested that there should be SAQA accreditation of the physiotherapist. SAQA can only register a qualification and cannot accredit a physiotherapist. A qualification is accredited by the Health Professions Council and the Council of Higher Education (CHE).

### 5.2.5 Goals for physiotherapy education and training

**TABLE 5.5: Responses of domain experts on objectives for physiotherapy education and training [2.1.5]**

	Likert Scale				
	1	2	3	4	5
The goals for physiotherapy education and training have been developed from the key findings of the research as discussed in Section I and converted to learning outcomes. These objectives for relevant physiotherapy education and training are:					
(i) to ensure quality physiotherapy services to all the people of South Africa through the development of physiotherapy education, practice and research;				1	6
(ii) to provide educational programmes which can satisfy the health needs of all the people of the country and the educational needs of the profession;			1	1	5
(iii) to equip those entering the profession with skills which are appropriate, affordable and relevant to the needs of the people of the country;				3	4
(iv) to contribute to the development and achievement of a healthy self-reliant nation;				3	4
(v) to ensure professional integrity and the highest ethical standards of practice;				1	6
(vi) to oppose any discrimination on the grounds of race, colour, creed, national origin or gender;			1	1	5
(vii) to encourage the development of interpersonal, negotiate, leadership and conflict management skills, at all four levels of health care, i.e. promotive, preventive, curative and rehabilitative, to practise effectively in any environment in accordance with the principles of primary health care;				2	5
(viii) to develop communication and interpersonal skills, team management and community development skills with a focus on adult learning;				3	4

(ix)	to instil in students the desire for continuing physiotherapy education and research;				7
(x)	to develop students' ability to document scientific, clinical reports;			2	5
(xi)	to teach multi-disciplinary perspectives in a programme;				7
(xii)	to ensure a programme-based approach to education and training;		1	2	4
(xiii)	to identify and solve problems by using critical and creative thinking skills;			2	5
(xiv)	to contribute to the full personal development of each learner;			3	4
(xv)	to have an understanding of the changing health care policies, nationally and internationally;			1	6
(xvi)	to develop and implement quality assurance measures and the accreditation of programmes;			2	5
(xvii)	to promote a standard of excellence in health practice, drawing on both international and local experience.		1	1	5
<b>Comments from domain experts</b>					
<ul style="list-style-type: none"> <li>o There is nothing about preparing the student for research</li> <li>o Research should play a larger part in the programme</li> <li>o The objectives are all worthy and worthwhile</li> </ul>					

### **Interpretation**

*Consensus was reached on each statement. According to the comments the statements are all worthwhile, but research must be added. The importance of research cannot be debated and in several cases reference was made to research e.g. in (ix) and (xiii), however, a separate statement referring to research was added in the final framework.*



## 5.2.6 Outcomes for the education and training of physiotherapists

These outcomes have been formulated in the style and format of outcomes-based programmes as have been introduced in South Africa by the South African Qualifications Authority. They also satisfy the expectations of the professional statutory council, the CORE document and the human resource development plan of the National Department of Health.

The outcomes stated here as exit-level outcomes reflect the competencies, abilities and capabilities required of the registered professional physiotherapist on obtaining a qualification. The knowledge, skills, understanding, and behaviour and attitudes, which underpin the competence, abilities and capabilities, are embedded in fundamental learning and core disciplinary learning. Provision is also made for elective learning.

### **Interpretation**

*These two paragraphs were offered to orientate the reader with regard to the outcomes for education and training that followed. Grading and comments were therefore not required.*

### 5.2.7 Exit-level outcomes

**TABLE 5.6: Responses of domain experts on exit-level outcomes [2.1.7]**

	Likert Scale				
	1	2	3	4	5
The exit-level outcomes of the programme entail the capabilities constituting the overall competence required of learners who have completed a four-year programme, pinned at level 6 or 7 of the National Qualifications Framework level descriptors and aimed at obtaining a Bachelor of Science degree in Physiotherapy. These exit-level outcomes demand of learners, on completion of the programme, to be able to demonstrate:					
(i) a sound knowledge and understanding of health care, the promotion thereof, and the prevention, management and treatment of disease and injury relevant to physiotherapy;		1		4	2
(ii) knowledge of the normal structure, functions and development of a person as a whole and as an individual within the context of the family and community is required;				2	5
(iii) a sound knowledge of the relevant physical sciences (physics, chemistry), biological sciences (anatomy, physiology), and behavioural sciences (psychology) which underpin physiotherapy practice;				4	3
(iv) the ability to apply manual therapeutic techniques, exercises and the application of electro-physical modalities;	1		1	2	3
(v) a well-founded knowledge of diseases and pathological processes as the basis of physiotherapy practice;			1	3	3
(vi) an understanding of physiotherapeutic principles and problem-solving and decision-making, with due consideration of ethical aspects,	1			1	5
(vii) the ability to use physiotherapeutic scientific terminology with confidence;	1			3	3

(viii) proficiency in basic clinical skills within the parameters of physiotherapy practice, including the ability to take a history, perform a physical examination and assess a person's mental state, interpret the findings, diagnose and treat diseases and injury;	1	2	4
(ix) the desire to prevent disease and promote health;	1	3	3
(x) the ability to apply professional reasoning as an integral part of physiotherapeutic practice;		2	5
(xi) the ability to utilise diagnostic and treatment aids, as well as the services of other health professions,		2	5
(xii) the ability to work as a member of a team rendering safe health care services;		1	6
(xiii) appropriate attitudes and behaviour patterns to ensure quality health care; a commitment to health care and a responsibility with regard to the physical, mental and social well-being of the community;	1	1	5
(xiv) the ability to palliate suffering with empathy and within ethical norms and guidelines;	1	2	4
(xv) an awareness of the importance of primary health care and a community-oriented approach to health care;		1	3
(xvi) an aptitude for being a lifelong learner (continuing professional development);		3	4
(xvii) a sensitivity to and knowledge and understanding of the health needs of the country, and the ability to satisfy international standards of excellence;		1	3
(xviii) the ability to be effective managers of health;		1	3
(xix) the ability to render a service as members of the health team;		1	2
(xx) the ability to act as advocates for their patients and communities;		4	3
(xxi) effective communication skills;		2	5
(xxii) critical thinking;		3	4
(xxiii) the ability to apply social and behavioural sciences in the physiotherapy profession.		3	4

<p><b>Comments from domain experts</b></p> <ul style="list-style-type: none"> <li>◦ It is unnecessary to satisfy international standards of excellence</li> <li>◦ Research methodology must be included</li> <li>◦ Include safety of practice and responsibility</li> <li>◦ Include first-line practitioners</li> <li>◦ There must be realistic limits of scope of practice and competencies</li> </ul>					
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### **Interpretation**

*Although consensus was reached, some comments were made, such as that international standards are not necessary and that aspects such as research methodology, safety of practice, first-line practitioners and limits of scope of practice should be included. These comments were all included in the framework.*

## 5.2.8 Specific outcomes

**TABLE 5.7: The responses of the domain experts on specific outcomes [2.1.8]**

	Likert Scale				
	1	2	3	4	5
The specific outcomes set for a programme for professional physiotherapists constitute the abilities that will enable the learner to be capable to achieve the exit-level outcomes stated above. These include:					
• <b>Knowledge outcomes:</b>					
On completion of the programme the students must demonstrate:					
(i) knowledge and understanding of normal human development, structures and pathological conditions;					7
(ii) knowledge of the principles of manual therapeutic exercises and electro-physical modalities as understood in preventive, promotive, therapeutic and rehabilitative health care;				2	5
(iii) the ability to master the knowledge required to identify, diagnose and treat complex physiotherapeutic health care problems;				3	4
(iv) the ability to master the fundamental and core knowledge required to work as a physiotherapist at the four levels of service delivery, i.e. tertiary, secondary, primary and self-care;					7
(v) a sound knowledge of professional clinical practice in the public and private sectors;			1	3	3
(vi) knowledge about the health policy of the country as well as global trends and issues in health care;			1	2	4
(vii) knowledge of the essential acts and regulations concerning the health care dispensation, labour system and relevant areas having a bearing on physiotherapy practice as a profession;			2	2	3

(viii) knowledge of the roles of the other members of the multi-disciplinary health care team;			4	3
(ix) mastery of the knowledge required to evaluate and apply the principles of the health care dispensation of the country as relevant to physiotherapy.		1	2	4
<b>o Skills outcomes</b>				
On completion of the programme the students must demonstrate:				
(i) mastery of the clinical skills required to be able to practise preventive, promotive, therapeutic and rehabilitative physiotherapy;			1	6
(ii) the ability to use relevant diagnostic and analytical skills;			1	6
(iii) the ability to work as members of the multi-professional health care team;			1	6
(iv) problem-solving and communication skills required to professionally counsel and communicate with patients;			1	6
(v) the technological and clinical skills required for effective and efficient practice in the field of physiotherapy and health care;	1		2	4
(vi) the ability to respond to the varied needs and the safety of the patient;			2	5
(vii) communication skills pertaining to health care delivery and work in the health care team;			2	5
(viii) well-developed research and managerial skills at undergraduate level.		1	3	3
<b>o Attitudinal and behavioural outcomes</b>				
On completion of the programme the students must:				
(i) maintain the personal, ethical and professional standards applicable to physiotherapy;			1	6
(ii) have a desire to ensure patient care of the highest possible quality;				7

(iii)	use a holistic approach to patients in a varied social milieu;			1	1	5
(iv)	be confident to deliver health care services at all levels;			1	1	5
(v)	have a community-oriented and primary health care oriented approach in service rendering;	1	1	2	3	
(vi)	show respect for patients and colleagues, without prejudice with regard to background, race, culture, gender, way of life, etc.;					7
(vii)	recognise human and patients' rights;					7
(viii)	demonstrate a positive approach to self-directed life-long learning;			2	5	
(ix)	have gained an awareness of personal limitations and demonstrate a willingness to seek help when necessary;			2	5	
(x)	demonstrate a positive attitude towards change and functioning within the uncertainties of the times;			3	4	
(xi)	demonstrate a positive approach towards continuing meaningful professional development.	1				6
<b>Comments from domain experts</b>						
<ul style="list-style-type: none"> <li>◦ Emphasis must be on writing skills</li> </ul>						

### Interpretation

*Consensus was reached with the only comment being that writing skills must be added. Writing skills were included in 5.2.9 (vi).*

## 5.2.9 Critical outcomes

**TABLE 5.8: The responses of the domain experts on critical outcomes [2.1.9]**

	Likert Scale				
	1	2	3	4	5
Although these outcomes have to be attended to at all levels of the programme, more time should be spent on fundamental learning and critical skills during the initial period of training to ensure that students from different educational backgrounds are sufficiently prepared and have the necessary grounding for the programme. During the course of the programme the critical outcomes (fundamental knowledge and skills) should be attended to in an increasingly integrated manner; they should never be regarded as 'completed', but need to spiral to higher levels as the programme proceeds. These outcomes include:					
(i) The ability to identify and solve problems, with special reference to the management of health care and patient issues within the field of physiotherapy;				3	4
(ii) the ability to make informed and responsible decisions through critical thinking;				1	6
(iii) the ability to work in a team or group, and as a member of an organisation or community;				2	5
(iv) the ability to manage and organise the ones self and own activities responsibly and effectively;				2	5
(v) the ability to collect, analyse, organise and critically evaluate information (research abilities);				3	4
(vi) the ability to communicate effectively and use language and managerial skills in oral and written persuasion in physiotherapy practice;				3	4
(vii) the ability to be informed of scientific language as related to the profession;				2	5
(viii) the ability to utilise science and technology critically and effectively, with responsibility towards the environment and the health of others;				3	4



(ix)	understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation, and demonstrating this understanding through the ability to establish relationships and using a holistic and creative approach in dealing with patients and health care problems;				2	5
(x)	the ability to explore a variety of strategies to learn more effectively (resource-based learning);				3	4
(xi)	the ability to participate as responsible members in the life of their communities, and, in particular, to act as role models with regard to health care;				1	6
(xii)	cultural sensitivity, especially within the context of health care;				2	5
(xiii)	the desire to explore educational and career opportunities, and show an independent entrepreneurial spirit.				3	4
<b>Comments from domain experts</b>						
◦ There is a need to demonstrate creativity and independence throughout						

### Interpretation

*Consensus was reached with the only comment being that creativity and independence need to be demonstrated throughout. Cognisance was taken of this comment and it was included in the final framework.*

## MAJOR THEMES FOR PHYSIOTHERAPY EDUCATION AND TRAINING

The following scientific fields or themes refer to the basic learning required of a qualified physiotherapist, and address the required knowledge, skills and attitudes, behaviour and values students have to demonstrate on completion of the education and training programme.

### FUNDAMENTAL DISCIPLINES

#### 5.2.10 Biological sciences

**TABLE 5.9: The responses of the domain experts on biological sciences [2.2.1]**

	Likert Scale				
	1	2	3	4	5
The following is required:					
(i) Normal human anatomy and physiology of systems relevant to physiotherapy practice;					7
(ii) basic knowledge of anatomical and physiological pathology relevant to physiotherapy;				2	5
(iii) the ability to recognise malfunction of the systems through assessment procedures;				2	5
(iv) the ability to plan and manage treatment using this knowledge.				2	5
<b>Comments from domain experts</b>					
◦ Relevant knowledge and core knowledge are important					
◦ Not sure if the newly qualified physiotherapist can recognize malfunction in these systems					
◦ Adequate					
◦ Not only basic knowledge					

## **Interpretation**

*Consensus was reached with a general rating indicating that the sciences as stipulated are adequate. The comments emphasised the importance of core knowledge; basic knowledge was therefore replaced by relevant core knowledge in the final framework. There was a query if a newly qualified physiotherapist could recognise malfunction in these systems. An important component of undergraduate education and training is the basic knowledge of anatomical and physiological pathology in order to be able to recognise malfunction of these systems, and using this knowledge in the subsequent planning of effective physiotherapeutic treatment. The researcher was of the opinion that the learners would have had sufficient exposure to malfunction to be able to identify abnormalities and clinical problems in their patients.*

### 5.2.11 Physical sciences

**TABLE 5.10: The responses of the domain experts on physical sciences [2.2.2]**

	Likert Scale				
	1	2	3	4	5
The following is required:					
Basic knowledge of the physical sciences listed below as relevant to and applied and integrated in physiotherapy:					
(i) Physics				3	4
(ii) Chemistry		1	2	2	2
(iii) Hydro-dynamics				3	4
(iv) Mechanics				2	5
(v) Biomechanics				1	6
(vi) Ergonomics.				2	5
<b>Comments from domain experts</b>					
◦ It must be understood that only core knowledge is required in a core discipline					
◦ Sciences should not be taught in isolation, they should be integrated					

#### Interpretation

*Overall consensus was reached. The panellists commented that only core knowledge must be taught and sciences cannot be taught in isolation. In the new framework the themes are integrated to address this problem. However, consensus was not reached under the sub-heading "Chemistry". In retrospect the statement referring to "chemistry" should have been included in round 2 of the Delphi technique. This was an omission in the research process. However, four panellists were of the opinion that "chemistry" plays a role in the course. Although three panellists were not certain about the*

*necessity of including "chemistry" in the course, it could be interpreted that they would prefer an applied short course. With the new suggested drug list allowing physiotherapists to prescribe medicine, the importance of chemistry must not be underestimated. A statement "applied chemistry" could have been included in the measuring instrument. Sub-themes of physics were included.*

## 5.2.12 Human (behavioural) sciences

**TABLE 5.11: The responses of the domain experts on human (behavioural) sciences [2.2.3]**

	Likert Scale				
	1	2	3	4	5
The following is required:					
(i) Psychology as a science	1		1	2	3
(ii) Human development			1	1	5
(iii) Developmental psychology			2	2	3
(iv) Psychofortigenesis	2		4	1	
(v) Multi-disciplinary co-operation and practice management			1	4	2
(vi) Knowledge of normal health and social well-being of individuals and groups			1	2	4
<b>Comments from domain experts</b>					
• Do not know what psychofortigenesis is					

### Interpretation

Overall consensus was reached. The only comment came from two panellists who did not know the meaning of the word "Psychofortigenesis". After due deliberation and communication with experts in psychology at a university department it was decided that psychofortigenesis is not taught in isolation and can therefore be excluded from the final framework. It refers to psychological strengths and is taught under headings such as "Developmental psychology", and "Human development". An explanation was given in the nomenclature of round 2 of the Delphi process but was referred to as "Psychological strengths".

*As it was decided to exclude the word "psychofortigenesis" from the framework and the domain experts were not required to respond to the word in round 2 of the Delphi process.*

### 5.2.13 Clinical sciences

**TABLE 5.12: The responses of the domain experts on clinical sciences [2.2.4]**

	Likert Scale				
	1	2	3	4	5
The following is required:					
A knowledge of medical and surgical sciences in the following basic disciplines as applicable in physiotherapy:					
(i) Paediatrics				1	6
(ii) Orthopaedics				1	6
(iii) Neurology				1	6
(iv) Neuro-surgery				3	4
(v) Emergency care				3	4
(vi) Cardio-thoracic surgery				1	6
(vii) Internal medicine			1	1	5
(viii) Sport science			1	1	5
(ix) Pharmacology			1	1	5
(x) Pulmonology			1	1	5
(xi) Appropriate precautions in the above-mentioned disciplines				1	6
(xii) The ability to plan treatment using the knowledge of the above-mentioned			1	1	5
(xiii) The role of physiotherapy in the above-mentioned disciplines				1	6
(xiv) Knowledge of the role of other health care professionals				1	6
(xv) Knowledge and skills in clinical physiotherapy as applied in general nursing				3	4



**Comments from domain experts**

- Include rehabilitation, clinical practice, oncology, obstetrics/gynaecology, geriatrics and mental health
- Electives are desirable only if adequate supervision is available
- What is the purpose of electives?

**Interpretation**

*Consensus was reached, but according to the comments the panellists were of the opinion that there should be more clinical areas. In round 2 of the Delphi process clinical areas were therefore added. They also wondered what the purpose of electives is and stated that electives serve no purpose if not supervised. Elective clinical blocks were attended to under [2.2.6]*

## 5.2.14 Research

**TABLE 5.13: The responses of the domain experts on research**  
[2.2.5]

	Likert Scale				
	1	2	3	4	5
The following is required:					
(i) training in research skills;				1	6
(ii) training in report writing and oral reporting and documentation;				2	5
(iii) resource-based education;				2	5
(iv) encouragement to be life-long learners.				1	6
<b>Comments from domain experts</b>					
• No comments					

### Interpretation

*Consensus was reached. By consensus being reached a stability was demonstrated among the domain experts regarding the importance of including research in the framework.*

### 5.2.15 Electives

**TABLE 5.14: The responses of the domain experts on electives**

[2.2.6]

	Likert Scale				
	1	2	3	4	5
The following applies:					
(i) student's prerogative with regard to clinical block for elective				4	3
(ii) student's prerogative with regard to number of electives	1	1	3	2	
(iii) approved revisited clinical exposure		1	2	3	1
(iv) suggested number of electives:					
1. or	1	1	3		2
2. or	2		3		2
3. or	4	1	1	1	
4. or	3	1	2	1	
5. or	3	1	2	1	
(v) suggested number of electives in the third study year	3		1	3	
(vi) suggested number of electives in the fourth study year	1		1		5
<b>Comments from domain experts</b>					
◦ No comments					

#### Interpretation

*Consensus was only reached on (i), (iv) 3 and (vi) and there were no comments. The researcher was of the opinion that the domain experts were confused by the construction of the statements. To address this problem the whole section was reconstructed and returned to the domain experts in round 2 of the Delphi process*

## CORE DISCIPLINES

### [2.3] GENERAL THEMES FOR PHYSIOTHERAPY EDUCATION AND TRAINING

#### 5.2.16 Health care management

**TABLE 5.15: The responses of the domain experts on health care management [2.3.1]**

	Likert Scale				
	1	2	3	4	5
Knowledge of the following is required:					
(i) health and social policy issues			1	3	3
(ii) factors influencing organisation, provision and delivery of health care				4	3
(iii) essential acts and regulations concerning the health care dispensation and labour system				4	3
(iv) political and social policies controlling health care management				5	2
(v) the role of the physiotherapist in health care				2	5
<b>Comments from domain experts</b>					
<ul style="list-style-type: none"> <li>◦ A differentiation between what is required by legislation and what is desirable is needed</li> </ul>					

#### **Interpretation**

*Consensus was reached with the comment that there must be differentiation between what is required by legislation and what is desirable. It is not within the jurisdiction of a training institution to decide what is required in health care management. Legislation determines the requirements if so desired. This is each centre's prerogative and cannot be prescribed in a framework.*

*However, had the panellist referred to the extent to which a topic must be covered in the syllabus, it would also have been difficult to include in the framework.*

## 5.2.17 Legal and ethical issues

**TABLE 5.16: The responses of the domain experts on legal and ethical issues [2.3.2]**

	Likert Scale				
	1	2	3	4	5
Knowledge of the following is necessary:					
(i) relevant medico-legal and safety measures				1	6
(ii) ethics of health care					7
(iii) consequences of violating ethical rules		1			6
(iv) professional conduct		1			6
<b>Comments from domain experts</b>					
◦ Role models are essential					
◦ Creative thinking skills are necessary					

### Interpretation

*Consensus was reached. The panel was of the opinion that role models and creative thinking are necessary. Each training institution aims at having role models on their staff. It is, however, once again not something that can be reflected in a framework. Critical thinking is emphasised under other headings (cf. 529 [ii]).*

*It was therefore decided that this section must be included to address knowledge of the parameters in which a physiotherapist may practice. It also attends to ethical acceptance concerning conduct and practice.*

## 5.2.18 Professional practice

**TABLE 5.17: The responses of the domain experts on professional practice [2.3.3]**

	Likert Scale				
	1	2	3	4	5
The following is required:					
(i) instruction in the rules of professional practice				2	5
(ii) instruction in professional conduct		1			6
<b>Comments from domain experts</b>					
• Instruction in ethical awareness and moral reflection is necessary					
• Role models are necessary					

### Interpretation

*Consensus was reached. In the comments reference was made to the importance of role models. The domain experts were of the opinion that the same applied here as in [2.3.2]. Reference was also made to ethical awareness and moral reflection. This is addressed under [2.3.2].*

*It was decided to include this section to address the importance of the professional profile of the physiotherapist.*

## 5.2.19 Quality assurance and integrated assessment

**TABLE 5.18: The responses of the domain experts on quality assurance and integrated assessment [2.3.4]**

	Likert Scale				
	1	2	3	4	5
The following is required:					
(i) Accreditation of the education and training institution by the Statutory Body				1	6
(ii) Accreditation of the training programme by the Statutory Body				1	6
(iii) Registration of the education by SAQA	1		1		5
(iv) Accreditation of a training institution by SAQA	1		1		5
(v) Continual monitoring of a programme/assessment by:					
– the statutory body				2	5
– the institution				1	6
– external colleagues				3	4
– peers				1	6
– students				3	4
– the Department of Education	1		2	1	3
– SAQA	2		1	1	3
(vi) Regular feedback after assessment					7
(vii) Remedial/reinforcing steps where necessary					7
<b>Comments from domain experts</b>					
◦ Community feedback is necessary					
◦ SAQA does not accredit institutional programmes, but statutory bodies do					
◦ SAQA is responsible for the development and implementation of the NQF					



## **Interpretation**

*Consensus was reached. Reference was made to the importance of community feedback. This is always obtained through student involvement with regard to patient care and research, as well as assessment of clinical work in the community.*

*In statement (iv) the reference to a training institution being accredited by SAQA was incorrect and one domain expert identified it as such. This error was corrected in the final framework.*

*True stability was not reached in the statements that the Department of Education and SAQA require continual monitoring of a programme and assessment. In retrospect it was felt that there are two incorrect statements. The statement referring to the Department of Education should have been: **the Higher Education Quality Committee (HEQC) of the Council of Higher Education (CHE)**. Monitoring and assessing a programme is not the responsibility of SAQA. This was therefore not included in the final framework and not returned in round 2 of the Delphi technique.*

## [2.4.1] REQUIREMENTS FOR THE EDUCATION AND TRAINING PROCESS AND STRUCTURE

### 5.2.20 Teaching, training and approaches

**TABLE 5.19: The responses of the domain experts on teaching, training and approaches [2.4.1]**

	Likert Scale				
	1	2	3	4	5
The following is necessary:					
(i) to keep abreast of current teaching trends				1	6
(ii) to meet all the outcome requirements of the programme				2	5
(iii) to guide students to be life-long learners			1		6
(iv) to encourage student-centred learning			1	2	4
(v) problem- and case-based instruction			1	2	4
(vi) integration of clinical, theoretical and practical work				1	6
(vii) lecturer-facilitated and directed learning			1	4	2
(viii) a resource-based approach				5	2
(ix) multi-disciplinary team-work				3	4
(x) an emphasis on generic skills in foundation studies			2	2	3
<b>Comments from domain experts</b>					
o Students must be life-long learners					
o The emphasis must be on learning and not on teaching					

### Interpretation

*Consensus was reached. As seen several times before, reference was made to the necessity of encouraging learners to be lifelong learners, and this was subsequently attended to. The domain experts were of the opinion that the emphasis must be on learning and not teaching. This was included throughout the framework, but mainly under [2.2.5].*

### 5.2.21 Student selection

**TABLE 5.20: The responses of the domain experts on student selection [2.4.2]**

	Likert Scale				
	1	2	3	4	5
The following is necessary:					
(i) Endorsed Senior Certificate with					
– Mathematics	1		1	3	2
– Physical science	1		1	1	4
– Biology	1		2		4
– Physiology	1		2	2	2
(ii) Academic merit	1		2	1	3
(iii) Sport activities		1	3	1	2
(iv) Cultural activities		1	2	2	2
(v) Leadership qualities		1	1	1	4
<b>Comments from domain experts</b>					
• Physical science or biology is needed (not both)					
• The standard that can be expected from a school-leaver must be ascertained					

#### Interpretation

*Consensus was not reached on each statement. The domain experts were of the opinion that not both physical science and biology are required for selection. Other aspects with regard to which there was a discrepancy, were academic merit and sport activities as a basis for selection. It was decided to return this question to the domain experts in round 2 of the Delphi technique.*

## 5.2.22 Recognition of prior learning

**TABLE 5.21: The responses of the domain experts on recognition of prior learning [2.4.3]**

	Likert Scale				
	1	2	3	4	5
Entrance to a course must allow for recognition of:					
(i) previous formal work experience and learning		1		2	4
(ii) previous informal work experience and learning		2	2	2	1
(iii) previous non-formal work experience and learning		2	3	1	1
<b>Comments from domain experts</b>					
◦ Differentiate between informal and formal					

### Interpretation

*Consensus was not reached in (ii) and (iii). There was a query as to the difference between formal, informal and non-formal. An explanation was given in the Nomenclature of round 2 of the Delphi process.*

*However, the three scenarios that were offered are the definition of RPL, and stability on either side of the Likert Scale would not have changed the definition. Further research would be useful in this area.*

### 5.2.23 Student support and development

**TABLE 5.22: The responses of the domain experts on student support and development [2.4.4]**

	Likert Scale				
	1	2	3	4	5
The following is necessary:					
(i) an infrastructure for student support					7
(ii) programme for student development				1	6
(iii) mechanisms to identify student problems					7
(iv) mechanisms to refer students with problems				1	6
(v) facilities to address student problems.				1	6
<b>Comments from domain experts</b>					
◦ Students who do not have academic qualifications must be identified					

#### Interpretation

*Consensus was reached. The only comment referred to the identification of students who do not have acceptable academic qualifications for selection. Universities and Technikons throughout South Africa are offering bridging courses to prepare students for acceptance to university courses in an attempt to address this problem.*

## [2.5] OTHER REQUIREMENTS PERTAINING TO QUALIFICATIONS

### 5.2.24 Mobility

**TABLE 5.23: The responses of the domain experts on mobility**

[2.5.1]

	Likert Scale				
	1	2	3	4	5
Programmes must be designed in a way that will allow					
(i) mobility between courses / programmes	1		1	1	4
(ii) mobility between Faculties and Universities	1		1	5	
(iii) national mobility	1		2	3	1
(iv) international mobility	1		4	2	
<b>Comments from domain experts</b>					
◦ Diversity in programmes is necessary to teach a range of strengths and perspectives					

### Interpretation

*Consensus was reached in (i) and (ii) but not in (iii) and (iv). One comment was made with regard to diversity in programmes being necessary to teach a range of strengths and perspectives. The relevance of this comment with regard to mobility could not be ascertained. In the Likert rating there was a tendency towards national mobility rather than international mobility. However, it is recommended that this is an aspect that educationists must bear in mind when compiling a programme to meet and the requirements of the National Plan for Higher Education. It was decided to delete national mobility in the final framework because mobility between faculties and universities and national mobility has the same implication.*

### 5.2.25 Portability

**TABLE 5.24: The responses of the domain experts on portability [2.5.2]**

	Likert Scale				
	1	2	3	4	5
CREDITS MUST BE TRANSPORTABLE					
(i) between courses/ programmes	1		1	1	4
(ii) between faculties/ institutions	1		2	1	3
(iii) nationally	1		3		3
(iv) internationally	1	1	3	1	1
<b>Comments from domain experts</b>					
◦ This may not be feasible					
◦ Content of modalities may differ between universities					

#### Interpretation

*Consensus was not reached in (ii) and (iv). The comments referred to the feasibility of portability and the content of modalities that may differ between universities. This is one of the aims of SAQA to ensure uniformity between programmes and modules, thus ensuring portability. Half the domain experts felt that international portability is unnecessary. It was decided to delete **national portability** from the final framework because it has the same implication as portability between faculties and institutions.*

### **5.3 ANALYSIS AND INTERPRETATION OF THE RESPONSES ON THE RESEARCH INSTRUMENT - ROUND 2 OF THE DELPHI PROCESS (APPENDIX IIIB)**

Consensus was reached in round one (1) of the Delphi Technique under all the main headings except 2.2.4 (vi, vii, viii, ix, x) 2.2.6 and 2.4.2. For the sake of completeness the whole research instrument was sent to the domain experts, but they were only required to assess the three mentioned revised statements. All additional work is typed in italics.

The rating and interpretations are as follows:



### 5.3.1 Clinical sciences

**TABLE 5.25: The responses of the domain experts on clinical sciences [2.2.4]**

	Likert Scale				
	1	2	3	4	5
The following is required:					
A knowledge of medical and surgical sciences in the following basic disciplines as applicable in physiotherapy:					
(i) Paediatrics					
(ii) Orthopaedics					
(iii) Neurology					
(iv) Neuro-surgery					
(v) Emergency care					
(vi) <i>Rehabilitation as a clinical science</i>	1		1	1	4
(vii) <i>Mental health</i>		1	1	3	2
(viii) <i>Obstetrics / Gynaecology</i>			1	2	4
(ix) <i>Geriatric care</i>				5	2
(x) <i>Oncology</i>			1	5	1
(xi) Cardio-thoracic surgery					
(xii) Internal medicine					
(xiii) Sport science					
(xiv) Pharmacology					
(xv) Pulmonology					
(xvi) Appropriate precautions in the above-mentioned disciplines					
(xvii) The ability to plan treatment using the knowledge of the above mentioned					
(xviii) The role of physiotherapy in the above-mentioned disciplines					
(xix) Knowledge of the role of other health care professionals					
(xx) Knowledge and skills in clinical physiotherapy as applied in general nursing.					

<b>Comments from domain experts</b> <ul style="list-style-type: none"><li>◦ No comments</li></ul>					
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### Interpretation

*Consensus was reached and there were no comments.*

### 5.3.2 Electives

**TABLE 5.26: The responses of the domain experts on electives**  
[2.2.6]

	Likert Scale				
	1	2	3	4	5
The following applies:					
(i) student prerogative with regard to clinical block for elective					7
(ii) student prerogative with regard to number of electives	2	2	3		
(iii) approved revisited clinical exposure		1	3	3	
(iv) <i>suggested number electives in the third study year</i>	4			2	1
(v) <i>suggested number electives in the fourth study year</i>	4	3			
<b>Comments from domain experts</b>					
• Students must have the prerogative to select their own clinical blocks, but not the number of electives in each year					
• Electives must be considered as clinical exposure that is revisited					
• Clinical blocks must be approved by the staff					

#### Interpretation

*This section was reconstructed as seen above and returned to the panellists in the second round of the Delphi technique.*

*Consensus was reached with regard to students having the prerogative to select their own clinical block, but not regarding the prerogative to determine the number of electives each year. The ratings gave the impression that electives must be considered as clinical exposure that is revisited and clinical blocks must be approved by members of staff.*

*In statements (iv) and (v) the domain experts were required to indicate how many electives there should be in the third and fourth study years. Four indicated that there should be one (1) in the third year, two that there should be four (4) while one indicated that there should be five (5). Four once again indicated that there should be one(1) in the fourth year, and three that there should be two (2)in the fourth year.*

*It could therefore be interpreted that consensus was reached with regard to there being 1 elective in the third year and 1 or 2 in the fourth year.*

*It must be noted that although the domain experts were not required to respond to statements (i), (ii) and (iii), they did. The rating has therefore been offered and discussed.*

### 5.3.3 Student selection

**TABLE 5.27: The responses of the domain experts on student selection [2.4.2]**

	Likert Scale				
	1	2	3	4	5
The following is necessary:					
(i) Endorsed Senior Certificate with			1	4	2
– Mathematics			2	5	
– Physical science		2	3		2
– Biology		1	1	1	4
– Physiology		1	1	2	2
(ii) Academic merit				3	4
(iii) Sport activities	1	2		4	
(iv) Cultural activities	1		2	4	
(v) Leadership qualities			2		5
<b>Comments from domain experts</b>					
◦ No comments					

#### Interpretation

*Consensus was reached regarding a senior certificate, mathematics, academic merit and leadership qualities being requirements for student selection. Consensus was not reached regarding Biology, Physiology, sport and cultural activities for student selection. It was therefore decided to only recommend these four aspects in the framework.*

## 5.4 CONCLUSION

In this chapter the interpretation of the responses from the domain experts who served on the Delphi panel are offered.

A biostatistician analysed the responses. It was decided that consensus had been reached with responses of five out of seven (70%) or four out of six (67%) was offered on either side of the 5-point Likert scale (*cf.* 3.5). Consensus was reached in each section of the measuring instrument in round one (1) of the Delphi technique except 2.2.4 (vi, vii, viii, ix, x), 2.2.6 and 2.4.2. These sections were revised and returned to the domain experts in round two (2) of the Delphi technique.

All the comments were included in the final framework.

**A FRAMEWORK FOR THE  
EDUCATION AND TRAINING  
OF PHYSIOTHERAPY STUDENTS**

**PART 1**

**Orientation**

**PART 2**

**Definitions**

**PART 3**

**Training outcomes**

**PART 4**

**Main themes for physiotherapy  
education and training**

**PART 5**

**Core disciplines**

**PART 6**

**Requirements for the education and training  
Process and structure for physiotherapy**

## **CHAPTER 6**

### ***The framework***

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#### **PART 1**

#### **Orientation**

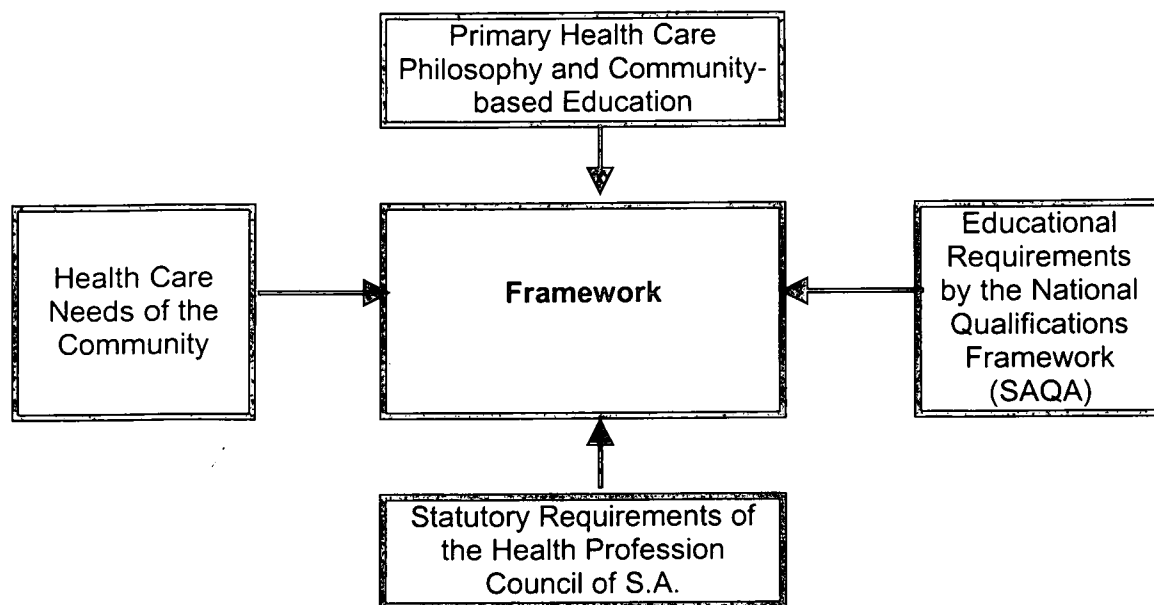
The philosophy and objectives dictating health reform in South Africa, and for the purpose of this framework for physiotherapy education and training, are based on principles and requirements set forth in the White Paper for the *Transformation of the Health System in South Africa*, by the *World Health Organisation, the South African Society of Physiotherapy, the Health Professions Council of South Africa, the National Physiotherapy Committee* (1998:1-24) and SAQA. The framework is thus underpinned and informed by national and international trends in physiotherapy by the conceptual framework as illustrated in Figure 6.1.

Newly qualified physiotherapists are required to function at levels 6 or 7 of the CORE document depending on the length and outcomes of the programme that they have completed. The generic job content that has been used for this document, is for Social, Natural, Technical and Medical Sciences Supplementing and Support Personnel; however, the generic job content for Professionals and Managers is also applicable to physiotherapists. These levels are offered in Appendix IIIA, Addendum A.

In contrast to the CORE levels, the Level Description of the National Qualifications Framework facilitates the assignment of a unit standard or a standard of qualification. This framework refers to outcomes. The physiotherapy student enters the course at level 5 and exits at level 6 or 7, depending on the competency requirements and the duration of the course.



Exit-level outcomes have been compiled according to levels 6 and 7. Levels 5, 6 and 7 are described in Appendix IIIA, Addendum B.



**FIGURE 6.1:** *Conceptual framework for the development of a framework for the education and training of undergraduate physiotherapy students*

The purpose of a professional qualification in physiotherapy is to supply physiotherapists who are competent to render a professional service in health care, that is, who have the necessary knowledge, skills, professional thinking, behaviour and attitudes to pursue the profession as physiotherapists and managers in health care.

All aspects necessary to ensure that the physiotherapy graduate meets national and international professional demands have been included in this framework.

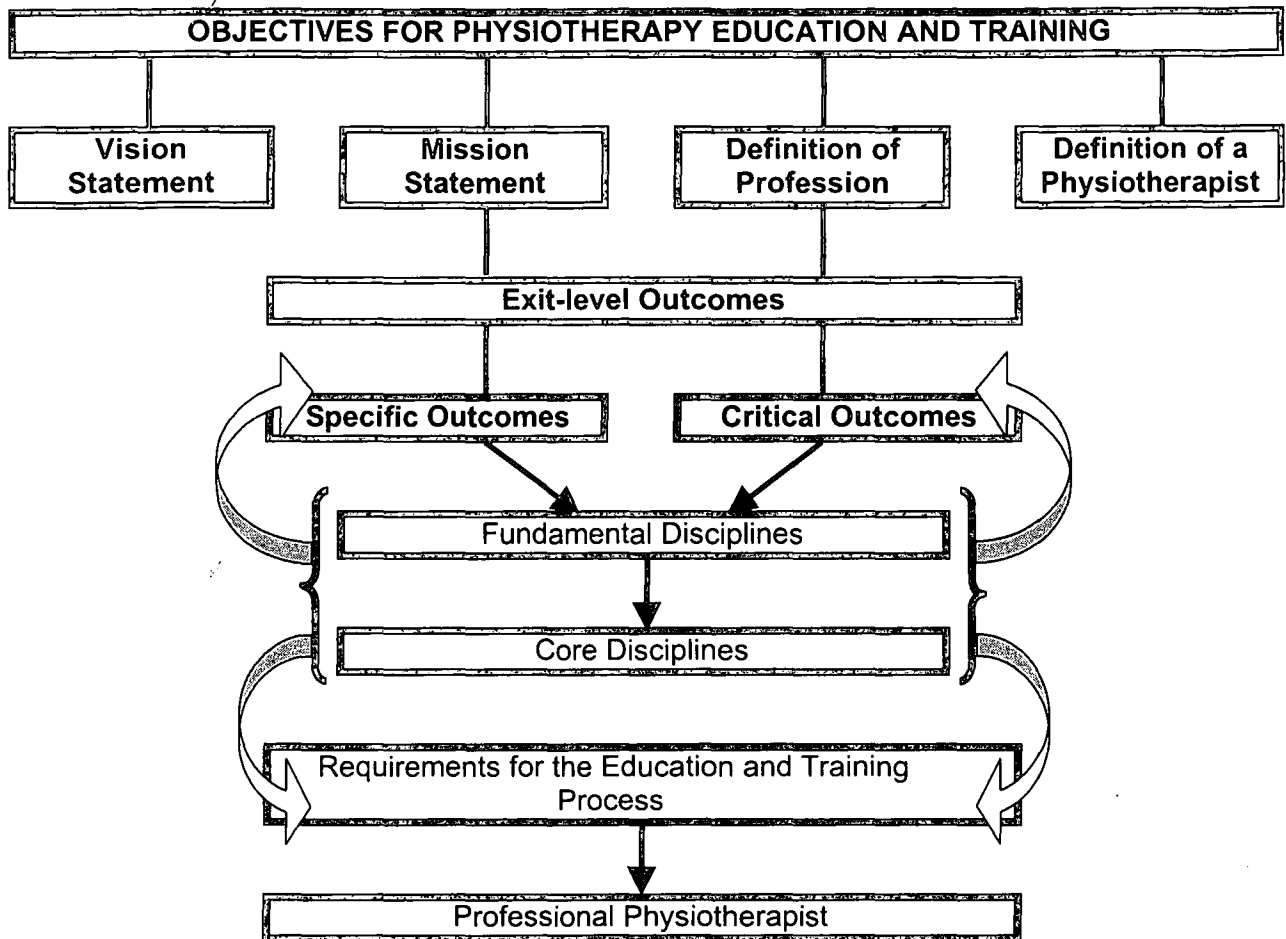
The framework has been divided into major themes that address the core knowledge and skills that refer to the essential contents of a physiotherapy education and training programme, reflecting the competence and ability required of a registered physiotherapist in initial qualification. Core learning

constitutes the knowledge and skills required to be able to practise the profession of physiotherapy, describing the contextually relevant knowledge, skills, attitudes and values to obtain the qualification.

In a physiotherapy programme designed according to this framework, core and fundamental knowledge and skills can be divided into major themes with modules representing the discipline-specific learning outcomes and corresponding credits. The credits for each theme in a module can be adjusted according to the weight of the module and desired exit-level. The framework can be used for any graduate physiotherapy course.

The framework is outcomes-, community- and problem-based and offers the outcomes of each theme.

The process that was followed to develop the framework is diagrammatically represented in Figure 6.2.



**FIGURE 6.2:** *Diagrammatic Representation the Developmental Framework for a Generic Education and Training Programme for Physiotherapists*

## VISION STATEMENT

Learners who obtain a qualification in professional physiotherapy will be equipped with discipline-specific technical competencies and generic skills, as well as the required vocational attributes to make them valuable members of the physiotherapeutic work environment. The learner should have gained the ability to function professionally and with interdisciplinary and inter-cultural collaboration, and pursue continuing evidence-based physiotherapy practice.

## **MISSION STATEMENT**

To train and educate physiotherapists who will be competent to render a professional evidence-based service, that is, who have the necessary knowledge, skills, critical thinking, behaviour and attitudes to pursue their profession as physiotherapists and managers in all the ramifications of physiotherapy and health care.

## **GOALS FOR PHYSIOTHERAPY EDUCATION AND TRAINING**

- (i) To ensure quality physiotherapy services to all the people of South Africa through the development of physiotherapy education and training, practice and research.
- (ii) To provide educational programmes which can satisfy the health needs of all the people of the country and the educational needs of the profession.
- (iii) To equip those entering the profession with skills which are appropriate, affordable and relevant to the needs of the people of the country.
- (iv) To contribute to the development and achievement of a healthy self-reliant nation.
- (v) To ensure professional integrity and the highest ethical standards of practice.
- (vi) To oppose any discrimination on the grounds of race, colour, creed, national origin or gender.

- (vii) To encourage the development of interpersonal, negotiative, leadership and conflict management skills, at all four levels of health care, i.e. promotive, preventive, curative and rehabilitative, to practise effectively in any environment in accordance with the principles of Primary Health Care.
- (viii) To develop communication and interpersonal skills, team management and community development skills with a focus on adult learning.
- (ix) To instil in students the desire for continuing physiotherapy education and research.
- (x) To develop students' ability to document scientific, clinical reports.
- (xi) To teach multi-disciplinary perspectives in a programme.
- (xii) To ensure a programme-based approach to education and training.
- (xiii) To identify and solve problems by using critical and creative thinking.
- (xiv) To contribute to the full personal development of each learner.
- (xv) To have an understanding of the changing health care policies, nationally and internationally.
- (xvi) To develop and implement quality assurance measures and the accreditation of programmes.
- (xvii) To promote a standard of excellence in health practice, drawing on both international and local experience.

## **PART 2**

### **Definitions**

#### **THE PROFESSION**

Physiotherapy is a health care profession, which emphasises the use of physical approaches in the maintenance and restoration of an individual's physical, psychological and social well-being, encompassing variations in health status through the use of manual therapy, therapeutic exercises and the application of electro-physical modalities, as well as problem-solving and clinical reasoning skills. All facts pertaining to client care are addressed in a caring and supportive manner to approach a health care problem holistically. Service delivery can be preventive, promotive, curative or rehabilitative.

#### **A PHYSIOTHERAPIST**

A physiotherapist is a person who is in possession of a qualification, which can be registered and recognised by the Professional Board for Physiotherapy, Podiatry and Biokinetics of the Health Professions Council of South Africa for the purpose of practising independently and treating any condition within the defined scope of the physiotherapy profession.

## **PART 3**

### **Training outcomes**

#### **INTRODUCTION**

The exit-level outcomes entail the capabilities constituting the overall competence required of learners who have completed a programme period on level 6 or 7 of the National Qualifications Framework level descriptors, aimed at obtaining a Bachelor's degree in Physiotherapy. The process followed to compile the exit-level outcomes is diagrammatically represented in Figure 6.1. The interaction between the exit-level outcomes and the specific, skills, attitudinal and behaviour and critical outcomes is diagrammatically represented in Figure 6.2.

#### **EXIT-LEVEL OUTCOMES**

The exit-level outcomes are as follows:

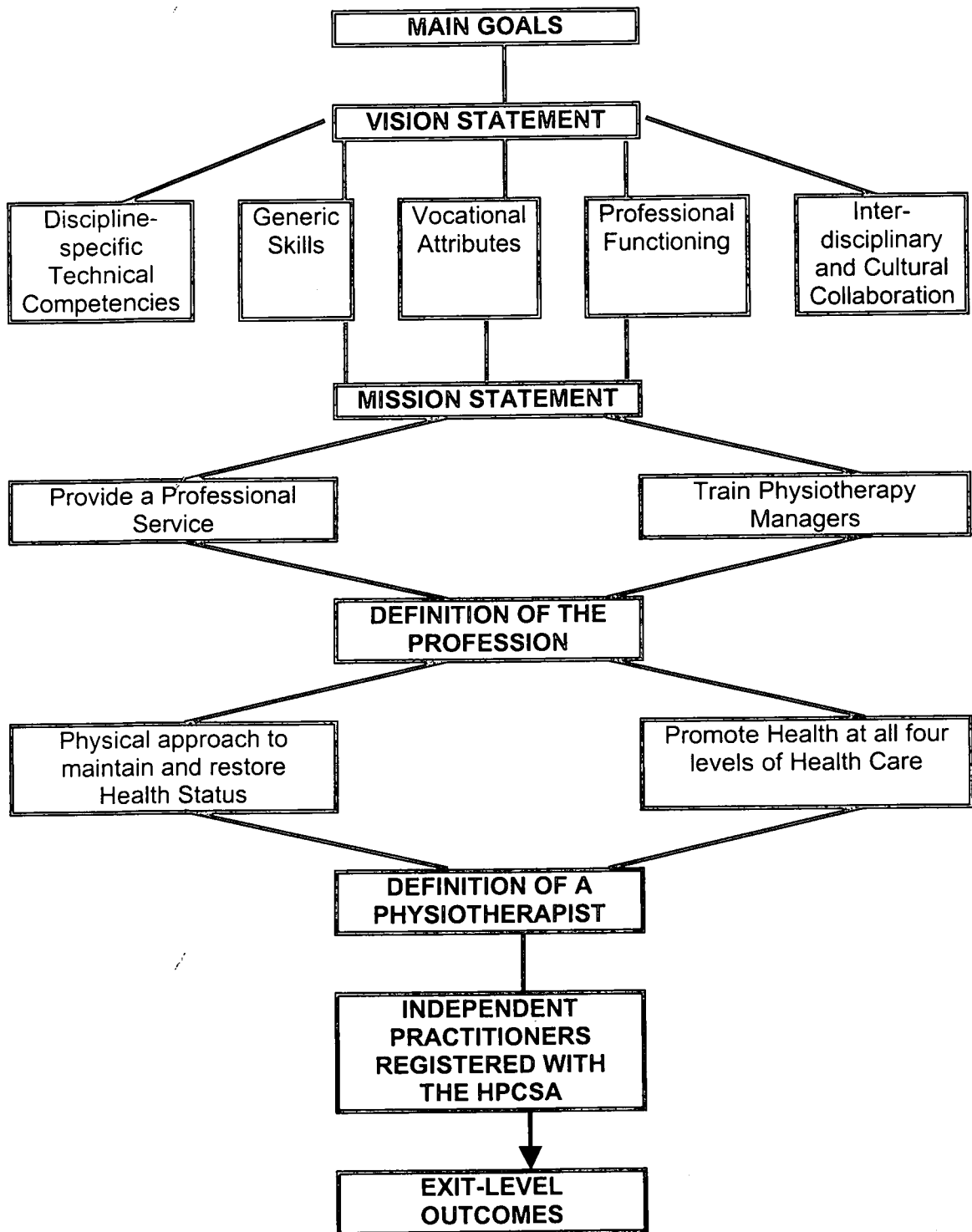
On completion of the programme, learners must demonstrate:

- a comprehensive knowledge and understanding of health care, the promotion thereof, and the prevention, management and treatment of disease and injury relevant to physiotherapy;
- a comprehensive knowledge of the normal structure, functions and development of a person as a whole and as an individual within the context of the family and community;
- a comprehensive knowledge of the relevant physical sciences (physics, chemistry), biological sciences (anatomy, physiology), and behavioural sciences (psychology) which underpin physiotherapy practice;
- the ability to apply manual therapeutic techniques, exercises and the application of electro-physical modalities;
- a well-founded knowledge of diseases and pathological processes as the basis of physiotherapy practice;

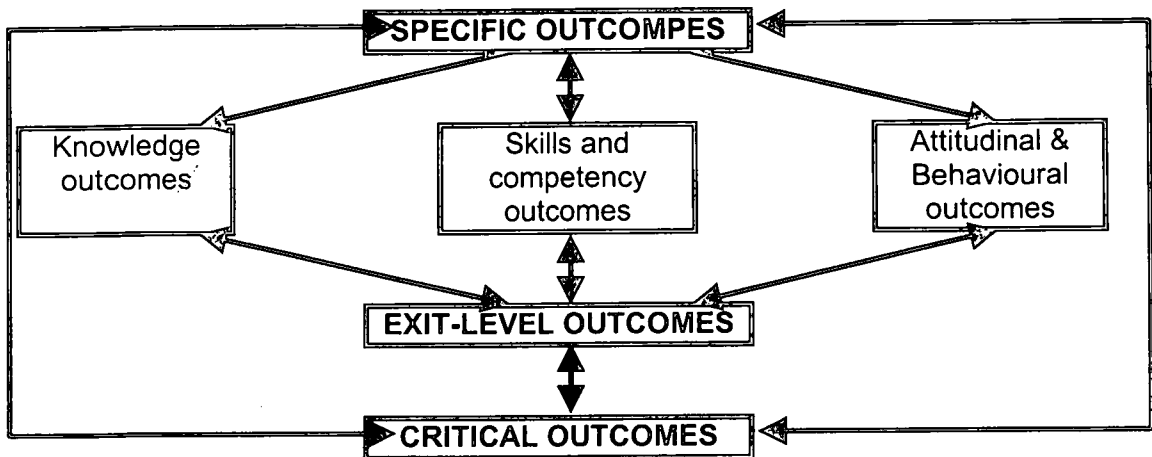
- an understanding of physiotherapeutic principles, problem-solving and decision-making, with due consideration of ethical aspects;
- the ability to use physiotherapeutic scientific terminology with confidence;
- proficiency in basic clinical skills within the parameters of physiotherapy practice, including the ability to take a history, perform a physical examination and assess a person's mental state, interpret the findings, diagnose and manage diseases and injury as a first line practitioner;
- the desire to prevent disease and promote health;
- the ability to apply professional reasoning as an integral part of physiotherapeutic practice;
- the ability to utilise diagnostic and treatment aids, as well as the services of other health professions;
- the ability to work as a member of a team rendering safe, responsible health care services;
- appropriate attitudes and behaviour patterns to ensure quality health care;
- a commitment to health care and a responsibility with regard to the physical, mental and social well-being of the community;
- the ability to palliate suffering with empathy and within ethical norms and guidelines;
- the ability to render a primary health care service within a community-orientated approach to health care;
- an aptitude for being a lifelong learner in preparation for continuing professional development and research methodology;
- a sensitivity to and knowledge and understanding of the health needs of the country, and the ability to satisfy national standards of excellence;
- the ability to be effective managers of health;
- the ability to render a service as members of the health team;
- the ability to act as advocates for their patients and communities;
- effective communication skills and research methodology;
- critical thinking skills;
- the ability to apply social and behavioural sciences in all four levels at which the physiotherapy profession practices;
- the ability to practice safely and responsibly;



- the ability to practice within the “scope of practice” and apply competencies as stipulated by Board of Physiotherapy, Podiatry and Biokenetics through the HPCSA.



**FIGURE 6.3:** *Diagrammatic representation of the relationship between exit-level outcomes and the main goals for physiotherapy education and training*



**FIGURE 6.4:** *Diagrammatic representation of the interaction between learning outcomes and exit-level outcomes*

## **SPECIFIC OUTCOMES**

The specific outcomes set for a programme for professional physiotherapists constitute the abilities that will enable the learner to be capable of achieving the exit-level outcomes stated above. These include:

### **Knowledge outcomes**

On completion of the programme the students must demonstrate:

- knowledge and understanding of normal human development, structures and pathological conditions;
- knowledge of the principles of manual therapeutic exercises and electro-physical modalities as understood in preventive, promotive, therapeutic and rehabilitative health care;
- the ability to master the knowledge required to identify, diagnose and treat complex physiotherapeutic health care problems;

- the ability to master the fundamental and core knowledge required to work as a physiotherapist at the four levels of service delivery, i.e. tertiary, secondary, primary and self-care;
- a sound knowledge of professional clinical practice in the public and private sectors;
- knowledge about the health policy of the country as well as global trends and issues in health care;
- knowledge of the essential acts and regulations concerning the health care dispensation, labour system and relevant areas having a bearing on physiotherapy practice as a profession;
- knowledge of the roles of the other members of the multi-disciplinary health care team;
- mastery of the knowledge required to evaluate and apply the principles of the health care dispensation of the country as relevant to physiotherapy.

### **Skills outcomes**

On completion of the programme the students must demonstrate:

- mastery of the clinical skills required to be able to practise preventive, promotive, therapeutic and rehabilitative physiotherapy;
- the ability to apply relevant diagnostic and analytical skills;
- the ability to work as members of the multi-professional health care team;
- problem-solving and communication skills required to professionally counsel and communicate with patients;
- the technological and clinical skills required for effective and efficient practice in the field of physiotherapy and health care;
- the ability to respond to the varied health care needs and the safety of the patient;
- communication skills pertaining to health care delivery and work in the health care team;

- well-developed research and managerial skills at undergraduate level.

### **Attitudinal and behavioural outcomes**

On completion of the programme the students must:

- maintain the personal, ethical and professional standards applicable to physiotherapy;
- have a desire to ensure patient care of the highest possible quality;
- use a holistic approach to patients in a varied social milieu;
- be confident to deliver health care services at all levels;
- have a community-oriented and primary health care-oriented approach in service rendering;
- show respect for patients and colleagues, without prejudice with regard to background, race, culture, gender, way of life, etc.;
- recognise human and patients' rights;
- demonstrate a positive approach to self-directed life-long learning;
- have gained an awareness of personal limitations and demonstrate a willingness to seek help when necessary;
- demonstrate a positive attitude towards change and functioning within the uncertainties of the times;
- demonstrate a positive approach towards continuing meaningful professional development.

### **CRITICAL OUTCOMES**

On completion of the programme, the student must demonstrate:

- the ability to identify and solve problems, with special reference to the management of health care and patient issues within the field of physiotherapy;

- the ability to make informed and responsible decisions through critical thinking;
- the ability to work in a team or group, and as a member of an organisation or community;
- the ability to manage and organise the self and own activities responsibly and effectively;
- the ability to collect, analyse, organise and critically evaluate information (research abilities);
- the ability to communicate effectively and use language and managerial skills in oral and written persuasion in physiotherapy practice,
- the ability to be informed of scientific language as related to the profession;
- the ability to utilise science and technology critically and effectively, with responsibility towards the environment and the health of others;
- understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation, and demonstrating this understanding through the ability to establish relationships and using a holistic and creative approach in dealing with patients and health care problems;
- the ability to explore a variety of strategies to learn more effectively (problem-based learning);
- the ability to participate as responsible members in the life of their communities, and, in particular, to act as role models with regard to health care;
- cultural sensitivity, especially within the context of health care;
- the desire to explore educational and career opportunities, and show an independent entrepreneurial spirit;
- demonstrate professional creativity.

## **PART 4**

### **Main themes for physiotherapy education and training**

The following scientific fields or themes refer to the basic learning required of a qualified physiotherapist and address the required knowledge, skills and attitudes, behaviour and values students have to demonstrate on completion of the education and training programme.

The following is required:

- Normal human anatomy and physiology of systems relevant to physiotherapy practice;
- Core knowledge of anatomical and physiological pathology relevant to physiotherapy;
- The ability to recognise malfunction of the systems through assessment procedures;
- The ability to plan and manage treatment by applying knowledge.

### **BIOLOGICAL SCIENCES**

A study of the biological sciences is required of students to gain knowledge of the normal human anatomy and physiology of those systems relevant to physiotherapy practice. Core knowledge of anatomy and physiology contributes to students' understanding of principles required in physiotherapy. Understanding of the structure and function of the body will enable the physiotherapist to recognise malfunction of the systems through assessment procedures, and to plan management and treatment. Disciplines that should be included are Anatomy and Physiology.

**Related Outcomes**

The learner must be able to demonstrate;

- knowledge of normal human anatomy and physiology of systems relevant to physiotherapy practice,
- basic knowledge of anatomical and physiological pathology relevant to physiotherapy,
- the ability to recognise malfunction of the systems through assessment procedures, and
- the ability to plan and manage treatment using this knowledge.

**PHYSICAL SCIENCES**

Students need to gain knowledge of physics, hydrodynamics, mechanics, biomechanics and ergonomics as applied in specific therapeutic techniques and procedures in practice, to underpin their practical skills scientifically. An understanding of, and effective and efficient application of this knowledge will ensure competent, safe and effective practice. Physical sciences include the study of physics and chemistry.

**Related Outcomes**

The learner must be able to demonstrate basic knowledge of the physical sciences listed below as relevant to, and applied to integrated physiotherapy;

- Physics,
- Chemistry,
- Hydro-dynamics,
- Mechanics,

- Biomechanics,
- Ergonomics.

## HUMAN (BEHAVIOURAL) SCIENCES

Human (behavioural) sciences are included in the programme to enable physiotherapists to use a holistic approach in the care they give. Knowledge of psychology and psychiatry are required for physiotherapists to gain a full understanding of normal health, illness and health care within the context of physiotherapy practice – inequalities in health, and social factors in the etiology of illness and health, and behavioural aspects of illness and health. Knowledge of behavioural sciences is required for physiotherapists to help individuals and groups to optimise their health and social well-being; to manage themselves and their clients' activities optimally, and to deliver responsive physiotherapy services. Disciplines that should be included are psychology and psychiatry.

### Related Outcomes

The learner must be able to demonstrate knowledge of:

- psychology as a science;
- human development;
- developmental psychology;
- multi-disciplinary co-operation and practice management;
- normal health and social well-being of individuals and groups.



## CLINICAL SCIENCES

Through the study of medical and surgical sciences the pathological changes and related clinical features of conditions encountered in physiotherapy practice are brought home to students. The appropriate health care management and treatment, with precautions, are covered. Understanding and knowledge in this area are essential for accuracy in clinical diagnosis and the selection of safe and effective application of physiotherapy treatments. Knowledge and an appreciation of the role of other health care professionals are also required. To this end, core knowledge and skills in clinical physiotherapy, general nursing and general medical conditions should be included. This is taught throughout the course and refers to all medical disciplines with relevant physiotherapy intervention.

### Related Outcomes

The learner must be able to demonstrate a knowledge of medical and surgical sciences in the following basic disciplines as applicable in physiotherapy;

- paediatrics;
- orthopaedics;
- neurology;
- neurosurgery;
- emergency care;
- rehabilitation as a clinical science;
- mental health;
- obstetrics/gynaecology;
- geriatric care;
- oncology;
- cardiothoracic surgery;

- internal medicine;
- sport science;
- pharmacology;
- pulmonology.

The learner must be able to:

- apply appropriate precautions pertaining to physiotherapy in the above-mentioned disciplines;
- assess a patient and plan and reform intervention using the knowledge of the above-mentioned;
- identify the role of physiotherapy in the above-mentioned disciplines;
- demonstrate a knowledge of the role of other health care professionals;
- demonstrate knowledge and skills of clinical physiotherapy as applied in general nursing.

## RESEARCH

Research will expose students to problems and the ability to solve problems. The skill will be developed to make responsible decisions using critical and creative thinking.

### Related Outcomes

The learner must be able to demonstrate the ability to:

- apply research skills;
- document and orally report research.

The following is required:

- an evidence-based education and training programme;
- encouragement of students to become lifelong learners.

## ELECTIVES

Electives provide the students with the opportunity to revisit and reinforce clinical exposure. The elective period also serves as a time for students to become more proficient in areas of special interest or preference, especially with a view to later specialisation.

The following is required:

- The choice by students to revisit areas where they are not proficient.
- The opportunity to improve a clinical mark.
- The opportunity to expand knowledge and skills in a particular area of interest.

## **PART 5**

### **Core disciplines**

#### **General themes for physiotherapy education and training**

#### **HEALTH CARE MANAGEMENT**

Knowledge of health and social policy issues is required of a practising physiotherapist. These include factors that have an influence on the organisation, provision and delivery of health care. Students need to gain knowledge of the essential acts and regulations concerning the health care dispensation, labour system and other relevant areas that have a bearing on physiotherapy as a profession. An understanding must be gained of the factors, especially political and social policies, that control and influence health care delivery and how health care is organised in the country. The physiotherapist will be introduced to the management of the system and how to contribute and take responsibility within a national and international system.

#### **Related Outcomes**

The learner must be able to demonstrate a knowledge of:

- health and social policy issues;
- factors influencing organisation, provision and delivery of health care;
- essential acts and regulations concerning the health care dispensation and labour system;
- political policies controlling health care management;
- the role of the physiotherapist in health care.

## LEGAL AND ETHICAL ISSUES

Students should gain knowledge and understanding of medico-legal, health and safety measures and obligations, as well as the ethics of health care in professional practice and research. The rules of professional ethics within physiotherapy, as identified by the relevant professional bodies are emphasised and students should be made aware of the importance of always adhering to them.

### Related Outcomes

The learner must be able to demonstrate knowledge of:

- relevant medico-legal and safety measures;
- ethics in health care;
- consequences of violating ethical rules.

## PROFESSIONAL PRACTICE

Students should gain an understanding and knowledge of the rules of professional conduct within physiotherapy as profession and health care *per se* and adhere to them at all times. Professional behaviour and attitudes are important to ensure that the physiotherapist will practise within professional boundaries as stipulated by the profession.

### Related Outcomes

The learner must be able to demonstrate the ability to:

- practise professionally according the regulations of the SASP;
- conduct themselves professionally.

## **QUALITY ASSURANCE**

The ability to continuously monitor the issues pertaining to professional physiotherapy practice will assure clinical and scientific quality. Students need to be equipped to assess all standards of practice and patient care to assure the maintenance of quality in the profession. Students must also be able to demonstrate the ability to apply competence within a range of formative and summative assessment methods. Quality assurance issues should be dealt with in all the major themes.

### **Related Outcomes**

The learner must be able to demonstrate the ability to:

- continuously monitor professional physiotherapy practice;
- assess the standard of patient care.

## **PART 6**

### **Requirements for the education and training process and structure for physiotherapy**

#### **TEACHING AND TRAINING APPROACHES**

The below mentioned related outcomes have a bearing on the learner before and during the learning process, and play a role in in-class and out-of-class experiences. The outcomes contribute to the development of the professional profile, as well as the personal professional experience and development of the student.

Staff development and support must also be attended to in order to keep abreast of the changes in health care education and services which make heavy demands on academic staff.

#### **Related Outcomes**

The training institution and lecturers must demonstrate the ability:

- to keep abreast of current teaching trends;
- to meet all the outcome requirements of the programme;
- to guide students to be life-long learners;
- to encourage student-centred learning;
- to offer problem- and case-based instruction;
- to integrate clinical, theoretical and practical work;
- to facilitate and self-direct learning;
- to guide students to a resource-based approach;
- to encourage multi-disciplinary team-work;
- to emphasise generic skills in foundation studies.

## STUDENT SELECTION

Student selection influences the student and graduate profile, and eventually the standard of registered professionals. No gender or cultural discrimination is permitted. The only overall prerequisite is academic merit.

### Requirements

The following is necessary:

- Endorsed Senior Certificate with one or two of the following:
  - Mathematics;
  - Academic merit;
  - Leadership qualities.

The following is recommended:

- Biology;
- Physiology;
- Sport activities;
- Cultural activities.

## STUDENT SUPPORT AND DEVELOPMENT

To prevent students discontinuing their course due to academic and extra-curricular factors, it is necessary for an education and training institution to be able to offer support to these students. Every precaution should be taken to prevent the unnecessary termination of a student's studies.



**Requirements**

The following is necessary:

- an infrastructure for student support;
- a programme for student development;
- mechanisms to identify student problems;
- facilities to address student problems.

**RECOGNITION OF PRIOR LEARNING**

Academic or clinical experience prior to application for the course must be considered and formally assessed to ensure that acceptance to the course is fair.

**Requirements**

Entrance to a course must allow for recognition of:

- previous formal work experience and learning;
- previous informal work experience and learning;
- previous non-formal work experience and learning.

## MOBILITY

Mobility of courses and credits allows students to retain their credits and move between faculties and health sciences.

### Requirements

Programmes must be designed in a way that will allow:

- mobility between courses/ programmes;
- mobility between faculties and universities;
- international mobility.

## PORTABILITY

Portability refers to students being able to move between universities and retaining their credits.

### Requirements

Credits must be transportable:

- between courses/programmes;
- between faculties/universities;
- internationally.

## **SUMMARY**

Although this framework has been based on the key findings from the research process of this study it has been constructed in sections, or, parts to facilitate easy accessibility to each part by physiotherapy educators. Each part refers to a different aspect of physiotherapy education and training to make the framework a user-friendly working document for use by training institutions.

The framework has also been compiled so that it can be used independently from the thesis.

# CHAPTER 7

## *Summary and discussion*

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### 7.1 INTRODUCTION

The major challenge and purpose of this study has been to consolidate the copious amounts of information relating to the transformation of health care and the higher education system in South Africa and then, through the research process, to superimpose this information into the education and training of physiotherapists.

Emanating from this research, a document called "The Framework" has been developed. "The Framework" is a working document that can be used by educators involved in physiotherapy education and training. The document can also be used to make proposals to the Professional Board for Physiotherapy, Podiatry and Biokinetics as well as the Standards Generating Body for Physiotherapy to set standards for physiotherapy learning programmes. This constituted the aim of this study.

The process followed was to investigate and describe the current situation regarding physiotherapy education and training. A literature survey was performed, a sample group of universities in the United Kingdom were identified and the programme director of each was interviewed. The curricula of physiotherapy programmes in South Africa were analyzed and two South African programme directors were interviewed. With this information, departmental workshops were held in the Department of Physiotherapy of UFS. Emanating from the above-mentioned research, a vision and mission statement was compiled for physiotherapy education and training. Definitions for the physiotherapy profession and a physiotherapist were also compiled.

The following step was to identify factors influencing physiotherapy education and training. These factors were called "*goals for physiotherapy education and training*". They were then converted into exit-level outcomes for a qualification which in turn were divided into specific and critical learning outcomes. The outcomes stated as exit-level outcomes reflect the competencies, abilities and capabilities required of a professional physiotherapist on achievement of a qualification. They have been formulated in the style and format of an outcomes-based, problem-based programme as have been introduced in South Africa by the South African Qualifications Authority.

With this background a measuring instrument was constructed with which to implement the Delphi technique. The final framework was based on the finding from the Delphi technique. This constituted the objectives for this study.

Throughout the study reference is made to national and international acceptance of the framework. National acceptance implies benchmarking of the framework by the HPCSA. International acceptance implies international credibility of the South African Physiotherapy qualification and not acceptance of the framework. Each country has its own curriculum framework (*cf.* CSP, 1996). In order to ensure national and international credibility, the SAQA Act prescribes that the NQF should establish a quality assurance management system (Olivier, 1998:10). In this study an attempt has been made to achieve this by compiling a framework that can be used by all training institutions in South Africa as a guideline for programme development.

## 7.2 SUMMARY

The research process for this study was qualitative and performed in five phases. Based on the key findings from phase I, which was the exploratory and descriptive phase, a measuring instrument was constructed. This process constituted phase II of the research process.

In phase III of the research process the Delphi technique was implemented for the first time. To assist and orientate the domain experts, the measuring instrument that was used for the Delphi technique was divided into a nomenclature, section I and section II (Appendix IIIA).

Section I served as an orientation to the development of the framework. It discussed the influences impacting on the development of a framework and the rationale for programme development.

In section II the components, in the form of a checklist, necessary for programme development as they relate to the influences discussed in section I, were given.

The above-mentioned document was sent to the domain experts in November 2000 and the last one was returned in April 2001.

In phase IV the Delphi technique was sent to the domain experts again. All the comments from the domain experts returned in phase III were taken into consideration and the measuring instrument was revised (Appendix IIIB).

In phase V the final framework was compiled. The final framework is based on the comments from the domain experts from the first and second rounds of the Delphi technique. The revised research instrument therefore became the framework.

In summary the aspects influencing the key findings in phase I of the research process and leading to the compilation of the measuring instrument will be offered in the same order as in Chapters 2 and 4.

□ **Transformation of the health care system in South Africa  
(cf. 2.2, 4.2)**

The main thrust behind the transformation of health care in South Africa, and by implication the new goals as identified for physiotherapy education and training, is the Department of Health's *Comprehensive Primary Health Care Plan*.

In this plan PHC is made available to all the citizens of South Africa, and various implementation strategies are designed to meet the basic needs of all the people. These strategies also include community-based rehabilitation delivered at all three levels of service delivery (primary, secondary and tertiary) (W.P. Branch Subcommittee, s.a.:4). In accordance with this new policy the Department of Health (1997:91) stated that the curricula of AHSCs must be revised to place greater emphasis on the needs of the communities, in accordance with primary health care principles. The National Physiotherapy Committee (1998:12) stated that "*the training of physiotherapists must equip them to play an effective role in comprehensive health care, including promotive, preventive, curative and rehabilitative and educative aspects, as well as in research*".

The above-mentioned requirements formed the foundation for the goals identified as important and essential for an innovative outcomes-based and problem-based programme as stipulated by SAQA (SAQA, 1997:198). With this background one of the most important goals for the compilation of a framework for physiotherapy education and training is to aggressively address primary health care requirements.

Furthermore the SASP recommended the inclusion of outcomes such as organisation and management skills, interpersonal and communication skills and the ability to be involved in a community (W.P. Branch Subcommittee, s.a.:9-10).

The deleterious effects of race discrimination especially in health care has been emphasised by the Department of Health (1997:108), SASP (South African Society of Physiotherapy, 1999:1; National Physiotherapy Committee, 1998).

With this background the objective *"Racial discrimination must be eradicated in training institutions and health care"* was included in the goals. In addition *"Equity and empowerment must be respected in communities"* was included.

Other important aspects identified throughout the literature survey were to maintain high standards of practice and that the professional needs of the members of the profession must be met, enabling them to play an effective role in comprehensive health care. When students register as physiotherapy students it is mandatory for them to register as student members of the HPCSA, thereby making them members of the profession. Two further objectives were identified, namely that service delivery must be effective and the health care needs of all the physiotherapists' clients must be met.

The above-mentioned objectives constituted the essence of the requirements for health care reform affecting physiotherapy education and training.



These objectives are reinforced by the Department of Health's Mission Statement:

- To provide leadership and guidance to the National Health System in its efforts to promote the health of all people in South Africa, and to provide effective services through a primary health care approach (Department of Health, 1997:2).

□ **Transformation of education and training in South Africa (cf. 4.3)**

The Minister of Education, Professor Kader Asmal, has stated that central to the vision of the Plan for Higher Education in South Africa is the establishment of a single, national, co-ordinated system, which will meet the learning needs of our citizens and the reconstruction and development needs of our society and economy (Republic of South Africa, 2001:2). He further states that South Africa must be able to produce graduates with high quality skills and competencies in all fields. They must also be able to produce research that will build South Africa's economy and make us significant players on the global stage. We must be able to create a learning society that draws in people from all walks of life and gives them the opportunity to advance, develop and enrich themselves, both intellectually and materially (Republic of South Africa, 2001:2).

The White Paper on Higher Education indicates that the role of higher education is threefold (Republic of South Africa, 2001:8), namely:

- Human resource development.
- High-level skills training.
- Production, acquisition and application of new knowledge (Republic of South Africa, 2001:8).

In accordance with the above-mentioned requirements the South African Qualifications Authority Act, Act 58, stipulates that the focus on education and training will be outcomes-based and problem-based. The proposed outcomes have to be explicitly stated. The aim of such explicitly stated outcomes is to direct the instructional and learning process. This implies that instruction and learning must be directed towards understanding, and acquiring abilities and skills, rather than memorising them. These outcomes are seen as two kinds, namely critical cross-field and specific outcomes.

In the physiotherapy goals as offered under this section (*cf.* 4.3) critical outcomes such as problem-solving abilities and associated skills which will underpin the role of higher education in the development of human resources, are addressed.

Emphasis has been placed on the training of "*High-level skills*" to enable the learners to organise and manage themselves and to critically evaluate subject matter, as well as to master the ability to communicate.

The acquisition and application of new knowledge to demonstrate responsibility towards the environment and health of others has also been included.

□ **National and international trends in physiotherapy education (*cf.* 4.4)**

Throughout the study, under this heading, aspects pertaining to physiotherapy education and training from other universities has been offered. Information has been collected, studied and assimilated and national and/or international similarities have been identified.

The objective dominating the new Higher Education Plan (Republic of South Africa, 2001:3) and the curricula of all the universities is to ensure that learning outcomes include core competencies to develop the students' ability to take responsibility for their own learning. This implies that a new generation of health care practitioners is being produced who embark on a lifetime of self-education as lifelong learners. In order to achieve this learning outcome the inclusion of appropriate skills was also uniformly identified. Skills such as mastering sophisticated information technology and then constantly re-evaluating their own understanding by being in possession of critical reasoning skills was included. Outcomes have been written to allow students to develop in a megacognitive manner. If students learn to think critically, they will be able to use good thinking as the guide by which to live their lives (Beyer, 1995).

Other objectives that were uniformly identified were to promote effective teamwork and develop communication skills enabling physiotherapists to negotiate with and counsel their patients. Across the board the inclusion of ethical decision-making was also identified.

□ **Physiotherapy requirements for the population of South Africa (cf. 4.5)**

With the initial planning of this study the final SADHS report had not been completed. Unfortunately, when the final report was published the findings were not as relevant to this study as initially anticipated. Where possible, important physiotherapeutic aspects pertaining to health care were identified and reported in Table 2.3. Cognisance was also taken of health problems and statute given in the White Paper for Health.

### 7.3 CONCLUSION

The key findings identified in the exploratory and descriptive stage of the study lead to the compilation of the Goals for Physiotherapy Education and Training and learning outcomes. This process resulted in the construction of themes for the measuring instrument which became the framework. These themes will be discussed in the same order as offered in the framework.

#### □ **Main themes for physiotherapy education and training**

After attending to the learning outcomes for a physiotherapy student, the required fundamental disciplines were identified. These were called themes and refer to the basic learning required of a qualified physiotherapist to address the required knowledge, skills and attitudes, behaviour and values that students have to demonstrate on completion of the education and training programme. The themes included:

#### ● ***Biological sciences***

Under biological sciences, a knowledge of anatomy and physiology was attended to. In addition the relevant pathology, assessment and ability to treat associated malfunction in patients were included.

#### ● ***Physical sciences***

Physical sciences referred mainly to physics and chemistry. However, sub-topics of physics were included because some training centres do not offer a full physics course; instead they include these sub-topics in the physiotherapy course.

● ***Human (behavioural) science***

In this section was included in the programme to enable physiotherapists to use a holistic approach to the care they give to their clients. A basic knowledge of behavioural science will assist the physiotherapist to optimise their approach to health care and social well-being. Disciplines that should be included are psychology and psychiatry.

● ***Clinical sciences***

This theme constitutes a very large portion of a physiotherapy undergraduate programme. Associated aspects such as being able to apply appropriate precautions and assess and treat a patient using this knowledge were also included.

Conditions and problems identified by the SADHS and White Paper for Health were included under the respective disciplines.

● ***Research***

After the repeated reference in the literature survey to the importance of research skills and the necessity of encouraging students to be lifelong learners it was decided that "research" must be placed in a separate theme. Skills such as writing and reporting, and aspects encouraging students to be lifelong learners were included.

## ⊙ ***Electives***

An elective, which refers to a clinical block in which a student elects to work can constitute a portion of the core of the qualification. Electives can contribute to additional credits at a specific level of a programme to ensure that the purpose of the qualification is achieved. The idea of early specialisation with competencies related to specialised areas or competencies that broaden the core knowledge can be applied here (Department of Education, 1998:39). Against this backdrop it was decided that electives must be allotted to a separate theme.

### □ **General themes for physiotherapy education and training**

The general themes that were included were considered cross-curricula. Specific and critical outcomes were included to develop an integrated programme. The general themes are:

#### ⊙ ***Health care management***

Knowledge of the acts and policies controlling health care, as well as the physiotherapist's role in health care were included.

#### ⊙ ***Legal and ethical issues***

Knowledge of the ethics of health care and the consequences of violating ethical rules were included. A separate statement was added concerning knowledge of professional conduct regarding ethical issues, parameters within which to practice, and what is ethically acceptable.

● ***Professional practice***

This general theme refers to the professional profile of the physiotherapist with regard to differentiating between professional and technical education and training. It was therefore deemed necessary to allot professional practice to a separate theme.

● ***Quality assurance and integrated assessment***

The SAQA Act prescribes that quality assurance is imperative for any learning programme. Quality assurance is the responsibility of the NSBs, SGBs and ETQAs which have the ability, capability and management infrastructure to establish and maintain standards. According to Jacobs (1999:7) quality assurance may be of an internal or external nature. Quality assurance is also necessary for registration, accreditation, moderation and auditing (Olivier, 1998:10). Against this backdrop the general theme pertaining to quality assurance and integrated assessment was constructed.

□ ***Requirements for the education and training process and structure for physiotherapy***

The vast amount of requirements in the draft White Paper on Higher Education (Republic of South Africa, 1997:9-14) prompted the inclusion of this section in the measuring instrument. These requirements as stated in this section correspond to the National Plan for Higher Education in South Africa (February 2001). The following were included:

### ● ***Teaching and training approaches***

Teaching and learning strategies were included in this section to assist lecturers and training institutions to meet the SAQA Act (Republic of South Africa, 1998) requirements.

### ● ***Student selection***

The promotion of equity in relation to the composition of the student and staff bodies in higher education is one of the central goals for transformation of the higher education system (Republic of South Africa, 1998). The strategic goals are to ensure that the race and gender profiles of graduates reflect the profile of student enrolments and that student profiles progressively reflect the demographic realities of South African society (Republic of South Africa, 2001:33).

It is not within the aim or objects of this study to address political issues; it was therefore decided to only address the possible entrance requirements under this section. Only academic, sport, cultural and leadership requirements were therefore included.

### ● ***Recognition of prior learning***

SAQA advocates RPL as part of admission guidelines. RPL attempts to acknowledge all learning, community work and leisure activities through an open and transparent approach to assessment (SAQA: Oct, 1997). Currently the only exit in the physiotherapy training programme is qualification after four years' sequential education and training. With this in mind it was decided to use the definition of RPL as statements in this section. According to SAQA (SAQA Act, 1995) the RPL concept includes learning outcomes achieved through formal, informal and non-formal learning and work experience.



⊙ ***Student support and development***

This section was included to redress the imbalances in the success and graduation rates of students and to ensure that teaching/learning processes are sensitive to the needs of different students (National Plan for Higher Education in South Africa, 2001:43).

According to the HPCSA document attending to the Education and Training of Doctors in South Africa (Pretoria, 1999:8), students are not always aware of their personal limitations and there is a lack of willingness to seek help. Staff must be made aware of this problem to ensure early detection of the need for academic or personal support.

Further the HPCSA states that students must receive support in the development of life skills as well as learning skills and they must be prepared to be lifelong learners (HPCSA, 1999:10).

□ ***Other requirements pertaining to qualifications***

The NQF stipulates the necessity of mobility and portability (SAQA Act, 1995).

⊙ ***Mobility***

This section deals with the domain experts' opinions of credit accumulation and transfer to ensure learner mobility were ascertained.

⊙ ***Portability***

In this section the domain experts' opinions of the transferability and recognition of credits between providers and employers were ascertained.

## 7.4 RECOMMENDATIONS

The researcher wishes to make the recommendation that the enormous amount of information that has been gathered for this study should be made available to the Physiotherapy Standards Generating Body of physiotherapy programmes. The framework is a working document and by the nature of the changes that have and are still taking place in South Africa, the framework will undergo changes and shall have to be revised from time to time.

There are a few of the sections that warrant extensive research in their own right. Sections such as student selection, student support, teaching and training approaches RPL, as well as electives, could all be independent research studies.

After reflection the researcher considered the section pertaining to teaching and training approaches worthy of more attention. The importance of this section may not be underestimated. The approach to teaching and training will produce graduates with high quality skills and competencies. Teaching strategies focussing on outcomes-based and problem-based programmes will afford students the opportunity to advance, develop and enrich themselves, both intellectually and materially. This is one of the main aims stipulated by the National Plan for Higher Education.

In order for teaching institutions to succeed in achieving these requirements it is essential to include self-directed learning in a teaching programme. The common elements in self-directed learning programmes are:

- a focus on learner independence and responsibility within a given learning context;
- an emphasis on student involvement in decision-making about both content and process;

- a concern about learning how to learn and learning about learning, not just what is learned (Higgs & Boud, 1991:247).

This forms the foundation for PBL and CBE. The inclusion of these concepts will also teach the student to learn in a megacognitive manner.

According to Fichardt (1996:8) one of the major problems in succeeding with self-directed learning is to re-educate academic staff and support facilitators.

Against this background it was felt that this section is inadequate in the framework. A twofold approach is necessary for including successful self-directed learning in a programme, namely:

- teaching and training strategies;
- academic staff development.

A revision of the section on teaching and training approaches could be revised as follows:

- Lecturers/facilitators must demonstrate the ability to:
  - structure small group learning with a faculty member or facilitation;
  - introduce students to basic knowledge in a clinical setting;
  - encourage learning based on problems;
  - encourage self-directed learning and student responsibility for education;
  - include critical learning outcomes at the appropriate learning/study level.

Training institutions must assist academic staff to:

- keep abreast of new teaching trends;
- meet the outcome requirements of the programme;
- give structure, as facilitators, to small group learning;
- design problems that will activate and build on previously acquired specific outcomes (knowledge);
- offer continuing support and training of facilitators.

Another section that the researcher considered worthy of more attention was the section pertaining to mobility and portability.

According to the Higher Education Act, 1997 (Act No. 101 of 1997), the autonomy of higher education institutions must be coupled with accountability. There is currently little collaboration between institutions, resulting in the development of foundation studies taking place in isolation (Higher Education Act, 2001:25).

It is, however, important to monitor the consequences of programme restructuring and to guard against rigid programme structures with little flexibility or opportunity to articulate between programmes offered at different institutions. This not only hinders student mobility, but also acts as a potential barrier to institutional collaboration in programme development and delivery (Higher Education Act, 2001:30).

Collaboration regarding portable modules between educational institutions is essential without compromising the autonomy of the institution. Unless universities address this problem, their accountability will be challenged.

An attempt to standardise undergraduate training for physiotherapists has been made by the efforts of the SGB and the Education Committee of the Professional Board for Physiotherapy, Podiatry and Biokinetics. However, this has not yet been achieved.

Mobility and portability are two concepts that have been stressed by the National Plan for Higher Education as being essential for transformation of higher education. These concepts give students the opportunity to obtain credits in their own time and at the institution or different institutions of their own choice.

Various methods have been suggested to enhance these two concepts, for example modulisation and collaboration between universities.

The concept of courses being broken down into modules has become an accepted practice in universities. Modules assist students to master smaller, more manageable sections of work. Assessment also takes place on smaller sections of the work. The credits obtained from modules should be portable, thus making the learner more mobile.

However, without collaboration between institutions, mobility and portability is an impossible task.

With this in mind the requirements for these sections could have included the following:

- learning programmes must consist of modules;
- collaboration between institutions is necessary for curriculum development.

A further recommendation could be made with regard to the section referring to research. Throughout the study the requirement to steer students to become lifelong learners has been identified. However, in the documents that were analyzed in the literature study no reference could be found with regard to the method that should be employed to develop this outcome and was therefore not included in the outcomes.

According to Ohles and Maritz, a "building block approach" must be used to teach students to be lifelong learners. Integrated and cross-curricular critical learning skills must be employed. Assignments should start with the easiest core competency such as learning to master the e-mail facility on a computer and then progress to electronic mailing and online data and World Wide Web search (Ohles & Maritz, 1998:13-21).

In an instructional session an initial search on one subject can be performed and more than one subject could be included later. Eventually students will be expected to integrate all the core competencies in one assignment. With this background a student will be able to perform research independently because the student will be able to find the information that they are looking for. By mastering these core competencies the foundation will be laid for integrated lifelong learning, resulting in lifelong learning becoming an ongoing, pleasurable experience.

Against this background statements such as the following could have been included in this section:

- electronic core competencies must be included in the programme;
- assignments integrating electronic core competencies must be included in the programme.

## **7.5 LIMITATIONS OF THE STUDY**

In retrospect, as discussed under "Recommendations" (cf. 7.4) the researcher is of the opinion that the measuring instrument could have been expanded. However, due to the length of the research and the time required to complete the checklist, this was not possible. Extensions to the measuring instrument have been offered under the heading "Recommendations" and can be included if so desired.

Informal comments were made by some of the domain experts that the completion of the checklist took too long. With this in mind the domain experts were only asked to complete the three sections, namely 2.2.4 (vi, vii, viii, ix, x), 2.2.6 and 2.4.2, where consensus was not reached with the second round of the Delphi technique. For the sake of completeness the entire document was sent to them in round 2. Had they been asked to once again complete the entire document it would have contributed to the study.

Although a learning programme has been developed in this study the weighting of clinical experiential learning was not done. However, the recommendation from NSB 09 is that institutions of higher education and statutory bodies should be responsible for this task (NSB 09: 2003).

## **7.6 FINAL REMARKS**

The comment could be made that accepting an invitation to be a member on a Delphi panel places a responsibility on the panellist. While processing the data and comments received from the domain experts, the question arose as to whether they were always aware of this responsibility.

The compilation of the final framework constitutes the culmination of this study and the achievement of the aim of the study.

"As stated by Hunt *et al.* (1998), "physiotherapy education throughout the world has undergone a number of changes over the past few decades. The most significant of these is the transfer of programmes from colleges and hospitals, where they were predominantly "vocational" or clinically focused, to universities where they have assumed applied sciences and clinical sciences frameworks. As products of a university education, physiotherapists are now expected by the general community to possess not only discipline-specific skills, but also skills common to all university graduates, such as critical thinking, communication, learning techniques and problem-solving abilities. Furthermore the growth and development of the physiotherapy profession are significantly influenced by the professional abilities and potential of all its graduates. The possession of generic university education skills not only provides the graduate with competence in the workplace, but also promotes professional survival in the health care environment" (Hunt *et al.*, 1998).

According to Donald and Denison (1996:23) the most frequently mentioned, meaningful feature of undergraduate education for alumni is the development of the ability to think critically. An attempt has been made to include this feature in the framework. However, it must be borne in mind that the framework is a theoretical representation of a physiotherapy programme. Aspects such as staff qualifications and experience, the overall profile of the institution offering the qualification and the students' extra-curricular experiences contribute to the final professional quality of a graduate.

The framework is outcomes-based, problem-based and integrated as prescribed by the South African Qualifications Authority and the National Plan for Higher Education. Critical thinking and community-based skills have been interwoven in the competencies and are offered as outcomes. All aspects of education and training for physiotherapists and the health care needs of the South African Population have been taken into account, and the inputs from



the domain experts have been included. The final framework is suitable for undergraduate programmes for physiotherapy education and training and has thereby achieved the aim of this study.

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# APPENDICES

A DEVELOPMENTAL FRAMEWORK  
FOR A  
GENERIC EDUCATION AND TRAINING  
PROGRAMME FOR  
PHYSIOTHERAPISTS

M.W. KRAUSE

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## APPENDIX IA

INTERVIEW FORMAT

University :

Address :

Person Interviewed :

Date :

History of institution offering qualifying programme:

Aim of programme / outcomes

When was the programme implemented?

Is the programme uniformly used in the U.K.?

Do any other universities use your programme?

Does all Physiotherapy training in the U.K. take place in a university?

How many study years are required for:

- |                          |                                   |
|--------------------------|-----------------------------------|
| <input type="checkbox"/> | a degree?                         |
| <input type="checkbox"/> | a diploma?                        |
| <input type="checkbox"/> | assistant qualification?          |
| <input type="checkbox"/> | mid-level category qualification? |

How long is your academic year?

### Selection Policy

- What policy do you use?
- Are the following aspects applicable:
- a) academic standard?
  - b) age?
  - c) gender?
- assumption of prior learning before?
- how many students are selected each year?
- what is your drop-out percentage – if any?
- any other aspects?

Course Content:

Programme Structure and Organisation:

Is your programme:

- offered in modules?
- sequential or integrated?
- divided into modules?
- subject-based (or)?
- systems based?
- tested nationally and internationally?
- regularly re-evaluated?
- inter-disciplinary?
- other aspects

Does your programme encourage:

- academic interaction among students?
- life-long learners?

Does your programme have:

- a core curriculum? (fundamental)
- undergraduate specialization directions?
- multiple entry and exit levels?
- an elective rotation?

### TEACHING METHODS

Which of the following teaching strategies do you use:

- student-centered?
- problem-based?
- integrated?
- community-based?
- group work?
- other?

Do you make use of audio-visual technology?

### BASIC KNOWLEDGE

How many hours of formal teaching does your course consist of?

### CLINICAL PRACTICE (C.P.)

What clinical rotations do you use?

- 1.
- 2.
- 3.
- 4.

How many hours C.P. are there in each year?

- 1.
- 2.
- 3.
- 4.

Which clinical areas are used in each year?

- 1.
- 2.
- 3.
- 4.

### EVALUATION

#### PROGRAMME

Internal evaluation:

- |                          |                     |
|--------------------------|---------------------|
| <input type="checkbox"/> | academic colleagues |
| <input type="checkbox"/> | clinical colleagues |
| <input type="checkbox"/> | students            |
| <input type="checkbox"/> | yourself            |
| <input type="checkbox"/> | others              |

External evaluation:

- |                          |                                 |
|--------------------------|---------------------------------|
| <input type="checkbox"/> | newly qualified physiotherapist |
| <input type="checkbox"/> | other universities              |
| <input type="checkbox"/> | Professional Board              |
| <input type="checkbox"/> | Accrediting Body                |
| <input type="checkbox"/> | community                       |
| <input type="checkbox"/> | others                          |

Are certain students with similar backgrounds more successful than others (why)?



LECTURERS

What functions do they have:

- teaching?
- facilitation?
- tutor?
- group leader?

What minimum qualifications do they have?

Are they evaluated individually?

Do you use the tenure system?

STUDENTS

What evaluation methods do you use for the following:

- basic knowledge?
- practical skills?
- clinical skills?
- integrated assessment?
- how is the success of your outcomes evaluated (newly qualified)?
  - client satisfaction
  - employee satisfaction

INSTITUTIONAL BUDGET / FACILITIES

Are the following aspects adequate?

- your budget?
- lecture room space?
- practical room space?
- electrical equipment?
- gymnastic equipment?
- staff?
- support systems (e.g. student academic support and health care)?
- any other facilities?

Do you have any problems?

- Do you use "Recognition or evaluation of prior learning" (RPL or EPL)

If so, which system do you use:

- |                          |                        |
|--------------------------|------------------------|
| <input type="checkbox"/> | written examination?   |
| <input type="checkbox"/> | portfolio submissions? |
| <input type="checkbox"/> | entry points?          |
| <input type="checkbox"/> | other?                 |

## APPENDIX 1B

**LETTER TO PROGRAMME DIRECTOR OF OVERSEAS  
UNIVERSITIES**

I am Head of the Physiotherapy Teaching and Training programme at the University of the Orange Free State in South Africa.

Currently higher education in South Africa is undergoing a paradigm shift. Traditional formal content-based and teacher-centered curricula are moving to learning-centered and outcome-directed curricula. In addition, all qualifications have to be accredited by a government body called the South African Qualifications Authority (SAQA). According to the criteria set by SAQA, learning shall have to be more flexible with integrated teaching strategies.

Inevitably, these changes will also affect the physiotherapy curriculum at the University of the Orange Free State. As a department, we shall have to compile a new teaching programme to meet the requirements of the government authorities and the needs of the profession. I am doing a study aimed at compiling a framework for physiotherapy education and training with a view at addressing these changes and designing a new programme.

I am under the impression that in your physiotherapy curriculum you use problem-based training. It would be a great help for me to discuss methods and ways in which to implement problem-based training into our course. I would like to find out how you integrate this teaching method in a physiotherapy course.

2/...

A short visit to your department to discuss your teaching strategies would assist me with my current task. This information will also be used for research. When the physiotherapy programme has been compiled, the validity of the programme will be tested by the Delphi technique.

I would like to invite you to be one of the members of the panel testing the programme. According to the Delphi technique, several assessments of the programme are necessary. I will therefore be sending the programme back to you two or three times for assessment. The final document will be made available to you.

I would like to make an appointment to see you for  $\pm 2$  hours during the last week of September 1998 (22<sup>nd</sup> – 26<sup>th</sup>). I trust you will find this in order and contact me with an appointment date at your earliest convenience.

Yours sincerely

.....

**Prof. M.W. Krause**

**HEAD OF DEPARTMENT: PHYSIOTHERAPY**



## HEALTH PROFESSIONS COUNCIL OF SOUTH AFRICA

### MINIMUM STANDARDS FOR THE TRAINING OF PHYSIOTHERAPY STUDENTS

#### 1. GENERAL

##### 1.1 Length and type of course

A four year B.Sc. (Physiotherapy) degree which will be equated with an honours degree.

##### 1.2 Training Institution

It is recommended that, wherever possible, the degree should be offered by a university with an established Faculty of Medicine.

##### 1.3 Major subjects

These may vary according to the requirements of the individual universities but should be sufficient to ensure acceptance into a masters degree programme upon completion of the B.Sc. (Physiotherapy).

##### Compulsory major subject

Physiotherapy (alternate Rehabilitation)  
Minimum duration of 3 years.

#### 2. FIRST-YEAR SYLLABUS

##### 2.1 Compulsory basic sciences\*

- 2.1.1 Physics - minimum hours 130
- 2.1.2 Chemistry - minimum hours 130

##### 2.2 Additional subjects

Two of the following subjects

- 2.2.1 Zoology/biology
- 2.2.2 Botany/biology
- 2.2.3 Psychology
- 2.2.4 Sociology
- 2.2.5 Physiotherapy

#### 3. SECOND-YEAR SYLLABUS

##### 3.1 Anatomy - minimal hours 250

##### 3.2 Physiology\* - minimal hours 250

---

\* \* See attached copies of examples of approved syllabi.

3.3 Behavioural sciences\*

One of the following subjects (unless the equivalent is included in the first year of third-year syllabi)

- 3.3.1 Psychology
- 3.3.2 Sociology
- 3.3.3 A specially designed course in human relations  
3.3.1/2 - minimum hours 180

3.4 Physiotherapy\*

- minimum hours - see below

4. THIRD-YEAR SYLLABUS

## 4.1 Applied pre-clinical sciences/clinical sciences

These will vary according to the course content at the individual universities but should include the following.

- 4.1.1 Basic pathology
- 4.1.2 Internal Medicine (including neurology and dermatology)
- 4.1.3 Surgery (including orthopaedics)
- 4.1.4 Obstetrics and gynaecology  
- minimum total hours 170

Specialized aspects of clinical sciences and applied pre-clinical sciences may be postponed until fourth-year syllabus.

4.2 Physiotherapy\*\*

- minimum hours - see below

4.3 Clinical practice

Supervised clinical practice in teaching hospitals and approved allied institutions.  
- minimum practical hours 400

5. FOURTH-YEAR SYLLABUS5.1 Physiotherapy\*

- minimum hours - see below

5.2 Clinical practice

Supervised clinical practice in teaching hospitals and approved allied institutions, including in specialized units.  
- minimum practical hours 600

6. ADDITIONAL

The following should be included in the third-year and/or fourth-year syllabi.

---

\* See attached copy of example of approved syllabus

\*\* The detailed minimal syllabus for the major subject Physiotherapy appears at the end of this section. If Physiotherapy is included as a first-year subject the recommended minimum hours in second, third and fourth years may be reduced accordingly.

- 6.1 Lectures on specialized aspects of applied pre-clinical sciences and clinical sciences
- 6.2 Attendance at clinical demonstrations
- 6.3 Attendance at specialist clinics, ward rounds, etc.
- 6.4 Introduction to research procedures
- 6.5 Individual study learning to the presentation of a project on an approved subject.

### DETAILED MINIMAL SYLLABUS FOR THE MAJOR SUBJECT PHYSIOTHERAPY

Minimal total hours over the four-year course - 1000

#### 1. ELECTROTHERAPY

- 1.1.1 Physics and electromechanics only as required for an understanding of the techniques and effects
- 1.1.2 Theory of heating and cooling
- 1.1.3 Theory of direct current, infra-red and ultra-violet irradiation, shortwaves diathermy, microwave diathermy and ultra-sound
- 1.1.4 Dangers and precautions involved in electrical treatment
- 1.1.5 Care of apparatus

#### 1.2 Practical application

##### 1.2.1 Faradic-type current

- 1.2.1.1 Individual stimulation - muscles of upper and lower limbs
- 1.2.1.1 Group stimulation - foot muscle, quadriceps, pelvic floor
- 1.2.1.3 Under pressure - arm and leg
- 1.2.1.4 Nerve conduction tests

##### 1.2.2 Interrupted direct current

- 1.2.2.1 Stimulation of muscles of upper and lower limbs; facial muscles
- 1.2.2.2 Intensity-duration tests

##### 1.2.3 Infra-red irradiation

Lumbar and cervical spine, shoulder, knees, wounds

##### 1.2.4 Ultra-violet irradiation

- 1.2.4.1 Skin-testing - Alpine sun, Theraktin, Kromayer
- 1.2.4.2 General irradiation
- 1.2.4.3 Local irradiation

##### 1.2.5 Shortwave diathermy

Techniques utilizing electrostatic and magnetic field for specific structures of the body.

### 1.2.6 Microwave diathermy

Soft tissues

### 1.2.7 Ultrasound

1.2.7.1 In contact

1.2.7.2 Under water

### 1.2.8 Additional procedures

1.2.8.1 Wax

1.2.8.2 Hot packs

1.2.8.3 Ice

## 2. MASSAGE

### 2.1 Theory

2.1.1 History of massage

2.1.2 General aspects of massage

2.1.3 Relation - general and local

2.1.4 Techniques of massage - description, effects and modifications

2.1.5 Rationale

2.1.6 Uses of massage, including for sport

### 2.2 Practical application

2.2.1 Massage of various body parts

#### 2.2.2 Specific treatments

2.2.2.1 Oedema massage of arm and leg

2.2.2.2 Massage for headache

2.2.2.3 Massage of a haematoma

2.2.2.4 Massage of a scar tissue

2.2.2.5 Massage for varicose veins

2.2.2.6 Massage in flaccid paralysis

2.2.2.7 Scalp and oil massage

2.2.2.8 Massage manipulations combined with postural drainage

#### 2.2.3 Transverse frictions

Transverse frictions to tendons, muscles and ligaments

## 3. MOVEMENT

### 3.1 Theory

3.1.1 Terminology - description of normal movement

3.1.2 Analysis of movement in terms of mechanics, muscle kinematics and kinetics of joint and bones; stability and range of movement

3.1.3 Normal development of movement - neurological background for movement, analysis of postural reflex mechanisms; gross motor development of the normal child

3.1.4 Physiology of exercise and work

3.1.5 Principles of rehabilitation



## 3.2 Theory and practical application

### 3.2.1 Analysis of functional activities in developmental sequence

### 3.2.2 Re-education of functional activities in developmental sequence

#### 3.3.3.1 Facilitation of automatic reactions

#### 3.3.3.2 Facilitation by means of proprioceptive neuromuscular facilitation techniques

#### 3.3.3.3 Self mat activities

#### 3.3.3.4 Rehabilitation

Transfers and wheelchair management  
Preparation for walking and re-education of gait  
Use of splints, including basic technique of splintmaking  
Preparation for work

### 3.2.3 Therapeutic movement for specific problems

#### 3.2.3.1 Re-education and strengthening of muscle

Basic principles - classification of joints, normal and pathological limitation of joint-range, evaluation of range movement (including the use of movement diagrams), principles of maintaining and increasing range of movement.

Basic techniques - methods of maintaining joint range, methods of increasing joint range (applied to both contractile and non-contractile structures)

#### 3.2.1.3 Re-education of posture

Causes of postural problems  
Assessment of posture  
Re-education methods

#### 3.2.3.4 Re-education of balance

Causes of disturbance of balance  
Re-education methods applied to different types of balance problems

#### 3.2.3.5 Re-education of co-ordination

Causes of inco-ordination  
Re-education methods

#### 3.2.3.5 Re-education of breathing

Physiological and physical principles  
Assessment of patterns of breathing and disturbances of respiratory functions  
Techniques of teaching diaphragmatic and controlled breathing expectoration;  
exercise for thoracic mobility and improved physical fitness

#### 3.2.3.7 Exercise in water

### 3.2.4 Group and class activities

3.2.4.1 General principles - use of group wards, advantages and disadvantages, organisation, precaution

#### 3.2.4.2 Gymnasium classes

Classes for specific groups  
Instructional classes for specific groups  
Application of circuit training

#### 3.2.4.3 Ward classes

General preparation; ward administration  
Classes for specific groups

## 4. ADDITIONAL SUBJECTS

### 4.1 Surface anatomy

### 4.2 Bandaging

### 4.3 Nursing

4.3.1 Hospital routing and administration, categories of staff and correct lines of communication in the hierarchical system

4.3.2 Ward equipment and the care thereof

4.3.3 Reading of prescriptions and charts; setting up reports and keeping records

4.3.4 Elementary microbiology - the spread of micro-organisms, entry of micro-organisms to the body, asepsis and antisepsis

4.3.5 The prevention of pressure sores

4.3.6 The management of haemorrhage

#### 4.3.7 Demonstration in the hospital

4.3.7.1 handling of special beds

4.3.7.2 changing of linen and making of beds

4.3.7.3 different positions used in bed

4.3.7.4 full bed-wash

4.3.7.5 the care of patients with catheters and drainage tubes; different types of catheters and drainage tubes

4.3.7.6 aseptic technique - the setting of a simple tray for the dressing of wounds; dressing of wounds

4.3.7.7 patient observation - temperature, pulse and respiration; blood pressure; intravenous drips; oxygen and inhalation therapy

A period of practical experience of nursing in the hospital should follow.

4.4 Emergency procedures in disaster situations.

#### 5. TREATMENT BY PHYSIOTHERAPY

Evaluation, analysis of general problems. principles of treatment, analysis of specific problems, treatment and rehabilitation of specific conditions, co-ordination with allied medical disciplines and documentation - in the following fields:

##### 5.1 Neurological conditions

5.1.1 Cerebral motor disturbances

5.1.2 Spinal and peripheral lesions

5.1.3 Primary muscle diseases

##### 5.2 Orthopaedic conditions

5.2.1 Traumatic orthopaedics

5.2.2 Cold orthopaedics

##### 5.3 Conditions of the cardio-respiratory system

5.3.1 Medical cases

5.3.2 Surgical cases

5.3.3 The treatment of patients in intensive care units

5.4 Obstetrics and gynaecology

5.5 General surgery conditions

5.6 Dermatological conditions

5.7 Other conditions

The treatment of other conditions where physiotherapy may be necessary, including in the management of cancer, geriatric and terminal patients

5.8 Physiotherapy in the community

5.8.1 Principles of community care

5.8.2 Rehabilitation and resettlement

5.8.3 Introduction to physiotherapy in private practice

5.8.4 Ethics and legislation relating to physiotherapy



**PROFESSIONAL BOARD FOR PHYSIOTHERAPY, PODIATRY AND BIOKINETICS**

**SCOPE OF PRACTICE: PHYSIOTHERAPISTS AND PHYSIOTHERAPY ASSISTANTS**

**DEFINITION AND SCOPE OF A PHYSIOTHERAPIST**

Physiotherapy is a health care profession, which emphasizes the use of physical approaches in the promotion, maintenance and restoration of an individual's physical, psychological and social well being, regardless of variations in either health or economic status

The skills of physiotherapists are biomechanical, electro-physical and biochemical in nature and include the application of manual therapy, therapeutic exercise and electro-physical modalities and limited invasive techniques.

Through problem solving and clinical reasoning approaches, the physiotherapist is able to apply these skills appropriately in response to the varied needs of individuals.

Physiotherapists are primarily involved in the management of physical problems in particular those associated with neuro-muscular, musculoskeletal, cardiovascular and respiratory systems.

Physiotherapists assess and evaluate an individual's needs or potential needs and take into account the current psychological, social and cultural factors and their influence on the individual's functional ability. This encompasses the needs of associated carers.

Through negotiation and in partnerships, physiotherapists work with persons with special needs in order to optimize their functional ability and potential, within the community and workplace.

In addition, physiotherapists have a general role in promoting health and in the prevention of problems by means of education and promoting self-care of individuals and communities. This can extend to advising and teaching associated carers and other health care professionals in order to provide a coherent approach within the bio-psychosocial model maximising the individual's independence.

A physiotherapist may act as a first line practitioner and either work independently or in association with a health care team to provide optimal services for patient rehabilitation and care.

#### **PERFORMANCE OF PROFESSIONAL ACTS BY A PHYSIOTHERAPY-ASSISTANT**

The physiotherapy-assistant operates within the physiotherapy scope under the guidance and direction of a registered physiotherapist.

These skills are practised in collaboration with and under the direction of a registered physiotherapist.

The skills of the physiotherapy-assistants are biomechanical in nature and include the use of therapeutic exercises and limited approved electrophysical modalities. Through basic problem solving and clinical reasoning approaches the PTA is able to apply these skills appropriately in response to the varied needs of individuals.

The physiotherapy-assistant is primarily involved in basic management of physical problems in particular those associated with the neuromuscular, musculoskeletal, cardiovascular and respiratory systems.

The physiotherapy-assistant is able to conduct a basic assessment and evaluation of the needs or potential needs of individuals and can take account of the current psychological, social and cultural factors and their influence on the individual's functional ability. This encompasses the needs of associated carers.

Through negotiation and in partnership a physiotherapy-assistant works with persons with special needs in order to optimise their functional ability and potential.

The physiotherapy-assistant has a general role in promoting health and the prevention of problems by means of education and promoting self care of individuals and communities. This can extend to advising and teaching associated carers and other health care professionals in order to provide a coherent approach within the bio-psychosocial models which maximises the individual's independence

A physiotherapy-assistant must work at an approved institution/facility under the direction and guidance of a physiotherapist. A physiotherapy-assistant may under these conditions work relatively independently but may not be the sole provider of a physiotherapy services nor work in a private practice.

## APPENDIX II

### PHYSIOTHERAPY STUDIES AT VARIOUS UNIVERSITIES

#### BRUNEL UNIVERSITY, UNITED KINGDOM

Based on the Brunel University's Osterley Campus in Isleworth, Middlesex, the Department of Health Studies offers study in peaceful and pleasant surroundings with central London only a short tube ride away. The Department, which has a long history of providing courses for nurses and health care professionals, has been enlarged and strengthened by a merger with the London School of Occupational Therapy (1980), the West Middlesex University Hospital School of Physiotherapy (1986) and the St Mary's Hospital School of Physiotherapy (1991) (Brunel University s.a.:2). The Physiotherapy course is housed in the Department of Health Studies, Faculty of Science, which offers courses at undergraduate and post-graduate levels, comprising five sections:

- Undergraduate Occupational Therapy
- Undergraduate Physiotherapy
- Post-initial Qualifying Nursing
- Health -related Undergraduate Studies
- Post-graduate courses.

The primary aim of the Department is to combine a thorough professional education with academic excellence. Most of the Department's undergraduate programmes are funded by various consortia of health trusts. Established features include the encouragement of integrated learning across courses within the Department and the maintenance of an impressive record of research, innovation and publication (Brunel University s.a.:2).



## **Mission statement**

The Department of Health Studies' mission statement reads as follows:

"The Department of Health Studies is committed to producing graduates of excellence, capable of high quality health care practice and research which is of substantial value to the wider community" (Brunel University, 1998:2). It is further stated that the Department is committed to providing outstanding service-led and responsive research and educational programmes, and to this end the Department will seek to:

- "consolidate and expand an already wide and specialised range of high quality and cost-effective education and training opportunities to meet the needs of rapidly changing health care provision;
- further facilitate educational opportunities for students to engage in programmes of study and evidence-based research through progressive levels of attainment;
- seek to maintain and enhance course quality by further implementation, monitoring and evaluation of effective staff development and research strategies;
- develop rigorous but enabling personal profiling techniques to extend higher education opportunities to those who have not traditionally participated;
- actively pursue the policy of the University in relation to equal opportunities" (Brunel University, 1998:2).

## **Course aims**

In the course handbook of this department (Brunel University, 1998:6) the general aim of the B.Sc. (Hons.) Physiotherapy course is described as providing the students with the highest academic standards and educational experience in order to enable them to qualify as a graduate physiotherapist, capable of professional autonomy.

In order for this to occur it is stated that it is essential for students to be able to relate the knowledge and skills that they acquire to the implementation of practice. The course therefore links institution-based learning with clinical education, in order for

the course to be relevant to health service. The basic structure of the course comprises a sequence of campus-based learning, followed by an appropriate clinical placement, though the first year is a predominantly campus-based period (Brunel University, 1998:6).

A similarity with the situation in South Africa is found in the attention paid to generic skills (*cf.* 2.4). It is stated in the course aims that the course is not only concerned with acquiring knowledge and practical skills, but the students also need to be able to critically assess the effectiveness of treatments/ interventions, and the ability to work both as an individual and a member of a team. Effective communication skills and the ability to manage change are said to be important components of the education, and training of the students in this course - as is expected of students in higher education and particularly physiotherapy education and training in South Africa. The importance of inter-disciplinary training is also stressed, and certain parts of the course are taught jointly with students in Occupational Therapy, like communication skills, critical evaluation of practice and research methodology, social and psychological aspects of health and illness, and management (Brunel University, 1998:6).

Clinical placements take place under the direction of experienced practitioners (clinical educators) who act as "teacher, facilitator and mentor" (Brunel University, 1998:14) for the duration of the placement. The Chartered Society of Physiotherapy sets the guidelines for standards in clinical placements. The standards influence the selection of placement and educators. Learning is attained by face to face contact with patients/ clients, observing treatment and handling skills, observing relevant operative and investigative procedures and also tutorials/ lectures within the scope of the educational programme of the placement provider. Students are also sometimes encouraged to accompany other members of the multi-disciplinary team on home visits or "case conferences" (Brunel University, 1998:14).

During the clinical placements students are given appropriate guidance and tuition, but are also encouraged to identify their own specific needs. They are expected to demonstrate progressively enhanced skills, clinical reasoning and a reflective approach to patient care. The clinicians responsible for their tuition during clinical

placements are informed of the aims of the course, the material the students have covered prior to the placements, and the expectations of the college for the particular level of training (Brunel University, 1998:6).

In the clinical programme the focus is on an integration of theory and practice. In the United Kingdom it is a statutory requirement of physiotherapy courses leading to eligibility for State registration by the Council for Professions Supplementary to Medicine and for membership of the Chartered Society of Physiotherapy to complete a minimum of 1 000 hours patient contact experience over the second and third years of the course (Brunel University, 1998:10).

The college claims in the course handbook to foster an evaluative and reflective approach to teaching and learning, that is, students need to think about what they are learning in order for them to be able to intelligently justify their statements, opinions and treatment approaches. They are encouraged to take ownership and responsibility for their own learning - which is in line with the world-wide trend and expectations of higher education in South Africa (*cf.* 2.5). Acquiring appropriate learning skills during undergraduate education is regarded imperative (Brunel University, 1998:6).

### **Learning outcomes**

This is an outcomes-based course and the learning outcomes, stated in the course handbook are the following (Brunel University, 1998:7):

On completion of the course, as graduate physiotherapists, students will be able to:

1. "Demonstrate knowledge and comprehension of the academic and clinical areas upon which physiotherapy is based.
2. Demonstrate an analytical and investigative approach to all aspects of physiotherapy.
3. Apply wide ranging knowledge and skills to assess, analyse and implement treatment of both physical and psycho-social problems.

4. Evaluate the efficacy of intervention using an holistic approach, and modify the intervention if necessary in an objective and reasoned manner.
5. Establish therapeutic relationships with patients/ clients, ensuring their needs are paramount at all times.
6. Take a pro-active role in the field of preventative (prophylactic) and educative medicine.
7. Apply critical and analytical skills to the interpretation and application of research into the practice of physiotherapy specifically and health care generally.
8. Recognise the value of continuing professional and personal development and enhancement.
9. Recognise and respond to the changes in demographic and local patterns of health care policy and administration.
10. Identify the rules of professional conduct and ethics within physiotherapy, as identified by relevant professional bodies, and adhere to them at all times."

It is expected of students to progressively acquire more independence and individual responsibility, becoming more adept at decision-making and more effective at organising, assessing and evaluating their clinical experiences. By the end of the course students are said to be adequately prepared for their first position as a qualified practitioner (Brunel University, 1998:10).

It is asserted that the course developers try to make the course material logical and developmental, that is, the course starts with the foundation sciences and skills, and builds on them progressively as the students move through the three-year programme. In the early stages of the course the approach is largely lecturer-centred, but as the course progresses, the emphasis becomes increasingly student-centred (Brunel University, 1998:7).

## Course structure and organisation

This course, which runs over three years, the first year comprising thirty-two academic weeks, divided into two sixteen-week semesters, covers three major themes, namely Physiotherapy studies, Integrated studies, and Clinical studies (Brunel University s.a.:8). In order to provide a balance between academic and clinical education and training and still meet the minimum number of hours of clinical experience required by the Chartered Society of Physiotherapy, clinical components sometimes extend beyond semester boundaries (Brunel University, 1998:7).

The first year is a foundation programme with an emphasis on gaining sound academic knowledge in Core Sciences (Anatomy, Physiology, Kinesiology and Biomechanics), and basic therapeutic skills (Brunel University s.a.:9).

All modules in this course are compulsory, to ensure that the course (programme) meets the professional requirements stipulated by the Chartered Society of Physiotherapy and the Council for Professions Supplementary to Medicine. To provide the students with some choice within the study of physiotherapy (*cf.* electives in South Africa), study options are provided in the final year of study in the module on Advanced Clinical Reasoning. Students also have some choices regarding their research project (Brunel University, 1998:9).

This is a modular course, the modules providing the knowledge and skills underpinning the practice of physiotherapy. To ensure a sound foundation there is an emphasis on structure, function and core skills in the first year. An increasing proportion of the early part of the study is oriented towards patient management, assessment and treatment. The rationale behind this is that there is little point in learning facts which cannot be applied, but, on the other hand, students need to learn something before they can apply it (Brunel University, 1998).

The programme of the second year (36 weeks) has been specifically designed to prepare students for the forthcoming clinical modules (Brunel University s.a.:8). The sequence of the clinical experience has been designed in a way which provides for

the students to become familiar with basic clinical work before advancing to advanced treatment procedures.

In the third year (34 weeks) the students are afforded the opportunity to develop their skills and expertise further through a process of advanced clinical reasoning. Options are provided to allow students to select specialist areas of professional practice for in-depth study (Brunel University, 1998:9).

The modules offered in the course are the following (Brunel University, 1998:10-12):

Semester 1, year 1:

- Structure and function I:  
An introduction to the normal structure and function of the upper and lower limbs, the basic tissue organisation of the human body and the basic concepts of health and disease.
- Core skills I:  
An introduction to the foundations of kinesiology, and manipulative, thermal and electrical procedures.
- Physical principles:  
An introduction to the theoretical principles which underpin safe and effective physiotherapeutic practice (centred around but not exclusively concerned with biomechanics and electrotherapy).
- Professional communication:  
A facilitation of professional interpersonal and communication skills, and a foundation for later research endeavour.

Semester 2, year 1:

- Structure and function II:  
A presentation of the normal structure and function of the head, neck and trunk, and normal neurological and cardiopulmonary function of the body.
- Core skills II:  
A development and application of the skills of kinesiology, and manipulative and electrotherapy procedures.
- Preparation for practice I:  
An introduction to pathophysiology and the principles of assessment, discussion and simulation of the physiotherapeutic management of traumatic, orthopaedic and rheumatological conditions.

Semester III, year 2:

- Preparation for practice II:  
An introduction to the problems faced by patients/ clients with respiratory or neurological disorders, and the skills of their assessment and basic handling/ treatment.
- Preparation for practice III:  
An enhancement of knowledge of peripheral neuromusculo-skeletal problems and their management through the development of problem-solving skills.
- Preparation for practice IV:  
A consideration of age-related problems and care of patients/ clients in the community.
- Clinical practice I:  
Assessment and treatment of patients/ clients with respiratory, neurological and neuromusculo-skeletal dysfunction in an in-patient setting.

Semester 4, year 3:

- Preparation for practice V:  
A consideration of the holistic management of patients/ clients presenting with cardiopulmonary or neurological dysfunction.
  
- Preparation for practice VI:  
A development of knowledge and skills of management of neuromusculo-skeletal problems, emphasising vertebral dysfunction.
  
- Clinical practice II:  
A development and application of knowledge and skills of management of patients/ clients with neuromusculo-skeletal or neurological dysfunction in an out-patient or community setting.
  
- Research methods:  
A development of understanding of information retrieval skills, research designs, qualitative and quantitative methods of investigation, and analytical techniques.

Semester 5, year 3:

- Clinical practice III:  
A synthesis of knowledge and skills in management of patients/ clients with cardiopulmonary and age-related problems.
  
- Advanced clinical reasoning:  
Advanced musculo-skeletal, advanced neurological and advanced respiratory approaches are considered, as well as options for further study in one of a number of areas.
  
- Clinical case studies:  
A reinforcement of communication skills focusing on the total care of a patient/ client.



- Professional practice in health care:  
A preparation for the roles of manager of health care delivery and supervisor of students and support staff, involving legal and political issues.

#### Semester 6, year 3:

- Clinical practice IV:  
A consolidation of experience in managing any patient/ client presenting with neuromusculo-skeletal problems in an out-patient setting.
- Clinical practice V:  
An extension or consolidation of experience in managing any patient/ client in a neurology/ care-of-the-elderly unit.
- Project:  
An opportunity to develop research skills through the undertaking of the small-scale research project relevant to the practice of physiotherapy.

### **Instructional methods and learning strategies**

The Department of Health Studies of the Brunel University uses many innovative teaching and learning methods to balance professional training with academic excellence. Teaching and learning take place through lectures, seminars, practical and group work, tutorials and private study (Brunel University s.a.:3).

In order to help the students progress from the foundation studies in the first year to advanced clinical reasoning in the third year, the teaching methods and learning strategies are modified throughout the course. The early part of the course is more lecturer-centred and the latter part more student-centred (Brunel University, 1998:13).

The Department strives to stimulate an atmosphere of discussion and debate through seminars, where the students meet in small groups with a tutor to discuss issues arising from the course. As the programme progresses, the seminars become increasingly student-led (Brunel University s.a.:3). Reflection on an evaluation of clinical practice, clinical reasoning, research evidence, ethical issues and consideration of research evidence are debated in these forums (Brunel University, 1998:13).

The purpose of the lectures is to provide students with information by presenting an overview of subject areas, drawing attention to the depth of study required and making reference to appropriate reading matter to guide the students in their independent study. The lecture sessions are also used to examine points of particular complexity (Brunel University, 1998:13).

Independent study is seen as crucial for students to develop skills and attitudes which will later enable them to pursue self-directed learning. Therapeutic skills are gradually acquired in the practical class settings. The practical classes help students initially to gain skills, and in the latter parts of the course, to refine basic skills and to see how treatment approaches can be combined for effective patient management. The skills classes do not merely involve the copying of a series of demonstrated techniques-they involve analysis, planning, critical reviews and problem-centred discussions (Brunel University, 1998:13). Practical work, both on campus and in the community and health service environment, is an integral part of the courses and group demonstrations of techniques are followed up by supervised practice with immediate feedback and individual demonstration as required. Students are encouraged to assess each other's practical skills as they develop (Brunel University s.a.:3).

Practical laboratory work is primarily used in physiology, biomechanics, kinesiology and research studies, whereby investigations are carried out, and measurements are made, the results of which are discussed either informally or in a written report (Brunel University, 1998:13).

Other instructional and learning techniques used include tutorials, with the specific intention of clarifying and interpretation; and computer-assisted learning. In accordance with a Senate Ordinance students are allocated personal tutors who offer "pastoral support and guidance" (Brunel University, 1998:14). During the fourth semester of the course, students are required to submit a research project proposal. At this time they are allocated a project supervisor, who then assumes the responsibilities of the personal tutor for the remainder of the course. In addition to providing pastoral care, the project supervisor provides advice and guidance regarding the scope of the project, time allocation, the availability of equipment and subjects, and ethical considerations (Brunel University, 1998:14).

## **UNIVERSITY OF NOTTINGHAM, UNITED KINGDOM**

### **Introduction**

The Division of Physiotherapy Education of the University of Nottingham is based in the School of Community Health Sciences, Faculty of Medicine and Health Sciences. The Division offers a B.Sc. (Hons.) Physiotherapy programme, which is modular in nature and extends over three academic years of full-time study. Each year is divided into two semesters, in which students undertake a varying number of modules. Every module is assessed and a mark awarded, and students have to pass all modules. Only in year III students have a choice in the modules they take (University of Nottingham, 1998:2).

### **Physiotherapy studies at Nottingham**

The course of the study for the Honours Degree of Bachelor of Science (Physiotherapy) is divided into a qualifying year, year 1 and year 2. The qualifying year embraces the course of study during the first, pre-clinical year of the course, that is semesters I and II. Year 1 (semesters III and IV) and year 2 (semesters V and VI) consist of the second and third years of the course and includes both academic and clinical education (University of Nottingham, 1998:6).

## Contents and structure of the course

The course has seven themes. Some run through the entire course, whilst others are offered during a part of the course. The seven themes are:

- Foundation studies (Anatomy, Physiology, and Movement) offered in year 1.
- Methods of investigation - offered in years 1, 2 and 3.
- Management and Behavioural Sciences-offered in years 1, 2 and 3.
- Therapeutic studies (electrotherapy and movement) offered in year 2.
- Pathoclinical studies, offered in years 1 and 2.
- Clinical education, offered in years 2 and 3.
- Individual development offered in year 3 (University of Nottingham, 1998:2).

The Foundation Studies course, year 1, comprises Anatomy, Physiology and Movement Studies. Communication, self-management and community care will be explored in the Management and Behavioural Science theme. In the Methods of Investigation theme students are introduced to research and the different research methods, and this theme includes an introduction to using computers. In Pathological Studies, which begins in the second semester of the first year, different diseases and injuries are studied. General pathology, the rheumatological diseases and orthopaedics are the main elements covered (University of Nottingham, 1998:2).

The study of the disease processes continues in year 2. The Methods of Investigation theme introduces statistics and the students have to start their own projects with the submission of a proposal. Two new themes are started with in year 2, namely Therapeutic Studies, involving electrotherapy and further movement studies, and Management and Behavioural Science, which deals with personality, leadership, stress management and counselling. In the four Clinical Education modules students start with their education in the clinical setting (University of Nottingham, 1998:2).

In year three the emphasis is on the development of clinical education with a further four Clinical Education modules and an elective. The Methods of Investigation module continues in the form of the project. Management and Behavioural Science involves preparation for work and equal opportunities in a module extending over the full year and called 'Continuing your Professional Development' (University of Nottingham, 1998:2). A new theme, Individual Development, is introduced in year 3. This theme is slightly different from the others in that students may choose from a range of modules, enabling them to extend existing areas of interest or explore novel areas (University of Nottingham, 1998:2).

### **Module aims and objectives and content description**

The aims and objectives and content description of the themes, briefly described, entail the following (University of Nottingham, 1998a:1-74):

#### **Foundation studies 1 (Semester 1)**

Module aim and objectives:

Aim: To introduce the student to the basic physiological, anatomical and movement concepts.

Objectives: The student should be able to:

- 1) discuss basic physiological concepts;
- 2) understand the basic anatomy of movement;
- 3) discuss theoretical aspects of normal movement;
- 4) apply basic manual handling skills;
- 5) interpret basic manual handling skills.

Transferable skills, including study skills, to be acquired on completion of the module:

- 1) the ability to observe and analyse normal movement;
- 2) application of manual handling skills;

- 3) the ability to carry out simple laboratory experiments;
- 4) laboratory report and assignment writing skills;
- 5) study skills and critical analysis skills.

Content description:

The module is an introduction to human physiology, anatomy and normal movement. The histological and macroscopic structure of the neuro-musculo-skeletal system is examined and related to normal movement and function. The physiological basis of homeostasis is explored, and concepts of pain are introduced. A broad overview is given of the skeletal anatomy of the body and the related major muscle groups, anthropology and myology. Principles of normal movement are examined, and the basic kinetics and kinematics of normal movement are introduced. Manual techniques used in manipulation of soft tissues and joints are introduced and factors influencing normal movement are considered. An overview of the assessment of movement problems is given.

**Communication and Self-management (Semester 1)**

Module aims and objectives:

**Aims:** The module aims at introducing students to study skills and the issues of communication and self-management.

**Objectives:** The students should be able to:

- 1) manage their time;
- 2) set objectives;
- 3) make and take decisions;
- 4) communicate effectively with other people.

Transferable skills (including study skills) acquired on completion of the module:

- 1) the ability to manage time effectively;
- 2) the ability to set objectives;
- 3) appropriate decision-making skills;
- 4) effective communication.

Content description:

This module introduces the students to fundamental study skills in terms of information resources from libraries, CD ROM and other data bases. The module kicks off with the process of self-management and facilitates the student's ability to integrate subject areas and carry forward topics which may be developed in the light of specific studies. Students are expected to learn not only what is needed in the wide fields of self-management situations, but also how to respond to these needs in practice. The second issue developed in this module is that of communication, personality types and factors affecting short- and long-term memory with respect to learning and teaching. Verbal and non-verbal communication theory is examined and skills explored and developed. Their relevance and application to life situations, working with patients and the multi-disciplinary teams are explored.

**Introduction to research (Semester 2):**

Module aims and objectives:

**Aims:** This module aims to provide an introduction to the concepts and principles of scientific investigation in physiotherapy and allied health professions, to develop an understanding of the research process, and encourage a critical awareness of published research process.

**Objectives:** The student should be able to:

- 1) discuss the concepts and background of research in physiotherapy;
- 2) identify the different approaches to research in the health professions;

- 3) identify the elements of the research process;
- 4) recognise limitations and delimitations in the research process;
- 5) critically evaluate research literature;
- 6) perform a literature search;
- 7) understand and use basic information technology.

Transferable skills (including study skills) acquired on completion of the module:

- 1) the ability to critically evaluate published material;
- 2) the ability to perform a literature search;
- 3) the ability to use basic information technology.

Content description:

This module introduces the student to different approaches to research in physiotherapy, including inductive/deductive, experimental/non-experimental, qualitative/quantitative methodologies. It also includes identification of the individual steps and elements of research process and considers identification and operationalisation of the research question. The content, structure and critical evaluation of research papers, the structure and function of the literature review and identification of sources of information are also included. A literature search is implemented, and information technology is introduced.

**Foundation studies 2 (Semester 2)**

Module aims and objectives:

Aim: This module is aimed at building on the knowledge and skills transferred from Foundation Studies 1 by supplementing detail and developing concepts relating to normal development and exercise.



Objectives: The student should be able to:

- 1) discuss in further detail the theoretical aspects of normal development;
- 2) understand the theoretical aspects of abnormal movement;
- 3) interpret abnormal movement;
- 4) apply more complex manual handling skills.

Transferable skills (including study skills) acquired on completion of the module;

- 1) analytical movement observation skills;
- 2) subjective and objective assessment skills;
- 3) manual handling skills;
- 4) study skills and critical analytical skills;
- 5) laboratory skills.

Content description:

This module builds upon Foundation Studies 1. Regional anatomy with detail and analysis of normal movement is considered. The interplay and relationships of the different muscle groups and individual muscles during normal movement are examined along with their effects upon associated joints. Some abnormal movement concepts are introduced. The application of practical techniques is developed including the use of sling suspension, resistance exercise friction, mobilisation of nerves, and gait analysis. Proprioceptive Neuromuscular Facilitation is introduced. Techniques are applied regionally to the body. The physiology of the cardiorespiratory system is examined as well as the endocrine system. This is then related in detail to the physiology of exercise.

**Care in the community: (Semester 2)**

Module aims and objectives:

**Aim:** The module introduces students to concepts of health care, provision of care in the community and mental health.

Objectives: The students will be able to:

1. take into account the way they manage factors within their organisations;
2. have insight into the management of change;
3. understand the issues of care in the community;
4. explore concepts of mental health.

Transferable skills (including study skills) acquired on completion of the module:

1. The ability to think in terms of management of change particularly within the context of Care in the Community and the student's Community clinical module.
2. An understanding of the role of physiotherapy in the community.

Content description:

This module explores the issues of the changing nature of the National Health Service with particular reference to the concept of care in the community. The students are made aware of the need to respond to change within an organisation, and how to manage change. Issues of health, illness, mental health and influencing factors are explored including personal values, self-esteem, body image and family dynamics. The module includes an introduction to Paediatrics, Learning Disabilities and Psychiatric conditions and these are related to physiotherapy in the community.

**Research design: (Semester 2)**

Module aims and objectives:

Aims: This module aims to build on the students' understanding of the principles of scientific investigation, to introduce the concepts of validity and reliability, and to involve the students in the practical application of some basic research designs.

Objectives: The student should be able to:

1. describe the levels of data;
2. discuss the concepts of validity and reliability;
3. describe and evaluate sampling techniques;
4. display a knowledge of descriptive statistics;
5. design studies and collect data, incorporating
  - i. experimental design;
  - ii. correlation design;
  - iii. questionnaire design;
6. apply descriptive statistics to the above designs.

Content description:

The module includes the basics of data and considers confidence in research, including the concepts of validity and reliability, sampling, inferability, limitation and power of the test. Theoretical and practical application of experimental and non-experimental designs and the application of descriptive analysis to these designs are considered. Computer skills are also included.

**Pathology, Rheumatology and Orthopaedics: (Semester 2)**

Module aims and objectives:

Aim: To encourage students to develop theoretical knowledge and apply it in the assessment and treatment of patients.

Objectives: The students should be able to:

1. demonstrate critical thinking in the development of their professional skills in relation to dysfunction with particular reference to the musculoskeletal system;
2. critically examine the role, value and limitations of physiotherapy in a hospital and primary care environment.

### Content description:

This module introduces students to basic pathology including the body's reaction to injury; the inflammatory response, immunity, healing and related circulatory disturbances. This will lead to consideration of the clinical subjects of orthopaedics and rheumatology. The common rheumatological diseases of osteoarthritis, rheumatoid arthritis and ankylosing spondylitis are discussed in detail.

Healing and classification of the common fractures, their medical and surgical management and complications are considered. Soft tissue injuries (sprains, strains, contusions, dislocations and subluxations) are studied relative to both acute and chronic states.

Physiotherapeutic management is considered at each stage of the disease process for clinical conditions. It will be related constantly to symptomatology, underlying pathology, and clinical practice, supported by current literature.

The role of the multi-disciplinary team and the place of physiotherapy within that team are highlighted.

### **Clinical studies 2: (Semester 3)**

Module aims and objectives:

Aim: To encourage students to develop theoretical knowledge and apply it in the assessment and treatment of patients.

Objectives: The student should be able to:

1. demonstrate critical thinking in the development of their professional skills in relation to dysfunction with particular reference to the musculo-skeletal system;
2. critically examine the role, value and limitations of physiotherapy in a hospital and primary care environment.

Transferable skills (including study skills) acquired on completion of the module:

1. General manual handling skills.
2. Clinical assessment and treatment skills.
3. Communication skills.
4. Patient management skills.

Content description:

Each student undertakes one of each clinical studies module, but in a variable permutation.

*Orthopaedics*-Physiotherapy management of patients with fractures and soft tissue injuries (including surgical and conservative management and joint surgery). Day care surgery and physiotherapy in the Accident and Emergency Department may be experienced.

*Rehabilitation/Out-patients (I)* - Clinical physiotherapy management of out-patients presenting with painful conditions of the peripheral musculo-skeletal system. Some of the following are included: group exercise therapy; management of amputees; hydrotherapy and hand therapy.

*Community* - Experience of the delivery of physiotherapy services in the primary health care setting, including GP clinic work, domiciliary work, work with carers and participation in "hospital at home" schemes.

*Integrated Medicine (I)* - Clinical physiotherapy management of in-patients presenting with a variety of general medical conditions, with a particular bias on mobility problems.

## Clinical studies 4 (a continuation of Semester 3)

### Personality and leadership: (Semester 3)

Module aims and objectives:

Aim: This module aims to explore concepts of personality and leadership.

Objectives: At the end of the module the student should be able to:

1. have insight into group dynamics and leadership styles;
2. conduct and participate in meetings;
3. understand concepts of motivation;
4. understand the development of personality.

Transferable skills (including study skills) acquired on completion of the module:

1. Organisational skills.
2. Participation and personal conduct in group settings.
3. Use and application of leadership models.

### Content description:

Personality and individuality are explored. Personality and its shaping and development throughout life are discussed, as well as the construction of identity. Personality theories are studied, including personality testing. Tests concerning the assessment of mental ability are also studied and the effect of depression and anxiety on personality. Personality disorders leading to addiction, self-abuse, eating disorders and suicide are considered. Personality, motivation, and emotion are discussed with particular reference to team participation and leadership. Management styles are explored and their influence on the effectiveness of carrying out a job. Leadership, the various management styles and their implementation in the National Health Service setting are discussed in some depth.

## Introduction to Statistical Analysis: (Semester 3)

Module aims and objectives:

**Aims:** This module aims to extend the students' knowledge of method of analysis of data, to develop their ability to match the statistical analysis to the design of the study, and to statistically analyse and present examples of parametric and non-parametric data.

**Objectives:** The students will be able to:

1. identify methods of statistical analysis for parametric and non-parametric data;
2. select the appropriate given sets of data;
3. perform computer analysis of selected sets of data;
4. perform a written report of the descriptive and statistical analysis of a selected set of data;
5. explain the concept of statistical significance;
6. interpret the results of analysis.

Transferable skills (including study skills) acquired on completion of the module:

1. computer skills;
2. interpretative skills.

### Content description:

An introduction to data analysis and interpretation including the concepts, selection and application of parametric and non-parametric tests. Computer skills are extended, involving entering and analysing various data. The concepts of statistical significance and hypothesis testing are addressed. It also includes the identification of sources of error and interpretation of data.

## Respiratory and cardiovascular disease (Semester 3)

Module aims and objectives:

**Aims:** The students will develop their knowledge and understanding of the pathologies, predisposing factors, and management of patients with respiratory or cardiovascular disease.

**Objectives:** By the end of the module the students will be able to:

1. display a sound knowledge of the development, structure and function of the respiratory and cardiovascular systems pertaining to the normal and pathological conditions;
2. demonstrate understanding of the changes associated with a variety of disorders affecting the respiratory and cardiovascular systems;
3. exhibit a knowledge of the various programmes of management and treatment of respiratory and cardiovascular disorders;
4. show an appreciation of primary and secondary prevention programmes and their effectiveness;
5. understand and apply appropriate physiotherapeutic management, and the effects on the respiratory system of patients who have restrictive or obstructive respiratory conditions;
6. demonstrate an understanding of the possible roles of the physiotherapist in the management of cardiovascular disorders.

**Transferable skills** (including study skills) acquired on completion of the module:

1. Problem-solving skills.
2. Analytical skills.
3. Physiotherapeutic management.



Content description:

In this module the normal anatomy and physiology of the respiratory and cardiovascular systems are reviewed. The students must develop knowledge and understanding of the effects of a variety of disease processes on the patient. Predisposing and risk factors are discussed in addition to the pathological changes and clinical manifestations of respiratory disease and cardiovascular disease. The effects of obstructive and restrictive lung disorders are considered, as well as their effect on the quality of life. Care of the unconscious and/or ventilated patient is discussed as well as the effects of anaesthesia. Abdominal and thoracic surgery is also considered. The role of the physiotherapist in the management of these patients is examined in detail. The module also aims to promote the ability to select and apply appropriate management procedures.

**Therapeutic studies 1 (Semester 3)**

Module aims and objectives:

Aims: To introduce students to the concepts of management of pain and soft tissue injuries using electrotherapy and manual techniques.

Objectives: The students will be able to:

1. demonstrate an understanding of hydro-dynamics in the re-education of human movement;
2. demonstrate skill in the application of peripheral and spinal joint mobilising techniques;
3. discuss the principles of production and physiological effects of thermal modalities, Interferential, TNS and Ultrasound;
4. demonstrate skill in the application of electrotherapeutic modalities;
5. demonstrate skill in the application of PNF techniques;
6. evaluate the merits of therapeutic techniques in the treatment of soft tissue injuries;
7. evaluate the merits of therapeutic techniques in the management of pain;

8. discuss current concepts and focus of research and development.

Transferable skills (including study skills) acquired on completion of the module:

1. The ability to apply and evaluate appropriate therapeutic techniques in patient management.
2. Appropriate record keeping skills.

Content description:

This module focuses on the use of therapeutic techniques and modalities in the treatment of soft tissue injuries and the management of pain. Students are introduced to the use of electrotherapeutic modalities, in particular thermal agents, transcutaneous nerve stimulation (TNS), interferential and ultrasound. Further development of passive manual techniques and proprioceptive neuromuscular facilitation continues and includes more complex skills. The use of hydrotherapy in the treatment of patients is initiated. The physics of water is examined and related particularly to the treatment of patients. Practical skills in the hydrotherapy pool are developed. Current concepts of theory and application within practice are presented and discussed.

**Counselling and stress management (Semester 4):**

Module aims and objectives:

**Aim:** This module aims to make students aware of stress in the work place, stress management and the possibilities of counselling.

**Objectives:** The student should be able to:

1. deal with conflict;
2. manage personal stress;
3. understand the nature of counselling and know how to make referrals.

Transferable skills (including study skills) acquired on completion of the module:

The ability to recognise stress in themselves and others - a skill which will transfer into when the student becomes a qualified practitioner.

Content description:

The module explores the concept of counselling, and the possible ways in which the relationship between the physiotherapist and patient may be enhanced by an understanding of the theories of counselling and the relevant skills. The module does not attempt to train students to be counsellors, but encourages them to understand the difference between advice and counselling and to be aware of different counselling approaches. The different counselling services available and the mechanisms for referral are highlighted. Stress, the characteristics of stressful events, psychological and physiological response to stress are discussed. The effects of stress on health, and the development of coping strategies for managing stress at a personal level are explored.

**Planning research (Semester 4):**

Module aims and objectives:

**Aims:** This module aims to prepare the students for the implementation of the research study, through identification of the research question, refining the research question and developing the background, and eventually presenting the research proposal.

**Objectives:** The student should be able to:

1. identify a research topic;
2. define the research question;
3. select the appropriate methodology;
4. select the appropriate design;
5. establish boundaries for the study;
6. identify resources required;

7. present the research proposal.

Transferable skills (including study skills) acquired on completion of the module:

1. literature search;
2. evaluative skills;
3. investigative skill;
4. communication skills.

Content description:

This module involves the identification of potential areas and topics for research with a view to the student developing a particular research question. The process of limiting and delimiting the study and ethical considerations are discussed. This culminates in the production of the research proposal. Further research designs are introduced, including the single case study, experiment, survey/interview designs and observational research.

**Neurology and care of the elderly (Semester 4):**

Module aims and objectives:

Aims: To provide the student with the ability to evaluate the patient's situation and the role of the physiotherapist in the rehabilitation process.

Objectives: The student will be able to:

1. understand the pathology of diseases of the nervous system;
2. understand the process of ageing;
3. devise and execute an appropriate assessment regime;
4. evaluate and analyse potential findings and use them to devise and justify rehabilitation regimes;
5. analyse and evaluate research findings of studies in this area;

6. evaluate the role of members of the rehabilitation team in the light of prevailing Health Care Initiatives.

Transferable skills (including study skills) acquired on completion of the module:

1. moving and handling patients with neurological deficit;
2. moving and handling the elderly and infirm;
3. devising and evaluation of assessment of patients;
4. derivation and justification of rehabilitation programmes.

Content description:

Normal human growth and development from embryo to death are considered. The normal appropriate anatomy and physiology are briefly reviewed before embarking on the abnormal. The pathophysiology of hemiplegia, multiple sclerosis, motor neurone disease, peripheral nerve lesions and neuropathies are discussed. Changes occurring with ageing and their consequences are discussed. The socio-psychological changes of ageing and issues associated with the patient with multi-pathology are examined. Physiotherapeutic and wider management strategies are considered. The psychological and sociological implications for patients with the above diseases and their carers are considered. The role of the multi-disciplinary team and the place of physiotherapy within it are also discussed.

**Clinical studies 3 (Semester 4):**

Module aims and objectives:

Aim: To encourage students to develop theoretical knowledge and apply it in the assessment and treatment of patients.

Objectives: The students should be able to:

1. demonstrate critical thinking in the development of their professional skills in relation to dysfunction with particular reference to the musculo-skeletal system;

2. critically examine the role, value and limitations of physiotherapy in a hospital and primary care environment.

Transferable skills (including study skills) acquired on completion of the module:

1. General manual handling skills.
2. Clinical assessment and treatment skills.
3. Communication skills.
4. Patient management skills.

Content description:

Each student will undertake one of each clinical studies module, but in a variable permutation.

*Orthopaedics* - Physiotherapy management of patients with fractures and soft tissue injuries (including surgical and conservative management and joint surgery). Day-care surgery and physiotherapy in the Accident and Emergency Department may be experienced.

*Rehabilitation/ Out-patients (I)* - Clinical physiotherapy management of out-patients presenting with painful conditions of the peripheral musculo-skeletal system. Students will also have experience in some of the following: group exercise therapy; management of amputees; hydrotherapy; hand therapy.

*Community* - Experience of the delivery of physiotherapy services in the primary health care setting, including GP clinical work, domiciliary work, work with carers and participation in "hospital at home" schemes.

*Integrated Medicine (I)* - Clinical physiotherapy management of in-patients presenting with a variety of general conditions, with a particular bias on mobility problems.

## Therapeutic studies 2 (Semester 4):

Module aims and objectives:

Aims: To develop themes of Therapeutic Studies 1.  
 To introduce students to further electrotherapeutic modalities.  
 To introduce methods of measurement associated with ergonomics and the work environment.

Objectives: The student will be able to:

1. identify, analyse and re-educate pathological patterns of gait;
2. discuss the use of ergonomics in patient management;
3. discuss the principles of production and physiological effects of stimulating and diagnostic currents, UVR, LLL and Intermittent Pneumatic Compression;
4. demonstrate skill in the selection and application of electrotherapeutic modalities;
5. evaluate the merits of therapeutic techniques in the maintenance and development of mobilising and muscle function;
6. discuss current concepts and focus of research and development.

Transferable skills (including study skills) acquired on completion of the module:

1. The ability to apply appropriate techniques and/or modalities in patient management within the clinical areas.
2. To evaluate the use of techniques and modalities, and modify or develop as necessary.
3. Appropriate record keeping.

### Content description:

This module introduces students to a wider range of electrotherapeutic techniques. The ideas and themes of Therapeutic Studies 1 are developed in order to extend the skills and modalities already learned. Modalities include lower level laser, ultra-violet

radiation and stimulating and diagnostic currents. The application of electrotherapeutic techniques is further developed.

The application of manual techniques in the maintenance and development of mobility and muscle function are considered. Inclusion of ergonomic concepts in patient management, and current areas of research are discussed. Practical skills are further developed to include spinal mobilisation techniques.

### **Clinical studies 5: (Semester 5):**

Module aims and objectives:

**Aims:** To extend and deepen the students' range of professional and therapeutic skills. To encourage the development of professional autonomy in order that supervision can be replaced by discussion and consultation.

**Objectives:** At the end of this module, students will be able to:

1. exhibit more extensive and therapeutic skills;
2. exhibit skills at a level of competence compatible with those of a qualified physiotherapist.

Transferable skills (including study skills) acquired on completion of the module:

1. Well-developed communication skills.
2. Clinical assessment and treatment skills.
3. Caseload management skills.
4. Report writing.

### **Content description:**

Each student undertakes one of each clinical studies module, but in variable permutation.



*Respiratory care* - Management of patients with pulmonary disease in an in-patient setting, patients in intensive care, patients involved in major surgery, such as thoracic and vascular surgery. Cardiac rehabilitation.

*Integrated Medicine II* - Physiotherapeutic management of in-patients with multiple pathology problems and/or upper and lower motor neurone dysfunction, including cerebro-vascular accident, multiple sclerosis, head injury and peripheral neuropathies.

*Out-patients II* - Physiotherapeutic management of patients with neuro-musculo-skeletal dysfunction. The emphasis is on developing therapeutic management skills for patients with spinal problems.

*Paediatrics/Mental health/ Adult learning disabilities* - one from these three specialist areas, emphasising the development of physiotherapeutic management for patients in the primary care environment.

### **Clinical studies 6 (Semester 5):**

Module aims and objectives:

**Aims:** To extend and deepen the students' range of professional and therapeutic skills. To encourage the development of professional autonomy in order that supervision can be replaced by discussion and consultation.

**Objectives:** At the end of this module, students will be able to:

1. exhibit more extensive and therapeutic skills;
2. exhibit skills at a level of competence compatible with those of a qualified physiotherapist.

Transferable skills (including study skills) acquired on completion of the module:

1. Well-developed communication skills.
2. Clinical assessment and treatment skills.
3. Caseload management skills.
4. Report writing.

Content description:

Each student undertakes one of each clinical studies module, but in a variable permutation.

*Respiratory care* - Management of patients with pulmonary disease in an in-patient setting, patients in intensive care, patients involved in major surgery, such as thoracic and vascular surgery. Cardiac rehabilitation.

*Integrated Medicine II* - Physiotherapeutic management of in-patients with multiple pathology problems and/or upper and lower motor neurone dysfunction, including cerebro-vascular accident, multiple sclerosis, head injury and peripheral neuropathies.

*Out-patients II* - Physiotherapeutic management of patients with neuro-musculo-skeletal dysfunction. The emphasis is on developing therapeutic management skills for patients with spinal problems.

*Paediatrics/Mental health/ Adult learning disabilities* - one from these three specialist areas, emphasising the development of physiotherapeutic management for patients in the primary care environment.

## The management of pain (option) (Semester 5)

Module aims and objectives:

**Aims:** The aim of this module is to enable students to amalgamate and extend their understanding of the physiological and psychological aspects of pain and to develop the skills required for pain management.

**Objectives:** The student will be able to:

1. demonstrate an understanding of alternative theories of pain perception;
2. demonstrate an understanding of the physiological processes and anatomical structures involved in the experience of pain;
3. apply knowledge of the relevant neuroanatomy and neurophysiology to the practice and application of physiotherapeutic techniques;
4. demonstrate an awareness of the different emotive aspects of pain and their influences on the patient's behaviour and attitudes.

Transferable skills (including study skills) acquired on completion of the module:

1. Application of knowledge to clinical areas.
2. Patient and equipment handling skills.

### Content description:

This module amalgamates and extends students' understanding of the physiology of pain and its physiotherapeutic management. Methods of assessing and recording pain levels, and the management of the chronic pain sufferer are considered. Less traditional modalities and methods (e.g. acupuncture) are introduced during the course of the module.

**Women's health (option) (Semester 5)**

Module aims and objectives:

**Aims:** To understand the changes which may affect women's health during normal development throughout life, pregnancy, childbirth, puerperium and the menopause.

To understand the place of physiotherapeutic techniques and the importance of education in this field.

**Objectives:** The student will be able to:

1. describe the physical, physiological and psychological changes in women throughout life;
2. outline the diagnostic and monitoring procedures commonly used in women's health;
3. evaluate the role of the health care professions in women's health;
4. understand and discuss the role of physiotherapy in women's health;
5. develop and evaluate a programme of treatment and/or education.

Transferable skills (including study skills) acquired on completion of the module:

1. Development and evaluation of a treatment and/or education programme.
2. Critical reflection on clinical practice.
3. Clinical management skills.

**Content description:**

Normal anatomy and physiology of the male/female reproductive organs. Normal development of the female from pubescence, the menarche to beyond the menopause is discussed with particular emphasis on the promotion of health in women. The current thinking in pre-conceptual care is discussed, including the common abnormalities which may occur during these stages. The normal management of the antenatal period is considered, encompassing all areas of care.

This includes the possible short- and long-term physical and psychological effects of pregnancy and parturition on the woman. All methods of childbirth are discussed. The role of the health professional in the education and treatment of the patient is considered with particular reference to the physiotherapist.

### **Exercise Science and Therapy (option) (Semester 5)**

Module aims and objectives:

**Aims:** This module aims to extend the students' existing knowledge of the physiology, psychology and mechanics of exercise, and apply it in specific exercise situations. It also aims to give the students practical experience in clinical and laboratory testing of different aspects of exercise/fitness testing, and to develop exercise programmes to meet different demands.

**Objectives:** The student should be able to:

1. apply concepts of physiology, biomechanics and psychology to the practice of exercise in sport, prevention and rehabilitation;
2. identify the benefits and risks of exercise;
3. discuss the value of field, laboratory and clinical exercise testing in different situations;
4. perform basic testing procedures;
5. interpret findings from exercise testing;
6. devise appropriate exercise programmes to promote training, preventive and therapeutic effects.

Transferable skills (including study skills) acquired on completion of the module:

1. practical skills in exercise testing;
2. evaluation of exercise programmes;
3. communication skills;
4. organisational skills.

### Content description:

This module considers various aspects of exercise science, including exercise physiology, biomechanics and psychology. The health benefits and risks of exercise are considered. The application of exercise in training, prevention and rehabilitation is included, as well as practical exercise/fitness testing and exercise prescription in specific situations in prophylaxis, sport and therapeutic intervention. Methods of interpreting and evaluating exercise testing and therapy are examined.

### Project 1 (Semester 5)

#### Module aims and objectives:

**Aims:** This module aims to provide the student with the opportunity to undertake an individual and substantial piece of work which will encourage individual thought, initiative and resourcefulness, to apply investigative, critical and analytical skills.

**Objectives:** The student should be able to:

1. critically review the literature relating to the research topic;
2. formulate methods of enquiry appropriate to the aims/objectives of the study;
3. undertake the selected method of enquiry to obtain data relevant to the aims/objectives of the study;
4. record and analyse the collected data;
5. discuss and interpret the findings.

Transferable skills (including study skills) acquired on completion of the module:

1. critical, evaluative and interpretative skills;
2. organisational skills;
3. communication skills - oral and written.

Content description:

This module involves carrying out a research project and preparation of the report. It includes carrying out a literature search, a critical review of the literature and the formulation and implementation of methods of enquiry. It also includes the collection, recording and analysis of data, the interpretation of data, and discussion of findings, and critical evaluation and recommendations for further study.

**Physiotherapy in Mental Health (option) (Semester 5)**

## Module aims and objectives:

**Aims:** The aim of this module is to enable the student to realise the global impact of mental illness, and to develop a holistic approach to each person referred for assessment and treatment.

**Objectives:** The student will be able to:

1. characterise the physical, physiological and psychological presentations related to conditions commonly encountered in the Mental Health environment;
2. discuss the conceptual framework of the management approaches;
3. integrate the concepts of mental illness within other areas of speciality work undertaken by the physiotherapist;
4. critically evaluate the role of the health care professions, with particular reference to physiotherapy in the Mental Health environment;
5. understand the global impact of mental ill health on other health care professions;
6. evaluate the impact of the Mental Health Act on physiotherapy practice.

Transferable skills (including study skills) acquired on completion of the module:

1. Critical reflection on clinical practice.
2. Clinical management skills.
3. Communication skills.

Content description:

In this module concepts of mental health and mental ill health are appraised. The role of the multi-disciplinary team, with particular reference to the physiotherapist, is investigated, as well as management in both the community and in-patient settings. Both theory and practical sessions are involved, and observational visits to areas of differing speciality are included; alternatives in management are debated. The nature and management of depressive illness, different states of dependency (e.g. alcohol, drugs), conversion, hysteria and psychoses are evaluated. Anxiety states and obsessional disorders are introduced and the effects of culture differences are examined. Students also consider the Mental Health Act, legal issues related to mental health and their impact on health care in general.

**Project 2 (Semester 6)**

## Module aims and objectives:

The module aims to draw together students' experience of the research process in the final presentation of the written research report and in the oral discussion of the research process and findings.

Transferable skills (including study skills) acquired on completion of the module:

1. Analytical skills.
2. Oral discussion skills.
3. Written communication skills.
4. Organisational skills.

Content description:

The completion of a student project in the form of a written report and discussion of the project in a viva voce situation.



## Health education (option) (Semester 6)

Module aims and objectives:

**Aims:** The module aims to increase the students' effectiveness as health educators by increasing their awareness of the psychological and sociological perspectives of health and illness, knowledge of health policy and strategies of health education.

**Objectives:** The student will be able to:

1. identify models of health and illness;
2. define the nature and scope of health education;
3. demonstrate knowledge *re* physiotherapy practice and physiotherapy education.

Transferable skills (including study skills) acquired on completion of the module:

The consolidation of these issues within practical clinical practice and physiotherapy education.

### Content description:

Definitions and descriptions of models of health and illness are examined. Health policy with respect to prevention and individual responsibility, concepts of health disease and illness is studied. The sociology of health and illness - inequalities in health, social factors in the aetiology of illness, the "sick role" - is studied. Behavioural aspects of illness and health - health locus of control, personality, medical phobias, life events change, compliance, anxiety, and depression are studied. Analysis, enactment and evaluation of communication skills, changing attitudes and behaviour - communication and behaviour modification are examined. Health education strategies - development and evaluation of health education programmes will be discussed.

## Clinical reasoning: Towards normal movement (option) (Semester 6)

Module aims and objectives:

Aims: To develop and deepen the clinical reasoning and physiotherapeutic skill base in the use of manual therapeutic techniques.

Objectives: To enable the student to:

1. justify their patient assessment and management procedure;
2. further develop their skills in the application of manual techniques;
3. present a clear understanding of their chosen area of manual therapy.

Transferable skills (including study skills) acquired on completion of the module:

1. Analytical patient assessment skills.
2. Presentation skills.
3. Manual therapy skills.

### Content description:

This module builds on biomedical and pathological principles in the prerequisite modules applying them to manual therapy. The model of clinical reasoning is used. The emphasis is on the analysis of complex movement and the application of manual therapeutic techniques in combination. Neuropathodynamics will be studied in depth and applied to manual rehabilitative management. Students are given the opportunity to study an area of particular interest. The choice may be either related to a region of the body, a particular movement disability or a manual physiotherapeutic philosophy.

## Clinical studies 7 (Semester 6)

Module aims and objectives:

Aims: To broaden and deepen the students' range of professional and therapeutic skills.

To encourage the development of professional autonomy in order that supervision can be replaced by discussion and consultation.

Objectives: At the end of this module, students will be able to:

1. exhibit more extensive and therapeutic skills;
2. exhibit skills at a level of competence compatible with those of a qualified physiotherapist.

Transferable skills (including study skills) acquired on completion of the module:

1. Well-developed communication skills.
2. Clinical assessment and treatment skills.
3. Caseload management skills.
4. Report writing.

### Content description:

Each student undertakes one of each clinical studies module, but in a variable permutation.

*Respiratory care* - Management of patients with pulmonary disease in an in-patient setting, patients in intensive care, patients involved in major surgery, such as thoracic and vascular surgery. Cardiac rehabilitation.

*Integrated Medicine II* - Physiotherapeutic management of in-patients with multiple pathology problems and/or upper and lower motor neurone dysfunction, including cerebro-vascular accident, multiple sclerosis, head injury and peripheral neuropathies.

*Out-patients II* - Physiotherapeutic management of patients with neuro-musculo-skeletal dysfunction. The emphasis is on developing therapeutic management skills for patients with spinal problems.

*Paediatrics/Mental health/ Adult learning disabilities* - one from these three specialist areas, emphasising the development of physiotherapeutic management for patients in the primary care environment.

### **Clinical studies 8 (Semester 6)**

Module aims and objectives:

Aims: To broaden and deepen the students' range of professional and therapeutic skills.

To encourage the development of professional autonomy in order that supervision can be replaced by discussion and consultation.

Objectives: At the end of this module, students will be able to:

1. exhibit more extensive and therapeutic skills;
2. exhibit skills at a level of competence compatible with those of a qualified physiotherapist.

Transferable skills (including study skills) acquired on completion of the module:

1. Well-developed communication skills.
2. Clinical assessment and treatment skills.
3. Caseload management skills.
4. Report writing.

Content description:

Each student undertakes one of each clinical studies module, but in a variable permutation.

*Respiratory care* - Management of patients with pulmonary disease in an in-patient setting, patients in intensive care, patients involved in major surgery, such as thoracic and vascular surgery. Cardiac rehabilitation.

*Integrated Medicine II* - Physiotherapeutic management of in-patients with multiple pathology problems and/or upper and lower motor neurone dysfunction, including cerebro-vascular accident, multiple sclerosis, head injury and peripheral neuropathies.

*Out-patients II* - Physiotherapeutic management of patients with neuro-musculo-skeletal dysfunction. The emphasis is on developing therapeutic management skills for patients with spinal problems.

*Paediatrics/Mental health/ Adult learning disabilities* - one from these three specialist areas, emphasising the development of physiotherapeutic management for patients in the primary care environment.

**Neurorehabilitation (option) (Semester 6)**

Module aims and objectives:

**Aims:** The aims of this module are to provide the student with greater insight into the problems and presentations of patients with disorders of the nervous system. The module seeks to build upon the insight gained from the modules of the previous year and the clinical modules of semesters 5 and 6. The possible physiological bases behind the major concepts of treatment are explored in the context of academic

physiology and this encourages a greater awareness of physiotherapeutic practice.

Objectives: The student will be able to:

1. describe the anatomic and physiological organisation of motor systems in the central nervous system;
2. discuss the variety of presentation within the major neuropathological conditions;
3. discuss the conceptual framework of the major rehabilitation regimes;
4. discuss the possible mechanisms by which physiotherapy may influence the organisation of the central nervous system;
5. evaluate the clinical and academic research which may impact upon the rehabilitation of patients;
6. evaluate the impact of these discussions on clinical practice.

Transferable skills (including study skills) acquired on completion of the module:

1. Critical reflection on clinical practice.
2. Integration of academic research and clinical practice.
3. Evaluation of clinical practice from an academic standpoint.

Content description:

The module explores the functional organisation of the central nervous system with particular reference to motor activation systems and sequences. The neuronal networks within cerebral and cerebellar hemispheres are considered in the light of their proposed influence on spinal networks as well as the periphery. Recent advances in the understanding of spinal networks are examined in the context of the possible relationship with ascending and descending input. Possible clinical application of the understandings is developed in terms of clinical presentations of pathological and non-pathological states. Implications for understanding of the mechanisms of the effect of treatment techniques at an individual and conceptual

level are developed. Critical review of treatment offered to patients with neural pathology is developed at a personal and professional level.

### Occupational Health (option) (Semester 6)

Module aims and objectives:

Aims: To introduce the student to the role of physiotherapy in the occupational health environment.

Objectives: To enable the student to:

1. understand the function of an industrial physiotherapy department;
2. consider the impact of the occupational environment on therapeutic intervention;
3. consider the physiotherapist's role in prevention of occupational injury;
4. understand the impact of Health and Safety policy on managers and the workforce.

Transferable skills (including study skills) acquired on completion of the module:

Understanding of how to operate in an industrial physiotherapy department and the physiotherapist's role therein.

### Content description:

This module is an introduction to the Health and Safety at Work Act, with particular reference to Manual Handling Operations Regulations. The module includes a review of common occupational neuromusculo-skeletal problems from the Health and Safety point of view, with both a preventive and a therapeutic focus. Issues relevant to health education are covered and methods of measurement, assessment and monitoring "in the fields" are considered. Different models of delivery of Occupational Health Services are explored, including site visits to Occupational Health Departments.

## Sports Medicine and Sports Injuries (option) (Semester 6)

Module aims and objectives:

**Aims:** To extend the student's understanding of the pathology and management of musculo-skeletal disorders and apply it in the sport specific situation. To apply knowledge of exercise science and therapy in order to improve the student's understanding of the mechanics, management, rehabilitation and prevention of injury in sport.

**Objectives:** The student should be able to:

1. apply knowledge and concepts of musculo-skeletal disorders to injury and sport;
2. apply knowledge of exercise and therapy to identification of mechanisms of injury in sport and to their management and rehabilitation.
3. apply specific assessment procedures;
4. apply specific practical techniques;
5. devise specific treatment and rehabilitation programmes;
6. identify the multi-disciplinary roles within sports medicine.

Transferable skills (including study skills) acquired on completion of the module:

1. Practical skills of assessment and treatment.
2. Identification of problems.
3. Communication skills.
4. Organisational skills.

### Content description:

This module considers both the physiotherapeutic and multi-disciplinary approach to the assessment, prevention and management of injury in sport. It encompasses reference to the mechanism and nature of specific injuries including intrinsic, extrinsic, acute and overuse injuries, and reviews their immediate treatment and



long-term management. It also introduces specific practical skills which may be applied in the assessment, treatment and prevention of injury in sport.

### Acupuncture for pain relief (option) (Semester 6)

Module aims and objectives:

**Aims:** To introduce the student to the use of acupuncture as a modality in the treatment of pain by physiotherapists.

**Objectives:** By the end of this module the student will be able to:

1. demonstrate a knowledge of the current theories of acupuncture and the basic concepts of traditional Chinese Medicine;
2. demonstrate a knowledge of the courses of meridians and the locations of the important points;
3. demonstrate a safe needling technique, adhering to strict hygiene and sterilisation practices according to health and safety regulations;
4. describe the dangerous sites for acupuncture and why they are contraindicated;
5. outline a treatment plan for a patient where acupuncture is indicated and select and treat with appropriate points.

Transferable skills (including study skills) acquired on completion of the module:

1. the ability to evaluate the potential use of acupuncture in conjunction with, or instead of alternative physiotherapy techniques;
2. the ability to devise and evaluate regimes of treatment.

### Course content:

The module introduces the student to the basic concepts of Traditional Chinese Medicine. These includes qi, Blood and Body Fluid, as well as Zang Fu Theory. The arrangement of the meridians (Jing Luo) is considered with their implications for the application of treatment against a background of the notion of Yin/Yang. These

concepts are compared and contrasted to the contemporary Western physiology of pain perception and modulation. The wider physiological underpinnings upon which acupuncture may be based are also explored. The possible place of acupuncture as a component in the management of pain is explored and developed. Practically, the student learns safe needling and needling techniques, moxabustion, cupping, electro-acupuncture, auriculotherapy and experience points.

### **Cardio-respiratory Rehabilitation (option) (Semester 6)**

Module aims and objectives:

**Aim:** To provide the student with a greater insight into the problems, presentations and therapeutic management of patients with disorders of the cardio-respiratory system. The module aims to build on the understanding and knowledge gained from the foundation modules, the second year modules and the clinical studies modules in year 3.

**Objectives:** The student will be able to:

1. relate the changes caused by the multi-factorial pathologies to the normal anatomical structure and physiological processes of the cardio-respiratory system;
2. discuss the resulting effects of these changes on cardio-respiratory function and quality of life;
3. analyse the inter-relationship between the cardio-respiratory pathologies;
4. demonstrate an understanding of the psychological impact of cardio-respiratory conditions on the patient's and patient's family's behaviour and attitudes;
5. critically evaluate the current practice of rehabilitation of the cardio-respiratory patient and be able to plan and justify a suitable evidence-based scheme for the patient and his/her family's individual needs for optimum quality of life;
6. critically evaluate the clinical and academic research which may impact on the rehabilitation of patients;

7. understand the importance of and implement methods of setting, achieving and measuring realistic treatment objectives with particular emphasis on clinical effectiveness and audit.

Transferable skills (including study skills) acquired on completion of the module:

1. critical reflection on current clinical practice and the literature supporting it;
2. integration of academic research and clinical practice;
3. application of clinical reasoning skills;
4. communication skills;
5. interpretation of clinical data from a patient case study.

Content description:

This module develops the student's understanding of the anatomy, physiology and the effect of pathology on the cardio-respiratory system. The role of the physiotherapist as part of the multi-disciplinary team in a variety of contexts and environments is explored. It critically examines recent advances in current practice and the literature which underpins the rationale for medical/surgical management and the types of physiotherapy intervention. The speciality areas of palliative care for respiratory pathologies, respiratory medicine, surgery and intensive care are discussed. The aim is to enhance the student's clinical reasoning skills with particular emphasis on the holistic management of the cardio-respiratory patient, so that they may critically appraise and evaluate the application of physiotherapeutic skills and medical management within cardio-respiratory rehabilitation.

**Continuing Professional Development (Semesters 5 & 6)**

Module aims and objectives:

Aims: The module aims to promote continuing professional development through critical reflection, analysis and implementation of rational decisions effecting change on personal and peer practice.

Objectives: The students should be able to:

1. identify the elements and put into practice the skills required for reflective practice;
2. reflect upon and evaluate their own personal and professional practice;
3. identify and record personal objectives and individual strengths and weaknesses;
4. change or modify professional behaviour in the light of reflection on practice;
5. discuss physiotherapy in the light of what constitutes a profession;
6. discuss the importance of a profession that continues to develop through self- and peer appraisal through the evaluation of clinical effectiveness;
7. promote the value of physiotherapy to others in the health care and public sectors.

Transferable skills (including study skills) acquired on completion of the module:

1. the ability to critically reflect on past experience in order to set new goals;
2. the ability to identify personal strengths, weaknesses, opportunities and threats;
3. the ability to compile a personal portfolio and curriculum vitae;
4. the ability to communicate with peers and patients;
5. study skills and critical analysis skills.

Content description:

The module is a continuation of the management theme introduced in the Foundation year and continued throughout Semesters 3 and 4. It builds upon the students' ability to manage their own learning and reflect upon and evaluate their academic and clinical performance. It starts with a review of historical and contemporary professional issues and how these may impact on the roles and responsibilities of the physiotherapist. These include: self-development (life-long learning), clinical development (clinical effectiveness and evidence-based medicine), and professional development (promotion of physiotherapy and its contribution to health care). This module is an essential element in the preparation for professional life. It allows students to identify their personal and professional attributes recorded

in a personal portfolio. This allows/creates the opportunity to develop a curriculum vitae to be used to support applications for future employment.

### **Instructional and learning methods and techniques**

In year one the main instructional and learning methods are lectures of one hour each, one-hour tutorials, one-hour practical sessions and essays to be handed in by the students. The number of hours students are expected to spend on self-study is not stipulated. In year two these are supplemented by clinical placements, seminars, and group work, while assignments seem to play an important role, and students also have to present a research proposal. In year three students also pay observational visits to clinical areas, e.g. to a maternity unit, make small group presentations, use role play during practical sessions, use videos, do practical analyses; discussions and debates become an important tool, and a poster presentation is made. Directed small group project work, computer-assisted instruction, a field-work case study presentation, and guided learning also are used in this year.

## **KEELE UNIVERSITY, UNITED KINGDOM**

### **Introduction**

The programme director of Keele University was not interviewed while the researcher was in the United Kingdom.

The approximate intake of the physiotherapy course at Keele University in 1999 was 56 (Keele University, 1998:150).

The Physiotherapy course differs from the University's normal courses in that it is not a Dual Honours degree, and, therefore, cannot be combined with any other principal subject. It does, however, conform to "Keele's interdisciplinary pattern: the Departments of Biological Sciences, Psychology, Physics, the School of

Postgraduate Medicine, and clinical specialists all contribute to the course" (Keele University, 1998:150.).

### **Distinctive features**

In a publication of the Keele University (1998:150) the distinctive features of the programme are set forth as follows:

- "Fully integrated modular course underpinned by the latest research findings
- Comprehensive clinical education programme
- Innovative module on health and exercise
- Choice of advanced/ independent study module in year III
- Excellent staff/student relationships".

The principal course, B.Sc. (Hons) Physiotherapy is a three-year single honours course which supports full integration of the science of physiotherapy with clinical practice. The course is aimed at developing high levels of academic and professional competence. It also "aims to promote an awareness of the present and future trends in health care and the need to educate physiotherapists for the future by ensuring students will be able to respond to, and be proactive in the changing health environment" (Keele University, 1998:150). To this end students are encouraged to be responsive and innovative and take responsibility for their own learning during their three years at Keele University.

### **Instructional and learning methods and techniques**

A variety of teaching strategies are used at Keele, including lectures, demonstrations, practical and laboratory classes, tutorials, seminars, discussions, self-learning and clinical work (Keele University, 1998:150).

## Course content and structure

The course content and structure of the B.Sc. (Hons) Physiotherapy course of Keele University are as follows (Keele University, 1998:150-152):

Year one consists of eleven modules which encompass the scientific and therapeutic principles of Physiotherapy. The focus in the first semester is on the science of normal body systems, where an understanding of the structure, function and inter-relationship of these systems is emphasised. There are four modular themes:

- Musculo-skeletal I & II
- Neuromuscular I
- Cardiovascular/Respiratory I
- Research Methodology I.

The first three modules integrate the academic disciplines of anatomy, physiology, pathology and therapeutic principles which form the Science of Physiotherapy. Research Methodology is a fundamental and on-going theme which is promoted throughout the course.

In the second (Spring) semester altered and abnormal function of the main body systems is introduced and the role of physiotherapist in these contexts is highlighted. The modular themes are:

- Musculoskeletal III
- Neuromuscular II
- Cardiovascular/ Respiratory II
- Research Methodology II
- Professional Practice
- Health and Exercise.

Professional Practice is a module which addresses psycho-social theories of health and behaviour in relation to patient:therapist interactions, and continues the theme of illness and disability. The module concludes by preparing students for their role in the Clinical Education Programme.

Health and Exercise is a new module which examines the developing role of the physiotherapist in the promotion of health and well-being. It involves a detailed study of the physiological functioning and adaptations of the human body to exercise and addresses the ergonomics of lifting and handling.

Research Methodology broadens the students' knowledge of different approaches to research with particular reference to physiotherapy.

Two weeks are spent shadowing a Chartered Physiotherapist. The first of these weeks is known as the Clinical Observation Elective. This takes place in the community setting. The second week is an orientation progressing to practice week, and is spent in the same location as the student's first Clinical Education Placement, which commences at the start of the second year.

Year two consists of seven modules and is a combination of 19 weeks of academic/ laboratory work and 15 weeks of applied clinical science (clinical education). More complex issues, which relate to the scientific and therapeutic bases of physiotherapy, are addressed.

- Musculo-skeletal IV
- Musculo-skeletal V
- Neuromuscular III
- Cardiovascular/Respiratory III
- Community Issues
- Applied Clinical Science A
- Research Protocol.



The Musculoskeletal, Neuromuscular and Cardiovascular modules relate to core clinical areas, progressing to more detailed, complex issues.

The Community Issues module incorporates aspects such as the adaptation of therapeutic practice, and legal and ethical considerations encountered in the community setting.

Students also embark on their research project. This normally involves in-depth study in an area of professional interest. It entails self-directed study with tutorial support from academic staff and the production of a research protocol.

The Applied Clinical science (clinical education) component promotes consolidation of the campus-based modules of the first three semesters. Students gain experience in patient management with emphasis on clinical decision-making.

Year three comprises six modules. It is a combination of 12 weeks academic work and 23 weeks Applied Clinical Science.

- Applied Clinical Science B & C
- Professional Practice III
- Professional Practice IV
- Advanced/Independent Study
- Research Dissertation.

This year is designed to facilitate progression towards more detailed integrated work where both personal and professional autonomy are emphasised.

The Professional Practice III module examines the concept of evidence-based medicine and the growing body of evidence which underpins physiotherapy practice. The module is designed to promote the students' ability to question themselves about diagnosis, prognosis and management every time they encounter a patient, admit when they do not know the answers and strive to find, appraise and integrate

the best evidence available. Therefore, clinical practice will be as evidence-based as possible in the light of current research.

Professional Practice IV addresses the broader issues relating to physiotherapy practice. It includes the academic disciplines of management and politics, and the moral and ethical issues which relate to the changing ethos of Health Care.

The Research Modules are concluded with the submission of a dissertation.

The Advanced/Independent Study module allows the student to explore an area of specific interest, which promotes higher order learning.

The Applied Clinical Sciences modules foster the development of students as independent practitioners. Normally, at least one of these modules is in the community setting and includes experience of mental health and learning disabilities. Finally, the last week of the course is dedicated to course evaluation and quality assurance audit.

### **Membership of Professional Institutions**

Undergraduates are to be registered as student members of the Chartered Society of Physiotherapy. Graduates in Physiotherapy are eligible to apply for membership of the Chartered Society of Physiotherapy and for State registration with the Physiotherapy Board of the Council for Professions Supplementary to Medicine, a prerequisite for practice in the National Health Service (Keele University, 1998:152).

## **HATFIELD UNIVERSITY, UNITED KINGDOM**

### **Introduction**

The University of Hatfield is located in Herefordshire and is not part of a medical school (personal experience:1998; no sources available). The physiotherapy course has been recently instituted, and the training of the students is the responsibility of lecturers in physiotherapy.

### **Physiotherapy course**

The Physiotherapy Department has a student intake of 72 students per annum. This department has moved away from the traditional curriculum framework as compiled by the CSP, as used for physiotherapy training in the United Kingdom (personal communication 1998).

The University follows a revolutionary approach to physiotherapy training and instead of the traditional themes such as practical and operational skills, systems such as joints and muscles are used. In such a systems approach, for example, a shoulder joint will be used for a module and the anatomy, physiology, pathology, treatment skills, evaluation, treatment programmes, precautions and final rehabilitation constitute the module. General patient management and counselling are included.

Instead of following a sequential three-year course as other United Kingdom universities, students may exit from the course after one or two years' study and use their credits professionally.

According to the Director of the programme (personal communication 1998) the new approach is most successful and other universities are considering reconstructing their programmes on these lines.

No documentation could be procured, therefore no outcomes can be described here. It did seem, however, that the general attitude towards this approach is positive in the United Kingdom.

## **SOUTH AFRICAN UNIVERSITIES**

### **Introduction**

After an extensive website search for the physiotherapy curricula of South African universities, where nothing could be found, the universities were contacted personally. The programme director of two South African universities visited the researcher and their programmes were discussed.

As a member of the education committee of the SASP, the researcher is well aware of the fact that the SASP has not as yet compiled a curriculum framework equivalent to that of the CSP. The curricula of four South African universities will be briefly discussed to give an idea of how these curricula compare to those already offered.

## **THE UNIVERSITY OF THE WESTERN CAPE**

### **Course work in physiotherapy**

This university offers a B.Sc. Physiotherapy course (University of the Western Cape, 1999:3). The curriculum extends over four academic years and consists of both academic and practical work. This course is focused on the physiotherapist's area of expertise, namely pathokineology, that is the study of abnormal posture and movement. The qualified physiotherapist will be able to use his/her knowledge and skills to help patients maintain or regain effective and efficient posture and movement.

## Subjects in the course

In the course of their studies (four years) students take the following subjects: Psychology, physiology, chemistry, physics, physiotherapy, physiotherapy clinical practice, kinesiology, applied physiotherapy, and medical sociology. This Department is in the process of restructuring its curricula; only the first year modules had been worked out in detail at the time when this information was obtained from them (Marais 2000).

The first-year course is divided into four categories:

1. Academic literacy, including English for Educational Development and computer skills.
2. Science (science-based subjects): Anatomy; Physics; Psychology.
3. Professional practice: Primary health care, Philosophy of care. (These subjects are offered inter-disciplinary, and include skills laboratory training during which communication skills are mastered.)
4. Own profession: Science of movement - this includes the application of principles and techniques in clinical practice.

The second year-year course is planned to be composed of four blocks :

1. **Science:** Physiology and Psychology
2. **Wellness and disablement:** Health promotion; disability and rehabilitation, kinesiology
3. **Chronic and acute care:** Movement science; physiotherapy techniques, introduction to pathological conditions
4. **Clinical education:** Ethics; clinical rotation.

The third year will also comprise four blocks:

1. Measurement of health and ill-health (shared course; multi-disciplinary)
2. Community-based rehabilitation; physiotherapy techniques; kinesiology
3. Pathological conditions
4. Clinical practice rotations

Three blocks are planned for the fourth year:

1. **Management and research:** Physiotherapy practice management, and research project
2. **Chronic and acute care:** Specialities (intensive care, surgical procedures, acute paediatrics, pharmacology, sports rehabilitation)
3. **Clinical education:** Clinical practice rotations.

## UNIVERSITY OF PRETORIA

The University of Pretoria offers a subject-based physiotherapy programme, extending over three years. Candidates may apply to follow an extended programme. In the first year the core subject is

- Physiotherapy

The following fundamental subjects make up the remainder of the first year curriculum:

- Physics
- Chemistry
- Physiology
- Anatomy
- EOG Elective module
- CIL Elective module

If the students meet the minimum required competence for the latter two elective modules, they may apply for exemption and choose one of the following elective subjects:

- \* Ubuntu/batho
- \* Introduction to drama
- \* Academic reading skills
- \* Introduction to poetry
- \* Introduction to critical reading, writing and language skills
- \* Introduction to prose
- \* Medical terminology
- \* *Tsotsitaal* and other language variations
- \* Academic writing skills

For the second year the core subjects are

- o Physiotherapy
- o Physiotherapy Clinical Practice
- o Professional development and leadership.

Fundamental subjects in the second year are:

- o Anatomical Pathology
- o Physiology
- o Community development
- o Systems in health care
- o Medical microbiology

The third year core subjects are:

- o Physiotherapy
- o Physiotherapy clinical practice
- o Professional development and leadership
- o Scenario studies

Fundamental subjects in the third year are:

- Psychology (Personology)
  - Pharmacology
  - Research methodology
  - Community development
  - Ethics and the law in health care.
- (Universiteit van Pretoria 2000)

## **UNIVERSITY OF CAPE TOWN**

The duration of the Physiotherapy degree programme normally is four years. Students who do not meet the requirements at the end of the first semester of the first or second year are admitted to the Academic Development Programme. Students in this programme take the subjects normally offered in the first two years of the course over three years, and receive additional tuition and support in the course of their studies. Students in the extended programme therefore take five years to complete the degree.

### **Curriculum**

First year:

- Physics
- Anatomy/Biomechanics
- Movement Science
- Introduction to Health Sciences
- Health and Society



Second year:

- Anatomy
- Physiology
- Movement Science
- Applied Physiotherapy

Third year:

- Clinical Sciences
- Movement Science
- Applied Physiotherapy
- Health Sciences
- Community Medicine and Human Behaviour
- Research Methodology

Fourth year:

- Applied Physiotherapy
- Health Sciences
- Practice Management
- Research Project

**Clinical training**

Second, third and fourth year students undergo compulsory clinical training in a variety of hospitals, clinics and clients' homes throughout the Western Cape. All students receive supervision during clinical practice. The Physiotherapy Department is involved in community projects and students participate in these activities (UCT, 2000).

## UNIVERSITY OF DURBAN-WESTVILLE

The University of Durban-Westville offers a four-year bachelor's degree in Physiotherapy in the School of Therapeutic and Rehabilitative Sciences. The purpose of the qualification is :

To allow the graduate to be a registered, independent physiotherapist, who:

- Applies an evidence-based physical and holistic approach to patient care, which will include core modalities such as therapeutic exercise, manual therapy and electrotherapy;
- applies these skills in a curative, rehabilitative, preventive and promotive manner;
- is able to contribute to the planning and implementation of managerial tasks in patient care and in the utilisation of department resources.

### Curriculum

#### Level 1:

##### First semester

- \* Introductory Biology
- \* Functional Anatomy
- \* Mechanics; Matter; Waves
- \* Changing society: Culture, ideas
- \* Kinesiology for Physiotherapy
- \* Understanding the individual
- \* English language placement

##### Second semester

- \* The individual in context
- \* Electricity and magnetism; Optics
- \* Massage and manipulation
- \* Community studies values
- \* Physiotherapy competency skills

#### Level 2:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>* Introduction to Anatomy and Neuroanatomy</li> <li>* Integration and Communication</li> <li>* Neuro muscular Physiology</li> </ul> | <ul style="list-style-type: none"> <li>* Anatomy of the trunk &amp; Embryology</li> <li>* Anatomy of the head, neck and back</li> <li>* Homeostatic mechanism in human body</li> <li>* Kinesiology for physiotherapy</li> </ul> |
|--|---|

- \* Anatomy of the upper and lower limbs
- \* Kinesiology for Physiotherapy
- \* Massage and Manipulation
- \* Community physiotherapy
- \* Selected competency skills
- \* Electrotherapy for physiotherapy

### Level 3:

- \* Clinical Sciences (Pathology, Microbiology, Paediatrics, Neurology)
- \* Clinical Sciences (Medicine, General Surgery, Obstetrics, Gynaecology)
- \* Applied Pre-clinical sciences (Applied Physiology & Applied Anatomy)
- \* Electrotherapy for Physiotherapy
- \* Kinesiology for Physiotherapy
- \* Physiotherapy in Orthopaedics & Sport
- \* Physiotherapy Clinical Practice (Cardio- and pulmonary & Orthopaedic conditions)
- \* Physiotherapy Clinical Practice (Neurological conditions and Community Physiotherapy)
- \* Research design
- \* Applied Pre-clinical sciences (Psychology)
- \* Clinical Sciences (Orthopaedics)
- \* Clinical Sciences (Rheumatology, Occupational health, Pharmacology, CPR, First Aid)
- \* Principles of physiotherapy Practice in Neurology, Rheumatology, Surgery, & Respiratory conditions
- \* Physiotherapy in Orthopaedics Sport

### Level 4:

- \* Clinical Science: Orthopaedics, Cardiothoracic Surgery
- \* Physiotherapy in Orthopaedics, Sport Neurological & Cardiopulmonary Professional Management
- \* Clinical Sciences: Pharmacology, ENT surgery, Dermatology
- \* Physiotherapy Clinical Elective
- \* Physiotherapy conditions

- \* Physiotherapy Clinical Practice (Cardio-pulmonary & Orthopaedic conditions)
- \* Physiotherapy Clinical Practice (Neurological conditions & Community Physiotherapy)
- \* Physiotherapy research  
(University of Durban Westville 2000)

**APPENDIX IIIA****MEASURING INSTRUMENT (ROUND I: PHASE III)****LETTER TO DOMAIN EXPERTS IN SOUTH AFRICA****AN INSTRUMENT FOR THE DEVELOPMENT OF A FRAMEWORK FOR AN EDUCATION AND TRAINING PROGRAMME FOR PHYSIOTHERAPISTS**

On a previous occasion I requested you to serve on a panel of domain experts to assess a framework, designed to be used to develop an education and training programme for professional physiotherapists in South Africa.

This framework has now been completed. It is based on information obtained from a literature study, workshops and interviews with some Directors of physiotherapy training programmes in the United Kingdom. The documents used in the literature study included recent publications on physiotherapy and health professions training world-wide, guidelines and requirements of the Health Professions Council of South Africa and the Physiotherapy Board, publications on higher education with special reference to the new higher education dispensation in South Africa, and a health survey done in South Africa. Physiotherapy education and training curricula in several other countries were also taken cognisance of.

A panel of experts has been selected for the purpose of assessing the framework. I herewith submit the framework to you for assessment. Should major changes to the framework be required after this first round of assessment, it may be necessary for me to ask of you to assess the then adapted framework again (Delphi technique).

I apologise for the length of time it has taken to complete this project. With the radical changes health care and higher education are undergoing in South Africa, the literature survey took much longer than anticipated. I trust, however, that you will still be prepared to assess the framework and complete the attached questionnaire. It is envisaged that the outcome of this study will make a major contribution to physiotherapy education and training, and naturally, to the practice of physiotherapy, and your participation will be highly appreciated, and acknowledged.

I realize that we are all busy preparing for the Christmas holiday and will find very little time to assess the check list for the framework; however a reply as soon as possible in January will be appreciated.

Thank you once again for your willingness to participate and make a contribution in this way.

Yours sincerely

**PROF. M.W. KRAUSE**  
**HEAD: DEPARTMENT OF PHYSIOTHERAPY**

## LETTER TO DOMAIN EXPERTS IN THE UNITED KINGDOM

Dear

### **AN INSTRUMENT FOR THE DEVELOPMENT OF A FRAMEWORK FOR AN EDUCATION AND TRAINING PROGRAMME FOR PHYSIOTHERAPISTS**

I visited your institution as part of a research project in September 1998. The purpose of this research was to compile a framework for the development of physiotherapy education and training programmes in South Africa. The information I collected from you and by means of other interviews, together with information gained from a literature study was used for the compilation of the framework.

This framework has now been completed. The documents used in the literature study included recent publications on physiotherapy and health professions training world-wide, guidelines and requirements of the Health Professions Council of South Africa and the Physiotherapy Board, publications on higher education with special reference to the new higher education dispensation in South Africa, and a health survey done in South Africa. Physiotherapy education and training curricula in several other countries were also taken cognisance of.

A panel of experts has been selected for the purpose of assessing the framework. During my visit to you, you agreed to serve on this panel, and I now wish to submit the framework to you for assessment. Should major changes to the framework be required after this first round of assessment, it may be necessary for me to ask of you to assess the then adapted framework again (Delphi technique).

I apologise for the length of time it has taken to complete this project. With the radical changes health care and higher education are undergoing in South Africa, the literature survey took much longer than anticipated. I trust, however, that you will still be prepared to assess the framework and complete the attached questionnaire. It is envisaged that the outcome of this study will make a major contribution to physiotherapy education and training, and naturally, to the practice of physiotherapy, and your participation will be highly appreciated, and acknowledged.

I realize that we are all busy preparing for the Christmas holiday and will find very little time to assess the check list for the framework; however a reply as soon as possible in January will be appreciated.

Thank you once again for your willingness to participate and make a contribution in this way.

Yours sincerely

**PROF MW KRAUSE  
HEAD: DEPARTMENT OF PHYSIOTHERAPY**

**QUESTIONNAIRE FOR THE ASSESSMENT**

of the

***FRAMEWORK FOR THE DEVELOPMENT OF A  
PHYSIOTHERAPY UNDERGRADUATE PROGRAMME***

**PERSONAL INFORMATION**

Name : .....

Title : .....

Position : .....

Institution : .....

Address : .....

.....

.....

.....

Physiotherapy qualification(s) : .....

Other professional qualification(s) : .....

Other qualification(s) : .....

Are you involved in physiotherapy education and training?

Yes

No

If yes, please describe your involvement briefly.

.....

.....

.....

.....

If *no*, please describe your involvement /interest in physiotherapy as profession.

.....

.....

.....

.....

Please note that your personal information is required only for purposes of identification and correspondence. There will be no breach of confidentiality as regards the information you provided, except for mentioning that you participated as evaluator in the Delphi process, for which you gave permission.

***Thank you very much for your participation!***



## NOMENCLATURE

**ASSESSMENT:** To develop, monitor and promote learning. *Draft White Paper on Higher Education. Government Gazette No. 17944 (1997).*

**ASSESSMENT AND QUALITY ASSURANCE:** Assessment and a system of quality assurance and quality improvement are fundamental to ensuring that further education and training programmes meet the needs of learners, communities, employers and society. The curriculum will include a number of different types of assessment that can be used, either alone or combined. To ensure the holistic assessment of the learner, assessment methods must be combined in different ways to suit the specific needs of different learners (National Curriculum Framework for Further Education and Training, May 2000:15).

**ACCREDITATION (FOR QUALITY ASSURANCE):** The South African Qualifications Authority accredits the Council on Higher Education as the Education and Training Quality Assurance body (ETQA) for Higher Education. The CHE performs the function of accrediting institutions and learning programmes through its Higher Education Quality Committee (HEQC).

**COMPETENCE:** The capacity for continuing performance within specified ranges and contexts, resulting from the integration of a number of specific outcomes (National Curriculum Framework for Further Education and Training, May 2000:48).

**CORE LEARNING:** Core learning means that compulsory learning required in situations contextually relevant to the particular qualification, and "core" has a corresponding meaning (DoE, CHE & SAQA, 1999:6)

**CREDITS:** One credit will be given to every ten (10) notional hours of learning. "Notional" means an informed estimate of the average time taken (including assignments, home study, etc., and not only time used for direct learning) by an average learner to master the specific outcomes of the unit standard. The

accumulated credits for completed unit standards will lead to the award of a qualification, subject to the agreed rules of combination laid down for the qualification in question (Building the National Qualifications Framework, November 1995:27).

**CRITICAL OUTCOMES:** Skills that represent the fundamental learning students need to achieve the outcomes required at a particular level; also referred to as critical cross-field, critical, generic or cross curricular outcomes (Hunt & Higgs; 1998:265).

**CRITICAL OUTCOMES:** Critical outcomes means those generic outcomes determined by SAQA, which inform all teaching and learning (DoE, CHE & SAQA, 1999:7).

**EXIT-LEVEL OUTCOMES:** Broad performance capabilities. (Spady W.G; 1994:2) The outcomes to be achieved by a qualifying learner at the point at which he or she leaves the programme leading to a qualification (Council on Higher Education: 1999:7).

**FUNDAMENTAL LEARNING:** Fundamental learning means that learning which forms the grounding or basis needed to undertake the education, training or further learning required in obtaining a qualification and "fundamental" has a corresponding meaning (DoE, CHE & SAQA, 1999:7).

**INTEGRATED ASSESSMENT:** Integrated assessment means that form of assessment which permits the learner to demonstrate applied competence, and which uses a range of formative and summative assessment methods (DoE, CHE & SAQA, 1999:7).

**LEVEL DESCRIPTORS:** To facilitate assigning a unit standard, a standard, or a qualification to a particular level on the National Qualifications Framework (SAQA Bulletin 4 (1), May 2000:3; Cosser, 1998:19-26).

**MOBILITY:** Credit accumulation and transfer to ensure learner mobility (National Curriculum Framework for Further Education and Training, May 2000:19).

**OUTCOMES-BASED EDUCATION:** Organising everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experiences (Spady W.G; 1994:1).

**PORTABILITY:** The condition of transferability and recognition of credits between programmes, providers and employers (SAQA Act, 1995).

**PROGRAMME DEVELOPMENT:** Programme development occurs when educators, parents, community members, business and industry representatives, and learners meet to interpret the curriculum framework and to design programmes that meet their needs. Programmes are developed to guide the activities of learners and educators in meeting the nationally agreed outcomes. The development of these programmes will include meaningful combinations of nationally registered unit standards into coherent courses. It will also include the development of learning statements, including their learning ranges, tasks, activities, etc., and assessment strategies (National Curriculum Framework for Further Education and Training, May 2000:21).

**QUALITY ASSURANCE:** Quality assurance (QA) and quality improvement are fundamental to ensuring that programmes meet the needs of learners, communities, employers and society. QA provides a means of bench-marking programmes and qualifications against one another and against world-class standards. It provides a basis for the recognition of credits and for articulation and transfer within Further Education and Training and Higher Education. It plays a vital role in ensuring that programmes and qualifications have currency with employers. (National Curriculum Framework for FET:32).

**RECOGNITION OF PRIOR LEARNING (RPL):** Recognising and building on the prior knowledge and experience of learners is a first step towards creating a curriculum that focuses on learners' needs. It also enhances the self-esteem and accomplishments of learners and, at the same time, prevents wastage of time, effort and resources. The concept includes learning outcomes achieved through formal, informal and non-formal learning and work experience (SAQA Act, 1995).

**SPECIFIC OUTCOMES:** Actions and performances that embody and reflect learner competence in using content, information ideas, and tools successfully (knowledge, skills, attitudinal and behaviour outcomes) (Spady W.G; 1994:2).

**UNIT STANDARD:** A unit standard is a nationally registered statement of desired education and training outcomes and their associated performance criteria. They should give attention to critical cross-field outcomes, though it is not essential to address all of them within a single unit standard. Unit standards will be assigned credit ratings on the basis of one credit being equal to ten national hours of learning (Council on Higher Education (CHE) SAQA: 1999:7).

## SECTION I

### 1. ORIENTATION TO THE FRAMEWORK DEVELOPMENT

#### 1.1 INTRODUCTION

A series of changes that has occurred in South Africa since the 1994 political emancipation, together with the changes in South Africa and elsewhere in higher education and health services delivery, has resulted in a need to review education and training for health professions. There is a continued need for a specification of core physiotherapy knowledge and skills, and a programme for professional physiotherapy that addresses the health care needs of the population. In order to ensure quality in all physiotherapy education and training programmes, and to establish comparability in the training of professional therapists, this framework was developed to serve as a guide for policy- and decision-makers, as well as the educators, in designing programmes for the education and training of professional physiotherapists. The title of this study therefore is: "*A Developmental Framework for a Generic Education and Training Programme for Physiotherapists*". The framework is not meant to serve as a blueprint for programmes, but rather as guidelines for programme development for the outcomes expected from qualified physiotherapists in order for them to be able to be regarded as having received relevant training of a high quality.

This framework has been divided into two sections, namely:

- **Section I**, which serves as an orientation to the development of the framework. It also discusses the influences that impact on the development of the framework as rationale for programme development.
- In **Section II** the components necessary for programme development as they relate to the influences discussed in Section I are given. The reader is requested to complete the checklist to assess these components.

## 1.2 THE DEVELOPMENT PROCESS OF THE FRAMEWORK

The framework has been developed over a period of two years. Initially a literature survey was performed. The information thus gained was used to set up a series of six workshops in the Physiotherapy Department of the University of the Free State, at which the components for the framework, as reflected in Section II were developed. During this time the researcher attended meetings called by the Education Board of the South African Society of Physiotherapy to discuss pertinent training issues and the way forward for training centres.

Three universities in the United Kingdom that offer physiotherapy training (degree qualifications) were visited. A questionnaire comparing aspects of training with training in South Africa was completed at each university. Curricula of other universities, such as the University of Ibadan (Nigeria), Durban-Westville (South Africa) and Queensland (Australia) were also assessed and the information used in compiling the framework. This information has been used in an attempt to standardise the framework internationally.

Information collected from the South African Demographic and Health Survey (SADHS), which was performed in 1998, was also used and converted to learning outcomes.

The framework consists of the broad parameters of physiotherapy, a set of professional outcomes and specific outcomes with indications of the critical outcomes, which inform the theme, the fundamental knowledge and skills required, a specification of core disciplinary knowledge, and a peg for electives. Major themes of the disciplines and training aspects required by the NQF will be included. The framework has been constructed in the form of a checklist or instrument. The unit standard for the qualification has been pegged at levels 6 and 7. Should earlier exit levels be decided on, the

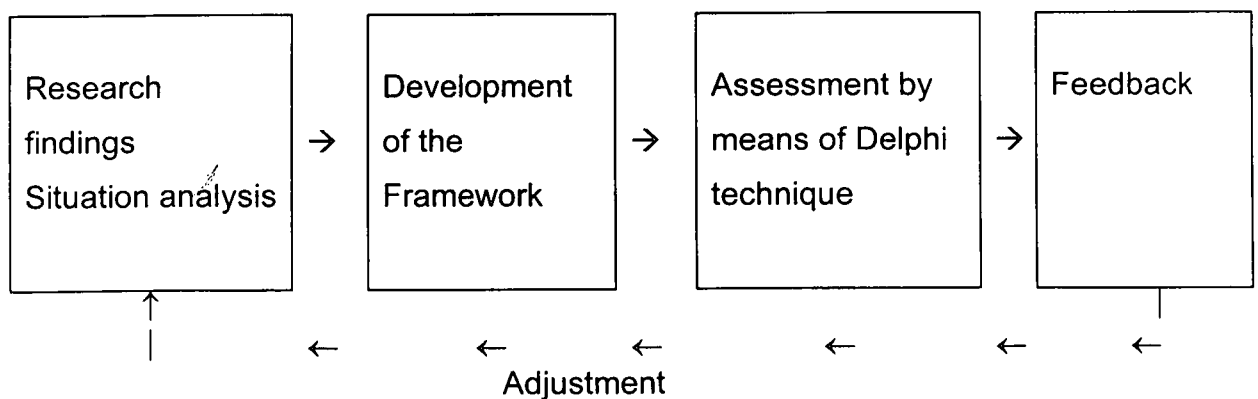
contents of a programme can be adjusted to accommodate a shift of outcomes between the levels within the programme.

The instrument is based on outcomes-based education in accordance with the South African Qualifications Authority's (SAQA) requirements.

This framework has been based on research findings and will be assessed by means of the Delphi technique. Feedback obtained from the domain experts will be used to make final adjustments to the framework. The steps used in the developmental process to reach consensus about the broad characteristics for the proposed framework were, and will still be, the following:

- Research findings based on the situation analysis;
- the compilation of the framework;
- assessment of the framework by means of the Delphi technique;
- feedback from the domain experts (Delphi technique); and
- adjustment of the framework.

#### Diagrammatic representation of the developmental process



## INFLUENCES IMPACTING ON A PROGRAMME FOR EDUCATION AND TRAINING OF PHYSIOTHERAPISTS

The philosophy and objectives dictating health reform in South Africa have been based on the following documentation:

- The South African Department of Health: *White Paper on Health 1997: Government Gazette No. 17910 April*
- Requirements of the Health Professions Council of South Africa (HPCSA)
- Guidelines and requirements of the South African Society of Physiotherapy (SASP)
- National and international trends in higher education (SAQA Act 58: 1995; Higher Education Bill, 1997b)
- The health care needs of the population of South Africa (SADHS, 1998).

To clarify the constants for the reader, the objectives as stated in the above-mentioned literature have been divided into four sections, namely:

- the transformation of the health care system in South Africa;
- the transformation of higher education, and academic and educational requirements and guidelines in South Africa;
- national and international trends in physiotherapy education;
- the physiotherapy needs of the South African community.

### 1.3 TRANSFORMATION OF THE HEALTH CARE SYSTEM IN SOUTH AFRICA

The philosophy and objectives dictating health reform in South Africa, and for the purpose of this document, for physiotherapy education and training, are based on principles set forth in the *White Paper for the Transformation of the Health System in South Africa*, and by the World Health Organisation, the South African Society of Physiotherapy, the Health Professions Council of South Africa and the National Physiotherapy Committee. Furthermore the job



profile as dictated in the CORE document and the Human Resources plan were used.

The strategic approach guiding the philosophy of reform in health care is the endeavour for Comprehensive Primary Health Care for all South African citizens.

All the stakeholders advocate a wide range of policies that will reform the health care system fundamentally. This transformation must reflect the wealth of the country and lay the foundation for a process of democratisation for the state and society that will foster the empowerment of all citizens and promote equality.

The main trends in the transformation of the health care system of South Africa may be summarised as follows:

- primary health care must be aggressively addressed and applied to community-based rehabilitation and service delivery, and include community involvement and empowerment;
- teaching strategies must be revised in order to move away from purely clinically and hospital-based based service delivery and rather move to other skills such as organisational, managerial and communication skills;
- problem-solving skills must be applied clinically and in research projects to encourage an enquiring mind and to develop life-long learning skills;
- racial discrimination must be eradicated;
- team work must be encouraged;
- equity and empowerment must be respected in all communities;
- the highest standards of practice and professional integrity must be encouraged;
- the needs of the members of the profession must be met to prepare them to play an effective role in comprehensive health care including promotive, preventive, curative, rehabilitative and educational aspects, as well as in research;

- service-delivery must be effective;
- health care needs must be addressed.

#### 1.4 THE NATIONAL QUALIFICATIONS FRAMEWORK AND THE SOUTH AFRICAN QUALIFICATIONS AUTHORITY

The idea of a National Qualifications Framework for South Africa arose from the need for transformation of the education and training policy of the country in the early 1990s. Through extended debates, agreement was reached on the concept of transparent national standards, understood as descriptions of learning achievements and agreed on by all major stakeholders in the particular area of learning. These standards are accommodated within a National Qualifications Framework designed to promote lifelong learning, integrate education and training, allow for flexible, portable credits and qualifications, facilitate access, mobility and progression in education, training and career paths and recognize learning gained outside the normal educational system.

The South African Qualification Authority (SAQA) was established under an Act of Parliament (Act No. 58 of 1995). SAQA is responsible for the development and implementation of the National Qualifications Framework through the structures created. SAQA functions strictly on the basis of the maximum participation of roleplayers and stakeholders in the national learning system, and is built on the principle of voluntary participation.

National Standards Bodies were established for 11 fields of learning by agreement with SAQA. These Bodies recommend qualification standards and review relevant standards. National Standards Bodies establish or recognize Standard Generation Bodies in its own defined field, to generate, update and review standards and qualifications in accordance with SAQA.

SAQA is empowered to accredit bodies responsible for the monitoring and auditing of standards and qualifications. These bodies function as Education and Training Quality Assurance structures on behalf of SAQA, i.e. statutory professional bodies.

A framework for programme development cannot only reflect the philosophy of the health care needs and the new principles for higher education. The framework must also reflect the requirements of the statutory body, which is the Health Professions Council of South Africa, and the competency profile for employment. This competency profile for the physiotherapy profession is described in the *Code of Remuneration (CORE)*, which was compiled by the Department of Public Service Administration implemented in July 1999.

The CORE is a management tool and is directly linked to a salary scale in government service. It has replaced the old Personnel Administration Standards (PAS), and consists of various levels. Employees, or executive authorities are responsible for ensuring that the actual requirements for employment reflect the coherent requirements of a post. The CORE describes employees' entrance service delivery at level 1 and the possible progression to level 15. This document is directly related to remuneration and reflects the inherent requirements of a post. Newly qualified physiotherapists enter government service at level 6 and progress to level 10.

Newly qualified physiotherapists are required to function at levels 6 or 7 of the CORE. The generic job content that has been used for this document is for Social, Natural, Technical and Medical Sciences Supplementary and Support Personnel; however, the generic job content for Professionals and Managers is also applicable to physiotherapists. The levels are depicted in Table I of Addendum A.

In contrast to the CORE levels, the level descriptors of the National Qualifications Framework facilitate the assignment of a unit standard or a standard of a qualification. The document refers to training outcomes. The physiotherapy student enters the course at level 5 and exits at level 6 or 7,

depending on the competency requirements and the duration of the course. Exit outcomes have been compiled according to these levels. Levels 6 and 7 are described in Table II of Addendum B.

For registration of a programme for qualification purposes, it must be ensured that all critical outcomes have been addressed appropriately at the level concerned within the proposed qualification. The following are critical outcomes that must be successfully embedded within a programme:

- To identify and solve problems in which responses display that responsible decisions using critical and/or creative thinking have been made.
- To work effectively with others as a member of a team, group, organisation and/or community.
- To organise and manage oneself and one's activities responsibly and effectively.
- To collect, analyse, organise and critically evaluate information.
- To communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation.
- To use science and technology effectively and critically, showing responsibility towards the environment and health of others.
- To demonstrate an understanding of the world as a set of related systems by recognition that problem-solving contexts do not exist in isolation.

In order to contribute to the full personal development of each learner, it must be the intention underlying any programme of learning to make an individual aware of the importance of:

- reflecting on and exploring a variety of strategies to learn more effectively,
- participating as responsible citizens in the life of local, national and global communities,
- being culturally and aesthetically sensitive across a range of social contexts,

- exploring education and career opportunities, and developing entrepreneurial opportunities.

## 1.5 NATIONAL AND INTERNATIONAL TRENDS IN PHYSIOTHERAPY EDUCATION

Rapid changes in health care services are sweeping over the global village and education and training are facing irreversible changes. The acceptance of this phenomenon is inevitable for all who are actively engaged in health professions education, as can be seen clearly in South Africa. These changes show a very close resemblance to what is expected of education and training in other countries. These include:

- the ability of students to take responsibility for their own learning, since the size and rate of change of the health sciences database require every health care practitioner to embark on a lifetime of self-education,
- the skills to take advantage of sophisticated information technology to ensure efficient updating of their knowledge. Centralised repositories of knowledge will give way, for those who can use the equipment, to detailed sources available in offices throughout the world,
- the attitudes appropriate to constant re-evaluation of their understanding, skills and attitudes. Without flexibility and self-awareness, health science professionals will be at sea among the choices and pressures, which will overwhelm them,
- the possession of critical reasoning skills to evaluate evidence and to provide a secure foundation for rejection, as well as accepting, solutions and suggestions,
- the skills and attitudes which promote effective work in teams. More than ever, effective health care will depend on well-structured teams, whose members fulfil defined and agreed roles,
- a high level of communication skills, with particular emphasis on obtaining and giving information, negotiating and counselling. These skills are

fundamental to the effective exercise of responsible choice, which will be increasingly crucial to patients and health care professionals,

- a sound grounding in ethical decision-making, without which instance of being a liberated work force the profession will lead down a path towards inhumanity, inequity, irrationality and exploitation.

## 1.6 PHYSIOTHERAPY REQUIREMENTS OF THE POPULATION OF SOUTH AFRICA

In 1998 the Unit for Health Systems Research initiated the South African Demographic and Health Survey (SADHS) to collect information on the health status and conditions in South Africa. The health related practices and diseases that have a direct bearing on physiotherapy service delivery and thereby the disciplines and weight for teaching are the following:

People who smoke and suffer from related and unrelated chest conditions constitute 25% of the population. The treatment of chest conditions constitutes a large proportion of a physiotherapist's work. These statistics warrant at least 25% of tuition in pulmonary conditions in the clinical years.

At least 12% of the population suffer from hypertension and 42% from overweight, with 60% suffering from obesity. Medical, neurological and skeletal (orthopaedic) problems are directly related to these statistics. The researcher suggests that at least 50% of training time should be spent on the treatment of these conditions.

Sixteen percent (16%) of births take place without assistance. The number of complications that arise from these births was not assessed, however, from personal experience the risk factor associated with an unattended birth is high. With these statistics in mind at least 10% of training time should be spent on infant neurology.

The remainder of clinical time in the senior years (15%) should be spent on sports science, geriatrics and the treatment of burns.

Throughout the programme, aspects such as management and counselling skills, ethics, medico-legal aspects and research techniques, as well as health care management and professional practice should be taught.

These statistics influence the weighting of the major clinical disciplines taught in a physiotherapy programme to ensure relevant service delivery after graduation.

## SECTION II

### 1. AIM

The aim of this section is to get expert opinions from subject specialists for the development of a framework for a learning and training programme for physiotherapists.

#### INSTRUCTIONS TO THE RESPONDENT TO COMPLETE CHECKLIST

On the basis of the following explanations, please indicate the extent to which the statement is in agreement with your opinion. Please encircle the applicable number in the margin in response to each question.

#### THE FOLLOWING 5-POINT SCALE APPLIES:

1. = The more negative opinion (e.g. the description is totally wrong; I definitely disagree; is not at all necessary).
2. = Not completely negative, but not positive.
3. = Expresses neutrality or "not sure".
4. = More positive, but not completely in agreement or positive.
5. = The most positive opinion (e.g. the description fits 100%; agree fully; absolutely necessary).

#### Comments

Where this is indicated, you are required to please comment on whether this information is relevant and sufficient to serve as background for the learning design.



1

## 2. THE CHECKLIST

### 2.1 COMPONENTS PERTAINING TO PROGRAMME DEVELOPMENT FOR THE EDUCATION AND TRAINING OF PHYSIOTHERAPISTS

Section II deals with the influences impacting on the development of a framework for a programme for the education and training of physiotherapists. This information has been used to ensure that learning outcomes are balanced and that they reflect the national education, and health care and service delivery policy, principles and goals, and achieve nationally consistent and internationally acceptable standards. The framework provides a philosophy, but does not prescribe in detail the content which will contextualise learning.

#### 2.1.1 VISION FOR PHYSIOTHERAPY EDUCATION AND TRAINING

Learners who obtain a qualification in professional physiotherapy will be equipped with discipline-specific technical competencies and generic skills, as well as the required vocational attributes to make them valuable members of the physiotherapeutic work environment. The learner should have gained the ability to function professionally and with interdisciplinary and inter-cultural collaboration, and pursue continuing evidence-based physiotherapy practice.

1	2	3	4	5
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Comments: .....

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**2.1.2 MISSION STATEMENT FOR PHYSIOTHERAPY TRAINING AND EDUCATION**

To train and educate physiotherapists who will be competent to render a professional service, that is, who have the necessary knowledge, skills, professional thinking, behaviour and attitudes to pursue their profession as physiotherapists and managers in all the ramifications of physiotherapy and health care.

1	2	3	4	5
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Comments: .....

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Education and training programme will be referred to as programme for the remainder of this document.

**2.1.3 DEFINITIONS OF THE PROFESSION**

Physiotherapy is a health care profession, which emphasises the use of physical approaches in the maintenance and restoration of an individual's physical, psychological, and social well-being, encompassing variations in health status. Through the use of manual therapy, therapeutic exercises and the application of electro-physical modalities, as well as problem-solving and clinical reasoning skills the physiotherapist must be capable of applying these skills appropriately in response to the varied needs of individuals and communities, at all four levels of health care (self-care, primary, secondary and tertiary care).

1	2	3	4	5
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Comments: .....

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### 2.1.4 DEFINITION OF A PHYSIOTHERAPIST

A physiotherapist is a person who is in possession of a qualification, which can be registered and recognised by the Professional Board for Physiotherapy, Podiatry and Biokinetics of the Health Professions Council of South Africa for the purpose of treating any condition within the defined scope of the physiotherapy profession

1	2	3	4	5
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Comments: .....

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### 2.1.5 GOALS FOR PHYSIOTHERAPY TRAINING AND EDUCATION

The goals for physiotherapy education and training have been developed from the key findings of the research as discussed in Section I and converted to learning outcomes. These objectives for relevant physiotherapy education and training are:

- (i) to ensure quality physiotherapy services to all the people of South Africa through the development of physiotherapy education, practice and research;

1	2	3	4	5
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- (ii) to provide educational programmes which can satisfy the health needs of the country and the educational needs of the profession;

1	2	3	4	5
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- (iii) to equip those entering the profession with skills which are appropriate, affordable and relevant to the needs of the people of the country;

1	2	3	4	5
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- (iv) to contribute to the development and achievement of a healthy self-reliant nation;

1	2	3	4	5
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- (v) to ensure professional integrity and the highest ethical standards of practice;

1	2	3	4	5
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- (vi) to oppose any discrimination on the grounds of race, colour, creed, national origin or gender;

1	2	3	4	5
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	11
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- (vii) to encourage the development of interpersonal, negotiative, leadership and conflict management skills, at all four levels of health care, i.e. promotive, preventive, curative and rehabilitative, to practise effectively in any environment in accordance with the principles of primary health care;

1	2	3	4	5
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	12
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- (viii) to develop communication and interpersonal skills, team management and community development skills with a focus on adult learning;

1	2	3	4	5
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	13
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- (ix) to instil in students the desire for continuing physiotherapy education and research;

1	2	3	4	5
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	14
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- (x) to develop students' ability to document scientific, clinical reports;

1	2	3	4	5
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	15
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- (xi) to teach multi-disciplinary perspectives in a programme;

1	2	3	4	5
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	16
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- (xii) to ensure a programme-based approach to education and training;

1	2	3	4	5
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	17
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- (xiii) to identify and solve problems by using critical and creative thinking;

1	2	3	4	5
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	18
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(xiv) to contribute to the full personal development of each learner;

1	2	3	4	5	<input type="checkbox"/>	19
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(xv) to have an understanding of the changing health care policies, nationally and internationally.

1	2	3	4	5	<input type="checkbox"/>	20
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(xvi) to develop and implement quality assurance measures and the accreditation of programmes;

1	2	3	4	5	<input type="checkbox"/>	21
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(xvii) to promote a standard of excellence in health practice, drawing on both international and local experience.

1	2	3	4	5	<input type="checkbox"/>	22
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Comments: .....

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## 2.1.6 OUTCOMES FOR THE EDUCATION AND TRAINING OF PHYSIOTHERAPISTS

These outcomes have been formulated in the style and format of outcomes-based programmes as have been introduced in South Africa by the South African Qualifications Authority. They also satisfy the expectations of the professional statutory council, the CORE document and the human resource plan of the National Department of Health.

The outcomes stated here as exit-level outcomes reflect the competencies, abilities and capabilities required of the registered professional physiotherapist on achievement of a qualification. The knowledge, skills, understanding, and behaviour and attitudes, which underpin the competence, abilities and capabilities, are embedded in fundamental learning and core disciplinary learning. Provision is also made for elective learning.

## 2.1.7 EXIT-LEVEL OUTCOMES

The exit-level outcomes of the programme entail the capabilities constituting the overall competence required of learners who have completed a four-year programme, pinned on level 6 or 7 of the National Qualifications Framework level descriptors and aimed at obtaining a Bachelor of Science degree in Physiotherapy. These demand of learners, on completion of the programme, to be able to demonstrate:

- (i) a sound knowledge and understanding of health care, the promotion thereof, and the prevention, management and treatment of disease and injury relevant to physiotherapy;

1	2	3	4	5	<input type="checkbox"/>	23
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- (ii) knowledge of the normal structure, functions and development of a person as a whole and as an individual within the context of the family and community is required;

1	2	3	4	5	<input type="checkbox"/>	24
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- (iii) a sound knowledge of the relevant physical sciences (physics, chemistry), biological sciences (anatomy, physiology), and behavioural sciences (psychology) which underpin physiotherapy practice;

1	2	3	4	5	<input type="checkbox"/>	25
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- (iv) the ability to apply manual therapeutic techniques, exercises and the application of electro-physical modalities;

1	2	3	4	5	<input type="checkbox"/>	26
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- (v) a well-founded knowledge of diseases and pathological processes as the basis of physiotherapy practice;

1	2	3	4	5	<input type="checkbox"/>	27
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- (vi) an understanding of physiotherapeutic principles and problem-solving and decision-making, with due consideration of ethical aspects,

1	2	3	4	5	<input type="checkbox"/>	28
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- (vii) the ability to use physiotherapeutic scientific terminology with confidence;

1	2	3	4	5	<input type="checkbox"/>	29
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- (viii) proficiency in basic clinical skills within the parameters of physiotherapy practice, including the ability to take a history, perform a physical examination and assess a person's mental state, interpret the findings, diagnose and treat diseases and injury,

1	2	3	4	5	<input type="checkbox"/>	30
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- (ix) the desire to prevent disease and promote health;

1	2	3	4	5	<input type="checkbox"/>	31
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- (x) the ability to apply professional reasoning as an integral part of physiotherapeutic practice;

1	2	3	4	5	<input type="checkbox"/>	32
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- (xi) the ability to utilise diagnostic and treatment aids, as well as the services of other health professions,

1	2	3	4	5	<input type="checkbox"/>	33
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- (xii) the ability to work as a member of a team rendering health care services;

1	2	3	4	5	<input type="checkbox"/>	34
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- (xiii) appropriate attitudes and behaviour patterns to ensure quality health care; a commitment to health care and a responsibility with regard to the physical, mental and social well-being of the community;

1	2	3	4	5	<input type="checkbox"/>	35
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- (xiv) the ability to palliate suffering with empathy and within ethical norms and guidelines;

1	2	3	4	5	<input type="checkbox"/>	36
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(xv) an awareness of the importance of primary health care and a community-oriented approach to health care;

1	2	3	4	5
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**37**

(xvi) an aptitude for being a lifelong learner (continuing professional development);

1	2	3	4	5
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**38**

(xvii) a sensitivity to and knowledge and understanding of the health needs of the country, and the ability to satisfy international standards of excellence;

1	2	3	4	5
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**39**

(xviii) the ability to be effective managers of health;

1	2	3	4	5
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**40**

(xix) the ability to render a service as members of the health team;

1	2	3	4	5
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**41**

(xx) the ability to act as advocates for their patients and communities;

1	2	3	4	5
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**42**

(xxi) effective communication skills;

1	2	3	4	5
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**43**

(xxii) critical thinking;

1	2	3	4	5
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**44**

(xxiii) the ability to apply social and behavioural sciences in the physiotherapy profession.

1	2	3	4	5
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**45**

Comments: .....

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### 2.1.8 SPECIFIC OUTCOMES

The specific outcomes set for a programme for professional physiotherapists constitute the abilities that will enable the learner to be capable to achieve the exit-level outcomes stated above. These include:

⇒ **Knowledge outcomes:**

On completion of the programme the students must demonstrate:

- (i) knowledge and understanding of normal human development, structures and pathological conditions;

1	2	3	4	5	<input type="checkbox"/>	46
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- (ii) knowledge of the principles of manual therapeutic exercises and electro-physical modalities as understood in preventive, promotive, therapeutic and rehabilitative health care;

1	2	3	4	5	<input type="checkbox"/>	47
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- (iii) mastery of the knowledge required to identify, diagnose and treat complex physiotherapeutic health care problems;

1	2	3	4	5	<input type="checkbox"/>	48
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- (iv) mastery of the fundamental and core knowledge required to work as a physiotherapist at the four levels of service delivery, i.e. tertiary, secondary, primary and self-care;

1	2	3	4	5	<input type="checkbox"/>	49
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- (v) a sound knowledge of professional clinical practice in the public and private sectors;

1	2	3	4	5	<input type="checkbox"/>	50
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- (vi) knowledge about the health policy of the country as well as global trends and issues in health care;

1	2	3	4	5	<input type="checkbox"/>	51
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- (vii) knowledge of the essential acts and regulations concerning the health care dispensation, labour system and relevant areas having a bearing on physiotherapy practice as a profession;

1	2	3	4	5
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	52
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- (viii) knowledge of the roles of the other members of the multi-disciplinary health care team;

1	2	3	4	5
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	53
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- (ix) mastery of the knowledge required to evaluate and apply the principles of the health care dispensation of the country as relevant to physiotherapy.

1	2	3	4	5
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	54
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Comments: .....

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⇒ **Skills outcomes**

On completion of the programme the students must demonstrate:

- (i) mastery of the clinical skills required to be able to practise preventive, promotive, therapeutic and rehabilitative physiotherapy;

1	2	3	4	5
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	55
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- (ii) the ability to use relevant diagnostic and analytical skills;

1	2	3	4	5
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	56
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- (iii) the ability to work as members of the multi-professional health care team;

1	2	3	4	5
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	57
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- (iv) problem-solving and communication skills required to professionally counsel and communicate with patients;

1	2	3	4	5
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	58
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- (v) the technological and clinical skills required for effective and efficient practice in the field of physiotherapy and health care;

1	2	3	4	5	<input type="checkbox"/>	59
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- (vi) the ability to respond to the varied needs of the patient;

1	2	3	4	5	<input type="checkbox"/>	60
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- (vii) communication skills pertaining to health care delivery and work in the health care team;

1	2	3	4	5	<input type="checkbox"/>	61
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- (viii) well-developed research and managerial skills.

1	2	3	4	5	<input type="checkbox"/>	62
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Comments: .....

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⇒ **Attitudinal and behavioural outcomes**

On completion of the programme the students must:

- (i) maintain the personal, ethical and professional standards applicable to physiotherapy;

1	2	3	4	5	<input type="checkbox"/>	63
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- (ii) have a desire to ensure patient care of the highest possible quality;

1	2	3	4	5	<input type="checkbox"/>	64
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- (iii) use a holistic approach to patients in a varied social milieu;

1	2	3	4	5	<input type="checkbox"/>	65
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- (iv) have a positive approach to health care services at all levels;

1	2	3	4	5	<input type="checkbox"/>	66
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- (v) have a community-oriented and primary health care oriented approach in service rendering;

1	2	3	4	5	<input type="checkbox"/>	67
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- (vi) show respect for patients and colleagues, without prejudice with regard to background, race, culture, gender, way of life, etc.;

1	2	3	4	5	<input type="checkbox"/>	68
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- (vii) recognise human and patients' rights;

1	2	3	4	5	<input type="checkbox"/>	69
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- (viii) demonstrate a positive approach to self-directed life-long learning;

1	2	3	4	5	<input type="checkbox"/>	70
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- (ix) have gained an awareness of personal limitations and demonstrate a willingness to seek help when necessary;

1	2	3	4	5	<input type="checkbox"/>	71
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- (x) demonstrate a positive attitude towards change and functioning within the uncertainties of the times;

1	2	3	4	5	<input type="checkbox"/>	72
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- (xi) demonstrate a positive approach towards continuing professional development.

1	2	3	4	5	<input type="checkbox"/>	73
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Comments: .....

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### 2.1.9 CRITICAL OUTCOMES

Although these outcomes have to be attended to at all levels of the programme, more time should be spent on fundamental learning and critical skills during the initial period of training to ensure that students from different educational backgrounds are sufficiently prepared and have the necessary grounding for the programme. During the course of the programme the critical

outcomes (fundamental knowledge and skills) should be attended to in an increasingly integrated manner; they should never be regarded as 'completed', but need to spiral to higher levels as the programme proceeds. These outcomes include:

- (i) The ability to identify and solve problems, with special reference to the management of health care and patient issues within the field of physiotherapy;

1	2	3	4	5	<input type="checkbox"/>	74
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- (ii) the ability to make informed and responsible decisions through critical thinking;

1	2	3	4	5	<input type="checkbox"/>	75
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- (iii) the ability to work in a team or group, and as a member of an organisation or community;

1	2	3	4	5	<input type="checkbox"/>	76
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- (iv) the ability to manage and organise the self and own activities responsibly and effectively;

1	2	3	4	5	<input type="checkbox"/>	77
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- (v) the ability to collect, analyse, organise and critically evaluate information (research abilities);

1	2	3	4	5	<input type="checkbox"/>	78
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- (vi) the ability to communicate effectively and use language and mathematical skills in oral and written persuasion in physiotherapy practice,

1	2	3	4	5	<input type="checkbox"/>	79
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- (vii) the ability to be informed of scientific language as related to the profession;

1	2	3	4	5	<input type="checkbox"/>	80
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(viii) the ability to utilise science and technology critically and effectively, with responsibility towards the environment and the health of others;

1	2	3	4	5
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(ix) understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation, and demonstrating this understanding through the ability to establish relationships and using a holistic approach in dealing with patients and health care problems;

1	2	3	4	5
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2

(x) the ability to explore a variety of strategies to learn more effectively (resource-based learning);

1	2	3	4	5
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3

(xi) the ability to participate as responsible members in the life of their communities, and, in particular, to act as role models with regard to health care;

1	2	3	4	5
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4

(xii) cultural sensitivity, especially within the context of health care;

1	2	3	4	5
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5

(xiii) the desire to explore educational and career opportunities, and show an entrepreneurial spirit.

1	2	3	4	5
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6

Comments: .....

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## 2.2 MAIN THEMES FOR PHYSIOTHERAPY EDUCATION AND TRAINING

The following scientific fields or themes refer to the basic learning required of a qualified physiotherapist and address the required knowledge, skills and attitudes, behaviour and values students have to demonstrate on completion of the education and training programme.

### FUNDAMENTAL DISCIPLINES

#### 2.2.1 BIOLOGICAL SCIENCES

The following is required:

- (i) Normal human anatomy and physiology of systems relevant to physiotherapy practice

1	2	3	4	5
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	7
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- (ii) Basic knowledge of anatomical and physiological pathology relevant to physiotherapy

1	2	3	4	5
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	8
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- (iii) The ability to recognise malfunction of the systems through assessment procedures

1	2	3	4	5
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- (iv) The ability to plan and manage treatment using this knowledge.

1	2	3	4	5
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Comments: .....

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## 2.2.2 PHYSICAL SCIENCES

The following is required:

Basic knowledge of the physical sciences listed below as relevant to and applied in physiotherapy:

(i) Physics

1	2	3	4	5
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	11
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(ii) Chemistry

1	2	3	4	5
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	12
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(iii) Hydro-dynamics

1	2	3	4	5
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	13
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(iv) Mechanics

1	2	3	4	5
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	14
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(v) Biomechanics

1	2	3	4	5
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	15
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(vi) Ergonomics

1	2	3	4	5
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	16
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Comments: .....

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## 2.2.3 HUMAN (BEHAVIOURAL) SCIENCES:

The following is required:

(i) Psychology as a science

1	2	3	4	5
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(ii) Human development

1	2	3	4	5
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	18
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(iii) Developmental psychology

1	2	3	4	5
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 19

(iv) Psychofortigenesis

1	2	3	4	5
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 20

(v) Multi-disciplinary co-operation and practice management.

1	2	3	4	5
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 21

(vi) Knowledge of normal health and social well-being of individuals and groups

1	2	3	4	5
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 22

Comments: .....

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#### 2.2.4 CLINICAL SCIENCES

The following is required:

A knowledge of medical and surgical sciences in the following basic disciplines as applicable in physiotherapy:

(i) Paediatrics

1	2	3	4	5
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 23

(ii) Orthopaedics

1	2	3	4	5
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 24

(iii) Neurology

1	2	3	4	5
---	---	---	---	---

 25

(iv) Neuro-surgery

1	2	3	4	5
---	---	---	---	---

 26

(v) Emergency care

1	2	3	4	5
---	---	---	---	---

 27

(vi) Cardio-thoracic surgery

1	2	3	4	5
---	---	---	---	---

 28

(vii) Internal medicine

1	2	3	4	5
---	---	---	---	---

 29

(viii) Sport science

1	2	3	4	5
---	---	---	---	---

 30

(ix) Pharmacology

1	2	3	4	5
---	---	---	---	---

 31

(x) Pulmonology

1	2	3	4	5
---	---	---	---	---

 32

(xi) Appropriate precautions in the above-mentioned disciplines

1	2	3	4	5
---	---	---	---	---

 33

(xii) The ability to plan treatment using the knowledge of the above mentioned

1	2	3	4	5
---	---	---	---	---

 34

(xiii) The role of physiotherapy in the above-mentioned disciplines

1	2	3	4	5
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 35

(xiv) Knowledge of the role of other health care professionals

1	2	3	4	5
---	---	---	---	---

 36

(xv) Knowledge and skills in clinical physiotherapy as applied in general nursing.

1	2	3	4	5
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 37

Comments: .....

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**2.2.5 RESEARCH**

The following is required:

- (i) training in research skills

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	38
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- (ii) training in report writing and oral reporting and documentation

1	2	3	4	5
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	39
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- (iii) resource-based education

1	2	3	4	5
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	40
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- (iv) encouragement to be life-long learners

1	2	3	4	5
---	---	---	---	---

	41
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Comments: .....

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**2.2.6 ELECTIVES**

The following applies:

- (i) student prerogative with regard to clinical block for elective

1	2	3	4	5
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	42
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- (ii) student prerogative with regard to number of electives

1	2	3	4	5
---	---	---	---	---

	43
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- (iii) approved revisited clinical exposure

1	2	3	4	5
---	---	---	---	---

	44
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- (iv) suggested number of electives:

1. or

1	2	3	4	5
---	---	---	---	---

	45
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2. or

1	2	3	4	5
---	---	---	---	---

	46
--	----

3. or

1	2	3	4	5
---	---	---	---	---

	47
--	----

4. or

1	2	3	4	5
---	---	---	---	---

	48
--	----

5. or

1	2	3	4	5
---	---	---	---	---

	49
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(v) electives in the third study year

1	2	3	4	5
---	---	---	---	---

	50
--	----

(vi) electives in the fourth study year

1	2	3	4	5
---	---	---	---	---

	51
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Comments: .....

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## CORE DISCIPLINES

### 2.3 GENERAL THEMES FOR PHYSIOTHERAPY EDUCATION AND TRAINING

#### 2.3.1 HEALTH CARE MANAGEMENT

Knowledge of the following is required:

(i) health and social policy issues

1	2	3	4	5
---	---	---	---	---

	52
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(ii) factors influencing organisation, provision and delivery of health care

1	2	3	4	5
---	---	---	---	---

	53
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(iii) essential acts and regulations concerning the health care dispensation and labour system

1	2	3	4	5
---	---	---	---	---

	54
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(iv) political and social policies controlling health care management

1	2	3	4	5
---	---	---	---	---

	55
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(v) the role of the physiotherapist in health care

1	2	3	4	5
---	---	---	---	---

	56
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Comments: .....

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### 2.3.2 LEGAL AND ETHICAL ISSUES

Knowledge of the following is necessary:

- (i) relevant medico-legal and safety measures

1	2	3	4	5
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	57
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- (ii) ethics of health care

1	2	3	4	5
---	---	---	---	---

	58
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- (iii) consequences of violating ethical rules

1	2	3	4	5
---	---	---	---	---

	59
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- (iv) professional conduct

1	2	3	4	5
---	---	---	---	---

	60
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Comments: .....

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### 2.3.3 PROFESSIONAL PRACTICE

The following is required:

- (i) instruction in the rules of professional practice

1	2	3	4	5
---	---	---	---	---

	61
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- (ii) instruction in professional conduct

1	2	3	4	5
---	---	---	---	---

	62
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Comments: .....

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**2.3.4 QUALITY ASSURANCE AND INTEGRATED ASSESSMENT**

The following is required:

- (i) Accreditation of the education and training institution by the Statutory Body

1	2	3	4	5
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63

- (ii) Accreditation of the training programme by the Statutory Body

1	2	3	4	5
---	---	---	---	---

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64

- (iii) Accreditation of the education by SAQA

1	2	3	4	5
---	---	---	---	---

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65

- (iv) Accreditation of a training institution by SAQA

1	2	3	4	5
---	---	---	---	---

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66

- (v) Continual monitoring of a programme/assessment by:

- the statutory body	1	2	3	4	5		67
- the institution	1	2	3	4	5		68
- external colleagues	1	2	3	4	5		69
- peers	1	2	3	4	5		70
- students	1	2	3	4	5		71
- the Department of Education	1	2	3	4	5		72
- SAQA	1	2	3	4	5		73

- (v) Regular feedback after assessment

1	2	3	4	5
---	---	---	---	---

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74

- (vi) Remedial/reinforcing steps where necessary

1	2	3	4	5
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75

Comments: .....

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## 2.4 REQUIREMENTS FOR THE EDUCATION AND TRAINING PROCESS AND STRUCTURE

### 2.4.1 TEACHING, TRAINING AND APPROACHES

The following is necessary:

- (i) to keep abreast of current teaching trends
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
- |  |
|--|
|  |
|--|
- 76
- (ii) to meet all the outcome requirements of the programme
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
- |  |
|--|
|  |
|--|
- 77
- (iii) to guide students to be life-long teachers
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
- |  |
|--|
|  |
|--|
- 78
- (iv) to encourage student-centred teaching
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
- |  |
|--|
|  |
|--|
- 79
- (v) problem and case-based instruction
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
- |  |
|--|
|  |
|--|
- 80
- (vi) integration of clinical, theoretical and practical work
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
- |  |
|--|
|  |
|--|
- 1
- (vii) lecturer-facilitated and directed learning
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
- |  |
|--|
|  |
|--|
- 2
- (viii) a resource-based approach
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
- |  |
|--|
|  |
|--|
- 3
- (ix) multi-disciplinary team-work
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
- |  |
|--|
|  |
|--|
- 4
- (x) an emphasis on generic skills in foundation studies.
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
- |  |
|--|
|  |
|--|
- 5

Comments: .....

.....

**2.4.2 STUDENT SELECTION**

The following is necessary:

(i) Endorsed Senior Certificate with

- Mathematics

1	2	3	4	5
1	2	3	4	5
1	2	3	4	5
1	2	3	4	5

	6
	7
	8
	9

- Physical science

- Biology

- Physiology

(ii) Academic merit

1	2	3	4	5
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	10
--	----

(iii) Sport activities

1	2	3	4	5
---	---	---	---	---

	11
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(iv) Cultural activities

1	2	3	4	5
---	---	---	---	---

	12
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(v) Leadership qualities

1	2	3	4	5
---	---	---	---	---

	13
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Comments: .....

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**2.4.3 RECOGNITION OF PRIOR LEARNING**

Entrance to a course must allow for recognition of:

(i) previous formal work experience and learning

1	2	3	4	5
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	14
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(ii) previous informal work experience and learning

1	2	3	4	5
---	---	---	---	---

	15
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(iii) previous non-formal work experience and learning

1	2	3	4	5
---	---	---	---	---

	16
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Comments: .....

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#### 2.4.4 Student support and development

The following is necessary:

(i) an infrastructure for student support

1	2	3	4	5
---	---	---	---	---

	17
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(ii) programme for student development

1	2	3	4	5
---	---	---	---	---

	18
--	----

(iii) mechanisms to identify student problems

1	2	3	4	5
---	---	---	---	---

	19
--	----

(iv) mechanisms to refer students with problems

1	2	3	4	5
---	---	---	---	---

	20
--	----

(v) facilities to address student problems.

1	2	3	4	5
---	---	---	---	---

	21
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Comments: .....

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## 2.5 OTHER REQUIREMENTS PERTAINING TO QUALIFICATIONS

### 2.5.1 Mobility

Programmes must be designed in a way that will allow

- (i) mobility between courses/ programmes

1	2	3	4	5
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	22
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- (ii) mobility between Faculties and Universities

1	2	3	4	5
---	---	---	---	---

	23
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- (iii) national mobility

1	2	3	4	5
---	---	---	---	---

	24
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- (iv) international mobility

1	2	3	4	5
---	---	---	---	---

	25
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Comments: .....

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### 2.5.2 Portability

Credits must be transportable

- (i) between courses/ programmes

1	2	3	4	5
---	---	---	---	---

	26
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- (ii) between faculties/ institutions

1	2	3	4	5
---	---	---	---	---

	27
--	----

- (iii) nationally

1	2	3	4	5
---	---	---	---	---

	28
--	----

- (iv) internationally

1	2	3	4	5
---	---	---	---	---

	29
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Comments: .....

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## CONCLUSION

Thank you for the time and effort put into the completion of the checklist. I trust it will be to the benefit of all physiotherapy education and training departments in South Africa.

**TABLE I: The CORE document****The job profile for a physiotherapist**

<p><b>Level 6: Social, natural, technical and medical sciences supplementary and support Personnel</b></p> <p><b>Generic job content</b></p> <p><b>UTILISATION CAPACITY</b></p> <ul style="list-style-type: none"> <li>◦ Render a support service to technical and professional personnel</li> </ul> <p><b>AUTONOMY:</b></p> <ul style="list-style-type: none"> <li>◦ Work content is well defined but requires occasional interpretation</li> <li>◦ Supervision and training of personnel may be required</li> </ul> <p><b>USE OF EQUIPMENT AND MACHINERY</b></p> <ul style="list-style-type: none"> <li>◦ Use a variety of equipment</li> </ul> <p><b>ADVICE</b></p> <ul style="list-style-type: none"> <li>◦ Give factual and technical advice</li> </ul> <p><b>JOB INFORMATION</b></p> <ul style="list-style-type: none"> <li>◦ Receive procedural and professional information on several matters closely related to wide</li> </ul>	<p><b>Key competencies</b></p> <p><b>KNOWLEDGE</b></p> <p><b>Sound knowledge of work processes and procedures such as:</b></p> <ul style="list-style-type: none"> <li>◦ Planning and organising</li> <li>◦ Human resource matters</li> <li>◦ Equipment</li> <li>◦ Physiotherapy assistants</li> </ul> <p><b>SKILLS</b></p> <ul style="list-style-type: none"> <li>◦ Intermediate to specialised skills in relevant field of work</li> <li>◦ Supervisory</li> <li>◦ Discipline</li> <li>◦ Analytical</li> <li>◦ Team building</li> </ul> <p><b>COMMUNICATION</b></p> <ul style="list-style-type: none"> <li>◦ Providing and obtaining information requiring difficult and technical explanation</li> <li>◦ Compiling difficult memos/ reports</li> </ul>
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matters closely related to wide ranging subject areas which may be familiar to the post holder, which requires a degree of interpretation

**PROBLEM-SOLVING**

- Solve procedural/technical problems whereby a variety of information is analysed which may result in a number of possible solutions/ outcomes

**PLANNING**

- Post holder's own work
- Contribute to work processes in component

**INTERACTION WITH CLIENTS/  
STAFF**

- Standard to complex interaction which will impact on the quality of service delivery

**SUPERVISION/ MANAGEMENT OF  
PERSONNEL**

- Manage personnel as a section/ component leader.

<b>Level 7: Professional and managers</b>	
<b>Generic job content</b>	<b>Key competencies</b>
<b>UTILISATION CAPACITY</b>	<b>KNOWLEDGE</b>
<ul style="list-style-type: none"><li>◦ Personnel who perform tasks related to research and the application of scientific concepts</li></ul>	<ul style="list-style-type: none"><li>◦ Planning and organising</li><li>◦ Human resource matters</li><li>◦ Finance</li><li>◦ Computer</li><li>◦ Physiotherapy</li><li>◦ Equipment</li></ul>
<b>AUTONOMY</b>	
<ul style="list-style-type: none"><li>◦ Work content well-defined but requires occasional interpretation</li><li>◦ Supervision/ guidance and training of personnel may be required.</li></ul>	

(Department of Public Service Administration, 1999)

**TABLE II: Level descriptor**

7. **Introduction to the frontiers of knowledge, with an awareness of the provisional nature of the state of knowledge; mastery** of theoretically sophisticated subject matter, with a comprehensive knowledge of the field of study; independent analysis of new and abstract data and situations deploying a wide range of techniques appropriate to the field of study, and transformation of abstract data and concepts towards the achievement of a given purpose; critical review of evidence supporting conclusions (including reliability, validity and significance), and investigation of contradictory information; critical evaluation of the literature pertaining to the field of study; specialisation; confident deployment of well-developed research skills; confident and flexible identification and definition of complex problems and the application of appropriate skills and knowledge to their solution; effective engagement in debate in a professional manner and context, with production of detailed and coherent reports; effective interaction within a learning or professional group, with recognition or demonstration of leadership; negotiation within a learning or professional context, and management of conflict.
  
6. **Systematic and coherent introduction to, and incipient specialisation in one or several fundamental or applied disciplines** with detailed knowledge of the discipline(s) and an awareness of the variety of contexts within which it/they may apply; introduction to the principles and concepts underpinning the field(s) of study, to techniques of self-directed work and learning, and to **basic research**, and identification of key elements of problems and selection of appropriate methods for their resolution; development of skills and attitudes needed to comprehend and evaluate new information, concepts and evidence from a range of sources; analysis of a range of information under minimal guidance, application of major theories of the discipline(s), and comparison of alternative methods for obtaining data; reformatting of a range of information towards the achievement of a given purpose; progressive study of the literature

of the field(s) of study to a level which provides a basis for work at the next level; development of practical skills and techniques required in the effective application of knowledge in a professional context; effective communication in a format appropriate to the discipline(s) and clear and concise reporting of practical procedures in a variety of formats; effective interaction within a learning group, and development of professional working relationships within the discipline(s).

5. **Introduction to and training in the fundamental disciplines of one field of study or activity;** possession of a given knowledge base, with an emphasis on appropriate terminology; analysis with guidance using given classifications or principles; collection and categorization of ideas and information in a predictable, standard format; evaluation of the reliability of data using defined techniques under tutor guidance; awareness of the necessary tools and materials used in the field of study, and accurate and careful application of tools and methods to well-defined problems; effective communication in a format appropriate to the discipline, and clear and concise reporting of practical procedures; meeting of obligations – to others (tutors and peers), offering and supporting of initiatives, and recognition and assessment of alternative options (Cosser, 1998).



**APPENDIX IIIB****MEASURING INSTRUMENT (ROUND 2: PHASE IV)****LETTER TO DOMAIN EXPERTS****AN INSTRUMENT FOR THE DEVELOPMENT OF A FRAMEWORK FOR AN EDUCATION AND TRAINING PROGRAMME FOR PHYSIOTHERAPISTS**

I appreciate and would like to thank you for the time you spent assessing the checklist I sent to you as the first round of the Delphi technique of my research. In only three questions you, the domain experts, did not reach consensus. These three questions have been restructured and your comments have been included in a new checklist. All additional work in the checklist and nomenclature has been typed in italics. However, for the sake of a holistic approach the whole checklist has been sent to you again, but you are only required to assess the new work, typed in italics and respond to statements 2.2.4 (vi, vii, viii, ix, x), 2.2.6 and 2.4.2.

This will not take longer than 10 minutes.

Please e-mail the checklist back to me.

And again in appreciation.

Yours sincerely

**Prof. M.W. Krause**  
**HEAD: DEPARTMENT OF PHYSIOTHERAPY**

## NOMENCLATURE

**ACCREDITATION (FOR QUALITY ASSURANCE):** The South African Qualifications Authority accredits the Council on Higher Education as the Education and Training Quality Assurance body (ETQA) for Higher Education. The CHE performs the function of accrediting institutions and learning programmes through its Higher Education Quality Committee (HEQC).

**ASSESSMENT:** To develop, monitor and promote learning. *Draft White Paper on Higher Education. Government Gazette No. 17944 (1997).*

**ASSESSMENT AND QUALITY ASSURANCE:** Assessment and a system of quality assurance and quality improvement are fundamental to ensuring that further education and training programmes meet the needs of learners, communities, employers and society. The curriculum will include a number of different types of assessment that can be used, either alone or combined. To ensure the holistic assessment of the learner, assessment methods must be combined in different ways to suit the specific needs of different learners (National Curriculum Framework for Further Education and Training, May 2000:15).

**COMPETENCE:** The capacity for continuing performance within specified ranges and contexts, resulting from the integration of a number of specific outcomes (National Curriculum Framework for Further Education and Training, May 2000:48).

**CORE LEARNING:** Core learning means that compulsory learning required in situations contextually relevant to the particular qualification, and "core" has a corresponding meaning (DoE, CHE & SAQA, 1999:6)

**CREDITS:** One credit will be given to every ten (10) notional hours of learning. "Notional" means an informed estimate of the average time taken (including assignments, home study, etc., and not only time used for direct learning) by an average learner to master the specific outcomes of the unit standard. The

accumulated credits for completed unit standards will lead to the award of a qualification, subject to the agreed rules of combination laid down for the qualification in question (Building the National Qualifications Framework, November 1995:27).

**CRITICAL OUTCOMES:** Skills that represent the fundamental learning students need to achieve the outcomes required at a particular level; also referred to as critical cross-field, critical, generic or cross curricular outcomes (Hunt & Higgs; 1998:265).

**CRITICAL OUTCOMES:** Critical outcomes means those generic outcomes determined by SAQA, which inform all teaching and learning (DoE, CHE & SAQA, 1999:7).

**ELECTIVES:** A clinical block chosen by the student that has already been covered by the core course. This will give the student an opportunity to revisit a clinical block.

**EXIT-LEVEL OUTCOMES:** Broad performance capabilities. (Spady W.G; 1994:2) The outcomes to be achieved by a qualifying learner at the point at which he or she leaves the programme leading to a qualification (Council on Higher Education: 1999:7).

**FORMAL EXPERIENCE:** *Where a qualification is obtained after training.*

**FUNDAMENTAL LEARNING:** Fundamental learning means that learning which forms the grounding or basis needed to undertake the education, training or further learning required in obtaining a qualification and "fundamental" has a corresponding meaning (DoE, CHE & SAQA, 1999:7).

**HOLISTIC:** *The philosophical approach that applies to the whole that is more than the sum of the parts (HAT).*

**INFORMAL EXPERIENCE:** *Where training takes place without a qualification.*

**INTEGRATED ASSESSMENT:** Integrated assessment means that form of assessment which permits the learner to demonstrate applied competence, and which uses a range of formative and summative assessment methods (DoE, CHE & SAQA, 1999:7).

**LEVEL DESCRIPTORS:** To facilitate assigning a unit standard, a standard, or a qualification to a particular level on the National Qualifications Framework (SAQA Bulletin 4 (1), May 2000:3).

**MOBILITY:** Credit accumulation and transfer to ensure learner mobility (National Curriculum Framework for Further Education and Training, May 2000:19).

**NON-FORMAL EXPERIENCE:** *Where experience is obtained without actual sessions.*

**OUTCOMES-BASED EDUCATION:** Organising everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experiences (Spady W.G; 1994:1).

**PORTABILITY:** The condition of transferability and recognition of credits between programmes, providers and employers (SAQA Act, 1995).

**PROGRAMME DEVELOPMENT:** Programme development occurs when educators, parents, community members, business and industry representatives, and learners meet to interpret the curriculum framework and to design programmes that meet their needs. Programmes are developed to guide the activities of learners and educators in meeting the nationally agreed outcomes. The development of these programmes will include meaningful combinations of nationally registered unit standards into coherent courses. It will also include the development of learning statements, including their learning ranges, tasks, activities, etc., and assessment strategies (National Curriculum Framework for Further Education and Training, May 2000:21).

**PSYCHOLOGICAL STRENGTHS:** The scientific study of psychological strengths (Wissing M.P. & van Eeden C; 1998. *Psychological well-being: A protogenic conceptualisation and empirical clarification*. In Schlebusch, L. *South Africa beyond transition*, pp.379-393. Pretoria: Psysa).

**QUALITY ASSURANCE:** Quality assurance (QA) and quality improvement are fundamental to ensuring that programmes meet the needs of learners, communities, employers and society. QA provides a means of bench-marking programmes and qualifications against one another and against world-class standards. It provides a basis for the recognition of credits and for articulation and transfer within Further Education and Training and Higher Education. It plays a vital role in ensuring that programmes and qualifications have currency with employers. (National Curriculum Framework for FET:32).

**RECOGNITION OF PRIOR LEARNING (RPL):** Recognising and building on the prior knowledge and experience of learners is a first step towards creating a curriculum that focuses on learners' needs. It also enhances the self-esteem and accomplishments of learners and, at the same time, prevents wastage of time, effort and resources. The concept includes learning outcomes achieved through formal, informal and non-formal learning and work experience (SAQA Act, 1995).

**SPECIFIC OUTCOMES:** Actions and performances that embody and reflect learner competence in using content, information ideas, and tools successfully (knowledge, skills, attitudinal and behaviour outcomes) (Spady W.G; 1994:2).

**UNIT STANDARD:** A unit standard is a nationally registered statement of desired education and training outcomes and their associated performance criteria. They should give attention to critical cross-field outcomes, though it is not essential to address all of them within a single unit standard. Unit standards will be assigned credit ratings on the basis of one credit being equal to ten national hours of learning (Council on Higher Education (CHE) SAQA: 1999:7; Cosser, 1998:12-26).

## SECTION II

### 1. AIM

The aim of this section is to get expert opinions from subject specialists for the development of a framework for a learning and training programme for physiotherapists.

#### INSTRUCTIONS TO THE RESPONDENT TO COMPLETE CHECKLIST

On the basis of the following explanations, please indicate the extent to which the statement is in agreement with your opinion. Please encircle the applicable number in the margin in response to each question.

#### THE FOLLOWING 5-POINT SCALE APPLIES:

- 1. =            The more negative opinion (e.g. the description is totally wrong; I definitely disagree; is not at all necessary).
- 2. =            / Not completely negative, but not positive.
- 3. =            Expresses neutrality or "not sure".
- 4. =            More positive, but not completely in agreement or positive.
- 5. =            The most positive opinion (e.g. the description fits 100%; agree fully; absolutely necessary).

#### Comments

Where this is indicated, you are required to please comment on whether this information is relevant and sufficient to serve as background for the learning design.

## 2.2.4 CLINICAL SCIENCES

The following is required:

A knowledge of medical and surgical sciences in the following basic disciplines as applicable in physiotherapy:

- |  |   |   |   |   |   |   |   |  |
|--|---|---|---|---|---|---|---|--|
| (i) Paediatrics                                  | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px; text-align: center;">1</td><td style="width: 20px; height: 20px; text-align: center;">2</td><td style="width: 20px; height: 20px; text-align: center;">3</td><td style="width: 20px; height: 20px; text-align: center;">4</td><td style="width: 20px; height: 20px; text-align: center;">5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 40px; height: 20px;"></td></tr></table> 23 |  |
| 1  | 2   | 3 | 4 | 5 |   |   |   |  |
|  |   |   |   |   |   |   |   |  |
| (ii) Orthopaedics                                | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px; text-align: center;">1</td><td style="width: 20px; height: 20px; text-align: center;">2</td><td style="width: 20px; height: 20px; text-align: center;">3</td><td style="width: 20px; height: 20px; text-align: center;">4</td><td style="width: 20px; height: 20px; text-align: center;">5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 40px; height: 20px;"></td></tr></table> 24 |  |
| 1  | 2   | 3 | 4 | 5 |   |   |   |  |
|  |   |   |   |   |   |   |   |  |
| (iii) Neurology                                  | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px; text-align: center;">1</td><td style="width: 20px; height: 20px; text-align: center;">2</td><td style="width: 20px; height: 20px; text-align: center;">3</td><td style="width: 20px; height: 20px; text-align: center;">4</td><td style="width: 20px; height: 20px; text-align: center;">5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 40px; height: 20px;"></td></tr></table> 25 |  |
| 1  | 2   | 3 | 4 | 5 |   |   |   |  |
|  |   |   |   |   |   |   |   |  |
| (iv) Neuro-surgery                               | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px; text-align: center;">1</td><td style="width: 20px; height: 20px; text-align: center;">2</td><td style="width: 20px; height: 20px; text-align: center;">3</td><td style="width: 20px; height: 20px; text-align: center;">4</td><td style="width: 20px; height: 20px; text-align: center;">5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 40px; height: 20px;"></td></tr></table> 26 |  |
| 1  | 2   | 3 | 4 | 5 |   |   |   |  |
|  |   |   |   |   |   |   |   |  |
| (v) Emergency care                               | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px; text-align: center;">1</td><td style="width: 20px; height: 20px; text-align: center;">2</td><td style="width: 20px; height: 20px; text-align: center;">3</td><td style="width: 20px; height: 20px; text-align: center;">4</td><td style="width: 20px; height: 20px; text-align: center;">5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 40px; height: 20px;"></td></tr></table> 27 |  |
| 1  | 2   | 3 | 4 | 5 |   |   |   |  |
|  |   |   |   |   |   |   |   |  |
| (vi) <i>Rehabilitation as a clinical science</i> | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px; text-align: center;">1</td><td style="width: 20px; height: 20px; text-align: center;">2</td><td style="width: 20px; height: 20px; text-align: center;">3</td><td style="width: 20px; height: 20px; text-align: center;">4</td><td style="width: 20px; height: 20px; text-align: center;">5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 40px; height: 20px;"></td></tr></table>    |  |
| 1  | 2   | 3 | 4 | 5 |   |   |   |  |
|  |   |   |   |   |   |   |   |  |
| (vii) <i>Mental health</i>                       | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px; text-align: center;">1</td><td style="width: 20px; height: 20px; text-align: center;">2</td><td style="width: 20px; height: 20px; text-align: center;">3</td><td style="width: 20px; height: 20px; text-align: center;">4</td><td style="width: 20px; height: 20px; text-align: center;">5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 40px; height: 20px;"></td></tr></table>    |  |
| 1  | 2   | 3 | 4 | 5 |   |   |   |  |
|  |   |   |   |   |   |   |   |  |
| (viii) <i>Obstetrics / Gynaecology</i>           | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px; text-align: center;">1</td><td style="width: 20px; height: 20px; text-align: center;">2</td><td style="width: 20px; height: 20px; text-align: center;">3</td><td style="width: 20px; height: 20px; text-align: center;">4</td><td style="width: 20px; height: 20px; text-align: center;">5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 40px; height: 20px;"></td></tr></table>    |  |
| 1  | 2   | 3 | 4 | 5 |   |   |   |  |
|  |   |   |   |   |   |   |   |  |
| (ix) <i>Geriatric care</i>                       | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px; text-align: center;">1</td><td style="width: 20px; height: 20px; text-align: center;">2</td><td style="width: 20px; height: 20px; text-align: center;">3</td><td style="width: 20px; height: 20px; text-align: center;">4</td><td style="width: 20px; height: 20px; text-align: center;">5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 40px; height: 20px;"></td></tr></table>    |  |
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| (x) <i>Oncology</i>                              | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px; text-align: center;">1</td><td style="width: 20px; height: 20px; text-align: center;">2</td><td style="width: 20px; height: 20px; text-align: center;">3</td><td style="width: 20px; height: 20px; text-align: center;">4</td><td style="width: 20px; height: 20px; text-align: center;">5</td></tr></table> | 1 | 2 | 3 | 4 | 5 | <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 40px; height: 20px;"></td></tr></table>    |  |
| 1  | 2   | 3 | 4 | 5 |   |   |   |  |
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- (xi) Cardio-thoracic surgery
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|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
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- 28
- (xii) Internal medicine
- |   |   |   |   |   |
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- 29
- (xiii) Sport science
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
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- 30
- (xiv) Pharmacology
- |   |   |   |   |   |
|---|---|---|---|---|
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- 31
- (xv) Pulmonology
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
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- 32
- (xvi) Appropriate precautions in the above-mentioned disciplines
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
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- 33
- (xii) The ability to plan treatment using the knowledge of the above mentioned
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
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- 34
- (xiii) The role of physiotherapy in the above-mentioned disciplines
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
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- 35
- (xiv) Knowledge of the role of other health care professionals
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
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- 36
- (xv) Knowledge and skills in clinical physiotherapy as applied in general nursing.
- |   |   |   |   |   |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
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- 37

Comments: .....

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## 2.2.6 ELECTIVES

The following applies:

- (i) student prerogative with regard to clinical block for elective

1	2	3	4	5
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	42
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- (ii) student prerogative with regard to number of electives

1	2	3	4	5
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	43
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- (iii) approved revisited clinical exposure

1	2	3	4	5
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	44
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- (iv) *suggested number of electives in the third study year:*

1	2	3	4	5
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	50
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- (v) *suggested number of electives in the fourth study year*

1	2	3	4	5
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	51
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Comments: .....

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**2.4.2 STUDENT SELECTION**

The following is necessary:

(i) Endorsed Senior Certificate with

- Mathematics

1	2	3	4	5
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	6
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- Physical science

1	2	3	4	5
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	7
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- Biology

1	2	3	4	5
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	8
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- Physiology

1	2	3	4	5
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	9
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(ii) Academic merit

1	2	3	4	5
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	10
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(iii) Sport activities

1	2	3	4	5
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	11
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(iv) Cultural activities

1	2	3	4	5
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	12
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(v) Leadership qualities

1	2	3	4	5
---	---	---	---	---

	13
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Comments: .....

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**OFFICE OF THE DIRECTOR: ADMINISTRATION**  
FACULTY OF HEALTH SCIENCES

339 BLOEMFONTEIN  
REPUBLIC OF SOUTH AFRICA

(051) 405-3013  
Faks/Fax: (051) 444-3103 SA

## APPENDIX IV

Dear Prof Krause

**ETOVS NR 245/99**  
**RESEARCHER: PROF MW KRAUSE**  
**PROJECT TITEL: A DEVELOPMENTAL FRAMEWORK FOR A GENERIC**  
**EDUCATION AND TRAINING PROGRAM FOR PHYSIOTHERAPISTS**

The above-mentioned protocol was approved by the Ethics Committee during their meeting held on the 2<sup>nd</sup> December 1999. Prof Krause, who is a member of the Ethics Committee did not take part in the final decision of the protocol.

Your attention is kindly drawn to the requirements that a progress report be presented not later than one year after approval of the project.

Would you please quote the Etovs number as indicated above in subsequent correspondence, reports and enquiries.

Yours faithfully

**For: DIRECTOR: MEDICINE ADMINISTRATION**

/hs

WVS. BIBLIOTEK