CHAPTER II

LITERATURE REVIEW

A. Introduction

This literature review is based on the different gaps identified in Chapter-I: problem, solution and implementation gaps. These gaps lead to key issues related to the assessment and improvement of the relevance of education in public health. The complexity of the cluster of gaps is substantial and generates multiple fundamental questions presented in Chapter III, as research questions.

Before addressing the fundamental questions related to the cluster of gaps it is important to review the literature on public health as a discipline. The first section in this review deals with the question what is public health? It provides an overview of the developments in the evolving field of public health, followed by a synopsis on future trends.

Insight on the purpose of public health and its description as a discipline and profession, then, provides a context to explore the literature on the relevance of education to the practice of public health. As mentioned in Chapter-I, relevance in public health education is rather ill defined and that further review of the concept is needed.

This leads to the first gap within the cluster: the problem gap, were this review aims to reflect on public health systems, functions, practices, services and the need for health systems development. This section intends to answer the following questions: how can a public health system be described; what factors determine the need for public health system development; how can development needs be identified; what are the practices required arriving at appropriate public health services?

The next section deals with the issue of human resource development need in public health and establishes the link between the problem and the solution gaps by reviewing the literature on public health competencies and skills. The questions to be addressed include: what are the desired public health competencies and skills and for whom, do these competencies and skills address the need for public health development and what are public health professionals? The findings of the literature review on aspects of human resources development lead to the following section on (public health) education.

The final section in this review refers to the implementation gap and focuses on programmatic aspects in public health education. Within the framework of need for curriculum development in education, the main question to be answered is how to assess program development need, in terms of relevance? The related sub questions are: what is involved in curriculum design that support attainment of competencies; what teaching-learning approaches are considered appropriate; what are the learning strategies discussed in the literature; what is needed to develop and deliver a postgraduate public health program relevant to health systems and human resources development?

Finally this chapter summarises the literature review. Referring to the cluster of gaps, it is clear that improving the relevance of learning to practice in public health education does not stop with the diagnosis. Logical next steps would be curriculum development and to explore organisation theory and organisation development. There are more questions to be answered such as: how can educational organisations apply evaluation outcomes; is there a causal-consequence loop between program performance and organisation performance; what is involved in change of organisational performance; how can organisation theory be handled within a Thai context? These are important questions to be answered, but are not within the scope of this study. Future study will be needed to address the issues of program and organisation development in public health education.

B. Developments in Public Health

1. Historical and Philosophical Foundations

It would be reasonable to assume that some form of public health was practised in ancient civilisations. The literature uses different taxonomies in describing the developmental process in public health; Barton (1979) describes the development of medical science from a conceptual and philosophical perspective from the empirical era before 1850, until the political health science era 1975-2000. Other authors (Frenk, 1992; WHO, 1996) refer to focus models such as the sanitation model, disease-oriented model and the risk factor model. Ashton and Seymour (1988) use historical phases, such as the environmental phase, the individualistic phase, the therapeutic interventions' phase and the New Public Health phase. Beaglehole and Bonita (1997), in their introduction to public health as a discipline and a critique of its development, summarise the recurrent historical themes that continue to influence public health practice. They point out the lack of agreement on the scope of public health; the belief in the 'golden age' of public health; the central but varying role of the state; the tension between individual liberty and collective responsibility; the influence of scientific knowledge; professionalism in public health; and globalisation. These taxonomies try to explain the shifts in focus over time and how public health has been practised while serving specific purposes such as reasoning about Epidemiology, Health for All, New Public Health and Ecological Public Health.

It becomes interesting to see that Winslow's (1923) definition of public health, which was adapted by the WHO in 1952 to include mental as well as physical health, has been unchanged up till the present:

> "The science and art of preventing disease, prolonging life, and promoting mental and physical health and efficiency through the organised community efforts for the sanitation of the environment, the control of communicable infections, the education of the individual in personal hygiene, the organisation of medical and nursing services for the early diagnosis and preventive treatment of disease and the development of social machinery to ensure to every individual a standard of living adequate for the maintenance of health, so organising these benefits as to enable every citizen to realise his birthright of health and longevity." (WHO, 1996, p.11)

The fact that there has been no call to revise the 1952 WHO definition of public health, could be interpreted as evidence of its comprehensiveness. Although the definition in itself has not been critiqued, during the past decades the practice of public health has been subject to criticism.

An important element to understand the present situation and the vivid discussions within the field are that public health became disconnected from its origin in medicine. As Ashton stated:

"In 1916, Rockefeller Foundation felt that insufficient attention was being paid to environmental and social factors in disease. The solution was to establish schools of public health apart from schools of medicine. Medical school's mission was the care of individual patients and investigations of disease processes. Public health schools were now to be responsible for studying the determinants of health and disease in populations, they were to formulate strategies requiring collective actions to improve the public's health" (1993, p. 165).

Unfortunately, the decision-makers did not realise that for decades to come physicians would occupy the seats in public health programs and inevitably would bring the disease-oriented paradigm with them.

An important development was the study from McKeown that underscored the important observation that mortality from infectious diseases, such as tuberculosis, pneumonia, influenza and whooping cough, as well as food and water borne diseases had already begun to decline before effective immunisation and treatment became available. McKeown concluded as early as 1976 that: "past improvement (in health) has been due mainly to modification of behaviour and changes in the environment and it is to these same influences that we must look for further advance" (WHO, 1996, p.10)

The Lalonde Report from the Canadian Government in 1974, that stated that major health problems cannot be solved by medical care, and the model of McKeown were the onset

of the concept of "New Public Health" in the late 70's. Notions on health promotion were embraced through the Ottawa Charter (Beaglehole and Bonita, 1998). Needs were expressed but disciplines are insufficient developed to implement the concepts of the Ottawa Chapter. Outdated models of health education are inadequate means to address a community focus. In the meanwhile the risk factor paradigm and clinical epidemiology were flourishing (Vandenbroucke, 1994; Beaglehole and Bonita, 1998). The community focus fostered by health promotion is further hampered by the privatisation of health-care services, reducing health to a commodity and creating functional divisions as purchasers and providers. Viewing health as a commodity offered by health care-services also diverts attention from the inter-sector determinants of health and it discourages integration and co-operation. In this regard Beaglehole and Bonita (1998) refer to the sparse insights from attempts to develop inter-sector public health policy and found only some work on food and nutrition. No country has implemented the full range of public health functions.

The literature offers a rich assortment of criticism such as public health has swung too far from its original sanitary orientation and become too disease-oriented (WHO, 1996). Another critique (Frenk, 1992) is that public health research is not making the necessary contribution to public policy. The emphasis is on hyper-specialisation and publications. Public health colleges tended to build an image of centres of excellence rather than centres or relevance. WHO (1996) argues that public health became obsessed by epidemiology and other "science" for its own sake at the cost of loss of contact with the realities of the people on the ground. The debate continues, with an important contribution of Beaglehole and Bonita (1997) arguing for an inclusive vision of public health based on the application in public policy of improved epidemiological understanding of causes of ill health.

The scope for public health as a discipline is not free of controversy given its evolution from a medical speciality to an independent discipline. Among all the disciplines, public health is probably the most difficult to characterise. Reflecting on the WHO definition, the aims of

public health are clear, but the scope is wide and, therefore, the strategies in achieving these aims are wide ranging too.

The discussion in the field continues; public health is an evolving term; the creation of new labels can be confusing and is often unnecessary. Public health today should incorporate the appropriate elements of past movements such as prevention, health promotion, health education, health policy, environmental concerns and community empowerment.

2. Future Trend

The challenge for public health professionals is to adopt a holistic definition of public health which incorporates a multidisciplinary and inter-sector approach to the underlying causes of ill health of the community.

As stated by Beaglehole and Bonita (1998):

"The value system of public health professionals tends to be egalitarian and supports collective action, therefore, it is important to explicitly express these values and seek public support for them. A broad focus easily leads to accusations of "woolly breath", but this breath is exactly what public health should be about" (The Lancet 1998, 351:590-592).

Discussions in the literature (Mann, 1997; The Lancet, 1997; Beaglehole and Bonita, 1998) indicate several challenges for the future such as improvement of world wide health statistics and exchange through information technology. There is also the need to reorganise the relationship between public health and medical-care policy. Typically, public health receives less than 5% of the total health-care budget and, from a policy perspective, is overshadowed by the demands of acute medical-care services and the power of the pharmaceutical industry. Ideally the public health sector rather than the medical-care sector, should be responsible for population health status and for informing and monitoring all government policy initiatives that affect population health status. A more feasible option is to aim at equality between interests of

public health and medical care through a MOPH supported by an independent Ministry. This option has been recently realised in the United Kingdom as well as in France. There is also the call for re-enforcement of global leadership in public health pointing out the need to reform the WHO after a decade of decline and to articulate a broad vision with a focused set of priorities. Considering public health, these authors refer to the existing opportunities for the World Trade Organisation, the World Bank and the WHO to build constructive partnerships and leadership.

As mentioned earlier, the discussion among academics and professionals alike is vivid and subject to controversy. For example Vandenbroucke (1994) who translates New Public Health into old rhetoric. Horton (1998) advocates for social medicine as the house for public health. The Lancet's editorial (1997) presents an argument to put public health back into epidemiology. And Beaglehole and Bonita (1997) advocate an inclusive vision on public health. The discussions focus mainly on issues as holism versus more narrow disease focused, or inter-sector and interdisciplinary versus medical speciality routes.

Indeed public health is difficult to characterise. It is it's wide-ranging scope that creates confusion about the nature of public health. To become effective, public health professionals need a clear identity based on a broad definition of public health including health promotion, disease prevention and disease cure, care, and the underlying social, economic and political determinants of health and disease. The major concerns are inequalities in health, poverty and global environmental issues. An important purpose of public health is to link public health science with policymaking and practice.

C. The Concept of Relevance in Public Health Education

1. An Overview

Health systems find themselves in a constant changing environment that affects the health needs of the populations they serve. Changes in the nature of health problems are initiated by the epidemiological transition, by major social and demographic changes, by the development of globalisation and information technology, and by the developments in health

care services including the important growth of the private sector and concern over increasing health care costs. For example, as national health systems become more and more trans-nationalised, a web of phenomena, such as migration, travel, trade, food security, environmental factors, foreign policy issues, and technologies, may affect the sustainability of public health (Walt, 1998). An ageing population and the transition from communicable to non-communicable diseases call for the development of appropriate policies, services and health promotion strategies (Sen, 1994). This continuous changing and dynamic environment for the health system requires co-ordination between planning, education and management of human resources. The lack of such co-ordination within human resources development generally leads to the irrelevant education of public health professionals.

The concern for improving relevance of public health education has been expressed on several occasions in the course of developing public health as a discipline. For decades, the literature has voiced the concern about the need to improve the relevance of education to practice; but does not provide a clear answer to the question what is relevance? (Engel, 1888; WHO-SEARO, 1988; de Macedo, 1992; Frenk, 1992; SEARO, 1992; Ashton, 1993; WHO, 1993; Navaro, 1995; WHO, 1996; King, 1998; Boelen, 1999; O'Reilly, Cunningham, Lester, 1999)

Secondly, with reference to the rationale of linking community needs to education in public health there are some further questions arising. What are the 'health' needs of the community? What determines the public's health? Are determinants equally important? What practices and services would be relevant to the public's health needs? Are these practices and services equally important? Are discipline and holistic perspectives balanced within a health system? Are educational programs in public health responsive to needs for health system development? Several of these questions touch upon controversial issues and concepts that could be underlying forces resulting in a lack of definition, both conceptual and operational, of the concept of 'relevance'. Addressing the need to develop an overall framework to define

relevance in postgraduate education in public health will have to take these questions into consideration.

The concept of relevance is rather indirectly expressed as consequences and lack of solutions or as a partial priority setting tool in care delivery and, therefore, not appropriate to address the challenges that public health schools face in improving the relevance of learning to practice. For example according to the WHO South East Asian Regional Office (SEARO, 1992) lack of relevance in education implies over-qualification, under-qualification and a mismatch in qualification, which are consequences of an inappropriate needs assessment. Although the paper does touch upon issues such as the role of the community in human resource development and the need for strengthening co-ordination between educational institutes, human resource development planning and policy and public health services, it formulates these issues as strategies for intervention. WHO (1993) refers to irrelevance as the overemphasis on technical knowledge and lack of social and problem-solving skills, which are causes for irrelevance. Further the issue of underestimation of the potential of educational institutes to advise on health policy and public health services delivery is stressed, which results in defining relevance by negation. Boelen (1999) sees relevance as a measure to set priorities in care delivery. His interpretation of relevance does not go beyond present community needs. This leaves questions related to health system and professional needs unanswered. Another possible limitation of his description of relevance, based on an epidemiological perspective, is that it may lead to a disease-oriented approach to relevance that would reduce it to a re-active rather than a pro-active measure.

2. An Attempt to Restore Links

The primary step in this study involves the development of the concept of relevance in a public health educational context as well as to employ the concept to facilitate assessment of an educational program. I used a systems perspective to identify and conceptualise the issues associated with relevance, which could be classified as health systems development, human resources development and educational program development processes. These processes

are the key elements to further analyse the problem of improving the relevance of learning to practice. Figure-2.1 below presents my attempt to display the different elements required in defining relevance of education programs in public health.

Figure-2.1: Framework on the Concept of Relevance of Learning to Practice
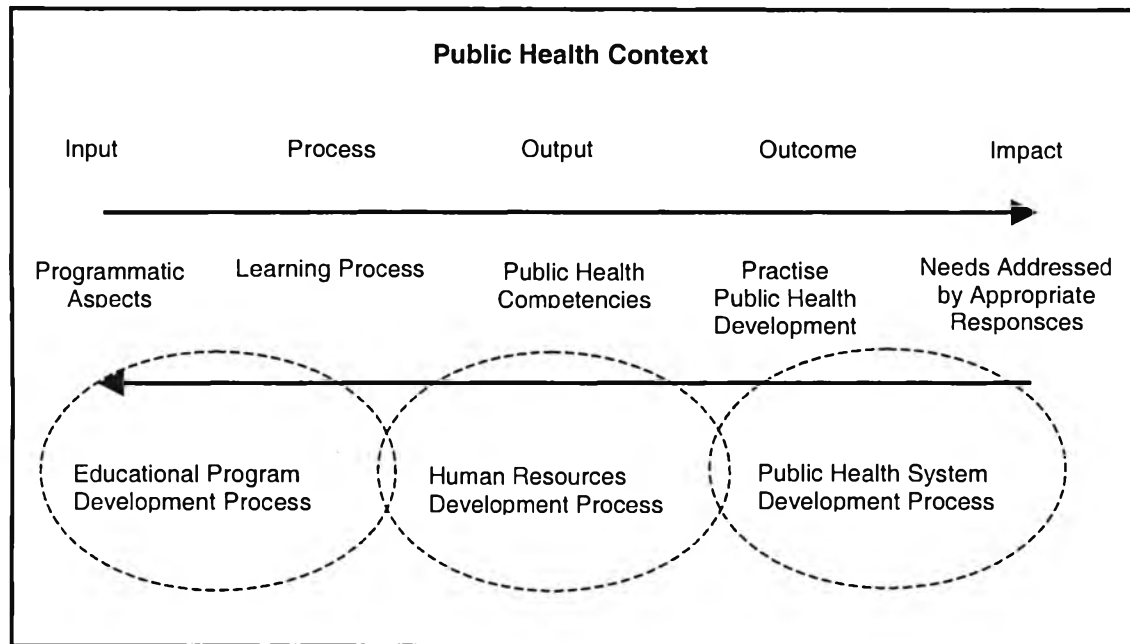
In order to link relevant public health education with community needs I use the basic systems model referred to as: the input-process-output model. Working backwards the impact is community 'health' needs addressed through appropriate public health services. To arrive at this impact, public health practices and services to ensure development of the health system are required as outcomes. This outcome is assumed to derive from appropriate competencies and related knowledge, attributes and skills, which are the outputs of a learning process. The inputs to this learning process are specific programmatic aspects such as program purpose, program design, planning and implementation. The perspective on the input-process-output model should be that of a broad vision on public health. This is important because it will provide direction on how to deal with the different elements and steps of the model. For example, defining community health needs should be consistent with a holistic view of health and of its determinants.

At this stage in the study, relevance can be generally defined as the 'extend to which' priorities has been set related to practices and services, competencies and programmatic requirements within human resource development. Factors for relevance of public health education vary with the context, the selected target groups among human resources and the appreciation of priorities by different partners and stakeholders.

D. Health System Development

1. In Search of a System

The traditional models for a national health system as developed by Kleczkowski; Roemer and Van Der Werff (1984) and the adapted version of Roemer (1991) are not directly suitable for this study. Both models concentrate on the structure of national health systems, not on public health systems development process per se and do not include a holistic public health context. Although both models provide useful sub-systems, the models emphasise the internal structural elements and, therefore, are limited in their focus on the interactions between inputs, the transformation process, outputs, outcomes, and particularly environmental factors determining health and wellbeing. In 1988, the USA based Institute of Medicine (IOM) published its report "The Future of Public Health" calling for public health to focus more on oversight responsibilities in protecting the public's health and less on the direct provision of personal health care services. IOM defined three core functions for public health namely: assessment, policy development and assurance. This report was an important milestone for public health system development in the United States of America (USA). During the last decade researchers as well as professionals undertook multiple efforts to employ this concept. Simultaneously, in 1996, the Pan-American Health Organisation (PAHO) developed another model with 12 essential functions. The WHO adopted this model and at a later stage the 12 functions were merged to arrive at a model with 4 essential functions. This various efforts resulted in multiple frameworks, developed for different purposes, all based on similar concepts but carrying different labels. (Corso, Wiesner, Halverson and Brown, 2000). The debate continues on the analysis of these various frameworks, their comparison and contrasts. Although these developments are important contributions to describe and frame public health

and its performance, none of these models offers a well-defined theoretical framework and do not address all requirements for this study. Further review of the literature did not yield a suitable model. Recognising the limitations of this study, I have, for the sole purpose of this study, developed a framework that suits the holistic concept of public health and the identification of required practices and services. The model consists of five core functions: (1) development of information, (2) development of responses, (3) development of support, (4) management of services and (5) organised arrangement of functions. The system's input can be expressed, as information in a broad sense related to health needs and resources, while the system's output refers to the purpose of the system namely promotion, protection, and cure/care. My diagram of this model is presented as Figure-2.2.

Figure-2.2: The Public Health System: Core Functions and their Interdependence
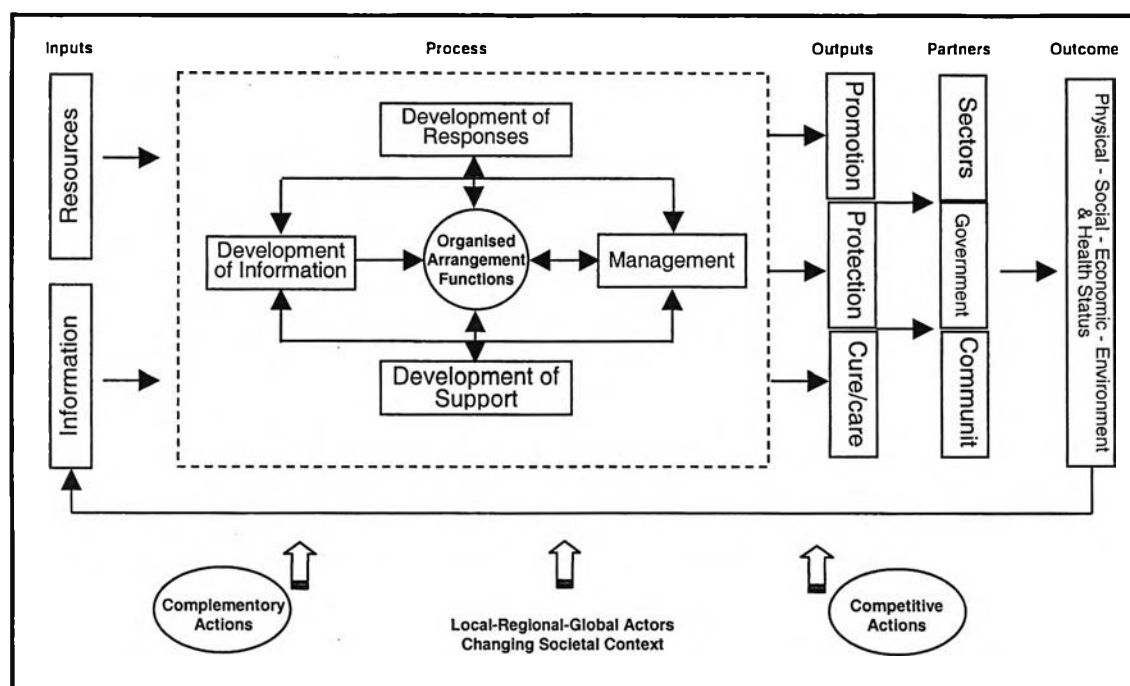
- System inputs:

As supported by Turnhock and Handler (1997) and Peckham (1999) a first main input is resources that include human resources, technology, knowledge, and financial resources. In the context of this study, I focus more explicitly on human resources and knowledge (competencies, attributes and skills). The second major input, information, includes a wide

range of information from a holistic perspective in public health. In addition to the more traditional surveillance and health information system results, information includes the main determinants of health such as physical, social and economic factors, and information related to the system's partners as well as environmental actors and actions.

- Function-1: Development of information

This function deals with processing the complex information inputs as well as information produced by the system itself into public health management information. As argued by Turnhock and Handler (1997), this is a crucial function and requires multidisciplinary teams to deal with the complexity and variety of facts transforming these into meanings.

- Function-2: Development of responses

This function deals with the development of public health strategic planning within the system. Information transformed into 'meaning' is its major input. Based on meaning derived from surveillance, health information system, community health status, and external and internal environment information and from a broad public health viewpoint, this function will develop required responses. As stated by Goldstein (WHO, 1996) these responses should address socio-economic development to promote and protect public's health, besides meeting needs for cure and care.

- Function-3: Development of support

No health system is in a position to address health from a holistic point of view. Health is mainly affected by physical, social and economic determinants and, therefore, often excludes direct control by the health system. The development of support function's aim is establishing support from key stakeholders and actors from the external and internal environment for planned responses. Sustainable responses need support from internal actors and other related sectors including the government and the community. This viewpoint is well supported by several authors (Mann, 1997; Begalehole and Bonita, 1998; Cassels and Janovski, 1998; Sram and Asthon, 1998; and Peckham, 1999). Next to collaboration and co-operation, this function

may also mobilise new and or additional resources. Development of support for planned responses involves advocacy, lobbying, liaison building, negotiation, partnerships, co-operation and collaboration.

- Function-4: Management of services

This function is derived from the models provided by Kleczkowski et al. (1984) and Roemer (1991). The function deals with the crucial role of transforming plans and priorities into action resulting in health promotion, protection and cure/care services. It involves all the aspects of management such as leadership, operational decision making and planning, legislation, regulation, implementation, monitoring and evaluation. Management of services involves the wide variety of the public health system's responses to the public's wellbeing. This compliments the traditional role of delivering health (care) services with initiatives such as health promotion policy and legislation, inter-sector collaboration for socio-economic development and international collaboration for regional and global health issues.

- Function-5: Organised arrangement of functions

This function, based on the models of Roemer (1991) and WHO (2000), represents the governance of the system at all levels and deals with co-ordination, control and regulation of the system. For example at a national level this function represents the MOPH in terms of the office of the Permanent Secretary, while at provincial level this function represents the provincial health administration in terms of the Area Health Board (AHB) and the Provincial Health Office (PHO).

- Health promotion output:

A major output of the public health system, that includes pro-active action and service, is to promote public's health. Goldstein (WHO, 1996) argues that this should be the public health system's primary focus. Health promotion initiatives addressing the community, other related sectors and the government aim to protect or restore the public's wellbeing. This includes a wide variety of activities such as the development and support of health policies,

legislative and regulatory measures, inter sector collaboration for socio-economic development projects, regional and international collaboration, community directed health promotion initiatives, dissemination of information and health promotion integrated with prevention and cure/care services.

- Health protection output

One could argue the distinction between health promotion and health protection. I found it useful to do so based on the different interpretations in the literature (Vandenbroucke, 1994; WHO, 1996; Sram and Asthon, 1998). Health protection measures often consist out of a mixture of promotion and care services. Making this distinction serves to link the 'polar' concepts of health promotion and health cure and care. Doing so also highlights the reactive nature of the set of responses in prevention, that makes use of knowledge and methods from both health care and health promotion. For example, health protection measures include extended programs for immunisation, school health programs, preventive dental care programs or social marketing of mosquito bed-nets.

- Health's cure and care output

This is the traditional set of services offered by health systems to restore health via treatment, or rehabilitate health losses, or providing care for chronic and irreversible illness. It is the most visible output of a public health system, essential to serve a community in restoring health or caring for ill health and is by nature resource consuming. As explained by Goldstein (WHO, 1996) although the holistic perspective on public health does not exclude this traditional purpose of the system, it strongly advocates a focus shift from care to promotion. This output serves directly individual community members and indirectly the community as a whole.

- Partners:

In my view the public health system serves three types of partners: the community, other sectors and the government. Traditional models of health systems often limit outputs to individuals, specific segments of a population and or the community as a whole. Based on the

developments in the field of public health I feel that a (public) health system needs to include other sectors and the government as beneficiaries as well if its aim is to develop the public's health. This viewpoint is supported by Peckham's health system development model (1999) in which he advocates the inclusion of external key stakeholders. Other sectors are ministries concerned with issues that affect public's health and wellbeing, but also the private sector, NGO sector and the media. Further the government becomes a partner in terms of policy development, legislation and international relations.

- Outcomes:

Finally the overall aim of a public health system is the development of the public's wellbeing. If responses in terms of interventions, programs and services were appropriate to identified needs, the overall health status of the population would develop. Reflection on health status and quality of life must take into consideration physical, social, political and economic environmental factors that determine health. Information on the changing societal environment, the community health status and the force fields created by local, regional and global actors will become important inputs for the public health system to enable the development of required responses.

- The environment:

The environment, as explained by the contributions of McKeown (1976), Goldstein (WHO, 1996) and Beaglehole and Bonita (1997), consists out of a complex web of social, economic, political forces including grassroots actions and development of knowledge and technologies. This ever-changing societal context is shaping the wellbeing of the population and challenging the public health system. The phenomena of globalisation fuels this environmental force field resulting in competitive (risks and threats) and complementary actions (opportunities, gains) and places extra challenges on public health (Jamison, Frenk, Knaul, 1998; Walt, 1998; and Garret, 2000).

The model presented in Figure-2.2 highlights the transformation process within a public health system through a set of core functions. The next step is to refine the system's functions by defining the main activities or responsibilities that take place in each of the functions. Based on the literature (Roemer, 1991; Turnock and Handler, 1997; WHO, 2000) Figure-2.3 presents my view on the major activities within each of the 5 core functions if the transformation of information into responses is to happen. Further the diagram includes the strategy applied to arrive at required practices. Need to develop human resources in public health is dictated by specific practices and services required within the public health system. Required practices are identified based on the public health system's goal, objectives, environmental factors and the transformation functions within the system. Next to these elements it is important to include the system's partners in identifying required practices and essential services. At this stage services are identified based on a review of literature only. Ultimately the study will include my review of the literature and the perceptions of community, private and IO/NGO sector, academics and public health representatives.

Figure-2.3: The Public Health System: Refined Functions
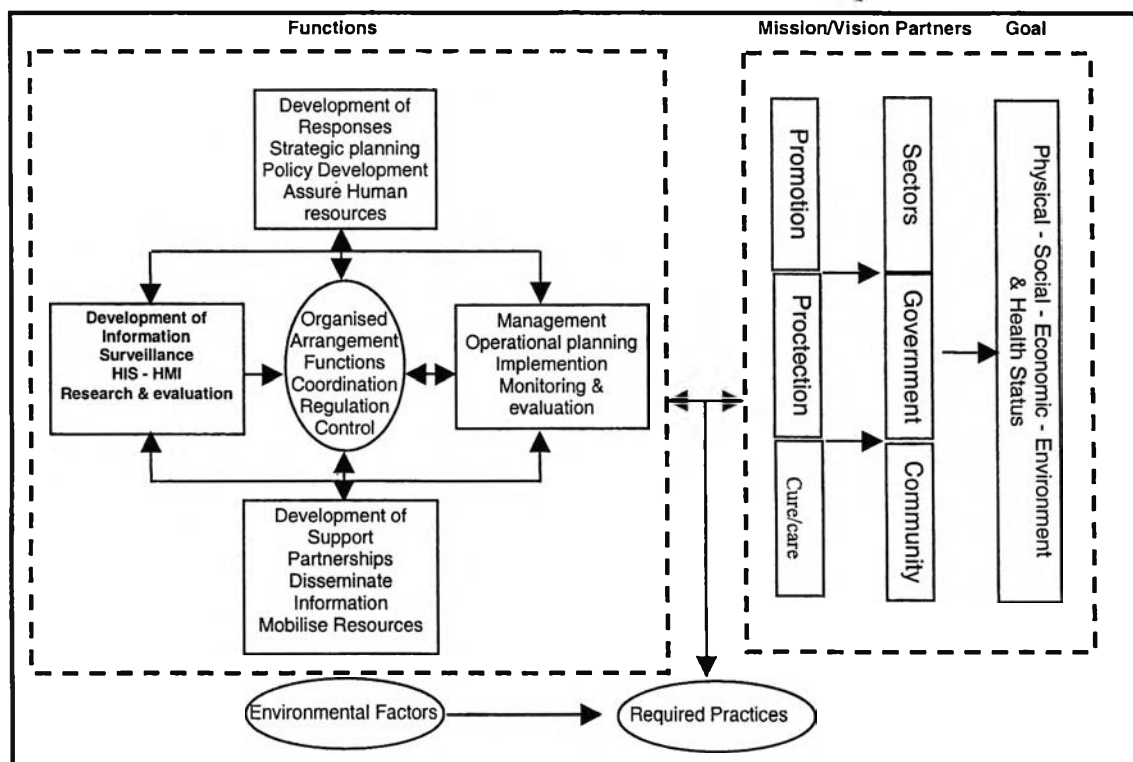
As presented in Figure-2.3, the model does not explain how to decide on required practices but it does provide a strategy to arrive at these practices based on linking the public health system's goal, objectives, functions, including the effects of important factors of the societal environment.

2. Health System Development Need

Reflecting on the controversies in defining public health, its role and future direction, it is not surprisingly that identifying theory and models for public health system development is also a challenge. The literature (Turnock and Handler, 1997; Peckham, 1999; Corso, Wiesner, Halverson and Brown, 2000) does address the need for development of a public health system, its practices and services. Turnock and Handler (1997) proposed a national surveillance model for public health practices which both measures and examines the relationships among inputs, core functions, related processes, outputs as well as outcomes. Peckham (1999) argues that a capacity is required within health service to implement policies and to inform policy development and proposes a model for health service development that could have wider applicability in the public sector. Turnock and Hander's model emphasises the need for surveillance or generation of information for the purpose of researching performance of practices. Peckham's model goes beyond this and emphasises the need for a development function in addition to generation of knowledge. The model of Corso et al. (2000) focuses on essential public health services as a foundation to assess local public health systems. Based on these contributions, I used an integrated forum approach, solely to facilitate this study. This public health system development model offers the rationale to identify partners and key-stakeholders of a public health system and this study. Stakeholders such as local government and other public sectors, the private sector, the non-governmental organisations, schools of public health and universities, public health professionals and finally the community. The forums employed in this study will review the public health system model, its core functions and practices, the required services and related competencies as well as need for human resources development.

E. Human Resources Development

1. A Human Resource Development Model

I have adopted the human resource management model from De Cenzo and Robbins (1994). As shown in Figure-2.4, efforts to develop public health professionals must start with exploring the public health system's goals, objectives, functions and required practices and services. The model will provide a framework from which public health professionals' development need is determined. In addition, based on the viewpoints of local health systems' authorities it should be possible select target groups. From the characteristics of the target groups and a statement on the required public health practices and services it will be possible to ascertain human resources development need in terms of competencies and skills. The next step, then, is to determine individual learning needs: skill development, changing attitudes and knowledge acquisition. Identified development need is input for program design and or assessment.

Figure-2.4: Development of Human Resources in Public Health
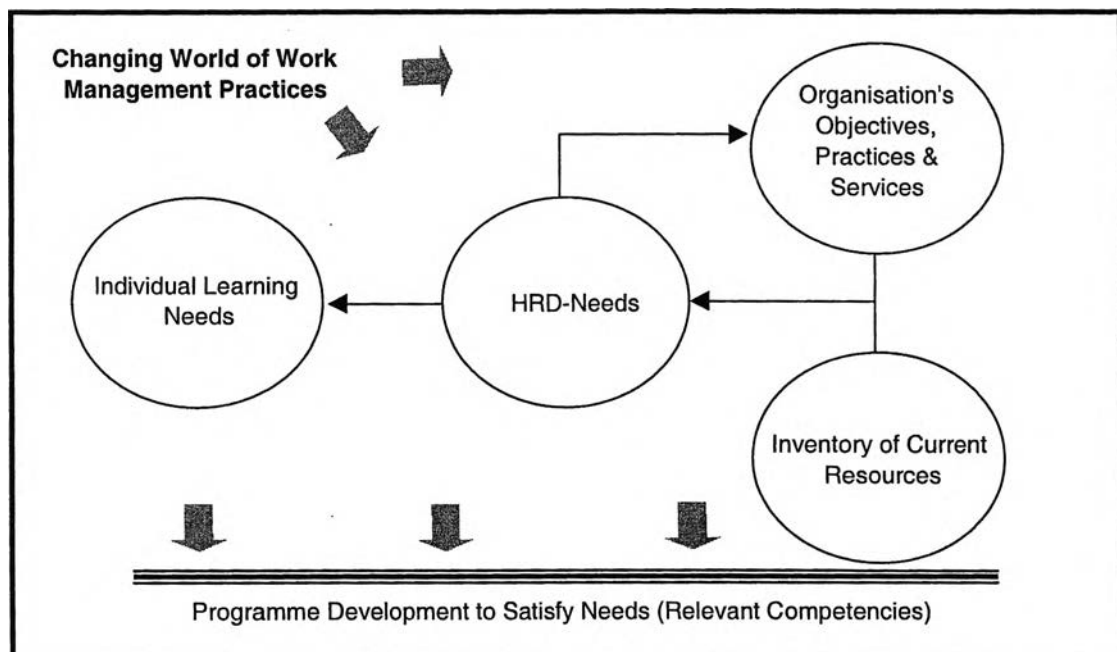
Source: De Cenzo and Robbins (1994)

2. An Overview on Public Health Competencies

The literature (Kleczkowski, Roemer, Van Der Werff, 1984; CU-CPH, 1993; Ebrahim, 1993; WHO, 1996; Sorensen and Bialek 1993; Frenk, Gwin, Micheals, Suwanela, and Walt, 1998; CLAPHW, 1998; Boelen 1999) does provide various public health competency models. Each of these models has been developed to serve a certain purpose and or from a certain perspective. Some of these take universal and global perspectives, others a health-care rather than a public health perspective. Further, most show a deficiency in taxonomy by mixing skills with competencies and concepts with functions. The competency model for public health professionals from the Council on Linkages between Academia and Public Health Workforce (CLAPHW, 1998) is the most comprehensive list and represents ten years of work on the subject by numerous organisations and individuals in public health academic and practice settings.

The core competencies (CLAPHW, 1998) represent a set of skills, knowledge and attributes necessary for the broad practice of public health. The competencies transcend the boundaries of the specific disciplines within public health and help to unify the profession. As pointed out by the CLPHW (1998) these competencies may be used to develop discipline specific competencies, assess training needs, develop training curricula or even develop job descriptions and performance appraisals. Interesting in this model is that the development of these competencies has been cross-walked with essential public health services. Such crosswalk ensures that the competencies help to build the skills necessary for providing these essential services, therefore, they may have a strong potential to support the relevance of education to practice.

F. Educational Program Development

1. Curriculum Development Models

A serious problem that schools of public health face is the perception of professionals and public health authorities that they have avoided stating clearly what competencies graduates should have. As a result they have provided little evidence that they are successful
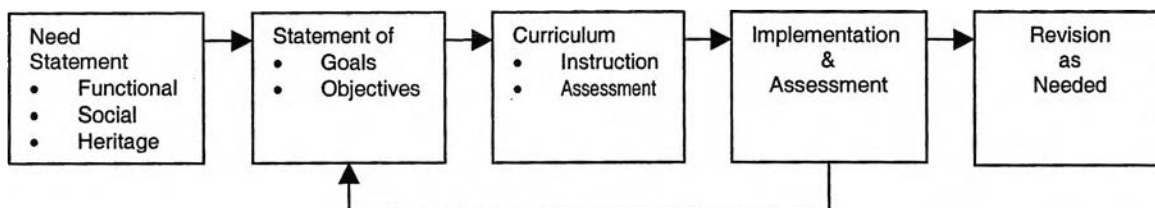
at what they are expected to do. A growing demand for assessment of programs has been neglected for years. To sustain and increase support for public health education it will be needed to collect and use essential information for curriculum development and then collect data and report results. These are major elements in curriculum design and implementation. A review on the related literature (Bligh, Jaques and Piper, 1981; Piskurich, 1993: Grunert, 1997; Diamond, 1998; Keirns, 1999) offers an in-depth understanding on what is involved in this process.

The educational program model from Bligh, Jaques, and Piper (1981) offers a good and flexible framework in describing the key elements in curriculum design. The model consists of seven decisions: (1) formulating needs and objectives, (2) defining assessment methods, (3) defining student selection criteria, (4) constructing courses, (5) define teaching methods, (6) program organisation and (7) assessment of teaching, diagnosis of defects, and modification of elements. Although the model offers sufficient flexibility to cater to local usefulness and has been developed from an international perspective in education, it does not explain how to take these decisions. The value of this model is that it does highlight which decisions to consider and how these decisions interrelate.

I have adopted the program and curriculum design model from Diamond (1998) which is well researched. The importance of Diamond's model for this study is that it does provide focus on the relationship between need and program as well as on the assessment of programs in terms of need. Figure-2.5 presents the basic design sequence in Diamond's model, which begins with an assessment of need, not only from an academic perspective but including functional and social need. Because this study focuses on the relevance of education to practice the functional and social needs are of particular interest. Assessment of need is followed by statement of goals including both general goals and specific program objectives. The next step is then the development of instruction and assessment. This steps deals with course and learning objectives, selection of content areas, sequencing in instruction, selection of methods and decision making on appropriate measures to assess achievement of learning

objectives. So far program design deals with planning. The following step requires to implement the program as planned and assess its performance which, then, leads to reflection and eventual revision.

Figure-2.5: Basic Design Sequence

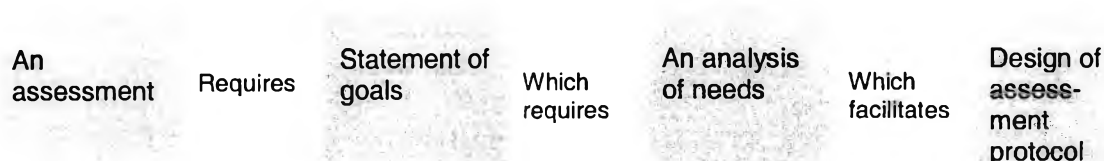| Need Statement • Functional • Social • Heritage	→	Statement of • Goals • Objectives	→	Curriculum • Instruction • Assessment	→	Implementation & Assessment	→	Revision as Needed

Source: Modified from Diamond (1998)

Colleges of Public Health assessing the performance of their academic programs will find out, no matter where one begins in the process, one will have to return to the statement of need before one can develop a statement of goals on which assessment must be based as presented in Figure-2.6. For example, to assess a program we need to know, first where we trying to go and, then, based on this information, an assessment protocol needs to be developed that will assist to determine whether the aim is achieved.

Diamond (1998) reports common problems encountered when assessing educational programs. These are:

(1) Statements on outcomes do not exist for many curricula and courses;

(2) When outcomes do exist, there is often a gap between stated performance objectives and assessment (inappropriate assessment methods);

(3) When outcome objectives do exist, there is often a gap between stated objectives and what is actual taught;

(4) When outcome statements do exist, there is often focus on content and not on critical thinking and learning skills.

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Diamond further argues that it is best to resist the pressure to discuss assessment before goals have been identified, which in turn must be based on identified need. And indeed, it is obvious to identify need and a program's purpose and objectives first before a meaningful discussion can take place about assessment.

Figure-2.6: Assessment Sequence

An assessment	Requires	Statement of goals	Which requires	An analysis of needs	Which facilitates	Design of assess-ment protocol

Source: Modified from Diamond (1998)

2. Arriving at a Framework for Relevance

Considerations of the gaps that are defined by comparisons between desirable and existing programs will provide a basis for schools of public health to develop plans for curriculum development. This should be contrasted to simply advocating for particular curricula that are discipline-based or subject-oriented. The substance of the gaps is related to the link between practice and learning (King, 1998). That this is not always evident is confirmed by de Leeuw (1997) who refers to a global study that revealed that there are significant regional differences in public health educational programs and in the mission of schools, which was strongly associated with the profile of the dean.

This leads to the question whether there are mechanisms that place relevance factors and indicators into a frame and ensure the inclusion of basic public health knowledge in addition to local needs. The CLAPHW (1998) as well as the accreditation criteria amended by the Council for Public Health Education (CPHE, 1999) seem to offer a possible answer to my question. The CLAPHW, as discussed earlier, provides a framework based on the public health system functions, essential services and competencies in public health. Further, to ensure that need assessment outcomes reflect the priorities within health system development the public health practices (Turnock and Handler, 1997) need to be included. The criteria of the CPHE are

based on the functions and roles of schools of public health towards education, research and community service. The CPHE stated that:

"The goals of those working to enhance health in human populations, through organised community effort, are to identify the totality of health problems and needs of defined populations, to consider mechanisms by which the needs may be met, and to assure services essential to the health of populations" (1999, p.1).

The development of the accreditation criteria is based on the assumption that excellence in education will relate to proficiency in practice, this by defining educational quality in terms of competencies. It further assumes that criteria help to link learning to practice. Caution is needed not to confuse excellence with relevance. Further the question on how competencies are identified remains unanswered by the CPHE model. The criteria in the CPHE model concentrate on both program and organisational performance domains.

The focus within the domains for this study is on factors related to mission, goals and objectives and instructional programs. The CPHE framework allows the integration of program assessment and organisational performance. It serves both curriculum and organisation development.

Based on educational theory (Diamond, 1998), these frameworks could be of particular use in the design of a need assessment which, then, will facilitate the design of a relevance assessment instrument.

3. A Brief Review on Learning Strategies

a. Strategies in Public Health Education

Innovative approaches aimed at improving professional education have emerged in recent decades. Most have focused on reforming the educational processes within the educational institution. Educational planning has remained isolated in most cases from consumer needs. Moreover, innovations have been reactive rather than proactive. The result is

that most innovations are likely to have a limited impact on the evolution of public health services. It is unlikely that educational reform per se will improve public health unless it is the result of close interaction and planning between health services and other sectors in society (WHO, 1993).

The search for relevance in the education of public health professionals has been a continuing process. As for most disciplines, in the past, the scrutiny has largely been on curriculum and teaching methods and has often been based on a hypothetical and an idealised professional role. The result is heavily biased towards what is desirable for students to know, rather than what a student needs to know (WHO, 1993).

As discussed by Beaglehole and Bonita (1997), most public health schools are established by stand-alone research and training institutions or departments of public health within a medical school. Innovative broad-based institutional initiatives, which are closely related to public health practice, are rare. The development of public health training accreditation systems to ensure public accountability is a priority in all countries. In short term, it matters little where public health professionals are trained; the nature and their orientation are paramount. A key goal is to develop and sustain partnerships between the two processes of education and practice. Strong institutional support and leadership in public health education are essential to bridge the gap between academic public health and practical public health and to ensure that students socialise with the values of public health.

In conclusion, the literature (WHO, 1993; WHO, 1996; Beaglehole and Bonita, 1997) highlights the following key issues:

> (1) Curricula should be relevant in terms of students, the public health services and the community;
>
> (2) This can only be guaranteed if partnerships between education and practice are fostered;

(3) The methodologies should be problem based learning, student oriented education, community based and oriented education and;

(4) This calls for change in the teaching-learning culture.

b. Adult and Continues learning

Baskett and Marsick (1992) offer a significant contribution with "Professional ways of knowing: new findings on how to improve professional education", as well as the American Association for Adult Education (2000) on the developments in continuous professional education. During the 90's demands on competencies rather than knowledge have risen dramatically. The answer to this demand was a shift to competence models. The focus is on what professionals can do and not just what they know.

Nowlen (1990) however, has severely critiqued the competence model: "The most serious flaw in the competence approach is its underlying assumption that performance is an individual affair". Nowlen represents an emerging school of thought that emphasises an understanding of professionals in relationship to the complex environments in which they practice. Nowlen's viewpoint is in line with the systems theory that acknowledges interrelationships and realises that parts of units are interconnected with one another. These interactions in professional settings are important determinants of performance, but the acquisition of competencies is a precondition for performance. Further, there is the question as to what extend educational institutes can address organisational performance?

Another relatively recent development is 'service learning'. Combining service and learning in higher education, as a branch of experiential education, has its theoretical roots in the work of Kolb (1984). Several authors define service learning differently and this approach to experiential learning is still in development. Godfrey (1999) uses the metaphor of "the tent of service learning" which is still under construction and enlarging, offering shelter to moral, pedagogical, and 'education shift' paradigms. Again distinct from learning at the workplace its benchmarking principles are quite useful and to a great extent applicable to learning at the workplace.

Recognising the potential of service learning, its promotion need to be the product of careful considerations. Before adopting new strategies and heading forwards it is important to ask where do we go; do we view service learning a means or an end; what conditions need to be addressed to make service learning successful? Kahne and Westheimer (1996) and Burns (1998) examine the concept of service learning and draw attention to questions such as in service of what; and are we sure that it is service learning not just community service? It is essential, in the planning of service learning activities, that there is clarity on the definition, goal, and motivation among all partners involved. In addition, development and utilisation of a structure is necessary to make service learning work? Finally it is important to acknowledge that the choice of service learning activities, like the choice of any other curricular activity, has political dimensions.

Gray, Ondaatje, and Zakaras (1999) offer an evaluation of service learning programmes in about 500 American education institutes during three years period from 1995 till 1997. Their conclusions can be summarised as follows:

(1) Community organisations are strongly positive;

(2) Institutional support for service learning grew;

(3) Students were highly satisfied;

(4) Only modest gains in student development;

(5) Program costs exceed benefits to communities and;

(6) No clear answers as to whether service-learning programmes can sustain themselves.

Brandeis University (1999) undertook a national evaluation of "Learn and Serve America" between 1994-1997. This study included 2,000 local efforts for school aged youth. The main difference on findings with the study of Gray, Ondaatje and Zakaras (1999) was the cost aspect. The evaluation conducted by Brandeis University pointed out that benefits of well-designed service-learning programmes substantially outweigh the costs. This points at the importance of curriculum design in service learning to ensure sustainability. Another interesting

observation in both studies is on the modest gains in student development. As with problem based learning, the method does not result in distinct improvements in achieving knowledge and skills compared to more traditional methods. The strength of the method lies in creating a satisfying and challenging learning environment that is less isolated from real world application.

Although Learning @ the Workplace is distinct from distance learning, it may use similar methodologies and technologies. A recent literature review conducted by Phipps and Merisotis on original research in distance learning is quite useful not only because it presents an overview on what has been researched, but especially how this research was conducted. The authors conclude that: "There is a relative paucity of true, original research dedicated to explaining or predicting phenomena related to distance learning. The overall quality of the original research is questionable and thereby renders many of the findings inconclusive" (1999, p.3).

Some broad implications can be summarised as (1) the notion of 'access to college' in distance learning is unclear. Many advocates present distance learning as 'the' strategy to improve access to college-level education. Interaction is important in education, but many computer- mediated learning are not interactive and therefore, require special skills of students and more technical sophisticated support if students are to interact. Questions that need to be asked are: what is the quality of access in distance learning; do students have the necessary skills to use technology; is there adequate technical support; what are the best ways to participate in asynchronous communication? (2) It seems clear that technology cannot replace the human factor in higher education. Technology can leverage faculty time, but it cannot replace most human contact without significant quality losses. (3) Many of the findings seem to indicate that technology is not nearly as important as other factors, such as learning tasks, learner characteristics, student motivation and the instructor.

Phipps and Merisotis conclude their discussion with the statement that: " Research on distance learning has a long way to go... On the other hand, technology has helped the

academy to continue its focus on the essential goals of teaching and learning. As a result, either implicitly or explicitly, the key question is: what is the best way to teach students?" (1999, p.8).

The review on continuous professional education literature offers a wide range of polar perspectives, including individual versus collective; cognitive versus emotional; rational versus intuitive; formal versus informal; and constructed versus scientific. These issues do not need to be opposite, but are rather interacting and overlapping. It would be incorrect to assume that learning models tend to be closer to one or another side (Baskett, Marsick and Cervero, 1992).

In conclusion it is important to shift the focus from education to learning, knowing that most of the learning takes place out of teaching sessions. There is need for a more holistic approach to improve learning. Learning does not take place in isolation, but involves all aspects of human existence. One of the major implications of the above is the need to create models that take into account trans-formative learning, learning through relationships, situational variables, intuitive knowing and the affective dimension of learning as explored by Goleman (1996, 1998). Further education programs need to move to where the learning occurs and create systems for just-in-time learning. In other words, the creation of systems that allows learning to take place in a relevant context such as problem based and service learning approaches. Abstract and conceptual, knowing need to be complimented by a greater attention to practical knowledge. This will have important consequences for evaluating educational programmes.

G. Summary

As explained the debate continuous on what public health ought to be, what practices and services would be relevant too address the public's health and whether a health system is a base or a cage for Public Health?

In absence of a clear understanding and consensus on public health, it becomes less obvious what competencies are required for public health professionals. The literature does provide summaries on public health competencies, but there is lack of consistency and academic or professional orientations are not clear.

There is no shortness of critique expressing the irrelevancy of educational programs in public health, but this is contrasted with a lack of definition, conceptual as well as operational. The literature is fragmented and deals with certain aspects only and, therefore, fails to provide models and indicators for the relevance of education in public health.

During the past decades several learning strategies emerged that could be appropriate to support the relevance of learning to practice such as: problem-based learning, service learning, computer mediated learning, competency based approaches, group and self-directed learning and student centred approaches. It is important to realise that strategies are means and not ends, therefore, strategies have to serve the purpose of relevance.

Having described the problem and explored the literature on the various issues involved, I present in Chapter 3 the conceptual framework for this study, demonstrating and explaining the different steps involved, which is followed by a section on the research hypothesis.