CHAPTER IV

METHODOLOGY

A. Introduction

In this study there are three units of analysis, which will be discussed later: (B) Perceived Need Assessment, (C) an Instrument Design Study and (D) an Evaluation.

1. Methods Employed

Both, qualitative and quantitative measures were utilised in this study. For all units of analysis in this study, and in each instrument used, informed consent was obtained from participants and respondents. In absence of existing instruments, standards for content analysis, interview frameworks, focus group protocols and questionnaires were developed. Each of the instruments was pre-tested for reliability and validity (see Appendix-III).

All presentations, oral or written, were done in English. However, my mother language is not Thai, certain discussions were conducted and questionnaires were prepared in Thai. This required interpreters who were instructed in detail on the study design, the purpose, the conceptual frameworks, the methodology and the use of instruments applied for this study. While this may counter accepted practice, in both observational and analytic studies, it was essential to collect both qualitative and quantitative data that were free of language bias. Both qualitative and quantitative measures used in this study can be summarised as follow:

Qualitative measures

(a) Structured panel discussions
(b) Semi-structured interviews
(c) In-depth interviews
(d) Focus group discussions
(e) Archival research: Content analysis
(f) Panel review

Quantitative measures

(a) Questionnaires
(b) Semi-structured interviews

2. Qualitative Measures

The qualitative measures included (a) structured panel discussions, (b) semi-structured interviews, (c) in-depth interviews, (d) focus group discussions, (e) archival research: content analysis and (f) a panel review. Each is discussed below. In all measures once participants (who were not members of the CPH) agreed to participate, a request letter was sent to their supervisor to obtain institutional approval.

a. Structured panel discussions

Participants for the various workshops were purposively selected, by a co-ordinating team consisting of CPH faculty members, according to the sampling plan (provided in Appendix-III), and based upon collected documentation on organisational charts of the main constituencies. Potential participants were personally contacted, to explain the purpose of the various panel workshops and provided with an information package. Incentives for participants were provided for non-College participants (out of the CMB project budget) to ensure a good attendance.

An introductory meeting was organised for participants of the various panels, to familiarise them with the study, its context, with the LWP, and with the mission of the CPH. Further terms of reference and agenda outlines were discussed during this introductory meeting.

The steps involved in this form of group discussion were (1) provision of background information from the literature or from primary data analysis outcomes (2) introductions with question statement (problem), (3) discussion to clarify ideas, (4) small group discussion as required (5) preliminary vote on item importance as required (6) discussion of preliminary vote, (7) and final ranking.

For each structured panel discussion, a full report was made in writing and approval of the minutes was sought from all participants.

b. Semi-structured interviews

The language used in developing and conducting semi-structured interviews depended on the selected samples.

c. In-depth interviews

The language used in developing in-depth interview frames and conducting interviews was English.

Prior to the interview respondents received a copy of the open-ended questionnaire to enable preparation of ideas. Interviews were tape-recorded, while interviewers maintained field notes. Verbatim reports were sent to participants for their review, reflection and possible modification.

d. Focus group discussions

Discussions were conducted in Thai language to facilitate active participation. Discussion protocols were developed in English, but were then translated into Thai language. Discussion moderators received in-depth explanation on the protocols. A team of 2 Thai research assistants assisting in various discussions was trained in moderation, observation, and note taking and tape-recording.

e. Archival research: Content analysis

Archival research was applied for the evaluation of the LWP. The overall content analysis of archival documents was guided by the research questions, while a sample strategy was applied based on the relevance assessment instrument developed in this study.

Recording units were defined based on the relevance factors and contained a mixture of low and high-inference items. A minimum of two researchers, using predefined categories for analysis, screened the documents. The selected documents were written either in English or Thai language.

Development of construct categories for analysis was directed by the relevance assessment instrument, which included components, factors and indicators. Coding was developed and tested, by a minimum of two persons, using sample texts for reliability and revisions were made.

f. Panel review

A panel of experts in adult education and public health supported the instrument design study. Purposively selected participants were personally contacted, to explain the purpose of the panel and provided with an information package. Incentives for participants were provided for non-CPH participants (out of the CMB project budget) to ensure good attendance.

Following steps took place: (1) define the function of the design and establish specifications to be met, (2) define design performance indicators, (3) review the draft design, (4) conduct a prospective evaluation of the design, (6) consult on field application using agreed factors and their indicators and (7) provide judgement and modification.

The review by the panel was facilitated by (1) the related literature, (2) the draft instrument design, (3) a set of instrument performance indicators. The panel used English language for presentations, discussions and written material.

3. Quantitative Measures

The quantitative measures included (a) questionnaires and (b) semi-structured interviews. Each is discussed below.

a. Questionnaires

Self-administered questionnaires were developed in English but translated into Thai language for data collection purpose. Translators, public health and adult education experts carried out a careful crosscheck of translations. Questionnaires included cover letters to introduce its purpose, seek co-operation and provide guidelines on how to complete and submit the questionnaires.

b. Semi-structured interviews

The language used in developing and conducting semi-structured interviews depended on the selected samples.

B. Perceived Need Assessment

1. Study Design

The study design of the perceived need assessment consisted of seven main phases: (a) the identification of public health practices, services and competencies; (b) stakeholders' perspectives on services and public health competencies; (c) the perspectives of PCMO and MOPH partners; (d) the perspectives of students; (e) the perspectives of public health experts; (f) validation of data collection outcomes on target groups and levels of mastery in competencies and (g) linking public health practices, services and competencies.

a. Identification of Public Health Practices, Services and Competencies

Lists of Public Health Practices, Services and Competencies were the outcomes of an assessment for health systems and human resource development need, which involved a panel of internal and external stakeholders. Potential needs, were developed through following steps:

(1) The first step, using a structured panel discussion, involved the identification of desirable Practices and Services for provincial public health system development in Thailand. This was based on the relationships between Thailand's public health goals, the health system functions, system inputs and outputs, population need and environmental factors. Discussions were facilitated through inputs from the literature on Services, the MOPH on the population health status and epidemiological trends, as well as the 9th National Health Development Plan.

(2) The next step, using structured panel discussion, involved the identification of desirable Competencies and Skills of provincial public health professionals in Thailand to address public health development needs, in addition to a classification of Public Health Staff.

b. Stakeholders' perspectives on Public Health Services and Competencies

Stakeholders were selected, representing important constituencies for participation in the prioritisation of Public Health Services and Competencies. Each participant was sent a questionnaire by mail.

c. Perspectives of Provincial Chief Medical Officers and MOPH partners

Further, through a focus group discussion, Target Groups for the LWP, specific Learning Need, Programmatic Requirements and Partnerships aspects were explored. In addition, in-depth interviews with MOPH partners focused on perceived need in partnerships.

d. Perspectives of past and present LWP Students

Also through focus group discussions, Target Groups for the LWP, specific Learning Need and Programmatic Requirements were explored.

e. Perspectives of the public health experts panel

Once data on Public Health Services through (b) and Target Groups and Learning Needs through (c) were analysed, the same panel members as described under (a) were asked to decide what Public Health Practices, Services, Target Groups and Learning Needs are important. This was done through semi-structured interviews.

f. Validation of data collection outcome on Target Groups and Levels of Mastery in Competencies

Because findings on Target Groups for the LWP (through c, d, and e), as well as some of the items of the mailed questionnaire (through b) were not conclusive, a panel of PCMO

assisted by the members under (a) was asked to make a final judgement. This was done through structured panel discussions.

g. Linking Public Health Practices, Services and Competencies

In this phase a national panel of public health professionals representing the main disciplines in public health was asked to (1) attribute Public Health Competencies for each of the Public Health Services and (2) indicate and describe the inter-relationships between Public Health Practices and Services. Linking Competencies with Services was done through a personally introduced self-administered questionnaire, while linking Practices with Services was done through panel discussions.

h. Selection of need

Finally, judgement was exercised in selecting key needs, which rate high on importance, and low on current availability. Other indicators, such as feasibility and the appropriateness of educational programs to address these needs, were applied as well. To acknowledge the danger of concentrating on accessible need, indicators from the literature on public health were included as well. All this was done in panel discussions with the same representatives who participated in (a).

2. Population and Samples

For the panel discussions, noted in (a), (f), (g) and (h), a purposive selection, based on criteria, was applied for national as well as provincial stakeholders. In total there were 7 participants, for (a) representatives of the MOPH, NGO, private and academic sectors (g) professionals and academics representing the main disciplines in public health and (h) the same as under (a). For (f) there were 12 participants included for the discussions representing provincial health offices and the MOPH (see Appendix-II for detailed sample plans).

For the questionnaire, noted in (b), a purposive selection, based on criteria, was applied in selecting participants from all provinces and the capital in Thailand. In total the

sample consisted of 657 respondents, representing the professional, the administrative and the academic sector (see Appendix-II for a detailed sample plan).

For the focus group discussion, noted in (c) and (d), a purposive selection, based on criteria, was applied. For (c) the six PCMO from provinces currently having a LWP were invited. For (d) representatives of LWP students, I selected six students (aiming at gender parity) from each region: North, Northeast, Central and Southeast. In addition MOPH partners for the in-depth interviews were selected on purpose, based on criteria.

3. Instrumentation

As explained under 1 Study Design, following instruments were applied to do the need assessment: (a) structured panel discussions, (b) mailed questionnaire (c) focus group discussions (d) in-depth interviews, (e) semi-structured interviews and (f) a self-administered questionnaire.

4. Measurement and Variables

a. Variables

1) The variables in identifying Public Health Practices as described in 1.a. 1) were: public health goals and objectives, public health functions, health system outputs, health determinants, epidemiological trends, environmental factors as described in the 9th National Health Development Plan and perceptions of panel members.

2) The variables in identifying Public Health Services as described in 1.a. (1) were the literature and perceptions of panel members.

3) The variables for Public Health Competencies as described in 1.a. (2) were Public Health Services, Competency models from the literature and Perceptions of panel members.

4) The variables for Public Health Services as described in 1.b. were the Perceptions on current Levels of Performance and for Public Health Staff the variables were the Perceptions on the Levels of Involvement. For Public Health Competencies also described in 1.b. the variables were the Perceptions on the required Level of Skills Mastery for each category of Staff.

5) As described in 1.c. and 1.d. the variables on Target Groups were participant Perceptions on Job-Category, Functional Level and Educational Background. The variables on Learning Need were the Perceptions of participants and the variables on Programmatic Requirements were participant Perceptions on Program's Level, Type and Major. As described in 1.c the variables for Partnerships were participant Perceptions on College-Workplace Liaison and Reciprocity.

6) As described in 1.e. the variables on Public Health Practices, Services and Learning Need were the Perceptions of respondents on the Level of Importance. The variables on Target groups were Job-Category, Functional Level and Educational Background.

7) The variables for Target Groups as described in 1.f. were Job-Category, Functional Level and Educational Background. The variables for Public Health Competencies were Staff Category, Core and Not Core Skills and required Level of Skill Mastery.

8) The variables for Public Health Services as described in 1.g. were Public Health Skills and Public Health Practices.

9) The variables for Selected Need as described in 1.h. were perceptions on the Level of Importance, the Level of Availability and the Level of Feasibility.

b. Comparisons

For the mailed questionnaire described in 1.b. respondents were classified into 4 important constituencies and the 2 main constituencies (public health professionals and administrators) respondents were classified in sub-categories and comparison on findings was applied to identify possible variations in frequencies. Questionnaire results were also compared with structured panel discussion outcomes described in 1.f. to validate findings.

The various student focus group discussion outcomes were compared, as well as PCMO vs. student focus groups to identify possible variations or discrepancies in perceptions.

For the structured group discussion described in 1.f. participants were classified into PCMO and PHO representatives and comparison on findings was applied to identify possible variations in frequencies.

5. Procedures

Approval was obtained from national health authorities for conducting the need assessment, including the participation of provincial health system representatives.

The various panel discussions for the Need Assessment were organised at the CPH, CU.

Mailing used for data collection through questionnaires was supported by letters from Dr. Mongkhol N. Songkhla, the Permanent Secretary of MOPH, from Associate Professor Wattana S. Janjaroen, then, the Acting Dean of the CPH, CU. Mail questionnaires included a self addressed and stamped return envelope. Phone, local contact persons and personal

contacts were used in follow-up. The strategy applied to increase the response rate is further described in Appendix-II.

To increase the power of the analysis and validate findings from the first mailing, a second mailing of the same questionnaire (including guidelines and consent form) was conducted. This mailing was to Public Health Professionals and Public Administrators in the remaining 51 provinces in Thailand, increasing the total sample from 372 to 657. The questionnaire was sent with a letter from Dr. Samlee Plianbangchang, Dean of the CPH, CU. Two weeks later, a thank you and reminder letter was sent.

Focus group discussions with students were conducted in Khon Kean, Ayutthia and Chonburi provinces, while the focus group discussion with PCMO and Phayao students took place at the CPH, CU.

6. Data Analysis

Quantitative data obtained in this unit served a descriptive analysis using simple descriptive statistics. The responses from the first and second mailing were separately entered in computer compatible format; with a randomly selected sample validated by double entry. This data was analysed using the SPSS (version 5.0 for Windows) program to determine Frequencies, Percentages, Means and Standard Deviations. For summations of Public Health Services and Levels of Public Health Staff Involvement ANOVA was used to determine statistical significant differences between all 4 Constituencies. If a statistical significant difference was found Scheffé's method (Portney and Watkins, 2000) was applied to specify which of the Constituencies were responsible for the overall statistical significant difference. Further for each item in the questionnaire, Chi-square was used, this because frequencies and proportions were used in the analysis based on the fact that the questionnaire deals with perception and, therefore, not explicit measures. Testing was done for the two largest groups of respondents (Public Health Professionals 119 and Public Administrators 74); the other two groups were too small for valid analysis by Chi-square. An analysis of item non-response was

done for all Constituencies. Because multiple tests of significance were done, only those associations with a p value < 0.01 were considered to be significant.

Analysis of qualitative data was based on theoretical prepositions and issues analysis facilitating discovery of regularities, comprehension of meaning and reflection. Outcomes of focus group discussions were triangulated with the various groups, as well as outcomes from panel discussions, to identify cross-validation and or discrepancy.

C. Instrument Design Study

1. Study Design

The function of this study was to develop an instrument to assess the relevance of the LWP in Thailand. The outcome of the study was a local appropriate RAI including conclusions on its validation.

The study design included following steps: (a) define the function of the design and establish specifications to be met; (b) define design performance indicators; (c) development of a draft instrument and review by the panel; (d) conduct a prospective evaluation of the design; (e) apply the instrument and evaluate, using agreed indicators; and (f) provide judgement and modification.

a. Define the function of the design and specifications to be met

The function of the RAI was defined as to provide a tool for educators in planning, development and evaluation of postgraduate education programs in public health. Specifications to be met were developed in terms of purpose, conditions of utilisation, accuracy and resources.

b. Defining design performance indicators

The instrument performance checklist of Morrison, Sullivan, Murray and Jolly (1999) was discussed with the panel and used for a prospective evaluation on instrument performance.

c. Development of an instrument and review by the panel

A draft instrument was prepared and discussed with a panel of experts in adult education and public health along with need assessment outcomes. The full version of the instrument addresses the various relevance components, sets of factors per component, each with a description and interpretation, indicators and their measures, sources for collection of data and methods for data collection.

d. A prospective evaluation of the design

The panel used a checklist developed by Morrison et al. (1999), as a base to arrive at a set of instrument performance indicators for the prospective evaluation of the instrument. Based on the prospective evaluation outcomes further instrument modifications were made by the panel.

e. Application of the instrument and evaluation, using agreed indicators

An application of the instrument was done through an evaluation of the LWP. The panel monitored the application of the instrument, using agreed indicators, to reflect during the evaluation process on instrument performance.

f. Provide judgement and modification

Finally, based on the application, the panel assisted in providing judgement on instrument performance and modifications were made to set boundaries for the study.

2. Population and Samples

Purposive selection, based on criteria, was applied in selecting participants for the design study. The 9 participants included adult educational experts, a representative of the PBRI (MOPH) and faculty of the CPH, CU. Appendix-II provides a detailed sample plan.

3. Instrumentation

As explained under 1. Study Design, following instruments were applied: (a) panel review, (b) instrument performance indicators developed by Morrison et al. (1999) and (c) a field application. An outline for panel discussions and a detailed description of the relevance instrument is given in a separate study Report-VIII while a synopsis of the instrument is presented in Chapter-V C.1 and the field application is discussed in detail in section D.

4. Instrument Performance Indicators

The checklist of Morrison et al. (1999) included the following questions (indicators): (a) Does the instrument seek to answer a clear question? (b) Does the instrument allow identification of clear learning needs? (c) Does the instrument address the educational context? (d) Does the instrument address the precise nature of the program? (e) Is the instrument design able to answer the question? (f) Are the methods within the instrument design capable of appropriately measuring the phenomena under study? (g) Are the indicators in the instrument appropriate to evaluate relevance? (h) Can assessment outcomes create rival explanations? (i) Can unanticipated outcomes be explained?

5. Procedures

The panel discussions were organised at the CPH, CU.

6. Validation

Analysis on findings and indicators performance was done during and at completion of the evaluation research in order to arrive at a judgement on the applicability of the instrument in terms of reliability, indicator and construct validity, as well as social desirability bias. Modifications were applied and discussed to further improve the instrument. The panel played a key role in the formulation of judgement and modifications.

D. Evaluation Research

1. Study Design

The purpose was to test the RAI through an assessment of the LWP's Purpose, Objectives, Student Assessment and Curriculum Design against the outcomes of the Need Assessment.

The objectives were (a) based on the findings to arrive at conclusions on the relevance of the Program's Purpose, Objectives, Student Assessment and Curriculum Content and (b) to provide recommendations on possible improvements for program relevance.

The evaluation design included the following steps: (a) statement of need, (b) application of relevance indicators, (c) assessment of partners' perspectives, (d) an integrated judgement on gaps, (e) conclusions on program relevance and (f) recommendations for improving program relevance.

a. Identification of needs

The outcomes of the perceived Need Assessment as described in Section B. were used to answer the questions posed by the RAI.

b. Application of relevance indicators to the program

The RAI was used to assess the LWP. Primary and secondary data (both qualitative and quantitative) were collected through archival research, questionnaires and in-depth interviews.

c. An assessment of partners' perspectives:

Besides applying explicit relevance indicators, an assessment on the perspectives of program partners was done to arrive at an integrated judgement on program relevance. Focus group discussions and in-depth interviews were used to collect qualitative data.

d. An integrated judgement on gaps

Findings on program relevance were triangulated with partners' perspectives. Findings on partner's perspectives added value to the assessment and provide an integrated judgement on program relevance.

e. Conclusions on program relevance

Based on the findings inferences were made on the relevance of the LWP's Purpose and Objectives and Curriculum Design aspects.

f. Recommendations for improving program relevance

Finally recommendations were made for the program as a whole and for specific domains on the scope for improving the relevance of LWP.

2. Population and Samples

A purposive selection, based on criteria, was applied in identifying target populations and documentation for the evaluation research. The target groups for the LWP evaluation were for questionnaires, 6 faculty members and 61 students from the LWP; for in-depth interviews, 3 program partners and 2 College representatives; for focus groups, 5 PCMO and 34 students. See appendix-II for a detailed sample plan. The RAI directed the selection of program documentation.

3. Instrumentation

Following data collection instruments were used (a) archival research, (b) questionnaires, (c) in-depth interviews and (d) focus group discussions.

a. Archival Research

Research reports on the Need Assessment were used to elicit evaluation criteria. Three categories of documents were selected related to the planned, the formal and the actual program. A content analysis was applied, using the relevance instrument factors and their indicators as analysis codes.

b. Questionnaires

Student self-assessment was facilitated by a questionnaire. In absence of a well-documented curriculum, a faculty questionnaire on Learning Objectives was applied as an alternative strategy.

c. In-depth interviews:

In-depth interviews were used to complement findings from the archival research in terms of Program's Purpose, Objectives and Programmatic Requirements as well as to collect partners' perspectives on the Partnerships for the program.

d. Focus Group Discussions

Assessment on the Perceptions of the actual Program Practices was facilitated by the use focus group discussions among local partners and students.

4. Measurement and Variables

The main variables for evaluating the relevance of the LWP were:

Program Components	*Dependent Variables*	*Independent Variables*
Program Specialisation	▪ Program level ▪ Program Type ▪ Program Major ▪ Partnerships	▪ Professional Perspectives ▪ Students' Perspectives ▪ Partner's Perspectives
Program Objectives	▪ System Objectives ▪ Program Objectives	▪ Professional Perspectives ▪ Students' Perspectives ▪ Partners' Perspectives
Student Assessment	▪ Achieved Skill Mastery ▪ Required Levels of Skill Mastery	▪ Students' Perceptions ▪ Professionals' Perceptions
Curriculum Design	▪ Course Descriptions ▪ Course Objectives ▪ Learning Objectives	▪ Program Objectives ▪ Public Health Services ▪ Learning Need ▪ Core Skills ▪ Required Levels of Skill Mastery ▪ Faculty Perspectives
Integrated Judgement	▪ Culminating Achievement ▪ Content Areas ▪ Partnerships	▪ Professional Perspectives ▪ Student Perspectives ▪ Partner Perspectives

5. Procedures

Approval was obtained from the CPH management on the purpose of the evaluation and access was assured for the researcher to relevant secondary data and documents or records.

6. Data Analysis

Quantitative data obtained in the program evaluation served a descriptive analysis using Chi-square and t-test, using SPSS software (version 5.0 for Windows).

Analysis of qualitative data was based on theoretical prepositions and issue analysis using manual techniques as well as Ethnograph software (version 5.0). Triangulation for focus groups discussions and in-depth interviews was done with questionnaires and archival research, to identify cross-validation and or discrepancy. Inter-analyst reliability was used for the content analysis.

E. Limitations

1. Methodological Limitations

a. Study Design

The methodology applied in this study has following limitations: (1) outcomes are only locally useful, (2) only the process can be generalised, (3) the study does not include organisational performance, (4) the study does not involve development and change of the educational program.

b. Sampling

In the need assessment the purposive selection applied for representatives for the various workshops might be vulnerable to selection and volunteer bias.

c. Instruments

To acknowledge the danger of concentrating on accessible needs in the prioritisation of health system and human resources need, because technical decisions have ideological consequences, perspectives from the literature were included as well.

Evaluation outcomes of the learning at the workplace program depend on the performance of the relevance instrument developed in this study.

d. Measurement

The lack of standardisation for interviews as well as possible social desirability bias among respondent may have affected reliability.

Content analysis for archival research methods were depending on the availability and completeness of the documents.

e. Procedures

Representatives from various constituencies participated in need assessment workshops on a voluntary base. Because representatives had tight schedules, there was some disruption in attending the complete cycle of workshops, and therefore, affected inclusion of viewpoints.

Mailing used to prioritise required public health services and competencies suffered from a relative low response rate.

Special attention was needed to avoid errors in translations from English to Thai language, and vice versa, for questionnaires and interviews used in the evaluation research.

f. Analysis

The study applied a simple quantitative analysis using chi-square and t-test.

To avoid a possible social desirability bias in interviews, triangulation was applied were possible. Inter-analyst reliability was used in the analysis to avoid interpretation errors.

Documents have been written for purposes other then a content analysis, which may have introduced bias or distortions. Therefore, where possible triangulation with in-depth interviews, and focus group discussions were applied. Inter-analyst reliability was used in the analysis to avoid interpretation errors.

2. Ethical Limitations

Consent was obtained from all participants by informing them on the objectives of the investigation. The study respected the protection of human subjects by treating responses as confidential in accordance with the university guidelines and procedures. The principal investigator shared responsibility with research assistants for the ethical treatment of participants. Prior appointments were made for interviews. Respecting the rights of participants and respondents may have affected the study.