A STUDY FOR THE DEVELOPMENT OF A CURRICULUM DEVELOPMENT MODEL FOR NURSING EDUCATION

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SUMMARY

The process and main findings of a qualitative, interpretative-theoretical study aimed at designing a model for curriculum development in nursing and formulating criteria for a new nursing curriculum, are discussed. The research was conducted in three phases namely exploration, conceptualisation and evaluation. The steps involved in each of these phases are outlined by the author. The main findings that formed the basis for the conceptualisation of the proposed model are discussed. Pertaining to the curriculum it was found that it comprises a foundation and a structure, as well as a conceptual and a cultural dimension. Curriculum development was found to be a process comprising particular phases, steps and tasks. The researcher conducted a situational analysis and concluded that critical thinking and comprehensive health care are the main concepts influencing the nursing curriculum in South Africa.

INTRODUCTION

This article is based upon theoretical research which aimed at designing a curriculum development model for the Programme Leading to Registration as a Nurse (General, Psychiatric and Community) and Midwife (South African Nursing Council, 1985). The research culminated in the establishment of a curriculum development model and the formulation of criteria for a new curriculum. A series of three articles will convey an overview of the study. This first article provides an overview of how the research was done, and the general findings influencing the conceptualisation of the curriculum development model and the formulation of criteria for a new curriculum.

BACKGROUND AND RATIONALE OF THE STUDY

Two main factors influence nursing education namely, realities that are inherent in an information technology-driven global order, the so-called post-industrial era (Esterhuyse, 1995:19; Tanner, 1995:247), and the existence of a National Health System (NHS) that is aimed at addressing the health care needs of the citizens of the Republic of South Africa (RSA) (South Africa, 1997:14-16).

The post-industrial era is characterised by constant and revolutionary change resulting in a demand for nursing practitioners who are able to think critically and function in complex, ever-changing environments. Knowledge explosions in science and technology result in situations where people cannot depend on previously successful ideas. Innovation and creative thinking abilities are currently required (Esterhuyse, 1995:19; Neethling, 1994:16; Van Niekerk, 1992:120). Nurses should be able to adapt to constant social change and be committed to lifelong learning (Lovat & Smith, 1991:203-208; Ornstein & Hunkins, 1993:388).

Nationally, nursing education is influenced by a NHS requiring trained nurses who are able to render comprehensive health care that is based on the underlying philosophy of primary health care (South Africa 1997:14-16, 36, 224). Specific knowledge and skills are required to meet the needs and expectations of a diverse South African society. There is a need for flexible nurses who are able to function in various health care settings in both the public and private sectors.

The existing nursing curriculum is currently being criticised for preparing students inadequately to think critically and to render optimal comprehensive health care. These two concepts need to be operationalised in order to serve as guidelines.
for nurse educators (Gwele, 1996a:51-52).

The existing nursing curriculum is based on the empirical analytical curriculum development paradigm where the development of technical skills for a particular vocation is emphasised (Bevis & Watson, 1989:2; Gwele, 1996b:27-28).

This goes hand in hand with a focus on content and thought processes with immediate practical value (Slabbert, 1994:38).

This approach is applicable to the demands of the industrial era, but not to that of the post-industrial era. The latter requires that students’ thought processes, information skills and learning skills are developed in contrast to a mere mastering of content and technical skills (Badenhorst, 1993:412; Slabbert, 1994:38-39).

Appeals for curriculum changes are often voiced in the nursing literature. This can be effected by means of curriculum development. The realities faced by nurse educators and the criticisms against the existing nursing curriculum require that nurse educators reflect on the nature of curriculum content, teaching and learning with the demands of an information and technology-driven society, as well as the requirements of the NHS in mind. Such deliberations will benefit nursing education if these aspects are viewed within the overall framework of the nursing curriculum because any proposed changes will have curriculum development implications.

Various problems are encountered with curriculum development in nursing education. Research by Gwele and Uys (1995:9) revealed that nurse educators in the RSA are out dated in terms of developments in education. This can have negative consequences for innovative curriculum development in nursing. Curriculum development in nursing is further complicated by current uncoordinated curriculum development initiatives promoted by individual organisations or groups, which are also characterised by a lack of a clear curriculum development strategy (Stucky, 1997:9).

With the above in mind, the researcher undertook research to design a model which could serve as a practical guideline for curriculum development in nursing to effect fundamental curriculum changes.

**PROBLEM STATEMENT**

While participating in the activities of a curriculum development committee at a particular nursing college, the researcher realised that a simplistic approach was adopted by the members of the committee. The main questions addressed were: What content should be included in the nursing curriculum and how should the content be structured? The researcher realised that a curriculum encompasses more than content and design and that curriculum development should therefore not be limited to a focus on these two aspects. The committee also did not reflect on the influence of national and international tendencies on the nursing curriculum, nor did they reflect on the extent of curriculum change that was required. Furthermore, curriculum development must be preceded by insight into fundamental issues underlying the curriculum itself. This implies that attention should also have been directed towards the philosophical basis of a curriculum in general and the nursing curriculum in particular.

With the above in mind, the researcher contended that a curriculum development model is needed to guide nurse educators through the curriculum development process to ensure that curriculum development is conducted systematically and comprehensively.

The researcher realised that an in-depth approach was required. Zais (1976:98) says: “It is interesting to note that far more attention has been paid in the literature to prescribing the processes of curriculum development and change than to developing understanding of the bases and nature of the curriculum itself.” The author also says: “Superficial understanding has apparently generated superficial strategies that get superficial results.” The researcher therefore had to ensure that the proposed curriculum development model incorporates the curriculum development process, as well as steps aimed at reflecting on the nature and foundation of a curriculum.

The problem statement for this study was formulated as:

What kind of curriculum development model is suitable for nursing, which concepts should be included in such a model and what are the relationships between these concepts?

**RESEARCH QUESTIONS**

The following research questions flowed from the problem statement:

*What is a curriculum?*

This question was addressed by analysing the concept curriculum to explicate the nature of a curriculum and the curriculum development process.

*What is the social context of the nursing curriculum?*

A situational analysis was undertaken to determine the national and global realities influencing the nursing curriculum in the RSA thus enhancing the relevance of the research.

*What are the implications of the findings of the situational analysis for the nursing curriculum?*

The main issues identified during the situational analysis were interpreted and analysed to determine their implications for the curriculum.

**AIM AND OBJECTIVES**

The aim of this research was to gain insight into the issues that influence curriculum development in nursing, to determine the extent of the curriculum development task and elucidate the process by which curriculum development can be undertaken.
The objectives were to:

- Analyse the concept curriculum
- Undertake a situational analysis
- Interpret the situational analysis by analysing the main concepts that influence the nursing curriculum as identified during the situational analysis
- Conceptualise a curriculum development model for nursing education
- Formulate criteria for the implementation of the model
- Evaluate the model and criteria by submitting it to nurse educators for scrutiny

DEFINITIONS

Curriculum development

Print (1993:23) defines curriculum development as, "...the process of planning, implementing and evaluating learning opportunities intended to produce desired changes in learners". Krüger (1980:22) defines curriculum development as, "...planned improvements of teaching-learning programs".

Curriculum development model

A model is an example of a phenomenon that is unknown or cannot be observed directly, that enables one to visualise and understand it (Jacox, 1974:355). It is a simplified, symbolic representation of reality and is often presented in a diagrammatic form (McKay, 1969:326; Print, 1993:61).

A curriculum development model is used to study the components of a curriculum and the relationship between these components (Print, 1993:61-62).

FRAME OF REFERENCE

Curriculum development paradigms

The frame of reference for this study was the curriculum development paradigms namely, the empirical-analytical, the hermeneutical and the critical paradigm.

The empirical-analytical paradigm is based on a scientific and technical rationality whereby reality is explained in terms of the laws of nature that have been revealed through scientific research (Lovat & Smith, 1991:81; Rajah, 1993:96). It is congruent with the content-based and the behaviourist curriculum (Grundy, 1987:12; Lovat & Smith, 1991:81).

The hermeneutical paradigm is based on an interpretative rationality and the development of insight into the underlying assumptions or meanings of a phenomenon. Action is based on insight, which in turn facilitates critical judgement about the most appropriate course of action in a given situation (Bigge, 1982:96, 173, 217; Grundy, 1987:13). This paradigm is congruent with the process curriculum (Grundy, 1987:15).

The critical paradigm supports transformative, emancipatory education. The aim of education is the development of insight into the power structure of society and ideological manipulation of man, and the ability to challenge existing ideas and practices which are at play to preserve the status quo (Freire, 1972:20, 30-31; Grundy, 1987:18, 99, 106). This paradigm is congruent with the praxis curriculum (Grundy, 1987:99).

Assumptions

This study was based on various assumptions. The assumption of the researcher regarding epistemology was as follows:
- Personal interpretation and the generation of meaning are sources of knowledge.

The assumptions regarding curriculum development were as follows:
- Curriculum development must lead to fundamental curriculum change.
- A comprehensive curriculum development approach requires decision making about all the curriculum components forming the curriculum structure.
- Fundamental curriculum change requires that decision making be based on insight into the fundamental issues influencing the nursing curriculum.
- A curriculum committee is primarily responsible for curriculum development.
- National, international and professional tendencies influence curriculum development.
- Curriculum development can be done in an accountable manner if guided by a relevant curriculum development model.
- A curriculum development model must be designed by means of scientific research.

The assumptions about nursing and nursing care were:
- Nursing is a practice oriented profession.
- Nursing care is rendered in a complex and constantly changing health care system.
- Nursing care is influenced by social tendencies, as well as health care needs and expectations.
- Nursing care is characterised by an inter-relatedness between thinking, judgement and actions reflecting a problem solving approach.

The assumption about nursing education was:
- The aim of nursing education is to reconcile the theoretical and intellectual foundation of nursing with the realities and demands of nursing practice within a professional-ethical framework.
METHOD

Design and Method of Inquiry

A process curriculum development model for nursing education was designed by means of a qualitative, interpretative-theoretical research. The method was that of theoretical inquiry. Theoretical inquiry involves systematic data collection and reflection by practising deductive and inductive reasoning. Short and Grove (1994:3) describe the purpose of theoretical inquiry into curriculum as follows: "...to create and critique conceptual schemes by which the essential nature and structure of curricular phenomena and processes can be made intelligible." Theoretical research is the most fundamental method of inquiry into curriculum. It establishes conceptual tools for subsequent practical research and curriculum activities (Short & Grove, 1994:4).

Sampling

Theoretical sampling was done continuously as new insights were acquired, until data saturation occurred. The aim was to ensure that the relevant curriculum related concepts and themes were adequately represented. Theoretical sampling was guided by the particular concept analysed at a specific point in time and the process by which concept analysis was conducted by the researcher. The literature was consulted to analyse a particular concept, determine the curriculum implications thereof and to substantiate the researcher’s statements.

Data collection and Analysis

Philosophical analysis was undertaken to achieve the objectives of this research. Data collection and analysis took place simultaneously. An in-depth approach was maintained with this inquiry into the curriculum development phenomenon. Gaut (1985:73) says, "...the techniques of philosophical analysis are utilised for improving an understanding of human endeavors by the clarification of language." Brink (1996:123) says: "The philosophical researcher considers an idea or issue from all perspectives through extensive exploration of the literature, examining conceptual meaning, raising questions, proposing answers and suggesting implications of those answers." The reason for choosing to do a philosophical analysis is its potential contribution to translate abstract ideas into more concrete terms in a meaningful context (Gaut, 1993:73).

Research Phases and Steps

The research was conducted in three phases namely exploration, conceptualisation and evaluation.

The exploration phase included an analysis of the concept curriculum, a situational analysis and interpretation of the situational analysis.

The conceptualisation phase involved conceptualising the Model for Curriculum Development in Nursing and formulating criteria for the implementation of the Model.

During the evaluation phase, the researcher submitted the curriculum development model and criteria to nurse educators for peer review. Their suggestions were used to refine the model and accompanying criteria.

Various steps were followed to achieve the objectives of this research.

Step 1: Analysing the concept curriculum

The concept curriculum was defined and existing curriculum models were described. This resulted in the identification of sub-concepts which guided further analysis by the researcher namely curriculum foundation, curriculum structure and situational analysis.

Coding was done as indicated in table 1. Data with similar codes were then grouped and processed.

<table>
<thead>
<tr>
<th>Table 1- Framework for the analysis of curriculum and coding of data</th>
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</thead>
<tbody>
<tr>
<td>FOUNDATION</td>
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<tr>
<td>-------------</td>
</tr>
<tr>
<td>Nature of a curriculum (FOUND-1)</td>
</tr>
<tr>
<td>Purpose of a curriculum (FOUND-2)</td>
</tr>
<tr>
<td>Philosophical basis of a curriculum (FOUND-3)</td>
</tr>
<tr>
<td>Learning experiences (STR-4)</td>
</tr>
</tbody>
</table>

This resulted in an explication of the nature of a curriculum and the interrelationship between a curriculum and the social environment.

Step 2: Conducting a situational analysis

The social context of the nursing curriculum was analysed by means of a situational analysis. The main determinants of a curriculum are the community, subject matter and the student (Mostert, 1985:42; Mostert, 1986:63, 69). A framework (table 2) for conducting the situational analysis was developed by the researcher. The researcher refined this framework as she progressed and gained more insight into the nature of a situational analysis. Relevant documents, reports, minutes and general and professional literature were studied to collect data.

Coding was done as indicated in table 2. Data with similar codes were then grouped and processed.
Table 2 Framework for conducting the situational analysis

<table>
<thead>
<tr>
<th>COMMUNITY</th>
<th>SUBJECT MATTER</th>
<th>STUDENT</th>
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<tbody>
<tr>
<td>General social tendencies (COM)</td>
<td>General requirements for a nursing curriculum (NCURR)</td>
<td>- Exit criteria (STUD-1)</td>
</tr>
<tr>
<td>Constitutional (COM-1)</td>
<td>- Curriculum content (NCURR-1)</td>
<td>Nature of existing students (STUD-2)</td>
</tr>
<tr>
<td>Statutory (COM-2)</td>
<td>- Curriculum design (NCURR 2)</td>
<td>(STUD - 2)</td>
</tr>
<tr>
<td>Political (COM-3)</td>
<td>The existing nursing curriculum (EXIST)</td>
<td>- Requirements with regard to learning experiences (STUD-3) 3</td>
</tr>
<tr>
<td>Economic (COM-4)</td>
<td></td>
<td>- Problem areas regarding learning experiences and the competence of the qualified nurse (STUD-4)</td>
</tr>
<tr>
<td>Demographic (COM-5)</td>
<td></td>
<td>- Proposed solutions for identified problems (STUD-5)</td>
</tr>
<tr>
<td>Cultural (COM-6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technological (COM-7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>International (COM-8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General educational tendencies (EDU)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Statutory (EDU-1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education in developing countries (EDU-2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>International (EDU-3)</td>
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</tbody>
</table>

Step 3: Interpretation of the situational analysis

The situational analysis brought to light that two main concepts influence the nursing curriculum namely, critical thinking (CT) and comprehensive health care (CHC). After completing the situational analysis these two concepts were analysed. The purpose was to determine the implications of these concepts for the nursing curriculum. This was preceded by determining, based on the situational analysis, how a curriculum is conceptualised by nurses.

Based upon the insights that the researcher gained during an analysis of the concepts critical thinking and comprehensive health care, concept analysis was extended to include an analysis of learning experiences (LE) and role of the nurse educator (ROLE). These concepts were analysed within the overall framework of critical thinking and comprehensive health care. This resulted in the identification of further concepts to be analysed namely problem-based learning, media-based learning, co-operative learning, mediated learning and reflective learning. Lastly, the implications of critical thinking, comprehensive health care, self-directed learning and problem-based learning for curriculum design, were investigated.

Coding was done by combining the number of each step in table 3 with the code of the concept which was being analysed e.g. CT-2; LE-4. Data with similar codes were then grouped and processed.

Table 3: Concept analysis method

<table>
<thead>
<tr>
<th>CONCEPT ANALYSIS METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identifying the concept</td>
</tr>
<tr>
<td>2. Describing the objective for analysing the concept</td>
</tr>
<tr>
<td>3. Formulating definitions and descriptions</td>
</tr>
<tr>
<td>4. Describing model cases in the form of existing theories, models or descriptions</td>
</tr>
<tr>
<td>5. Describing a contrasting case</td>
</tr>
<tr>
<td>6. Describing the expected outcome of the implementation of the concept in the nursing curriculum</td>
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</tbody>
</table>


Step 4: Conceptualisation of the Model for Curriculum Development in Nursing

The results of the preceding analysis served as a conceptual framework for the conceptualisation of the Model for Curriculum Development in Nursing. The constitutive and the structural concepts of the Model were identified, defined and discussed. The constitutive concepts are the components of a model and the structural concepts describe the relationship between the constitutive concepts (Short & Grove, 1994:3). The Model explicates the relationship between the stages, steps and tasks that constitute the curriculum development process. In addition to this, the researcher developed criteria for the implementation of the Model which also include criteria for a new nursing curriculum.

The Model and criteria will be discussed in subsequent articles.

Step 5: Evaluation of the curriculum development model resulting from this research

The Curriculum Development Model for Nursing and the criteria for the implementation of the Model were submitted for peer review. The respondents were asked to complete a questionnaire that consisted of a Likert scale. The items were derived from the criteria for theory evaluation by Chinn and Kramer (1995:126-137) and Parse (1987:5-10).
The Model was therefore evaluated for semantic integrity, logical progression and practicality. Respondents were also requested to write general suggestions and comments in the spaces provided. The responses indicated clearly that the respondents regarded the Model as a suitable guide for curriculum development in nursing. Their general comments proved to be valuable and were used by the researcher to refine the Model.

**Trustworthiness**

The main dilemma which the researcher was faced with, was the requirement that preconceptions and personal preferences be set aside, while the interpretative nature of the study required subjective judgement. However, the researcher tried to maintain a balance between maintaining an open mind and practising subjective judgement. It must be kept in mind that interpretation had to occur within a particular framework, namely within the parameters of the problem statement and research questions. That complicated the issue of the researcher’s neutrality. However, Lincoln and Guba (1985:300) state that neutrality in qualitative research should be judged by focusing on the confirmability of the data rather than the characteristics of the researcher.

Lincoln & Guba’s (1985:289-231) model of trustworthiness of qualitative research was used as a guideline to enhance trustworthiness of the findings of this study. The assumption of Lincoln and Guba (1985:250) namely, “(Second) the doing of naturalistic inquiry presumes, except under very unusual circumstances, heavy reliance on the human as instrument,” is congruent with that of the researcher namely, personal interpretation and meaning making are sources of knowledge. Therefore, the researcher regarded Lincoln and Guba’s (1985) model to be appropriate for this research.

Trustworthiness of the research findings was enhanced by adhering to the following:

- The researcher had previously gained extensive experience in curriculum activities such as curriculum evaluation, curriculum development and conducting a situational analysis. She is therefore knowledgeable with regard to the field of study.
- The researcher used the exploration phase of the research to exchange preconceptions and misconceptions, for a more realistic view of the nature of a curriculum, curriculum development and the social context of the nursing curriculum.
- The researcher consulted the literature extensively and repeatedly until a clear understanding was obtained and data saturation occurred.
- The researcher linked interpretations to existing models or theories where applicable.
- The researcher submitted the research periodically to the promoters for verification.

To enhance transferability of the research findings, the researcher:

- included extensive discussions in the thesis to enable the reader to judge the applicability of the research to his/her organisation
- submitted the Model and implementation criteria to nurse educators to judge, amongst others, its applicability and practical implementation potential.

Dependability was enhanced by:

- conducting the research in a flexible manner. The researcher refrained from imposing a rigid analytical strategy on all the research objectives. By doing so, she ensured that the unique characteristics of each concept were taken into consideration during concept analysis.
- submitting the research periodically to the promoters to judge the methodological aspects thereof.

To enhance confirmability of the findings the researcher ensured that the findings, conclusions and recommendations are substantiated by preceding discussions and analyses.

**GENERAL FINDINGS**

The study resulted in the conceptualisation of a curriculum development model and implementation criteria which were derived from various main findings, summarised in the following section. The Model and criteria will be discussed in subsequent articles.

**The nature of curriculum development**

Curriculum development is a process that consists of three phases namely planning, design and implementation. Each phase comprises various steps through which particular curriculum development tasks are executed. A curriculum development model should therefore stipulate the tasks to be completed during curriculum development and the process through which these tasks can be systematically completed.

**The nature of a curriculum**

**Components of a curriculum (figure 1)**

A curriculum consists of a foundation and a structure. Curriculum foundation comprises the philosophical assumptions about the epistemology, society/culture, man and learning. The curriculum foundation influences the structure and the substance of a curriculum. Curriculum structure refers to the components of a curriculum namely goals, content, design, learning experiences and evaluation (Zais, 1976:15, 96-98). A curriculum is socially situated. The social context of a curriculum is determined through a situational analysis.

A curriculum development model should therefore incorporate the curriculum foundation and structure, as well as the situational analysis.
FIGURE 1: Components of a curriculum

FIGURE 2: Dimensions of a curriculum

FIGURE 3: Social Context of the nursing curriculum
The dimensions of a curriculum (figure 2)
A curriculum has a conceptual and a cultural dimension (Grundy, 1987:5,7). This means that a curriculum could be conceptualised in terms of an educational plan and a strategy for the implementation of the educational plan. The educational plan consists of an outline of the goal (aim, exit and learning outcomes), curriculum content, learning experiences and evaluation standards. This is organised to reflect a distinct curriculum design. The implementation strategy consists of guidelines pertaining to the teaching-learning strategies, the learning climate, the role of the nurse educator, as well as evaluation strategies.

A curriculum development model should therefore support the development of an educational plan and implementation strategy.

The social context of the nursing curriculum

The two main factors influencing nursing education in the RSA namely, the so called post-industrial era (Esterhuyse, 1995:19; Tanner, 1995:247) and the NHS (South Africa, 1997:14-16) are represented in figure 3.

The researcher conducted a situational analysis and concluded that critical thinking and comprehensive health care are the main concepts influencing the nursing curriculum in South Africa (figure 4). Critical thinking as an influencing concept is closely related to the realities of an information and technology-driven world. The concept comprehensive health care is consistent with national health care realities.

Comprehensive health care is an influential concept requiring that the nursing culture be taught to students within the framework of existing health legislation (South Africa, 1997). Critical thinking will enable nurses to view nursing traditions critically and to challenge outdated ideas, practices and existing health care limitations (Halpern, 1996:5; Kataoka-Yahiro & Saylor, 1994:352).

Criteria for a new nursing curriculum should therefore be derived from the concepts critical thinking and comprehensive health care.

CONCLUSION

Theoretical research aimed at designing a curriculum development model and formulating criteria for a new nursing curriculum, was conducted by the researcher. In this article, the research process and main findings that influenced the conceptualisation of the model and criteria were discussed. The main findings of the research indicated that curriculum development phases, steps and tasks should be incorporated into a curriculum development model. A curriculum development model should also incorporate the curriculum foundation and structure, as well as situational analysis. Such a model should support the development of a curriculum that comprises an educational plan and an implementation strategy.

Curriculum development is aimed at designing a new curriculum. Criteria for a new nursing curriculum should be derived from the concepts critical thinking and comprehensive health care.

![Diagram](image_url)

**FIGURE 4:** Main concepts that influence the nursing curriculum
In subsequent articles, the curriculum development model and criteria for a new nursing curriculum will be discussed.

LIST OF SOURCES


Mostert, JM 1985: Situasie-analise en die bepaling van doelstellings vir vakkerkurricula. Pretoria: RGN.


