CRITERIA FOR A NURSING CURRICULUM FOR THE NEW MILLENNIUM

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SUMMARY

This article is based upon literature research aimed at theorising about a curriculum development model for the Programme leading to Registration as a Nurse (General, Psychiatric and Community) and Midwife. Criteria for a new nursing curriculum were formulated based on this research. One of the findings of the research is that curriculum development should lead to the establishment of a curriculum document that comprises a section outlining the foundation of the proposed curriculum, an educational plan and an implementation strategy. Based on this finding the criteria for a nursing curriculum are classified into criteria pertaining to the foundation of the nursing curriculum, criteria pertaining to the educational plan and criteria pertaining to the implementation strategy. The criteria for a new nursing curriculum were inferred from an analysis of the concepts critical thinking and comprehensive health care.

OPSOMMING

Die artikel is gebaseer op literatuurnavorsing gerig op teoretisering oor 'n kurrikulumontwikkelingsmodel vir die Program vir Registrasie as 'n Verpleegkundige (Algemene, Psigiatryse, Gemeenskaps-) en Vroedvrou. Kriteria vir 'n nuwe verpleegkundekurrikulum is geformuleer, gebaseer op die navorsing. Een van die bevindinge van die navorsing is dat kurrikulumontwikkeling behoort te lei na die daarstelling van 'n kurrikulumdokument wat bestaan uit 'n afdeling waarin die grondslag van die voorgename kurrikulum uitgespel word, 'n opvoedkundige plan, asook 'n implementeringstrategie. Op grond van dié bevinding is die kriteria vir 'n verpleegkundekurrikulum geklassifiseer volgens kriteria vir die grondslag van die voorgename kurrikulum, kriteria vir die opvoedkundige plan en kriteria vir die implementeringstrategie. Die kriteria vir 'n nuwe verpleegkundekurrikulum is afgelei van 'n analise van die konsepte kritiese denke en omvattende gesondheidsorg.

INTRODUCTION

This article is based upon literature research aimed at theorising about 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 outcomes of the research include the formulation of criteria for a new nursing curriculum. These criteria represent the characteristics of a nursing curriculum that could contribute towards training nurses for the new millennium. The purpose of this article is to discuss the said criteria. Initially, the nature of a curriculum and the social context of the nursing curriculum will be discussed briefly.

THE NATURE OF A CURRICULUM

Components of a curriculum

A curriculum consists of a foundation and a structure. The curriculum foundation comprises the philosophical assumptions about the epistemology, society/culture, the individual and learning. It also represents a particular view about the nature and purpose of a curriculum. The curriculum foundation influences the structure and the substance of a curriculum. Curriculum structure encompasses the components thereof, namely goal, content, design, learning experiences and evaluation (Zais, 1976:15, 96-98).

A curriculum is socially situated. Therefore, decisions about the characteristics of a proposed curriculum are inferred from the findings of a situational analysis.

A discussion about the characteristics of a curriculum for the new millennium should therefore incorporate criteria for the curriculum foundation and structure, which are in line with social realities.

The dimensions of a curriculum

A curriculum has a conceptual and a cultural dimension (Grundy, 1987:5, 7). This means that it 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 (aims, exit outcomes 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 teaching-learning strategies, the learning climate, the role of the nurse educator and evaluation strategies.

A discussion about the characteristics of a curriculum for the new millennium should therefore incorporate the educational plan and the implementation strategy.

THE CURRICULUM DOCUMENT

The results of a curriculum development initiative are reported upon in a curriculum document. The preceding discussions about the nature of a curriculum indicate that a curriculum document (figure 1) should consist of various sections namely:

- a section outlining the foundation of the proposed curriculum;
- an educational plan specifying the curriculum structure, namely goal, curriculum content, learning experiences and evaluation standards; and
- an implementation strategy comprising guidelines for learning experiences, the role of the nurse educator, the learning climate and evaluation strategies.

The substance of the educational plan and implementation strategy should be consistent with the stated foundation of the proposed curriculum and the findings of a situational analysis.

THE SOCIAL CONTEXT OF THE NURSING CURRICULUM

Nursing education is influenced by an information technology-driven, post-industrial, global order (Esterhuysen, 1995:19; Tanner, 1995:247), and the National Health System (NHS) striving to address the specific health care needs of the Republic of South Africa (RSA) in particular (South Africa, 1997:14-16).

During the research under discussion, the researcher conducted a situational analysis and concluded that *critical thinking* and *comprehensive health care* are the main concepts influencing the nursing curriculum in the RSA. *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 and legislation.

Comprehensive health care as an influencing concept requires 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 challenge outdated ideas, practices and existing health care limitations (Halpern, 1996:5; Kataoka-Yahiro & Saylor, 1994:352).

CRITERIA FOR A NEW NURSING CURRICULUM

With the proposed nature of the curriculum document (figure 1) and the results of the situational analysis as points of departure, the researcher formulated criteria for a new nursing curriculum.

Criteria pertaining to the foundation of the nursing curriculum

Criterion I: The nursing curriculum should be based on a definition of curriculum that acknowledges the conceptual and cultural dimensions thereof

A definition that reflects the curriculum committee's view about the nature of a curriculum should be included in the foundation section of the curriculum document. A definition

that acknowledges the conceptual and cultural dimensions of a curriculum could pave the way for curriculum development that is aimed at establishing and implementing an educational plan and an implementation strategy. The curriculum goal, content, learning experiences and evaluation standards are specified in the educational plan. Teaching-learning strategies, the role of the nurse educator, the ideal learning climate and evaluation strategies that can contribute towards the successful achievement of the curriculum goal, are specified in the implementation strategy. The implementation strategy is also the point of departure for personnel development with regard to implementing the educational plan.

Criterion II: The purpose of the nursing curriculum should be conceptualised in terms of promoting a personal commitment to learning

The curriculum committee should state their views about the purpose of a nursing curriculum in the foundation section of the curriculum document. Conceptualising the purpose of a curriculum in terms of a personal commitment to learning could pave the way for curriculum development aimed at preparing nurses to be able to think critically and to render comprehensive health care. Critical thinking skills and a continual ability to render comprehensive health care are dependent upon a life-long learning disposition amongst nurses. The personal commitment purpose of a curriculum supports the establishment of a curriculum aimed at conveying the nursing culture, promoting intellectual development of students and contributing to social reform. This purpose also supports establishing, amongst students, an eagerness to acquire insight into, and appreciate the questions posed by the various academic disciplines (Vallance, 1986:27-28).

Criterion III: Progressivism could be adopted as the educational philosophy on which the nursing curriculum is based

The educational philosophy underlying the proposed curriculum should be specified in the foundation section of the curriculum document. Progressivism is based on the philosophy of pragmatism. This philosophical approach is congruent with the intention to teach the cultural tradition of nursing to students while also promoting their intellectual development, adaptation skills and their ability to contribute towards social change (Ornstein & Hunkins, 1988:38-39, 47; Ornstein & Levine, 1993:234, 237).

Criterion IV: The perspective about the meaning of the concept "knowledge" should be clarified

A statement about the nature of the concept knowledge should include references to it as something external to the individual that may be known; the act, process or state of showing knowledge or awareness of something that may be known; the result or product of knowing something (Branford, 1987:415). Within a curriculum context knowledge therefore refers to subjects and subject disciplines that need to be mastered by students, as well as intellectual and learning skills and processes through which knowledge is acquired. It also includes the notion that students acquire

FIGURE 1: THE CURRICULUM DOCUMENT

demonstrable abilities during the process of learning (Stenhouse, 1975:82; Zais, 1976:327).

Criterion V: Statements about the anticipated value of the proposed curriculum for society in general should be consistent with latest social tendencies

The findings of a situational analysis should be the point of departure for formulating statements about the anticipated value of the proposed curriculum.

Statements about the broad characteristics of the graduate practitioner could include references to the ability to think critically, practise life long learning and render comprehensive health care competently. References to the ability to adapt to and initiate change are also important considering the changing environment within which health care is rendered.

There should be a statement indicating the relevance of the proposed nursing curriculum for a multicultural society. This could pave the way for the development of an educational plan and implementation strategy supporting a multicultural approach and cultural sensitivity. A language (-s) of instruction could also be proposed. This is particularly relevant in the RSA, which is a multi-lingual society.

Considering the developments in the area of information technology, the curriculum committee should acknowledge the value of electronic media as sources of knowledge. This could support the development of an implementation strategy fostering an independent search for knowledge, by utilising the electronic media such as computer software packages and the Internet.

Criterion VI: The learning theories, on which the curriculum is based, should support problem-based, media-based, co-operative, mediated and reflective learning

The nursing curriculum should support problem-based, media-based, co-operative, mediated and reflective learning. The learning theories that are fundamental to the stated learning approaches are the cognitive field, the cognitive development and experiential theories. The cognitive field theories support problem based learning (Bigge, 1982:61, 217-218). The cognitive development theories support co-operative learning and mediated learning (Vygotsky, 1978:56-57; Wink, 1997:82-88). The experiential theories support reflective learning (Davies, 1995:167; Freire, 1972:41; Kolb, 1984:40-43).

Criteria pertaining to the educational plan

Criterion VI: The main aims of the nursing curriculum should be "critical thinking" and the ability to render "comprehensive health care"

Exit and learning outcomes with regard to *critical thinking* and *comprehensive health care* should be stated in the curriculum document.

Critical and specific outcomes (Olivier, 1997:7-8) should be specified. Critical outcomes include outcomes related to *critical thinking*, social competence and assuming a global vision. Specific outcomes refer to professional and technical outcomes related to *comprehensive health care*.

Criterion VIII: The curriculum content should cover the scientific knowledge base of nursing, critical thinking skills and related processes, as well as meta-cognitive skills

Curriculum content should include the specific knowledge base of nursing (content and skills), critical thinking skills and processes, as well as meta-cognitive knowledge. This can include authoritative knowledge (subjects and subject disciplines) (Kneller, 1971:22), procedural knowledge (technical skills) (Quinn, 1995:40), methodological knowledge (processes such as problem solving and research) (Belenky *et al.* in Bevis, 1989:179-180) and meta-cognitive knowledge (skills pertaining to learning) (Halpern, 1996:34). Guidelines directing educators in the selection of educational strategies that will enable students to translate public knowledge (Zais, 1976:153) into personal knowledge (West, Fenham & Garrard in Gravett, 1994:64), thus contributing towards internalisation, should be developed.

Provision should be made for electives allowing some choices for addressing the specific interests of students. The principles of a process curriculum (Ornstein & Hunkins, 1993:234, 237) should be adhered to, namely focusing on thinking and learning processes, rather than merely accumulation of facts.

Comprehensive health care and *critical thinking* have various implications for curriculum design. Two dimensions of curriculum design exist, namely design to ensure a logical progression through the learning material and design to ensure a systematic approach to foster student development. The latter includes professional and intellectual development, as well as development towards self-directed learning.

Criterion IX: Vertical curriculum organisation aimed at intellectual development should facilitate students' progression through the levels of critical thinking and development towards self-directed learning

Vertical curriculum organisation aimed at intellectual development of students can be conceptualised in terms of the critical thinking levels, namely basic, complex and commitment. This means that students are allowed to progress through various stages:

- The most basic stage is characterised by a right-wrong orientation with a belief in the educator as the source of correct answers.
- The complex stage is characterised by the acknowledgement that more than one perspective or solution to a problem may exist and students are required to analyse possible solutions critically in order to select the most suitable one. In complex situations the persons who are at this level are able to deviate from standard protocols.
- The commitment stage is characterised by the ability to make responsible choices based on personal values and beliefs, as well as a commitment to act responsibly on these choices.

(Katayoka-Yahiro & Saylor, 1994:354-355; Perry, 1970:9-10, 59, 97, 153).

The above can be achieved by guiding students through various learning stages, namely dependent, interested, involved and self-directed. This means that the role of the nurse educator and the student could progress as follows:

- Stage one is characterised by teacher-centred education whereby students are dependent on an authority figure, namely the nurse educator.
- Stage two is characterised by interested students who are inspired by the nurse educator who acts as a motivator and guide.
- The third stage is the stage of student involvement in a democratic learning environment. Students are equal partners in, for instance, group projects and the nurse educator's role is that of facilitator.
- Stage four is one of self-directed learning under the guidance of the nurse educator who acts as a consultant or delegator.

(Grow, 1991:129).

Criterion X: Vertical curriculum organisation aimed at preparing students to render comprehensive health care, could be planned according to the levels of health prevention (figure 2)

Vertical curriculum organisation should promote the development of competence to render comprehensive health care. For this purpose, curriculum content and clinical placement of students are planned to proceed through primary, secondary and tertiary prevention and students should be exposed to the corresponding levels of health services.

FIGURE 2: HORIZONTAL CURRICULUM ORGANISATION FOR COMPREHENSIVE HEALTH CARE

Criterion XI: Horizontal curriculum organisation with regard to subject matter should occur according to integrating themes

Integration can be achieved by stating themes that should be studied by students. These themes should support integration of various subjects, subject disciplines, as well as theory and practice. Specific problems and issues related to each theme are then selected to effect problem-based learning.

Another aspect of horizontal curriculum organisation is breadth versus depth of learning (figure 3).

FIGURE 3: HORIZONTAL CURRICULUM ORGANISATION AND SUBJECT MATTER (WAYS OF KNOWING)

The depth in which the thematic learning material is studied, is conceptualised in terms of Habermas' ways of knowing, namely empirical, hermeneutic and self-reflective (critical) (Lovat & Smith, 1991:74-76). In-depth knowledge can be promoted by allowing the students to analyse the learning material, reflect upon the underlying meanings and principles inherent in each theme and critically reflect upon socio-political factors that are at play to promote the status quo (Lovat & Smith, 1991:75-76).

The breadth of the curriculum is conceptualised in terms of Carper's ways of knowing, namely empirical knowledge, ethical knowledge, self-knowledge and aesthetic knowledge (Carper, 1978:218-220). Students should study the relevant facts, acquire practical skills and reflect upon the ethical issues inherent in each theme. The development of self-knowledge related to each theme should be promoted. Learning opportunities to practise relevant critical thinking skills and processes should be established by the nurse educator.

Horizontal curriculum organisation also incorporates bal-

ance. Balance can be achieved by allocating weight to curriculum content that is consistent with the health priorities of the RSA and to review this weighting from time to time to correspond with social change.

Criterion XII: Intellectual and professional standards for the evaluation of learning should be developed

Intellectual and professional standards (Kataoka-Yahiro & Saylor, 1994:353-354) should be specified and included in the educational plan (figure 4). These standards are incorporated in evaluation instruments and memoranda in the form of evaluation criteria.

Evaluation criteria to assess students' intellectual performances such as research, problem solving, decision-making and creativity should be developed. This includes criteria pertaining to the ability to think comprehensively, as well as to communicate and defend arguments in a logical, accurate and unambiguous manner. Evaluation therefore goes beyond assessing students' ability to memorise and regurgitate information.

FIGURE 4: EVALUATION OF LEARNING

Ethical, legal and other professional criteria for evaluation should also be specified, ensuring that students' intellectual and clinical performances are judged within the parameters of accepted professional norms and standards.

Clinical evaluation instruments should be aimed at assessing students' abilities to render comprehensive health care whilst maintaining a critical approach. Items for evaluating problem solving and decision-making skills, as well as the ability to practise creatively, should be included.

Criteria pertaining to the implementation strategy

Criterion XIII: Learning opportunities for conceptual and action-based learning should be specified.

It should be ensured that students are exposed to abstract and concrete reality models during the learning process (Print, 1993:176-177).

Criterion XIV: A community based learning approach should be maintained

The principle of a community based curriculum requires that students are confronted with concrete and abstract reality models that reflect the health needs, problems and tendencies within society (Biteyi, 1993:27-29; Ntoane, 1993:19).

The curriculum should reflect the health care priorities of society as determined from the findings of a situational analysis. This can be effected by allocating relatively more weight to the subject matter related to the health priorities of society. The clinical settings to which students are exposed, should also be representative of the services in which they might practise as qualified nurses, with special emphasis on priority areas.

It is important that education, and not merely the rendering of services, should be the primary focus during clinical teaching or while students are assigned to clinical settings. Students should also have access to relevant educational

media to ensure that a learning climate prevails in the clinical setting.

Criterion XV: *Teaching and learning should support the principles of problem-based, media-based, co-operative and reflective learning (figure 5)*

New knowledge is acquired to supplement existing knowledge for successful problem solving. This leads to an extension of the existing cognitive structure. Knowledge and problem solving skills acquired by students are tested experimentally in similar situations leading to repetitions of the process (Creedy, Horsfall & Hand, 1992:729-732; Ford & Profetto-

FIGURE 5: LEARNING EXPERIENCES, ROLE OF THE NURSE EDUCATOR AND LEARNING CLIMATE

Abstract and concrete reality models serve as learning stimuli for problem based learning. Problem based learning provides a link between the conceptual structure of existing knowledge in the mind of students and action for the achievement of learning objectives in the classroom or clinical situation. Problems and issues which students are confronted with need to be interpreted according to the cognitive structure of existing knowledge through the process of reflection.

McGrath, 1994:341-343).

Problem based learning requires the ability to seek information independently, to process and apply that information appropriately in order to solve a given problem or to address a given issue. Learning occurs in a rapidly changing society characterised by knowledge and technological explosions. Therefore, the development of information and technological

skills (pertaining to information technology) is essential. Media, with an emphasis on information technology, are important sources of information on which problem solving is based. Therefore, learning activities should require that students seek information independently using, amongst others, information technology.

Learning activities should be structured to promote the development of information skills among students. These activities should be structured to guide students through phases of seeking, interpreting and applying information systematically and appropriately (Chow, 1987:8-25).

Problem based learning and media based learning should occur in a co-operative learning climate. Teaching-learning strategies should therefore also support co-operative learning.

Criterion XVI: A strategy for the establishment of an interactive, co-operative, democratic learning climate, aimed at developing a critical disposition among students, should be proposed (figure 5)

Interaction among students, between nurse educators and students, as well as between students and the learning material, is important for the development of critical thinking skills. Strategies to promote the establishment of an interactive learning climate should therefore be proposed. This should be supported by strategies promoting co-operation, interdependency, and democracy in the learning setting. Furthermore, the learning climate should support the development of a critical disposition by implementing strategies to enhance inquisitiveness and risk taking in order to devise creative solutions or answers to problems. Characteristics such as perseverance and self-discipline should be respected and rewarded accordingly.

Criterion XVII: The role of the nurse educator should be conceptualised in terms of mediation and promotion of self-directed learning (figure 5)

The role of the nurse educator is two fold namely that of mediator and promoting self-directed learning.

The nurse educator as mediator

The nurse educator mediates between external stimuli and the internal cognitive processes of each student in order to effect cognitive development in social contexts (Feuerstein, 1980:15-17). The mediation role of the nurse educator includes:

- providing structure and clarifying where problem areas exist
- establishing a learning climate as discussed previously (criterion XVI)
- planning and facilitating learning experiences as discussed previously (criterion XIII-XV)
- facilitating students' progress towards higher levels of critical thinking and self-directed learning (criterion IX)
- promoting personal experience of accomplishment amongst students by promoting self-evaluation and ensuring that students experience success

(Mentis & Frielick, 1993:106-107).

The nurse educator and self-directed learning

The role of the nurse educator as mediator goes hand in hand with the promotion of self-directed learning. Self-directed learning can be promoted by correlating the nurse educator's involvement in the teaching-learning situation with the students' learning stage at a particular point in time and to promote development towards a more advanced stage (see criterion IX).

Criterion XVIII: The nurse educator fulfils his/her role as mediator by implementing the principles of experiential learning (figure 5)

The nurse educator applies the principles of experiential learning to promote reflective involvement of students. This means that the learning experiences should be structured so that students are accompanied through the phases of experiential learning, namely concrete experience, reflective observation, abstract conceptualisation, and active experimentation (Kolb, 1984:40).

Criterion XIX: A variety of evaluation strategies for the evaluation of learning should be specified (figure 4)

Formative and summative evaluation strategies, clinical and theoretical, are developed to assess learning conceptually and practically. Strategies should include those for self-evaluation, peer group evaluation and evaluation by the nurse educator.

The focus of evaluation should include assessing the following:

- progress towards self-directed learning
- progress towards achieving learning outcomes
- contribution towards group effectiveness with regard to achieving learning objectives during co-operative learning
- ability to apply knowledge to solve problems and address given issues
- problem solving strategies practised by students

(Uys & Cassimjee, 1997:135-136; Van Niekerk & Van Aswegen, 1993:39-40)

Criterion XX: Evaluation of learning should comply with a problem based, community based and comprehensive health care approach (figure 4)

A problem-based approach requires that students' abilities to apply nursing knowledge to solve problems or address given issues are evaluated. This can be done by stating test and examination items in the form of problems and issues that need to be solved or debated. Students' achievements are assessed according to specified intellectual and professional criteria (see criterion XII).

A community based approach requires that items be representative of prevalent problems and issues in the community. The ability of students to address these problems and issues should be evaluated.

The principle of comprehensive health care requires that items in test and examination papers, as well as clinical evaluation instruments, represent the comprehensive role of the nurse. This means that each paper or clinical evaluation instrument should include items with regard to:

- preventing disease and promoting health,
- identifying and handling of risk groups,
- nursing patients with acute and chronic health problems in community and curative settings,
- promoting re-integration into the community after suffering from a major health problem.

CONCLUSION

The result of curriculum development is the establishment of a curriculum document consisting of sections outlining the foundation of the proposed curriculum, an educational plan and an implementation strategy. *Critical thinking* and *comprehensive health care* are the main concepts influencing the nursing curriculum. The author proposed criteria for each section of the curriculum document. These criteria are derived from literature research aimed at theorising about a curriculum development model for nursing in which *critical thinking* and *comprehensive health care* were analysed to determine the curriculum implications thereof.

BIBLIOGRAPHY

- Bevis, EO 1989: Teaching and learning. The key to education and professionalism. (In: Bevis, EO and Watson, J (eds.) 1989: Toward a caring curriculum. A new pedagogy for nursing. New York: NLN, pp. 153-188.)
- Bigge, ML 1982: Learning theories for teachers; fourth edition. New York: Harper & Row.
- Biteyi, R 1993: Innovative approaches to teaching in nursing: The LePSA methodology. International Conference on March 21-24: Africa Unite for Nursing Education: Integrating Primary Health Care into Nursing Education. Bellville: University of the Western Cape.
- Branford, W (Editor) 1987: South African pocket Oxford dictionary. Cape Town: Oxford University Press.
- Carper, BA 1978: Fundamental patterns of knowing in nursing. (In: Nicoll, LH (ed.) 1978: Perspectives on nursing theory. Philadelphia: Lippincott, pp. 216-223.)
- Chow, C 1987: Information skills curriculum guide. Process, scope and sequence. Washington: Library Media Association.
- Creedy, D; Horsfall, J & Hand, B 1992: Problem based learning in nurse education: An Australian view. **Journal of Advanced Nursing**, 17, 1992:727-733.
- Davies, E 1995: Reflective practice: A focus for caring. **Journal of Nursing Education**, 34(4), 1995:167-174.
- Esterhuyse, W 1995: Tussen twee wêreldes. **Finansies en Tegniek**, 17 Maart 1995:19.
- Feuerstein, R 1980: Instrumental enrichment: An intervention program for cognitive modifiability. Baltimore: University Park Press.
- Ford, JS & Profetto-McGrath, J 1994: A model for critical thinking within the context of curriculum as praxis. **Journal of Nursing Education**, 33(8), 1994:341-344.
- Freire, P 1972: Pedagogy of the oppressed. Harmondsworth: Penguin.
- Gravett, S 1994: Die dosent se taak as leerbegeleier. **Suid-Afrikaanse Tydskrif vir Hoër Onderwys**, 8(1), 1994:64-68.
- Grow, GO 1991: Teaching learners to be self-directed. **Adult Education Quarterly**, 41(3), 1991:125-149.
- Grundy, S 1987: **Curriculum: Product or praxis**. Philadelphia: Falmer Press.
- Halpern, DF 1996: Thought and knowledge: An introduction to critical thinking; third edition. Mahwah: Lawrence Erlbaum.
- Kataoka-Yahiro, M & Saylor, C 1994: A critical thinking model for nursing judgement. **Journal for Nursing Education**, 33(8), 1994:351-356.
- Kneller, GF 1971: Introduction to the philosophy of education. New York: John Wiley.
- Kolb, DA 1984: Experiential learning experience as the source of learning and development. Prentice Hall: Englewood Cliffs.
- Lovat, TJ & Smith, DL 1991: Curriculum: Action on reflection. Wentworth Falls: Social Science Press.
- Mentis, M & Frielick, S 1993: Teaching thinking and thinking teaching: Adaptations of Feuerstein's cognitive theories in a university setting. **South African Journal for Higher Education Research Supplement**, 7(1), 1993:101-109.
- Ntoane, C 1993: The health of the public: Towards reorienting the training of health personnel for the "new" South Africa. Inaugural lecture delivered on 4 November 1993. Bellville: University of the Western Cape.
- Olivier, C 1997: Outcomes-based education and training programmes. Ifafi: OBET Pro.
- Ornstein, AC & Hunkins, F 1988: Curriculum: Foundations, principles and theory. Boston: Allyn & Bacon.

Ornstein, AC & Hunkins, F 1993: Curriculum: Foundations, principles and theory; second edition. Boston: Allyn & Bacon.

Ornstein, AC & Levine, DU 1993: Foundations of education; fifth edition. Boston: Houghton Mifflin.

Perry, WG 1970: Forms of intellectual and ethical development in the college years. A scheme. New York: Holt, Rinehart & Winston.

Print, M 1993: Curriculum development and design; second edition. St. Leonards: Allen Unwin.

Quinn, FM 1995: The principles and practice of nursing education; third edition. London: Chapman & Hall.

South Africa 1997: White Paper for the Transformation of the Health System in South Africa. Notice 667 of 1997. Pretoria: Government Printer.

South African Nursing Council 1985: Regulations leading to approval and the minimum requirements for the education and training of a nurse (general, psychiatric and community) and midwife leading to registration. R. 425. (As amended). Pretoria: State Printer.

Stenhouse, L 1975: An introduction to curriculum research and development. London: Heinemann.

Tanner, CA 1995: Editorial: The times they are a-changin'. *Journal of Nursing Education*, 34(6), 1995:247.

Uys, LR & Cassimjee, R 1997: Implementing a problem based curriculum in a university department. **South African Journal of Higher Education**, 11(1), 1997:132-138.

Vallance, E 1986: A second look at conflicting conceptions of curriculum. **Theory into Practice**, XXV(1), 1986:24-30.

Van Niekerk, K & Van Aswegen, E 1993: Implementing problem based learning in nursing. **Nursing RSA**, 8(5), 1993:37-41.

Vygotsky, LS 1978: Mind in society. The development of higher psychological processes. Translated by M Cole. London: Harvard University Press.

Wink, J 1997: Critical pedagogy: Notes from the real world. New York: Longman.

Zais, RS 1976: Curriculum principles and foundations. New York: Harper & Row.