

LEARNING EXPERIENCES OF STUDENTS DURING INTEGRATED MANAGEMENT OF CHILDHOOD ILLNESS (IMCI) TRAINING

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Abstract

The aim of the study on which this article is based was to reflect on the learning experiences of students during integrated management of childhood illness (IMCI) training in an undergraduate programme. IMCI is a set of guidelines that was established by the World Health Organisation (WHO) for cost-effective quality care for children younger than five to prevent diseases and death (WHO, 2004). Skilled primary healthcare workers are required to provide quality care at first contact with these children. The IMCI package was presented as an integral part of the second-year module that focuses on primary healthcare. In order to improve the quality of health services and refocus the health system on primary health-care (South Africa Department of Health, 2010), students have to demonstrate that they have achieved competence. According to Killen (2000:188), competence is a holistic term and focuses on knowledge, skills and values instead of competencies, which refer to specific capabilities. Primary health-care workers who act competently will integrate foundational IMCI knowledge with skills and values as well as with the ability to verify their decisions (Killen, 2000:188). A qualitative, exploratory and descriptive research design was used to investigate the IMCI learning experiences. Such experiences are one of the indications whether training has been successful and how it can be improved (Suski, 2004:222). Data was collected by means of nominal-group technique (NGT) interviews with second-year nursing students of the training school who complied with the criteria for inclusion. NGT interviews were used effectively to evaluate clinical interaction, education and training. The findings reflected the different emotions experienced during teaching and learning as having been positive, negative or neutral. The consideration of negative emotions will assist with the improvement of IMCI teaching and learning, but all these findings can be useful for other higher-education institutions that present or plan to present IMCI training.

Keywords: Learning experiences, Integrated Management of Childhood Illness, Undergraduate programme, Significant learning, Clinical learning experience, Primary healthcare clinic.

1. INTRODUCTION

A child born in a developing country is over 13 times more likely to die within the first five years of its life than a child born in an industrialised country (United Nations Development Programme, 2007).

According to News24 (2011), a published report stated that South Africa's child-mortality rate is increasing and that no progress has been made in the reduction of its under-five child mortality rate. More than 60 000 children, aged between one month and five years, die in South Africa each year, according to a report released at the Maternal, Child and Women's Health Summit (Mail & Guardian, 2009).

The under-five mortality rate is a fundamental indicator of the level of child health and overall development in countries (Medical Research Council, 2003:1; WHO, 2003). The sharp increase in child mortality has been attributed to a deterioration of programmes (Health Systems Trust, 1992–2012).

The Millennium Development Goals (MDGs) were set to improve life for all citizens of the world (United Nations, 2000). These goals list four aims to reduce child mortality (South Africa Department of Health, 2010). The 10-Point Plan of 2009–2014 and the outcomes-based Medium-Term Strategic Framework (MTSF) of 2009–2014 aim to improve the quality of health services and refocus the health system on primary healthcare (South Africa Department of Health, 2010).

Different key strategies are identified to attain these millennium developmental goals (South Africa Department of Health, 2010). An example of one of these strategies is Integrated Management of Childhood Illness (IMCI). This set of guidelines has been established by the World Health Organisation (WHO) and the United Nations Children's Fund (UNICEF) for cost-effective care of children younger than five years, in order to prevent diseases and death (WHO, 2004). IMCI guidelines are based on best evidence, and the implementation thereof, enhances quality care of children under the age of five. Providing quality care to patients requires training primary healthcare workers and establishing a culture that values lifelong learning for improving quality (South Africa Department of Health, 2010).

The Department of Health presents IMCI training as a two-week session to professional registered nurses. IMCI training in an undergraduate programme differs from the training given by the Department of Health (Van Dyk, 2007: IMCI presentation). IMCI was included and presented as an integral part of the second-year module that focuses on primary health care with the aim of optimising theory and practical integration during clinical experiential learning (University of the Free State Yearbook, 2007). Work integrated learning (clinical experiential learning) within a Service Learning Module in the second year occurs in the primary health-care setting. The School of Nursing at the University of the Free State (UFS) has been advocating engagement with communities since the early nineties. Increased and broadened participation, responsiveness to social interests and needs, and cooperation and partnerships have been established for the provision of quality care to children and patients.

IMCI has been included and presented in the undergraduate programme since 1999. No formal research has been done to determine the students' learning experiences regarding IMCI training.

The aim of the study on which this article is based was to reflect on the learning experiences of students during integrated management of childhood illness training in an undergraduate programme.

2. LITERATURE REVIEW

Pneumonia, diarrhoea, malaria, measles and malnutrition are the causes of more than 70% of deaths in children under the age of five in South Africa, and HIV/AIDS has become a general disease in children (WHO, 2004:1–2). Nurses in the primary healthcare clinics are the first line of contact with these children and therefore need training to identify and treat children with these conditions effectively.

The WHO and United Nations Children's Fund (UNICEF) use an integrated approach in the assessment, treatment and follow-up of children under the age of five, which is referred to as Integrated Management of Childhood Illness (IMCI). This set of guidelines has been established for the cost-effective handling of children younger than five years old to prevent diseases and death (WHO, 2004). Therefore, professional registered nurses in the primary healthcare clinics must be trained in IMCI.

To be able to become proficient in IMCI, caregivers need significant learning. Such learning has principles (Fink, 2003a:31–32) that guide teaching and learning and contribute to fundamental knowledge, the application of knowledge, the development of a caring attitude, learning how to learn, and theory and practical integration in general. Students then develop special feelings of caring, interest, application skills, responsibility and the ability to develop as a self-directed learner (Cowen, Maier & Price, 2009:19, 20; Fink, 2003a:12; Jooste, 2010:54). All these are needed within clinical practice during the execution of safe and effective practice as a nurse (Billings & Halstead, 2009:20; Jooste, 2010:54).

Significant learning enables students to develop critical thinking and use knowledge creatively within the IMCI context. They are also able to solve problems in a real situation as presented in the IMCI approach (Fink, 2003b:8; Jooste, 2010:54, 59, 93). This integration of theory and practice takes place during clinical experiential learning in primary healthcare clinics.

Integration of theory and practice is one of the outcomes of outcomes-based education (Cowen et al., 2009:373). With outcomes-based education, the focus during teaching and learning is on what the students should be able to do (Boughey, 2004:8).

The development of these skills will satisfy the needs of the students and contribute to the satisfaction of healthcare needs by means of effective practice (Cowen et al., 2009:373; Field & Smith, 2008:5).

The aim of the research conducted was to ensure quality IMCI training. A description follows below.

3. RESEARCH METHODOLOGY

A qualitative, exploratory and descriptive research design was used to investigate the IMCI learning experiences with regard to the theoretical and practical class presentations, as well as the practice in the clinical experiential learning environment of the student nurses, in order to determine whether good-quality IMCI nursing training was taking place. An exploratory interview was conducted to test if the research question was stimulating, suitable and applicable, and assisting with conformability of the data (Meyer, Naude & Van Niekerk, 2004:259). No data from the exploratory interview was used in this research.

3.1 Data Collection and Analysis

The data was collected by means of two nominal-group technique (NGT) interviews with second-year nursing students of the training school who complied with the criteria for inclusion.

The criteria for inclusion were as follows:

- registered and attended at least 80% of the theory classes during the first semester of 2009;
- registered and attended at least 100% of the practical classes during the first semester of 2009;
- clinical experiential learning in the primary healthcare clinics during the first semester of 2009;
- voluntary informed consent given in writing. This criterion was stipulated so that self-determination of the students was ensured (Burns & Grové, 2005:177).

NGT interviews are appropriate for qualitative research involving a target population where a specific question has to be investigated and discussed (Potter, Gordon & Hamer, 2004:126; Strydom, 2005:419–421). According to Jones and Hunter (2000), NGT interviews can be successfully used to evaluate clinical interaction, education and training in healthcare.

NGT interviews are a structured form of brainstorming. An experienced facilitator conducts the process to identify and prioritise problems or concerns (Dunham, 1998; Jones, 2004:22–23; Van Breda, 2005:2–3). According to Dunham (1998), the skills of an experienced facilitator contribute to the credibility of data.

The qualitative data processing and data analyses were carried out systematically to organise and give meaning to the information, and express in words rather than numbers (Burns & Grové, 2005:535, 546, 733; De Vos, 2005:333; Nieuwenhuis, 2007:105, 108). Scientific honesty could be proven because no data had been falsified, changed or selectively manipulated (Brink, 1996:47).

The data processing, analyses, categorisation, as well as the final ranking of the learning experiences of both groups were done according to the steps in Van Breda (2005:2–5). All of these were used for reporting the research findings. This meaningful information is included in Table 1.

4. RESULTS

In Table 1 the results of the nominal-group technique interviews were classified. The responses are indicated as being either positive or negative. The negative responses are relevant insofar as they indicate room for improvement.

TABLE 1: Multiple group analyses

CATEGORY	THEME	RESPONSE / STATEMENT	SCORES ALLOCATED	TOTAL (Average)	Final Ranking
1. Assessment	Expectations (unclear)	5. I can do IMCI in a clinic on a patient but it is not clear what is expected in tests; this makes me feel unsure of myself – also in OSCE (pictures not clear) Negative: improvement needed	2, 1, 2	5 (0.71)	2
		1. If background information in other IMCI booklets had been asked in tests, I would have learnt more – only chart booklet assessed in tests Negative: improvement needed	4	4 (0.57)	
	Assessor reliability	10. Guidance regarding IMCI case-study not clear – assessment tool not used the same way by different lecturers Negative: improvement needed	2	2 (0.29)	
	Open-book test (underestimated)	11. Die oopboektoets hoef nie voor geleer te word nie en ons kan nog steeds die toepassing doen (The open-book tests do not have to be studied beforehand, and we can still do the application) Positive	3, 3	6 (0.67)	
2. Structured guideline	Disease coverage (insufficient)	12. Because not all diseases are handled in IMCI, it is difficult to treat skin diseases and other conditions such as tonsillitis Negative: improvement needed	3, 3	6 (0.86)	*5
	Holistic care (impaired – impatient clients)	4. Due to patients becoming agitated with looking up in booklet, I became maybe less thorough – had to work faster Negative: improvement needed	1, 2	3 (0.43)	

CATEGORY	THEME	RESPONSE / STATEMENT	SCORES ALLOCATED	TOTAL (Average)	Final Ranking
	Holistic care (ensured)	9. The recording form helped not to forget things when seeing patients Positive	5, 4, 1	10 (1.43)	
	Self-confidence (decreased – parent expectations)	6. Was unsure how to handle an unhappy mother with a child in green-box classification – did not get medication Negative: improvement needed	3	3 (0.43)	
	Self-confidence (increased)	11. IMCI made me feel competent/independent – felt knowledgeable Positive	2, 3, 4, 4	13 (1.86)	
	Skills development (empowered – holistic care)	4. IMCI het gehelp om kindersiektetoestande te behandel (IMCI helped to treat children's illnesses) Positive	4, 2, 5, 2, 3, 5, 3	24 (2.67)	
	Skills development (empowered – parent counselling)	19. IMCI helped me to do parent counselling as well empowered Positive	5	5 (0.71)	
	Skills development (enhanced)	5. Chart booklet het gehelp om medikasie reg te gee (Chart Booklet helped [me] to dispense medication correctly) Positive	5, 4	9 (1)	
	Theory & practice integration (enhanced)	16. IMCI helped me to immediately recognise the real patient theory and practice linked Positive	5, 1, 5, 3	14 (2)	

CATEGORY	THEME	RESPONSE / STATEMENT	SCORES ALLOCATED	TOTAL (Average)	Final Ranking
		7. Direkte toepassing van IMCI in kliniek help want dit is soos ons dit in klas leer – <i>Selfde taal word gepraat</i> (The direct application of IMCI helps because it is like the way we learn it in class) Positive	4, 5, 5, 5	19 (2.11)	
	Understanding (deficient – age categories)	8. I felt that diagnosis is made > 2 months – age classifications < 2 months confusing me Negative: improvement needed	4	4 (0.57)	
	Understanding (deficient – BCG immunisation & HIV infection)	18. Immunisation guidelines not clear, e.g. BCG & HIV+ child – was unsure what to do in clinic Negative: improvement needed	2	2 (0.29)	
	Understanding (enhanced)	3. IMCI chart booklet very clear, made understanding lecturer easier Positive	5, 5, 5, 4	19 (2.71)	
		8. Chart booklet baie eenvoudig en duidelik om te verstaan (Chart booklet very simple and easy to understand) Positive	3, 1, 2, 3, 1, 3, 1	14 (1.56)	
3. Teaching & learning	Audiovisual resources (enhanced learning)	17. Videos were clear and helped to recognise signs in clinics Positive	3, 2	5 (0.71)	5
		10. Video's en foto's op rekenaar het gehelp om tekens en simptome in praktyk te identifiseer – <i>Klasbespreking opgevolg met video's</i> (Videos and photos on PC helped to identify signs)	3, 5	8 (0.89)	

CATEGORY	THEME	RESPONSE / STATEMENT	SCORES ALLOCATED	TOTAL (Average)	Final Ranking
		and symptoms in practice – class discussion followed up with videos) Positive			
	Case studies – (enhanced integration)	9. IMCI-gevallestudie het gehelp om dit wat ons leer in praktyk toe te pas (IMCI case study helped to apply what we learnt in practice) Positive	1, 4, 1	6 (0.67)	
	E-learning (unrealistic case exercises impede learning)	14. Computer exercise did not give a realistic view of an IMCI child Negative: improvement needed	1	1 (0.14)	
	E-learning (unrealistic expectation)	2. Rekenaaroefening nie gehelp, het nog nie werk behandel nie (kan liever as hersiening gebruik word) – <i>Wil liever eers klasbespreking hê, opgevolg deur rekenaaroefening (Computer exercise did not help, work was not discussed (can be used as revision) – prefer class discussion and then computer exercise)</i> Negative: improvement needed	2, 2, 5, 1, 4, 1	15 (1.67)	
	E-learning (limited off-campus access)	1. Inligting wat net elektronies beskikbaar is, is nie altyd toeganklik nie – vervoer na rekenaars het vervoerkostes (Information only available on PC not always accessible – transport to computer has transport cost) Negative: improvement needed	1, 4, 1	6 (0.67)	
	Group discussions	6. Groepbesprekings van IMCI baie stimulerend – gedagtes het	5, 2, 4, 4	15	

CATEGORY	THEME	RESPONSE / STATEMENT	SCORES ALLOCATED	TOTAL (Average)	Final Ranking
	(enhanced learning)	so uitgebrei (IMCI group discussions very stimulating – comprehensive thoughts developed) Positive		(1.67)	
	Learning opportunity (insufficient – recording form completion)	15. Did not get practical exposure to complete recording form Negative: improvement needed	3	3 (0.43)	
	Learning opportunity (incorrect practice exposure)	2. Was unsure what to do when I knew the PW's IMCI conduct was wrong Negative: improvement needed	1	1 (0.14)	
	Learning opportunity (insufficient – recording form completion)	3. Party sisters in praktyk het nie vertroue in ons gehad nie, kon dus nie kinders se "recording form" voltooi nie – en nie in toets geweet hoe nie (Some sisters in practice did not trust us, and therefore could not complete recording forms for children – during test did not know how) Negative: improvement needed	3, 4, 2, 2, 2	13 (1.44)	
	Self-directed learning (ensured)	7. Since I knew I had to put IMCI into practice, I had to make sure about how IMCI works Positive	1	1 (0.14)	
	Understanding (enhanced)	13. Pre-reading chart booklet before class assisted in learning Positive	4	4 (0.57)	

5. DISCUSSION

Different emotions develop during teaching and learning. The responses can be positive, negative or neutral (Cowen et al., 2009:11). These emotions will influence the learning process (Cowen et al., 2009:11; Vermunt & Vermetten, 2004:361). Positive emotions can include a feeling of importance, interest, excitement, challenges to master and enjoyable learning (Biggs & Tang, 2007:24).

Learning experiences are one of the indications used in determining the success of training and indicating how it can be improved (Suski, 2004:222). The learning experiences in Table 1 reflect positive and negative emotions.

Consideration of the negative emotions will assist with the improvement of IMCI teaching and learning. Thought should be given to the students' personal aims, motives, expectancies, attitudes and concerns (Cowen et al., 2009:11; Vermunt & Vermetten, 2004:362).

The ability of students to socialise, maintain their self-esteem and develop their interpersonal skills is needed for significant learning (Cowen et al., 2009:11; Mahar & Harford, 2004:14). The interpretation of information, study material, problem statements and problem-solving skills during teaching and learning are needed for students' effective use of knowledge (Cowen et al., 2009:5–9; Von Glasersfeld, 1989:2). The following responses verify the above-mentioned statements:

- I can do IMCI in a clinic on a patient but it is not clear what is expected in tests; this makes me feel unsure of myself – also in OSCE (pictures not clear).
- If background information in other IMCI booklets had been asked in tests, I would have learnt more – only chart booklet assessed in tests.
- Guidance regarding IMCI case study not clear – assessment tool not used the same way by different lecturers.
- Chart booklet baie eenvoudig en duidelik om te verstaan (Chart booklet very simple and easy to understand).

During teaching and learning, active involvement is needed (Von Gruenewaldt, 1999:5). Learning is an active cognitive process and not a passive transfer of knowledge (Billings & Halstead, 2009:154, 155; Cowen et al., 2009:131; Pritchard, 2005:39). With effective educational experiences, further cognitive connections will be made (Jones & Brader-Araje, 2002:5; Pritchard, 2005:28, 29). These new connections will contribute to new forms of intellectual abilities. The change in performance is what leads to the conclusion that learning has occurred (Quinn, 2000:99). The following responses verify the above-mentioned claims:

- Since I knew I had to put IMCI into practice, I had to make sure about how IMCI works.
- Pre-reading chart booklet before class assisted in learning.
- Did not get practical exposure to complete recording form.
- IMCI-gevallestudie het gehelp om dit wat ons leer in praktyk toe te pas (IMCI case study helped to apply what we learnt in practice).
- IMCI made me feel competent/independent – felt knowledgeable.
- IMCI helped me to do parent counselling as well empowered me.

Communication, teamwork, decision-making and interpersonal relationships are a number of skills important in education for all professions (Cloete, 2004). Sadly, not all critical outcomes can be accommodated within a single learning environment. Therefore, it is imperative to select a number of learning strategies such as teamwork, deep and effective learning, experiential learning as well as informal learning (Malan, 1997:14). The following responses verify the above-mentioned claims:

- Party susters in praktyk het nie vertrouwe in ons gehad nie, kon dus nie kinders se “recording form” voltooi nie – en nie in toets gewoet hoe nie (Some sisters in practice did not trust us, and therefore could not complete recording forms for children – during test, did not know how).
- Was unsure what to do when I knew the PW's IMCI conduct was wrong.
- Because not all diseases are handled in IMCI, it is difficult to treat e.g. skin diseases, tonsillitis.
- Did not get practical exposure to complete recording form.

Good teaching and learning will enable the students to develop expertise, competence, critical thinking, creative thinking and practical skills. Through these, they will be able to make the necessary connections with existing ideas, people and real-life situations (Billings & Halstead, 2009:155; Cowen et al., 2009:20; Fink, 2003:8b; Boughey, 2004:9; Jooste, 2010:55). The students will be able to demonstrate effective assessment, treatment, and consultation as well as follow up of children under the age of five according to the IMCI guidelines, under the supervision of a professional nurse. The following responses will prove this statement:

- IMCI made me feel competent/independent – felt knowledgeable.
- Since I knew I had to put IMCI into practice, I had to make sure about how IMCI works.
- IMCI chart booklet very clear, made understanding lecturer easier.
- IMCI-gevallestudie het gehelp om dit wat ons leer in praktyk toe te pas (IMCI case study helped to apply what we learnt in practice).

6. CONCLUSION

The main aim of this article was to pose and answer the question whether good-quality training had taken place during the presentation of integrated management of childhood illness (IMCI) in an undergraduate programme. According to the specialist of Child and Youth Health, South African Department of Health, IMCI training is offered by a number of higher education institutions but with no proof of quality.

To be able to improve the quality of health services and refocus the health system on primary health care (South Africa Department of Health, 2010) good quality IMCI training is urgently required. IMCI is an integral part of primary health care for children younger than five.

Cost effective quality care is needed for children younger than five to prevent diseases and death (WHO, 2004). According to the IMCI guidelines, providing quality care to such children requires effective training of skilled primary healthcare workers who are the first line of contact with these children.

It could be concluded that in order for quality IMCI training to take place, the planning, implementation and evaluation of IMCI teaching and learning must include a variety of methods in terms of presentation and assessment. These methods must be innovative and creative to ensure a good command of all the outcomes. These outcomes represent the results of all formal, non-formal and informal learning processes and reflect the knowledge, skills, attitudes and values within a specific context (Nieman, 2002:47); and in this case those of child healthcare.

The essential imperatives of interpersonal skills, self-esteem and the ability to socialise are crucial for all students during IMCI teaching and learning. These skills are needed for effective assessment, treatment, consultation and follow-up of children under the age of five according to the IMCI guidelines.

The availability of IMCI clinical facilities for experiential learning is often limited, and the effective use of these should be properly coordinated. Therefore, planning and selection of clinical facilities for experiential learning are needed for significant learning and the effective integration of theory and practice (Gopee, 2004:36). These factors are important considerations that contribute to the healthcare needs of South Africa (Malan, 1997:3) and specific to child health.

All the above findings can be useful for other higher education institutions that present or plan to present IMCI training.

“Learning is worth nothing if it cannot be applied” (Billings & Halstead, 2009:239; Cowen et al., 2009:375; Field & Smith, 2008:9; Jooste, 2010:59; White & Evan, 1991:4,5).

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8. REFERENCES

Biggs, J. & Tang, C. 2007. Teaching for quality learning at university: What the student does. New York: Mc Graw Hill. Society for Research into Higher Education & Open University Press.

Billings, D.M., & Halstead, J.A. 2009. Teaching in Nursing: A Guide for Faculty (3rd ed). Missouri: Saunders Elsevier.

Boughey, C. 2004. Higher education in South Africa: Context, mission and legislation. In: Gravett, S., & Geysler, H. Teaching and learning in higher education. Hatfield: Van Schaik Publishers.

Brink, H. I. 1996. Fundamentals of Research Methodology for Health Care Professionals. Cape Town: Juta Publishers.

Burns, N. & Grové, S.K. 2005. The practice of nursing research (6th ed). Philadelphia: WB Saunders.

News24. 2011. Child mortality rate increasing in SA, [online]. Available from: <<http://www.news24.com/SouthAfrica/News/Child-mortality-rate-increasing-in-SA-20>> [Accessed] on 27 March 2012.

Cloete, D.J. 2004. 'nOndersoek na die fasilitering van verskillende leerstyle en meervoudige intelligensies tydens koöperatiewe leer en groepaktiwiteite in hoër onderwys. Pretoria: Universiteit van Pretoria. (Gepubliseerde Magister in Onderwys).

Cowen, M., Maier, P. & Price, G. 2009. Study skills for nursing and healthcare students. England: Pearson Education.

De Vos, A.S. 2005. Combined quantitative and qualitative approach: Programme evaluation. In: De Vos, A.S., Strydom, H., Fouché, C.B., Delport, C.S.L. Research at grass roots for the social sciences and human service professions (3rd ed). Pretoria: Van Schaik Publishers.

Dunham, R.B. 1998. Nominal group technique: A user's guide, [online]. Available from: <<http://instruction.bus.wisc.edu/obdemo/reading/ngt.html>> [Accessed] on 29 January 2009.

Field, L. & Smith, B. 2008. Nursing care: An essential guide. England: Pearson Education Limited.

Fink, L.D. 2003a. A self-directed guide to designing courses for significant learning. San Francisco: Jossey-Bass.

- Fink, L.D. 2003b. What is “significant learning”? creating significant learning Experiences. San Francisco: Jossey-Bass.
- Gopee, N. 2004. Effective clinical learning in primary care settings. *Nursing Standard* 18, (37) 33-37.
- Health Systems Trust (HST) Bulletin. 1992-2012. Big rise in child mortality rate in SA. [Online]. Available from: <<http://www.hst.org.za/news/big-rise-child-mortality-rate-sa>> [Accessed] on 27 March 2012.
- Jones, S.C. 2004. Using the nominal group technique to select the most appropriate topics for postgraduate research student's seminars. *Journal of University Teaching and Learning Practice* 1, 120-34.
- Jones, G.M. & Brader-Araje, L. 2002. The impact of constructivism on education: Language, Discourse, and Meaning. School of Education, University of North Carolina at Chapel Hill.
- Jones, J. & Hunter, D. 2000. What are consensus methods? [online]. Available from: <<http://www.bmjpg.com/qrhc/chapter5.html>> [Accessed] on 18 February 2009.
- Jooste, K. 2010. The principles and practice of nursing and health care: Ethos and professional practice, management, staff development, and research (1st ed). Pretoria: Van Schaik Publishers.
- Killen, R. 2000. Teaching strategies for Outcomes-based education. Landsdowne: Juta & Co. Ltd.
- Mail & Guardian. 2009. Health minister shocked by SA child death rate, [online]. Available from: <<http://mg.co.za/article/2009-08-26-health-minister-shocked-by-sa-child-death-rate>> [Accessed] on 27 March 2012.
- Mahar, S. & Harford, M. 2004. Research on human learning. Melbourne: Department of Education and Training.
- Malan, B. 1997. Excellence through outcomes. Pretoria: Kagiso Publishers.
- Meyer, S., Naude, M. & Van Niekerk, S. 2004. The nursing unit manager: A comprehensive guide (2nd.ed). Sandton: Heinemann.
- Medical Research Council (MRC). 2003. What are the leading causes of death among South African children? South Africa: MRC Policy Brief.
- Nieman, M.M. 2002. Onderrig en leer. Module 2: Enigste studiegids vir GED102-U. Pretoria: Universiteit van Suid-Afrika.

- Nieuwenhuis, J. 2007. Analysing qualitative data. In: Maree, K. First steps in Research (1st ed). Pretoria: Van Schaik Publishers.
- Potter, M., Gordon, S. & Hamer, P. 2004. The Nominal Group Technique: A useful consensus methodology in physiotherapy research. *NZ Journal of Physiotherapy* 32(3): 126-130.
- Pritchard, A. 2005. Ways of learning: Learning theories and learning styles in the classroom. Great Britain: David Fulton Publishers.
- Quinn, F.M. 2000. The principles and practice of nurse education (6th ed). Cheltenham: Stanley Thornes.
- Republic of South Africa (RSA). 1997. South African Qualifications Authority: Draft regulations governing the activities of National Standards Bodies (NSBs). Government Gazette 9 May 1997. Pretoria: Government Printer.
- Strydom, H. 2005. Participatory action research. In: De Vos, A.S., Strydom, H., Fouché, C.B., Delport. C.S.L. Research at grass roots for the social sciences and human service professions (3rd.ed). Pretoria: Van Schaik Publishers.
- South Africa. Department of Health. 2010. Strategic Plan 2010/11 – 2012/13. A policy on Quality in Health Care for South Africa. Pretoria: Government Printer.
- Suski, L. 2004. Assessing student learning. San Francisco: Jossey-Boss.
- United Nations Development Programme. 2000. What are the Millennium Development Goals. [Online]. Available from: <<http://www.undp.org/mdg/basics.shtml>> [Accessed] on 17 November 2011.
- United Nations Development Programme. 2007. Tracking the Millennium Development Goals. [Online]. Available from: <<http://www.mdgmonitor.org/>> [Accessed] on 16 November 2011.
- UFS (University of the Free State). 2007. Yearbook: School of Nursing: Undergraduate programme. Bloemfontein: University of the Free State.
- Van Breda, A.D. 2005. Steps to analysing multiple-group NGT data. *Die maatskaplikewerk navorsing-praktisyn* 17(1):1-14
- Van Dyk, D.L. 2007. Integrated Management of Childhood Illness training in an undergraduate Programme. IMCI Conference, August, Johannesburg.

Vermunt, J.D. & Vermetten, Y.J. 2004. Patterns in student learning: relationship between learning strategies, conceptions of learning and learning orientations. *Educational Psychology Review* Volume 16.

Von Glasersfeld, E. 1989. *Constructivism in education: The international encyclopedia of education*, Oxford/New York: Pergamon Press.

Von Gruenewaldt, J.T. 1999. Achieving academic literacy in a second language: South Africa's educational predicament. Vista University Distance Education Campus.

WHO (World Health Organization). 2003. Health Status Statistics: Mortality, [online]. Available from: <<http://www.who.int/healthinfo/statistics/-indiunder5mortality/en/>> [Accessed] on 27 March 2012.

WHO (World Health Organization). 2004. *About Integrated Management of Childhood Illness. Adaptations for South Africa*. Geneva: WHO and Unicef.

WHO (World Health Organization). 2007. *Integrated Management of Childhood Illness: Chart Booklet*. Geneva: WHO and Unicef.