

**THE EFFECT OF TEACHING METHODS USED AS  
EXPERIENCED AND PERCEIVED BY STUDENT NURSES  
AT A NURSING COLLEGE IN THE WESTERN CAPE  
PROVINCE**

**LAETITIA NICOLE FÜRST**



Thesis presented in partial fulfilment  
of the requirements for the degree of  
Master of Nursing Science  
in the Faculty of Health Sciences at Stellenbosch University

Supervisor: Dr E.L. Stellenberg

December 2011

## DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my own, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

Signature: .....

Date: .....

## ABSTRACT

The 21<sup>st</sup> century teaching environment is unique in its diversity, and challenges academic staff to create a teaching environment that is conducive to all current learners. Various teaching methods are available and affordable, but technology remains an essential investment for the future of higher education institutions.

The goal of the study was to evaluate the perceptions of student nurses regarding the effectiveness of the teaching methods which they experienced at a nursing college in the Western Cape Province.

The objectives included an evaluation of the effectiveness of teaching methods as perceived and experienced by students of:

- The traditional (green/whiteboard) lecture
- Group activity
- Self-activity
- The use of technology such as PowerPoint presentations and video clips.

An explorative descriptive research design was applied with a quantitative approach. The target population (N=1238) consisted of nursing students following the programme leading to registration as a professional nurse. Stratified random sampling was used to select the sample of participants (n=267).

Data was collected personally by the researcher with a self-administered questionnaire which consisted of predominantly closed questions.

Ethics approval to conduct this study was obtained from Stellenbosch University including permission from all other relevant parties.

Reliability and validity of the study were assured through a pilot study, consultation with experts in nursing, education and statistics. The reliability of the questions were tested using the Cronbach alpha coefficient test which varied between .89 and .94.

The data was analysed with the support of a statistician and was expressed as frequencies in tables and histograms. Descriptive statistics and post-hoc analyses including tests for statistical associations were performed.

Results include a significant difference in generation X participants and the green/whiteboard teaching methods (Spearman p-value = 0.02) and their preference

of the traditional lecture as a teaching method (Spearman p-value =  $<0.01$ ). The perceived effectiveness of the teaching methods on student performance varied between very helpful and not helpful. Only ( $n = 49/19\%$ ) of participants experienced the traditional lecture as being very helpful on their general academic performance, in comparison to the effect of group work ( $n = 69/26\%$ ) and self-activity ( $n = 102/39\%$ ). Furthermore, no significant results were obtained between the participants and the perceived effect of the teaching methods.

Open-ended questions showed that participants regarded the teaching strategies as boring and ancient and that much of the unhappiness expressed stems from the difference in the needs of millennials and the lack of change and obstinacy existing amongst academics.

Recommendations include an increase in the use of technology, a blended approach to teaching, the re-training of academic staff, measures in counteracting a boring classroom environment, orientation for neophyte academics and students, workload perception of students and class size.

In conclusion should recommendations be implemented a complete transformation of the college under study will result. It may force the education institution to move out of complacency, to a more vigorous and dynamic education environment that enables them to emerge as an Higher Education Institution (HEI) of good standing.

## OPSOMMING

Die een-en-twintigste-eeuse onderwysomgewing is uniek wat betref diversiteit en daag akademiese personeel uit om teenswoordig 'n onderwysomgewing te skep wat bevorderlik is vir alle leerders. Verskeie onderwysmetodes is beskikbaar en bekostigbaar, maar tegnologie bly 'n noodsaaklike belegging vir die toekoms van hoër onderwysinstansies.

Die doel van hierdie studie was om die effektiwiteit van die gebruik van onderwysmetodes wat waargeneem en ondervind word deur studentverpleegkundiges by 'n spesifieke Verpleegkollege in die Wes-Kaap, te evalueer. Die doelwitte sluit in die evaluering aangaande die effektiwiteit soos waargeneem en ondervind deur studente van die volgende onderwysmetodes:

- Die tradisionele groen/witbord lesing
- Groepaktiwiteit
- Selfaktiwiteit
- Die gebruik van tegnologie soos PowerPoint-aanbiedings en video-insetsels.

'n Ondersoekende, beskrywende navorsingsontwerp met 'n kwantitatiewe benadering is toegepas. Die teikengroep is ( $n=1238$ ) wat uit verpleegstudente bestaan wat die program vir die van 'n geregistreerde professionele verpleegster volg. 'n Gestratifiseerde ewekansige steekproef is gebruik om die deelnemers ( $n=267$ ) te selekteer.

Data is self deur die navorser ingesamel deur gebruik te maak van 'n selfgeadministreerde vraelys wat hoofsaaklik uit geslote vrae bestaan het.

Etiese goedkeuring om die studie na te vors, is verkry van die Universtiteit van Stellenbosch, asook die van al die betrokke partye.

Betroubaarheid en geldigheid van die studie is verseker deur 'n loodsondersoek, sowel as raadpleging met deskundiges op die gebied van Verpleging, Opvoedkunde en Statistiek. Die betroubaarheid van die vrae is getoets deur gebruik te maak van die Cronbach-alpha koëffisiënt toets wat tussen .89 en .94 gevarieer het.

Die data is geanaliseer met die ondersteuning van 'n statistikus en word voorgestel as frekwensies in tabelle en histogramme. Beskrywende statistieke en post-hoc analyses, insluitende toetse vir statistiese assosiasies, is uitgevoer.

Resultate sluit in 'n beduidende verskil in generasie x-deelnemers en die groen- of witbord onderwysmetodes (Spearman p-waarde = 0.02) en hul voorkeur vir die tradisionele lesing as 'n onderrigmetode (Spearman p-waarde >0.01). Die effektiwiteit van die onderwysmetodes op studenteprestasies wat waargeneem is, varieer tussen baie waardevol en van geen waarde nie.

Slegs (n=49/19%) van die deelnemers het die tradisionele lesing as baie waardevol vir hul algemene akademiese prestasie ervaar, in vergelyking met die effek van groepwerk (n=69/26%) en self-aktiwiteit (n=102/39%). Vervolgens, is geen beduidende resultate verkry tussen die deelnemers en die effek van die onderrigmetodes wat waargeneem is nie.

Ope vrae bewys dat deelnemers die onderwysstrategieë as vervelig en verouderd beskou en dat baie van die ongelukkigheid wat deurgevoer is, voortspruit uit die verskil in die behoeftes van die milleniums en die gebrek aan geneentheid, asook halsstarrigheid by akademici om te verander.

Aanbevelings sluit in 'n toename in die gebruik van tegnologie, 'n saamgestelde benadering tot onderrig, die heropleiding van akademiese personeel, maatstawwe om 'n vervelige klaskameratmosfeer teen te werk, oriëntering vir neofiet akademici en studente se persepsie van werklading en klasgrootte.

Ten slotte, indien aanbevelings geïmplementeer word, sal 'n volslae transformasie van die kollege onder die soeklig, plaasvind. Dit mag die opvoedkundige instansie forseer om te beweeg vanuit 'n toestand van gemaksugtigheid na 'n meer ondernemende en dinamiese onderrigomgewing wat in staat sal wees om as 'n Hoër Onderwysinstansie van formaat te funksioneer.

## ACKNOWLEDGEMENTS

I would like to acknowledge and express my sincere thanks to:

- My Heavenly Father, all praise and thanks go to Him, who through his grace inspired and granted me the strength to undertake and complete this research project.
- Dr E. L. Stellenberg, my supervisor, for her continuous support, guidance and encouragement through this study.
- Professor M. Kidd for the analysis of the data.
- Mrs Meyer for language editing.
- To my husband, Rodney, for your support and patience.
- To my daughters Lerushca, Roganey and Summer for your understanding and patience.
- To my mother-in-law, Marion, for your constant support.
- To the rest of my family for your indispensable encouragement and support.
- To Nazma Vajat, for your assistance and patience.
- To all other friends and colleagues who contributed, supported and encouraged me at some time or the other.

## TABLE OF CONTENTS

<b>Declaration .....</b>	<b>ii</b>
<b>Abstract .....</b>	<b>iii</b>
<b>Opsomming .....</b>	<b>v</b>
<b>Acknowledgements .....</b>	<b>vii</b>
<b>Abbreviations .....</b>	<b>xvi</b>
<b>List of Tables .....</b>	<b>xviii</b>
<b>List of Figures .....</b>	<b>xx</b>
<b>List of Annexures .....</b>	<b>xxi</b>
<b>CHAPTER 1: SCIENTIFIC FOUNDATION OF THE STUDY .....</b>	<b>1</b>
1.1 Introduction .....	1
1.2 Rationale.....	1
1.3 Significance of the study.....	5
1.4 Problem statement.....	5
1.5 Research question.....	6
1.6 Research goal.....	6
1.7 Research objectives .....	6
1.8 Research methodology.....	6
1.8.1 <i>Research design</i> .....	6
1.8.2 <i>Population and sampling</i> .....	6
1.8.3 <i>Pilot study</i> .....	6
1.8.4 <i>Reliability and validity</i> .....	7
1.8.5 <i>Ethical considerations</i> .....	7
1.8.6 <i>Specific criteria</i> .....	7
1.8.7 <i>Data collection</i> .....	7
1.8.8 <i>Data collection tool</i> .....	7
1.8.9 <i>Data analysis and interpretation</i> .....	7
1.9 Recommendations.....	7
1.10 Operational definitions.....	8
1.10.1 <i>Teaching</i> .....	8
1.10.2 <i>Student nurse</i> .....	8
1.10.3 <i>Nursing education</i> .....	8
1.10.4 <i>Learning environment</i> .....	8



1.10.5	<i>Approaches to learning</i> .....	8
1.10.6	<i>Teacher centered approach</i> .....	8
1.10.7	<i>Learner-centered approach</i> .....	9
1.10.8	<i>Greenboard</i> .....	9
1.11	Chapter layout .....	9
1.12	Conclusion .....	9
<b>CHAPTER 2:</b>	<b>LITERATURE REVIEW .....</b>	<b>10</b>
2.1	Introduction .....	10
2.2	Diversity issues in learning .....	10
2.2.1	<i>Generational diversity in the 21<sup>st</sup> century</i> .....	10
2.2.1.1	Generation X students .....	11
2.2.1.2	Millennial or generation Y students .....	11
2.2.2	<i>Changing demographics</i> .....	13
2.2.3	<i>Cultural diversity</i> .....	14
2.2.3.1	Language diversity.....	14
2.2.4	<i>Approaches to learning</i> .....	15
2.2.4.1	Surface approach .....	15
2.2.4.2	Deep-holistic approach .....	16
2.2.4.3	Strategic approach.....	17
2.2.5	<i>Learning environment</i> .....	17
2.2.5.1	The surface approach learning environment.....	17
2.2.5.2	The deep approach learning environment.....	17
2.2.6	<i>Approaches to teaching</i> .....	18
2.2.6.1	Teacher-centered approach.....	18
2.2.6.2	Student-centered approach.....	18
2.3	Technology in HEI .....	19
2.3.1	<i>Information technology</i> .....	19
2.3.2	<i>Multimedia</i> .....	19
2.3.3	<i>Electronic learning environment</i> .....	20
2.3.3.1	Videoconferencing .....	20
2.3.3.2	The World Wide Web.....	21
2.3.4	<i>High-tech / smart classrooms in HEI</i> .....	21

2.3.5	<i>Technology integration in teaching environments</i> .....	22
2.3.5.1	IT assistance .....	23
2.3.5.2	Teachers and technology.....	23
2.3.5.3	Students and technology .....	24
2.4	Various other teaching methods in HEI .....	25
2.4.1	<i>Traditional lecture</i> .....	25
2.4.1.1	Advantages of lecture method .....	25
2.4.1.2	Disadvantages of lecture method.....	26
2.4.2	<i>Group work</i> .....	26
2.4.2.1	Advantages of a group work environment.....	26
2.4.2.2	Disadvantages of a group work environment.....	27
2.4.3	<i>Peer group teaching</i> .....	28
2.4.4	<i>Peer assessment</i> .....	29
2.4.5	<i>Self-activity</i> .....	29
2.4.6	<i>Overhead projector with transparencies</i> .....	30
2.4.7	<i>Traditional green / whiteboard</i> .....	31
2.4.7.1	Whiteboard or ink board.....	31
2.4.7.2	Electronic whiteboard .....	31
2.4.8	<i>Data projector with PowerPoint slides</i> .....	32
2.5	Conceptual framework.....	32
2.5.1	<i>Educational changes in the teaching environment</i> .....	34
2.5.2	<i>Bloom's taxonomy</i> .....	34
2.6	Summary .....	37
2.7	Conclusion .....	37
<b>CHAPTER 3:</b>	<b>RESEARCH METHODOLOGY .....</b>	<b>38</b>
3.1	Introduction .....	38
3.2	Research question.....	38
3.3	Goal .....	38
3.4	Objectives .....	38
3.5	Research methodology.....	38
3.5.1	<i>Research design</i> .....	38
3.5.2	<i>Population and sampling</i> .....	39
3.5.3	<i>Instrumentation</i> .....	40

3.5.4	<i>Pilot study</i> .....	42
3.5.5	<i>Reliability and validity</i> .....	42
3.5.6	<i>Data collection</i> .....	43
3.5.7	<i>Data analysis</i> .....	44
3.5.7.1	Analysis of variance.....	45
3.5.7.2	Chi-square.....	45
3.5.7.3	Cochran Q test.....	45
3.5.7.4	Homogeneity of variances.....	45
3.5.7.5	Kruskal – Wallis.....	45
3.5.7.6	Mann – Whitney U test.....	45
3.5.7.7	Mean.....	46
3.5.7.8	Median.....	46
3.5.7.9	McNemar test.....	46
3.5.7.10	Mode.....	46
3.5.7.11	Post-hoc test.....	46
3.5.7.12	Probability theory (p-value).....	46
3.5.7.13	Standard deviation.....	46
3.5.7.14	Spearman’s rank-order correlations ( Spearman’s rho).....	46
3.6	Ethical considerations.....	47
3.7	Conclusion.....	47

**CHAPTER 4: DATA ANALYSIS, INTERPRETATION AND DISCUSSION..**  
 ..... **48**

4.1	Introduction.....	48
4.2	Description of statistical analysis.....	48
4.3	Section A: Biographical information.....	48
4.3.1	<i>Variable A1: Age (How old are you?)</i> .....	48
4.3.2	<i>Variable A2: Gender (n=267)</i> .....	49
4.3.3	<i>Variable A3: Marital status (n=267)</i> .....	50
4.3.4	<i>Variable A4: Home language (n=267)</i> .....	51
4.3.5	<i>Variable A5: Year completed matric (What year did you complete Matric/ Grade XII) n=251</i> .....	52
4.3.6	<i>Have you completed any other study courses prior to your current nursing studies?</i> .....	53
4.3.7	<i>Variable A7: What year of nursing study are you currently in?</i> .....	54
4.3.8	<i>Variable A8: Have you practised nursing prior to commencing this R425 Nursing Program?</i> .....	55

4.3.9	Variable A9: Do you make use of library facilities? .....	56
4.3.10	Variable A10: Do you own a Play station I/II/III, Nintendo Wii game, Cell phone, I-pod, Mp3/Mp4 player, DVD/CD player, Computer/Laptop or none of the above? .....	56
4.3.11	Variable A11: Does your family (whom you have physical contact with) own television, Mnet decoder, computer/laptop, cell phone, DVD/CD player, Mp3/Mp4 player, home theatre entertainment system, digital camera or none of the above? .....	57
4.3.12	Variable A12: Are you able to use a computer without assistance?....	58
4.3.13	Variable A13: Have you ever used any of these computer programs before? .....	59
4.3.14	Variable A14: Do you use any of these technologies to assist you in your studies?.....	59
4.3.15	Variable A15: Please indicate the teaching method(s) to which you were exposed to during primary/secondary school years. ....	60
4.4	Section B: Effects of teaching methods on learning .....	62
4.4.1	Question 16: Effect of the traditional lecture (Variable: 68 - 72).....	62
4.4.1.1	Variable 68: "my ability to concentrate during a lecture" (n = 267/100%)	63
4.4.1.2	Variable 69: "making content easier to understand" (n = 266/100%) .....	63
4.4.1.3	Variable 70: "making the studying of content easier" (n = 265/100%) .....	63
4.4.1.4	Variable 71: "my academic performance in general" (n = 264/100%) .....	63
4.4.1.5	Variable 72: "the stimulation of my learning style" (n = 264/100%) .....	63
4.4.2	Question 17: Effect of group work (Variable: 73 - 77) .....	64
4.4.2.1	Variable 73: "my ability to concentrate during a lecture" (n = 267/100%)	64
4.4.2.2	Variable 74: "making content easier to understand" (n = 267/100%) .....	64
4.4.2.3	Variable 75: "making the studying of content easier" (n = 267/100%) .....	65
4.4.2.4	Variable 76: "my academic performance in general" (n = 266/100%) .....	65
4.4.2.5	Variable 77 "the stimulation of my learning style" (n = 267/100%) .....	65
4.4.3	Question 18: Effect of self-activity (Variable: 78 - 82) .....	65
4.4.3.1	Variable 78: "my ability to concentrate during a lecture" (n = 264/100%)	66
4.4.3.2	Variable 79: "making content easier to understand" (n = 266/100%) .....	66
4.4.3.3	Variable 80: "making the studying of content easier" (n = 264/100%) .....	66
4.4.3.4	Variable 81: "my academic performance in general" (n = 264/100%) .....	67
4.4.3.5	Variable 82: "the stimulation of my learning style" (n = 264/100%) .....	67

4.4.4	<i>Question 19: Effect of using an overhead projector with transparencies, during teaching (Variable: 83 - 87)</i> .....	67
4.4.4.1	Variable 83: "my ability to concentrate during a lecture" (n = 267/100%)	68
4.4.4.2	Variable 84: "making content easier to understand" (n = 267/100%)	.....68
4.4.4.3	Variable 85: "making the studying of content easier" (n = 266/100%)	.....68
4.4.4.4	Variable 86: "my academic performance in general" (n = 265/100%)	.....68
4.4.4.5	Variable 87: "the stimulation of my learning style" (n = 264/100%)	.....68
4.4.5	<i>Question 20: Effect of content being explained on the green/whiteboard (Variable 88 - 92)</i> .....	69
4.4.5.1	Variable 88: "my ability to concentrate during a lecture" (n = 265/100%)	69
4.4.5.2	Variable 89: "making content easier to understand" (n = 267/100%)	.....70
4.4.5.3	Variable 90: "making the studying of content easier" (n = 267/100%)	.....70
4.4.5.4	Variable 91: "my academic performance in general" (n = 267/100%)	.....70
4.4.5.5	Variable 92: "the stimulation of my learning style" (n = 265/100%)	.....70
4.4.6	<i>Question 21: Effect of using a data projector with PowerPoint slides, during teaching (Variable 93 - 97)</i> .....	70
4.4.6.1	Variable 93: "my ability to concentrate during a lecture" (n = 267/100%)	71
4.4.6.2	Variable 94: "making content easier to understand" (n = 267/100%)	.....71
4.4.6.3	Variable 95: "making the studying of content easier" (n = 265/100%)	.....71
4.4.6.4	Variable 96: "my academic performance in general" (n = 267/100%)	.....72
4.4.6.5	Variable 97: "the stimulation of my learning style" (n = 264/100%)	.....72
4.5	Open-ended questions .....	72
4.5.1	<i>Question 22: My most liked teaching method:</i> .....	72
4.5.1.1	"Why this is my most liked teaching method" .....	73
4.5.2	<i>Question 23: My least liked teaching method</i> .....	79
4.5.2.1	"Why this is my least liked teaching method" .....	80
4.5.3	<i>Question 24: My suggestion(s) to improve the current teaching methods at the nursing college is/ are:</i> .....	86
4.5.3.1	Academic staff .....	87
4.5.3.2	Academic guidance with self-activity.....	88
4.5.3.3	Technology assisted learning .....	89
4.5.3.4	Group work .....	89
4.5.3.5	Workload perception .....	90
4.5.3.6	Class sizes .....	90
4.5.3.7	Visual stimulation .....	91

4.5.3.8	Continuous and summative assessments.....	91
4.5.3.9	Students' preparation for class .....	91
4.5.3.10	Teaching environment .....	91
4.5.3.11	Diverse learning needs of students.....	92
4.5.3.12	Library support/study center .....	92
4.6	Conclusion .....	92
<b>CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS.....</b>		<b>94</b>
5.1	Introduction .....	94
5.2	Conclusions from the survey outcomes.....	94
5.2.1	<i>The perceived effectiveness of the traditional (green/whiteboard; overhead projector with transparencies) lecture on students learning.....</i>	<i>94</i>
5.2.2	<i>The perceived effectiveness of group work on student learning .....</i>	<i>95</i>
5.2.3	<i>The perceived effectiveness of self-activity on student learning .....</i>	<i>95</i>
5.2.4	<i>The perceived effectiveness of the use of technology such as powerpoint presentations and video clips on student learning.....</i>	<i>96</i>
5.3	Recommendations based on the objectives .....	96
5.3.1	<i>Traditional green/whiteboard lectures and overhead projector with transparencies lecture.....</i>	<i>96</i>
5.3.1.1	Lectures.....	96
5.3.1.2	Overhead projector with transparencies .....	97
5.3.1.3	Green/whiteboard lectures.....	98
5.3.2	<i>Group work.....</i>	<i>98</i>
5.3.3	<i>Self-activity.....</i>	<i>99</i>
5.3.4	<i>Technology.....</i>	<i>100</i>
5.3.4.1	PowerPoint, video clips and animation .....	100
5.3.5	<i>Blended approach to teaching.....</i>	<i>102</i>
5.3.6	<i>The teaching environment.....</i>	<i>103</i>
5.3.6.1	Academic staff .....	103
5.3.6.2	Re-training of academic staff .....	104
5.3.6.3	Counteracting a boring classroom environment.....	105
5.3.6.4	Orientation for neophyte academics .....	105
5.3.6.5	Orientation of students.....	105
5.3.6.6	Workload perception of students.....	106
5.3.6.7	Class size .....	107

5.4	Further research .....	107
5.5	Limitations of this study .....	108
5.6	Conclusion .....	108
<b>Annexures</b>	<b>.....</b>	<b>123</b>

## ABBREVIATIONS

<b>ANOVA</b>	Analysis of variance
<b>ARS</b>	Audience response system
<b>BNS</b>	Baccalaureate nursing students
<b>BSN</b>	Baccalaureate Student Nurse
<b>CA</b>	Continuous assessment
<b>CAI</b>	Computer-assisted instruction
<b>CAL</b>	Computer-assisted learning
<b>CPUT</b>	Cape Peninsula University of Technology
<b>CSP</b>	Comprehensive Service Plan
<b>ESL</b>	English as a second language
<b>GPA</b>	Grade point average
<b>GWBL</b>	Group work based learning
<b>HEI</b>	Higher Education Institution
<b>HOTS</b>	Higher order thinking skills
<b>IT</b>	Information technology
<b>ICT</b>	Information and communication technology
<b>ITS</b>	Interactive telematic services
<b>ITV</b>	Interactive television
<b>LOTS</b>	Lower order thinking skills
<b>OHP</b>	Overhead projector
<b>PAL</b>	Peer assisted learning



<b>PGWC</b>	Provincial Government of the Western Cape
<b>R425</b>	Regulation for registration as registered nurse (General, Psychiatric and Community) and Midwifery
<b>RN</b>	Registered nurse
<b>RPT</b>	Reciprocal peer tutoring
<b>SANC</b>	South African Nursing Council
<b>SD</b>	Standard deviation
<b>SDL</b>	Self directed learning
<b>VLE</b>	Virtual learning environment
<b>WBL</b>	Web-based learning
<b>WCCN</b>	Western Cape College of Nursing
<b>WCP</b>	Western Cape Province
<b>WWW</b>	World Wide Web

## LIST OF TABLES

Table 1.1: Total number of students for the period 2005-2009 at the college under study (PGWC:2009) .....	3
Table 1.2: First semester results for the period 2002-2009 at the college under study (PGWC:2009).....	4
Table 3.1: Student Population of the College under study 2010.....	39
Table 3.2: Summary of the number of questionnaire distributions and returns.....	44
Table 4.1: Age (n=267) .....	49
Table 4.2: Gender (n=267).....	50
Table 4.3: Marital status (n=267) .....	50
Table 4.4: Home language (n=267) .....	51
Table 4.5: Other Home languages (n=8) .....	52
Table 4.6: Year completed Matric (What year did you complete Matric/ Grade XII) n=251 .....	52
Table 4.7: Other study courses prior to current nursing studies (n=267) .....	53
Table 4.8: Various other courses studied by participants (n=41).....	53
Table 4.9: Year of current nursing study .....	54
Table 4.10: Practising nursing prior to commencing R425 Nursing program (n=261) .....	55
Table 4.11: Can use computer without assistance .....	58
Table 4.12: Other teaching methods to which you were exposed to during primary and/or secondary school years as indicated by participants (n = 5/1%) .....	62
Table 4.13: Effect of the traditional lecture on:.....	62
Table 4.14: Effect of group work on: .....	64
Table 4.15: Effect of self-activity on: .....	66
Table 4.16: Effect of the use of an overhead projector with transparencies, during teaching, on:.....	67
Table 4.17: Effect of the content being explained on the green/whiteboard, on: .....	69
Table 4.18: Effect of using a data projector with PowerPoint slides, during teaching, on: .....	71
Table 4.19: Motivation for liking data projector and PowerPoint slides.....	73
Table 4.20: Motivation for liking green/whiteboard teaching .....	75
Table 4.21: Motivation for liking group work.....	76
Table 4.22: Motivation for liking overhead projector with transparencies .....	77
Table 4.23: Motivation for liking traditional lecture .....	78

Table 4.24: Motivation for liking self-activity.....	79
Table 4.25: Motivation for not liking overhead projector with transparencies .....	81
Table 4.26: Motivation for not liking green/whiteboard teaching .....	82
Table 4.27: Motivation for not liking data projector with PowerPoint slides .....	83
Table 4.28: Motivation for not liking group work.....	84
Table 4.29: Motivation for not liking traditional lecture .....	85
Table 4.30: Motivation for not liking self-activity.....	86
Table 4.31: Themes for response to open-question: Suggestion(s) to improve the current teaching methods at the nursing college.....	87

## LIST OF FIGURES

Figure 2.1: Educational changes in the teaching environment (Illustrated by the researcher) .....	33
Figure 2.2: Bloom's Revised Taxonomy by Anderson and Krathwohl .....	34
Figure 2.3: Bloom's Digital Taxonomy Concept map by Churches .....	35
Figure 2.4: Factors guiding the teaching strategies of the 21st century teaching environment (Illustrated by Researcher) .....	36
Figure 4.1: Various Nursing positions practised prior to commencing R425 Nursing program (n=21) .....	55
Figure 4.2: Library facilities used by participants n=267 .....	56
Figure 4.3: Technological equipment owned by participants .....	57
Figure 4.4: Technological equipment owned by family (with whom participants have physical contact).....	58
Figure 4.5: Participants' use of computer programs .....	59
Figure 4.6: Technologies used by participants to assist with their studies.....	60
Figure 4.7: Teaching methods exposed to during primary and/or secondary school years.....	61
Figure 4.8: Most liked teaching method .....	73
Figure 4.9: Least liked teaching method .....	80

## LIST OF ANNEXURES

Annexure A: Questionnaire .....	123
Annexure B: Participant consent form.....	133
Annexure C: Letters of permission to conduct research at college under study. ....	136
Annexure D: Letter of permission from participating health care institutions .....	138
Annexure E: Letter of permission from participating health care institutions .....	139
Annexure F: Ethical approval .....	140
Annexure G: Language editing and translation.....	142

# CHAPTER 1: SCIENTIFIC FOUNDATION OF THE STUDY

## 1.1 INTRODUCTION

According to Richards (2007:1), training has become the primary investment tool, with the dawn of new technology in the twenty first century. Furthermore, she describes how imperative it is for professionally trained nurses to be knowledgeable of technologies such as computers; internet and PowerPoint communications. Globally there is advancement in technology and the nursing profession needs to keep up to date in order not to be disadvantaged (Brown, Kirkpatrick, Mangum & Avery, 2008:283). The 21st century has brought about a change in nursing education, specifically the technology that impacts the learning of all nursing students. The nursing students of this century are furthermore found to be technologically aware young adults (Merrill, Reinckens, Yarborough & Robinson, 2006:107). This has advanced the use of instructional technology in academia and requires that faculty be open to new types of teaching and learning situations (Cooper, Taft & Thelen, 2004:160). Therefore, through this study, the researcher aims to investigate the perceived effect of the current teaching methods as experienced by student nurses at a nursing college in the Western Cape Province.

## 1.2 RATIONALE

In 1994 all aspects of the public service were faced with restructuring and development. In response to the Minister of Education the Provincial Government executed the policy of rationalising the nursing colleges in the Western Cape (1996:np). In 1999 the 4 independent nursing colleges were dissolved and amalgamated to form one Nursing College that would supply nursing resources to the Western Cape Province. The year 2000 earmarked the first intake of nursing students to the newly formed college. In 2002 the minister of education promulgated that this college should merge with a Higher Education Institution (Asmal, 2002:48).

In preparation for the merger with the Department of Higher Education it has become imperative that the teaching methods of the college under study be aligned with the teaching methods facilitated at higher education institutions. According to Quinn (2001:247), information and communication technology (ICT) is the term that embraces the full range of teaching and learning resources that students encounter in higher education. Higher education institutions have adopted technology as one of the critical teaching and learning strategies (Juniu, 2006:68; Den Beste, 2003:493; Peluchette & Rust, 2005:200 and Brown, Kirkpatrick, Mangum & Avery, 2008:283). In addition, ICT is considered to be

an authoritative tool for the constructivist classroom (Juniu, 2006:69). Constructivism view learning as a process of making sense of the world around you, whereby the learners relate their past experience and knowledge (Paurelle, 2003:1) with the guidance that the teacher is able to offer (Rovai, 2004:80). Learners are active processors of information (Rovai, 2004:80) and construct their own meaning through active engagement with content and by constructing their own presentation of what they know (Juniu, 2006: 68). ICT rich classrooms ensure that learners self-regulate their learning by taking an active role and constructing knowledge – thus creating a student-centered environment (Wang, 2005:40; Becta, 2007:3).

However, in higher education various other teaching methods are also utilised to facilitate the educational needs of learners. WebCT Vista is a software package for online course management that supplement face-to-face lectures. It improves the learning experience for all learners and particularly for the learners who have a visual learning style and who want to work at their own pace. Video conferencing and interactive telematic services (ITS) introduce the learner to a user-friendly virtual learning environment that allows direct two-way communication between the academic staff and the learner. It is an integrated interactive learning system that knows no boundaries. WebCT, a web-based virtual learning environment (VLE) and interactive television (ITV) or videoconferencing are the main technological methods used to deliver distance education (Marsh, Marais, Van der Walt, Van Deventer, Steyn & Labadarios, 2006:e1 and Badenhorst & Axmann, 2002:293).

Peer group teaching is a teaching method practised at educational and higher education institutions. Learners are keen on reciprocal peer tutoring (RPT) (Schmuck, 2001:273). In the classroom, groups with supportive friendship patterns enhance academic learning (Schmuck, 2001:273). Furthermore, in a study on reciprocal peer tutoring, 72% learners indicated a benefit, 9% was neutral, and 19% indicated no benefit (Cheng & Ku, 2001: 6). Peer tutoring can be an effective model to refine knowledge, attitudes and skills that are related to diversity issues in health (Tang, Hernandez & Adams, 2004:60). The results by Field, Burke, Mc Allister and Lloyd (2007:411), indicates the effectiveness of peer assisted learning (PAL), with the post –training confidence skills scoring a mean >7, 7 on a 10 cm scale. Peer group teaching has been found to be an effective teaching method that learners enjoy.

The traditional lecture has long been practised. The use of the writing board always ensures an interactive classroom. It has many positive as well as negative elements. The use of an overhead projector (OHP) is flexible, quick, and cheap. Self-activity grants the learners the opportunity to engage with the learning content at their own pace and in their own time. It helps the learner to identify his/her lack of or understanding of learning content.

The learner will also identify his need for acquiring help from fellow learners and/or an educator. Group activity or collaborative learning is an educational approach whereby the learning environment is structured for the learners to work together towards a common learning goal (Steinert, 2004:286; Prichard, Bizo & Stratford, 2006:136; Volet & Mansfield, 2006:341).

The Healthcare 2010 Human resources plan (2003:24) identifies the challenge that the burden of disease poses to the human resource of the nursing profession. The Nursing strategy for South Africa (2008:8), states that the total number of nurses is inadequate for the health care demand in South Africa. Furthermore, the Comprehensive Service Plan (CSP) of the Western Cape Province (WCP) describes the urgent need for an increased number of nursing resource output to address the apparent shortage of nursing staff in the WCP. In an effort to produce such high output numbers, authorities in South Africa need to re-evaluate training facilities, training methods as well as assess the needs of the learners. Cooper, Taft, and Thelen (2004:160), found that nursing shortages challenge nursing faculties to embrace new teaching and learning opportunities. However, in the light of the projected nursing resource output plan, various marketing strategies such as community awareness programmes and college open-days for career choices have been initiated since 2007 (Health Western Cape, 2003:24 and Nursing strategy for South Africa, 2008:16) Therefore, there has been an increase in the intake of the number of students from 2006 until 2010 at this particular nursing college (see table 1).

**Table 1.1: Total number of students for the period 2005-2009 at the college under study (PGWC:2009)**

Year	No. of students 1 <sup>st</sup> semester	No. of students 2 <sup>nd</sup> semester	Total number of students per year
2005	529	502	1031
2006	577	545	1122
2007	614	591	1205
2008	817	771	1588
<b>2009</b>	<b>1018</b>	<b>951</b>	<b>1969</b>

Furthermore, children are born in a technologically crazed era, where cellular phones, electronic equipment and electronic programs consume their attention throughout the greater part of the day and they have become accustomed to this visual stimulation (Frey & Birnbaum, 2002:2). It is from the same pool of electronically advanced people, that nursing resources are being recruited. Conversely, academics could be labelled as technologically



challenged and even disadvantaged if they do not have access to such equipment and programs.

The college under study facilitates learning to a diverse group of undergraduate and postgraduate nursing students. These students vary from young to older adult learners. The South African Nursing Council (SANC) has accredited the academic nursing programmes that are facilitated at this nursing college. It includes the undergraduate programmes according to R425 and programmes offered on a post – basic level according to R212 as promulgated by the Nursing Act 50 of 1978.

Student performance has also become a major area of concern for the WCP and specifically at the nursing college. An increase in the failure rate of students studying at this particular nursing college has become evident in the 1<sup>st</sup> semester academic results from 2002 until 2009 (see table 2). Urgent measures were required to address this problem. A possible area influencing student academic performance could be the current teaching methods being used at the college, which varies between the use of traditional teaching methods such as: green/whiteboards or whiteboards, overhead projected information, flipcharts, practical skills demonstrations, group activity, self-activity and PowerPoint presentations (Provincial Government of the Western Cape (PGWC, 2009).

**Table 1.2: First semester results for the period 2002-2009 at the college under study (PGWC:2009)**

Year	Total Pass %	Total Failure %
2002	91.9	8.1
2003	89.9	10.1
2004	87.3	12.7
2005	86.7	13.3
2006	80.9	19.1
2007	71.3	28.7
2008	84.8	15.2
2009	86.1	13.9

However, since 2008 academic staff at the nursing college was exposed to more technologically enhanced tasks, such as the keeping of the newly introduced electronic registers and facilitating PowerPoint lectures as far as possible. The academic staff were also furthermore equipped with skills development training in electronic programs such as Microsoft Office (Word, Excel and PowerPoint).

While practising as a nursing lecturer in Saudi Arabia, it was observed that many Middle Eastern nursing students are disadvantaged by the use of English as a teaching language due to English being their second language. However, it was observed that fewer students were disadvantaged by the use of technologically advanced equipment. Chang (2005:9) identified the positive impact that PowerPoint, as a teaching method has on culturally diverse students with English as second language. Supporting evidence is discussed by Wang (2005:39), describing the benefits of using PowerPoint as being successful in a second language education environment.

Students perceive the use of technology such as PowerPoint, during lectures, as a positive contributor to their ability to understand lectures (Chang, 2005:11; Clarke, 2008:39). Frey and Birnham (2002:2) researched and found that a PowerPoint lecture does enhance academic performance. They also found that students perceive lecturers that use PowerPoint to be more organised. Furthermore, Smith-Glasgow and Cornelius (2005:179) researched the benefits and costs of integrating technology into undergraduate nursing programs in the United States of America. They recommend that new technologies could transform nursing education when the necessary infrastructure is put into place.

In her current position as an academic lecturer, the researcher identified that the institution is equipped and prepared for the use of technology in the teaching environment. Unfortunately, despite the support for the use of technology in the classroom, the equipment is underutilized and in most cases not used, by the academic staff. The majority of academic staff use the traditional teaching methods, such as the overhead projector with transparencies, as well as small group activities.

### **1.3 SIGNIFICANCE OF THE STUDY**

This study identified the strengths and weaknesses of the current teaching methods. Furthermore, this study sought to identify the best teaching methods to improve student throughput and which influenced the student output positively. The researcher hoped that the findings and recommendations of this study would not only benefit the college under study but all other nursing institutions of learning.

### **1.4 PROBLEM STATEMENT**

In the light of the above, it was therefore imperative that a scientific investigation be undertaken to evaluate the perceptions of students regarding the effectiveness of the teaching methods which they experienced at a nursing college in the Western Cape Province (WCP) and to evaluate whether this was a contributing factor towards the students' academic performance.

## **1.5 RESEARCH QUESTION**

The research question “What were the perceptions of the student nurses regarding the effectiveness of the teaching methods which they experienced at a nursing college in the Western Cape Province?” guided this study.

## **1.6 RESEARCH GOAL**

The goal of this research was to evaluate the perceptions of student nurses regarding the effectiveness of the teaching methods which they experienced at a nursing college in the WCP.

## **1.7 RESEARCH OBJECTIVES**

The objectives set for this study was to evaluate the effectiveness of teaching methods as perceived and experienced by students of:

- the traditional (green/white board) lecture on student learning
- group activity (small groups) on student learning
- self-activity on student learning
- the use of technology such as PowerPoint presentations and video clips on student learning.

## **1.8 RESEARCH METHODOLOGY**

A brief overview of the research methodology is described in this chapter, more detail related to the literature and implementation of the methodology are described in chapter 3.

### **1.8.1 Research design**

For the purpose of this study an exploratory descriptive research design with a quantitative approach was applied to explore the perceptions and experiences of students regarding the effectiveness of teaching methods used at a nursing college in the Western Cape.

### **1.8.2 Population and sampling**

The target population (N=1238) included the undergraduate 1<sup>st</sup> – 4<sup>th</sup> year nursing students that were studying for the basic diploma in nursing at a college in the WCP. A stratified random sampling method was applied to draw a sample (n=248) of twenty percent (20%) from the population of student nurses.

### **1.8.3 Pilot study**

A pilot study or “preliminary study” was conducted to test the feasibility of the study, the methodology and test the instrument.

#### **1.8.4 Reliability and validity**

The reliability and validity were supported through a pilot study and the use of experts in the field of education, nursing, research methodology and the statistics. Cronbach alpha coefficient test was done to test the reliability of the questions, results varied between .89 and .94.

#### **1.8.5 Ethical considerations**

Creswell (2009:87), highlights the importance for the researcher to adhere to the ethical considerations when implementing a research study. Informed consent refers to the right of full disclosure about the researcher's intent to do research. Permission was obtained from the Head of College under study (Annexure D and E) and from the Health Research Ethics Committee of the University of Stellenbosch (Annexure F) to conduct this study. Informed written consent was obtained from the participants (Annexure B). The researcher maintained the principles of anonymity and confidentiality. No indicators such as contact detail or names appeared on the measuring instruments. Completed measuring instruments are being stored in a secured locked cupboard for a period of five years. Only the researcher has access to the data.

#### **1.8.6 Specific criteria**

The criteria set for this study was to include only students following the undergraduate (R425) programme in their 1<sup>st</sup> - 4<sup>th</sup> year of study who were willing to participate in this study of any age and gender.

#### **1.8.7 Data collection**

The researcher personally disseminated the questionnaires to the willing participants and collected the self administered questionnaire after it was completed.

#### **1.8.8 Data collection tool**

The instrument used in this study was a self-developed, self-administered Likert scale type questionnaire(Annexure A) based on the literature and teaching classroom experience of the researcher.

#### **1.8.9 Data analysis and interpretation**

Data was expressed in frequency tables and histograms. Descriptive statistical analysis and associations between various variables were completed using the chi square test.

### **1.9 RECOMMENDATIONS**

Recommendations based on the scientific evidence were made to the educational authorities, nursing college and department of health. Results will also be published.

## **1.10 OPERATIONAL DEFINITIONS**

### **1.10.1 Teaching**

It is a deliberate and purposeful activity that is directed towards the promotion of learning. It comprises of two basic elements: the teacher, i.e. the individual who is promoting learning, and the learner/ student/ recipient, i.e. whose learning is being promoted (Quinn, 2001:155).

### **1.10.2 Student nurse**

Student refers to a person studying at a university or other place of higher education denoting someone who is studying to enter a particular profession, e.g. a student professional nurse (Oxford Dictionary, 2001:904). Student nurses refer to nursing students who are undertaking the 4-year diploma, which is the basic nursing education and training programme leading to registration as a nurse (general, psychiatric and community) and midwife (SANC, R425:1985). The learner in nursing education is socially mature, but is still developing within context of nursing, be it basic education, or specialisation in one of the nursing disciplines (Meyer & Van Niekerk, 2008:25).

### **1.10.3 Nursing education**

The science aspect of teaching, is based on a body of knowledge derived from the theories and research from natural and social science disciplines, such as microbiology, anatomy, physiology, anthropology, psychology, sociology, and speech communication (Vandever, 2009:190 in Billings and Halstead, 2005:25).

### **1.10.4 Learning environment**

A learning environment should be humanistic, authentic, supportive and caring and one that is characterised by respect for learners' uniqueness and abilities. Furthermore, for learning to occur, it must be stimulating and disciplined in the pursuit of new knowledge (Meyer & Van Niekerk, 2008:107). For the purpose of this study the learning environment is focussed on the theoretical setting.

### **1.10.5 Approaches to learning**

Students' approaches to learning is defined as the intentions and motives a student has when approaching a learning task, as well as the corresponding strategies by which these intentions and motives are accomplished (Diseth, 2007:187).

### **1.10.6 Teacher centered approach**

The teacher has direct control over what s/he teaches and how s/he presents the information to nursing students (Bruce, Klopper & Mellish, 2011:194).

### **1.10.7 Learner-centered approach**

The learner is actively involved in the learning process, with the teacher being the lesser medium through which learning occurs, and also sometimes learning that results from learners' own enquiry (Bruce et al., 2011:194)

### **1.10.8 Greenboard**

The greenboard is a board with a green colour background that is written on with white or coloured chalk and is also known as the chalkboard (Mellish, Brink and Paton, 2001:183). For the purpose of this study it will be referred to as a greenbord.

## **1.11 CHAPTER LAYOUT**

### **Chapter 1: Scientific foundation of the study**

Describes the background, rationale, goal, objectives and gives a brief overview of the research methodology applied in this study.

### **Chapter 2: Literature review**

This chapter contains the discussion of a literature review on the various types of teaching methods and conceptual theoretical framework which guided the study.

### **Chapter 3: Research methodology**

Describe and discusses the research design and research methodology that were used in this study.

### **Chapter 4: Data analysis, interpretation and discussion**

Describes and discusses the data analysis and interpretation, and related discussion.

### **Chapter 5: Conclusion and recommendations**

This chapter comprises of a discussion and recommendations based on the scientific evidence obtained in the study.

## **1.12 CONCLUSION**

In this chapter the researcher described the study that was undertaken with specific reference to the rationale for the study, the problem statement, goal, objectives and research methodology applied.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 INTRODUCTION**

In this chapter, the literature study was conducted to obtain scientific information about the effects of various teaching methods. The purpose of a literature review is to convey what is currently known about a specific topic (Burns & Grove, 2009:91). This summary of theoretical and empirical sources indicates whether adequate knowledge exists to make changes in practice or whether additional research is needed (Burns & Grove, 2003:37). According to Terre Blanche, Durrheim and Painter (2004:19), a literature review puts a research project into perspective by showing how it fits into a particular field.

### **2.2 DIVERSITY ISSUES IN LEARNING**

Diversity refers to a state of being and to a range of differences, usually in people, objects, phenomena and circumstances (Bruce, Klopper & Mellish, 2011:122).

#### **2.2.1 Generational diversity in the 21<sup>st</sup> century**

In the majority of teaching environments the teachers and students come from different generations (Bruce et al., 2011:135 and Oblinger, 2003:38).

It was identified that faculty / academics born between 1946 and 1964 also known as the silent type of person in the classroom, display characteristics such as:

- valuing hard work and thriftiness
- regarding conformity, consistency and uniformity as important work values
- enjoying the security and longevity that large organisations offer and
- they value the system, over individual enterprise.

Furthermore, they are loyal and committed, but not skilled with technology, and therefore struggle to understand others, such as generation X's and millennials (Bruce et al., 2011:136).

The diverse university and college society today, consists of generation X and Y students, who are conditioned to expect immediate gratification and also have a shorter attention span, with a low threshold for boredom (Billings & Halstead, 2009:19; Woempner, 2007:4; Oblinger, 2003:37 and Arhin & Johnson-Mallard, 2003:121). It can be quite a challenge for educators to keep these young people engaged in the classrooms (Arhin & Johnson-Mallard, 2003:121).

### 2.2.1.1 *Generation X students*

According to Bruce et al. (2011:136); Billings and Halstead (2009:19); Woempner (2007:1); Skiba (2005:370); Oblinger (2003:38); Archin and Johnson-Mallard (2003:121) persons born between 1965 and 1980 are referred to as generation X and can be characterised as:

- flexible
- independent
- can multi task well
- intolerant of busy work
- pessimistic
- self-reliant
- being accustomed to change and
- want to get the job done

In addition they account for a large number of college students who were exposed to factors such as:

- being the first to pass through metal detectors as they enter schools
- grew up with television
- more than half have divorced parents and grew up with a working mother
- they were the first generation of latchkey children for whom day care, baby sitters, television and computers served as surrogate parents
- more than one third were physically, mentally or sexually abused (often by stepparents)
- many were left alone as their parents pursued their careers and subsequently became very independent and developed strong problem-solving skills

This generation prefers learning to be straightforward, and they want to learn information in the easiest, quickest way possible and allow leisure time to exceed learning time, especially if they do not see the value in learning something (Bruce et al., 2011:137).

### 2.2.1.2 *Millennial or generation Y students*

Millennial or generation Y refers to the persons born between late 1970's or early 1980's up until 2003 and can be characterised as:

- direct
- optimistic
- rule follower
- self-confident
- accept authority
- balance work and personal life
- socially aware
- tough to bully but great to collaborate
- socially involved
- team players
- very vocal
- believe "it's cool to be smart" and
- are racially and ethnically diverse



(Bruce et al., 2011: 136; Billings & Halstead, 2009: 19; Woempner, 2007:3; Oblinger, 2003:38 and Arhin & Johnson-Mallard, 2003:121).

Millennials outnumber the previous generations and has been reported by Woempner (2007:1) to comprise 36% of United States of America population, which in 2000 were registered at 100 million children and youth aged 0-22. In preparation for success the parents of the millennial, involve their children in academic and sports activities at younger and younger ages. By the time they reach college they have learned how to work with others (members of a team) and group grades for projects and assignments are something they are used to, and expect (Billings & Halstead, 2009:19; Skiba, 2005:370 and Oblinger, 2003:38).

Millennials were also very wanted babies (baby boomers) who

- received much attention and caring from their parents;
- identify with their parent's values and feel close to their parents;
- are much more involved with service activities because their parents value giving back to the community;
- are used to living highly structured lives planned by their parents and subsequently have very little free time
- (Billings & Halstead, 2009:19; Woempner, 2007:1 and Oblinger, 2003:43).

In addition according to Bruce et al. (2011:137) and Skiba (2005:370)

- technology is a part of the millennials generation and consequently
- spend much of their time online, on the internet and staying connected electronically
- prefer web searches
- demand prompt feedback on work they have done since they are accustomed to continuous and speedy information access.

Through their vast experience in "gaming" through video games, modern communication tools such as the internet, beepers and cell phones; play station portables, X-Boxes, I-phones and I-pods they expect stimulation and interactive modes of learning rather than traditional lecture formats (Billings & Halstead, 2009:19; Woempner, 2007:1; Skiba, 2005:370; Oblinger, 2003:38 and Arhin & Johnson-Mallard, 2003:121).

Results of a research study show that of students in their teen years:

- 94% use the internet for school research
- 78% believe the internet helps with schoolwork
- 70% use instant messaging to keep in touch
- 41% use email and instant messaging to contact teachers or schoolmates about class work
- 81% use email to stay in touch with family and relatives and
- 56% prefer to use the Internet to the telephone (Oblinger, 2003:38).

In 2007 it was found that the average college graduates have spent less than 5000 hours of their lives reading, over 10 000 hours playing video games and 20 000 hours watching television (Woempner, 2007:4). These students expect varied technological approaches in their learning environments. Furthermore, parents of this generation expect that their children's schools and universities will reflect diversity and thus provide a richer learning experience for them (Billings & Halstead, 2009:19 and Oblinger, 2003:38). In a survey conducted during 2003 on college and university students results show that 84% of the students reported that they own their own computer, 25% own more than one computer; 47% planned to buy a notebook and 43% planned to buy a desktop (Oblinger, 2003:39).

Millennials prefer to multitask because of their expert technology abilities and scheduled lifestyles. However, this can sometimes be a barrier to critical thinking, as students may have difficulty refining their abilities to focus on priority issues (Bruce et al., 2011:136; Billings & Halstead, 2009:19; Skiba, 2005:370; Woempner, 2007:4 and Oblinger, 2003:38).

### **2.2.2 Changing demographics**

The college enrolment as projected for 2004 to 2014 shows an increase of 11% of students younger than 25 years and 15% of students older than 25 years (Billings & Halstead, 2009:18). The average age of nurses was 31 years in 2003; in 2004-2005, 72.1% of baccalaureate nursing students (BNS) were 25 years or younger; more students are attending college part-time than previous years and a higher proportion of students are women (Billings & Halstead, 2009:19 and Oblinger, 2003:38).

Schools of nursing (local and abroad) must prepare for an increasingly diverse student body and should closely examine the changing demographics of their student body, the adequacy of support services and the flexibility of their nursing curricula in their training program (Billings & Halstead, 2009:20 and Oblinger, 2003:38 ). Diana Oblinger (2003:37) asks the question: "How well do college and university faculty, administrators and staff understand these differences" and "how often do they take the differences into account

when designing programs or courses?”. According to Oblinger (2003:43), the aging infrastructure and lecture tradition of colleges and universities may not meet the expectations of students who were raised on Internet and interactive games. Apart from balancing the interests of current students and institutions, colleges and universities should also consider the other implication of new students and their learning styles (Oblinger, 2003:45 and Arhin & Johnson-Mallard, 2003:122).

There is no single formula, particularly since students often present with a diversity of ages, learning styles, and communication preferences (Oblinger, 2003:45 and Arhin & Johnson-Mallard, 2003:122). According to Oblinger (2003:45), the first step would be to better understand the “new” learners, Gen-Xers, millennials, and those still to come. Learning styles of these generations are more active and visual rather than verbal (Arhin & Johnson-Mallard, 2003:121). Of the twenty five junior undergraduate nursing students, only two choose the lecture format to present the content; the other students either employed visual techniques such as PowerPoint presentations, posters, musical presentations, video taped play or a theatrical presentation. This observation confirms the kinaesthetic and visual learning style of this generation (Arhin & Johnson-Mallard, 2003:122).

The profile of the nursing student in the new millennium is therefore markedly different from the past (Billings & Halstead, 2009:18). To serve an increasingly diverse population of nursing students, have implications for faculty while they contemplate the development of future curricula and determine the resources necessary to support the academic performance of students (Bruce et al., 2011: 136 and Billings & Halstead, 2009:19).

### **2.2.3 Cultural diversity**

Cultural diversity often focuses on ethnicity, race and language, but can also broadly include all those issues that characterise students' backgrounds and other factors such as: age; gender; place of birth; immigrant status and education (Bruce et al., 2011:138). Cultural diversity in academic settings, if not properly understood and managed, can create significant challenges and barriers for students (Bruce et al., 2011:138; Billings & Halstead, 2009:21).

#### *2.2.3.1 Language diversity*

Guhde (2003:113) defines English as a second language (ESL) of a student as a student whose primary language at home is not standard English, and therefore, may not be fluent in standard English. ESL students in particular struggle with critical thinking and analysis, and with understanding complex materials and concepts, both of which are difficult skills to acquire without a degree of English proficiency (Bruce et al., 2011:139). Language can therefore affect a student's ability to acquire the needed resources to continue his/her education, while a lack of language skills may lead employers, faculties or students to

believe that students with ESL are less intelligent (Starr, 2009:484). Sanner and Wilson (2008:813), warn that in the absence of scientific evidence, educators should avoid stereotyping culturally diverse student populations with reference to poor intellectual development and intelligence. Students reported concerns about the responses of their peers and faculty to their ESL status and often chose not to speak out in class because of being self-conscious of their accents (Sanner & Wilson, 2008:813).

According to Bruce et al. (2011:139); Billings & Halstead (2009:21) and McLaughlin (2007:59), faculty need to embrace the cultural differences of their students and use resources available to them to foster a successful learning environment. Students with ESL can be found throughout the world and their education warrants responsive attention to their needs (Sanner & Wilson, 2008:813). Collaboration with campus ethnic students' associations can assist faculty as they work to promote student success, by offering access to role models, peer support and encouragement, tutoring opportunities, and communication strategies (Billings & Halstead, 2009:21 and McLaughlin, 2007: 59).

#### **2.2.4 Approaches to learning**

Approaches to learning refer to individual differences in intentions and motives when one faces a learning situation, and the corresponding strategies that are then utilised (Diseth & Martinsen, 2003:195). Approaches to learning are associated with the degree of satisfaction students experience in their learning (Herington & Weaven, 2008:116).

The students' choice of approach to learning is determined by their orientation to studying, which include their past learning experiences, teaching factors such as: the workload of the subject, the type of assessment, feedback received and the enthusiasm of the teacher (Bruce et al., 2011:123; Case & Marshall, 2004:606 and Biggs, 2003:11). Teachers should understand various learning styles and approaches, to be able to address the learners' needs and ensure success in teaching (Arthurs, 2007:4 and Vaughn & Bake, 2001:610).

Educationalists describe three approaches to learning: a surface approach, a deep-holistic approach and a strategic approach (Bruce et al., 2011:123). The precise descriptions of surface and deep approaches differ from task to task, and also from subject to subject area, just as learning outcomes vary in different subjects (Ramsden, 2003:80).

##### *2.2.4.1 Surface approach*

In the surface approach a student mainly focuses on the text itself, trying to memorise as much as possible and to reproduce the learning material without trying to understand them or put them in context (Diseth, 2007:188; Case & Marshall, 2004:606; Kiger, 2004:75, Diseth & Martinsen, 2003:196, Cope, 2003:135 and Evans, Kirby & Fabrigar,2003:508). Such students who learn from memory are often unable to construct a holistic

understanding of what they are learning (Rollnick, Davidowitz, Keane, Bapoo & Magadla, 2008:30). When multiplying numbers, memorising can be very useful (Kiger, 2004:76). In this learning process the students accept information in lectures, journals and textbooks without questioning or critiquing texts (Bruce et al., 2011:124).

Students find it difficult to solve problems and use routine solutions and procedure to solve problems; they are more comfortable following problem examples that have already been worked out, and or copy or reproduce the solutions for similar problems (Bruce et al., 2011:124 and Diseth & Martinsen, 2003:197).

The tendency of students to surface learning is based on previous educational experiences in secondary education (Oblinger, 2003:44). According to Biggs (2003:53), students who think that the workload is high, would rather adopt a surface approach to learning. In surface learning students are usually motivated by extrinsic factors such as: passing a course, obtaining a qualification and receiving a monetary reward. It is therefore more important for them to rote-learn or memorise, what they need to learn, and less important for them to understand it (Bruce et al., 2011:124 and Cope, 2003:135). Such extrinsic motivators add little value to learning and do not steer the student to use the knowledge they have gained to improve their nursing practice, care or service delivery (Bruce et al., 2011:124).

#### *2.2.4.2 Deep-holistic approach*

Magno (2009:2) describes the deep approach as the intention to extract meaning, to produce active learning processes and to monitor the development of one's own understanding. In the deep-holistic approach, students explore and probe to better understand the meaning of information (Kiger, 2004:75). It involves intrinsic interest in developing an understanding of the content associated with learning a task (Cope, 2003:135). In this approach it is important for students to see the relationship between ideas and concepts, and how these contribute to plans, such as nursing care and health education (Bruce et al., 2011:124). Conceptual learning is the main focus here (Cope, 2003:135).

According to Ramsden (2003:80), the deep approach generates high quality, well structured, complex outcomes and produces a sense of enjoyment in learning and commitment to the subject. Students should adopt more deep approaches to learning in order to develop the skills to acquire and apply their knowledge efficiently, think critically, analyse, synthesise and make inferences (Gijbels, Segers & Struyf, 2008:432 and Hall, Ramsay & Raven, 2004:491).

Students who adopt a deep approach to learning find assessments less challenging, and they are more likely to succeed in a course than students who take the surface learning approach (Bruce et al., 2011:125). Deep learning produces long term learning results (Riley & Anderson, 2006:134). Such students open themselves up to the possibility of conceptual development: through trying to see how parts form a whole; through trying out their understanding in different situations; through relating what they are learning to other parts of the subject, other subjects and their personal experiences (Cope, 2003:136).

Deep-holistic learning is thus considered being the preferred approach to all learning, and occurs predominantly when students are engaged in challenging tasks in topics of interest (Kember et al., 2009:48). Entwistle, McCune and Hounsell (2002:16), reported in their study that indicated that the deep and highly self-regulated learners indicated that they did not need detailed manuals, unlike their counterpart surface / undirected learners.

#### *2.2.4.3 Strategic approach*

In the strategic approach students intend to achieve the best grades possible (Diseth & Martinsen 2003:196). According to Entwistle (2008:9), such students enter a programme with the intention to do well and achieve their goals. Students may adopt a deep-holistic approach to solve problems, make decisions and use creative ideas to put together a plan or solution. Such students' approach to learning is flexible, yet well organised and structured and they have highly efficient study methods whereby they choose when to use either deep or surface approaches (Bruce et al., 2011:126). The strategic learning approach refers to the student's ability to focus on organised study, time management and monitoring their achievements (Rollnick et al., 2008:30).

### **2.2.5 Learning environment**

The learning environment plays an important role in a student's approach to learning and mechanisms should be implemented to evaluate how students perceive their learning environments (Magerman, 2011:89 and Hall et al., 2004:503).

#### *2.2.5.1 The surface approach learning environment*

In poorly resourced environments, as well as poor or inappropriate educational preparation of nurse educators, it is unlikely that students will adopt a deep learning approach (Bruce et al., 2011:124). The presence of a surface approach may thus indicate that something is out of order in teaching, or in the assessment methods, and should be addressed (Biggs, 2003: 53).

#### *2.2.5.2 The deep approach learning environment*

Learning technologies should be used to promote the learning environmental factors perceived by students who use deep learning approaches (Cope, 2003:137). Integration of learning technologies into higher education learning environments encourage students to

use the deep learning approaches. Technology support include video conferencing, multimedia CD ROMS, and Mind Tools i.e. computer applications designed to assist students to organise and seek meaning in a broad array of information (Cope, 2003:140).

### **2.2.6 Approaches to teaching**

According to Schaefer and Zygmunt (2003:238), the learning environment is created by the teacher's view on learning, as well as his/her approach to teaching. Teachers in a study rated the relationship of their teaching style to their philosophy of teaching with a mean of 4.2 (SD=0.55) almost always, or always equate to their actual teaching style (Schaefer & Zygmunt, 2003:240). A single type of teaching style could be ineffective for certain students (Leahy, Lyon, Thompson & William, 2005:20), specifically with a large group of nursing students (Arthurs, 2007:4).

Teachers have a preferred teaching style and in a time of crisis, they easily revert back to the teaching style they are comfortable with (Vaughn & Bake, 2001:610). Many times the most effective choice of a learning or a teaching style is dictated by the educational objectives (Vaughn & Bake, 2001:611) and are adjusted according to the students' level of skills and prior knowledge (Carlson, Wann-Hansson & Pilhammar, 2009:525). Garde, Heid, Haag, Bauch, Weires and Leven (2007:124), suggest that integration or combination of teaching methods is most effective.

#### *2.2.6.1 Teacher-centered approach*

A teacher-centered classroom environment is described when

- the student passively receives information
- formal testing is preferred over informal evaluation techniques
- strict control is maintained in the classroom and
- one predominant teaching method is used

(Schaefer & Zygmunt, 2003:238).

Activities in the traditional classroom environment are teacher-centered and teachers are perceived as the experts (Rovai, 2004:81 and Newby, Stepich, Lehman & Russell, 2000:7).

#### *2.2.6.2 Student-centered approach*

According to Wessels (2011:1), the student-centered classroom is an environment where the teacher guides and facilitates the learner to acquire the necessary skill, knowledge, values and attitudes. Students take an active role in their own learning process and have a close collaborative relationship with the teacher (Lindahl, Dagborn & Nilsson, 2009:6 and Schaefer & Zygmunt, 2003:239). Student-centered learning helps nurses to develop critical thinking and evaluation skills (Clarke, 2010:18). In a student-centered environment there is an expectation of negotiation between teacher and student with the focus on the needs of



the student rather than on the knowledge to be transmitted (Schaefer & Zygmunt, 2003:239). Although effective implementation of student-centered strategies requires a great deal of effort before it can be introduced into a curriculum, both students and faculty consider student-centered strategies as superior with regards to professional satisfaction (Distler, 2007:58).

Constructivist pedagogy, one of the dominant pedagogies used in education, uses the e-environment to place the student at the center of the learning experience. Learning is also seen as social experiences where dialogue and collaboration is essential (Conceiçã & Taylor, 2007:268; Juniu, 2006:68; Rovai, 2004:80 and Paurelle, 2003:1). A constructivist pedagogy uses Web-based training to ensure a learner-centered environment where the teacher becomes the facilitator, guides and coaches instead of being the transmitter of knowledge (Garde, Heid, Haag, Bauch, Weires & Leven, 2007:125).

### **2.3 TECHNOLOGY IN HEI**

According to Neo (Ken) and Neo (2004:118), this new age of digitalism, information and the transmission of information are becoming important components in our communication strategies. The way we send and receive information has received a tremendous boost from the advancement of technology. Technology allows greater access to information and provides powerful tools for communication and collaboration (Salter, 2003:144).

#### **2.3.1 Information technology**

Information technology (IT) is a compulsory requirement in higher education (Magerman, 2011:100). IT refers to computer technology devices that are used for processing information (Muir-Herzig, 2004:121). Computer technology has a range of applications to teaching and learning that is known as computer-assisted learning (CAL) or computer-assisted instruction (CAI) where educators/ teachers can use computers for generating teaching materials, content and presentations, while students may access educational media to prepare assignments, presentations and many more (Bruce et al., 2011: 245). Milliken and Barnes (2002:231-232), in their study reported that students' responses are that computer-based teaching offers clarity of lecture notes for future reference; were easy and interesting to follow; provides a greater understanding of the subject; and eliminates the boredom factor. Ninety percent of these students indicated that they would like to see a computer-assisted teaching approach used in other modules of study.

#### **2.3.2 Multimedia**

Use of only a single computer could be limiting, therefore teachers tend to combine computers with other media, such as videos and multimedia CAL (Bruce et al., 2011:246). Multimedia can be an effective instructional medium for delivering information because it



enables the teacher to represent the information in various media via sound, text, animation, video and images, which if combined provides a stimulating environment for learning and retaining content. Multimedia environments are interactive, multi-sensory and visually challenging to the student (Neo (Ken) & Neo, 2004:120). Teachers can thus move away from traditional teaching methods and adopt a more interactive approach by providing students with a more meaningful learning environment (Neo (Ken) & Neo, 2004:121).

### **2.3.3 Electronic learning environment**

Electronic learning or e-learning environment can be CD-ROM-based, internet-based, intranet-based or network –based and covers a wide set of applications and processes, such as web-based learning (WBL), CAL, virtual classrooms, video conferencing and digital collaborations (Buzzetto-More, 2008:113; Green/whiteboard & Watties-Daniels, 2006:103; Padalino & Peres, 2007:389; Smart & Cappel, 2006:201; Servonsky, Daniels & Davis, 2005:132; Salyers, 2005:1; Richard, Mercer & Bray, 2005:210; Peluchette & Rust, 2005:200 and Liles, 2004:76). According to Bruce et al. (2011:249), the e-learning environment is a non-physical environment which is jointly operated by computers on a network and is called cyberspace. Furthermore, in cyberspace the computer operators interact in ways similar to the real world, but without physical activity where users can share information in real or delayed time (Green/whiteboard & Watties-Daniels, 2006:105; Servonsky, Daniels & Davis, 2005:132 and Oblinger, 2003:42).

#### *2.3.3.1 Videoconferencing*

Students that may not normally speak in class might feel more comfortable and often actively share ideas and information in an open classroom setting, via the web (Black & Watties-Daniels, 2006:105 and Salter, 2003:143). Video conferencing provides a means to get both learners and teachers to a virtual, central location (Badenhorst & Axmann, 2002:293). In addition, video conferencing can eliminate the expensive travelling costs; can make the best use of limited time; allows genuine dialogue between all participants; allows immediate, full two-way communication of content; and provide a sense of social presence (Salyers, 2005:6; Badenhorst & Axmann, 2002:296). Cooper et al. (2004:164), concur that online conferencing allows students more time to think and reflect, producing a more in-depth conversation and interaction than time-limited face-to-face clinical conferences. In their study results show that clinical conference facilitated participation were rated significantly higher ( $p=0.00$ ) by students in the online groups than students in the face-to-face groups. Furthermore, students participating online chose the time of their participation and might have been more rested, energetic, and eager to write about their clinical experiences and respond to others' comments. However, students in both groups (online or face-to-face conferencing) perceived that online conferencing took more time. They identified time and their inexperience with technology as the major drawback.

A disadvantage is that e-learning can be financially taxing on any institution. Badenhorst and Axmann (2002:298), conclude that anything is possible with videoconferencing, if the financial means are available. However, more low-cost PC-based conferencing is emerging, where the public domain software and a small camera, can be used.

#### 2.3.3.2 *The World Wide Web*

The World Wide Web (WWW) or Web is public forums that serve as important vehicles for teachers and students to become part of the global village (Buzzetto-More, 2008:119; Black & Watties-Daniels, 2006:105 and Servonsky, Daniels & Davis, 2005:132).

According to Buzzetto-More (2008:124); Padalino and Peres (2007:389); Black and Watties-Daniels (2006:105), Smart and Cappel (2006: 211); Salyers (2005:6) and Cuellar (2002:9), students describe their experience of web-based enhanced courses as convenient, flexible and self-paced learning where the students can access the syllabi and other course related documents at any time. E-learning provides a rich learning experience for the user and can include text, video, audio, animation and virtual environments (Bruce et al., 2011:249; Padalino & Peres, 2007:389 and Oz, 2005:271).

The outcome for web-based course delivery is to cultivate student-centered learners who are excited about engaging in a course (Richard et al., 2005:209). According to Buzzetto-More (2008:126) 89,5% of students found the online lecture notes satisfying; 79, 6% considered it a valuable resource; and 75,2% found online lecture notes easy to print. The students in this study also strongly agreed (79,8%) that they enjoyed and preferred submitting assignments online because it is a convenient, simple and easy procedure. Furthermore, an overwhelming 99,1% indicated that they enjoy the ability to check assignment grades online (Buzzetto-More, 2008:128).

E-learning can also suffer many of the pitfalls of classroom teaching, such as boring slides, monotonous speech and little opportunity for interaction. However, software designers are continually improving to ensure highly effective learning environments (Bruce et al., 2011: 249). Some students may feel that an on-line atmosphere may be distant, cold and without the input of human emotion (Black & Watties-Daniels, 2006: 105). Online learning communities can help reduce the isolation felt by long distance students (Salter, 2003:143).

#### **2.3.4 High-tech / smart classrooms in HEI**

High-tech / Smart classrooms in HEI is a convergence of various technologies that produces teaching-learning environments in which actively engaged students can participate in desktop experiments, collaborative learning activities and students' faculty dialogue (Billings & Halstead, 2009:347; Oz, 2005:270; Löfström & Nevgi, 2007:318 and Black & Watties-Daniels, 2006:104). The usual technologies that might be found in high-

tech classrooms include ceiling-mounted video projectors, an instructor workstation with video conferencing and WWW interactivity, multiple interactive student workstations, multiple student microphones, a document camera, an electronic whiteboard, and networked printers (Billings & Halstead, 2009: 347; Oz, 2005: 271; Black & Watties-Daniels, 2006:104). An audience response system (ARS) allows the faculty to keep students engaged and involved in the classroom, and to receive feedback and check whether students understand the materials / content (Billings & Halstead, 2009: 347 and Patterson, Kilpatrick & Woebkenberg, 2009:1).

### **2.3.5 Technology integration in teaching environments**

According to Georgina and Olson (2008:1), there is much discussion about the integration of technology into pedagogy amongst faculty members. Faculty readiness to embrace technology is a significant factor for the successful transition of a programme to a web-based delivery. Many faculty members find that converting conventional graded activities to the Web, creates an overwhelming flood of emails, project attachments and bulletin board postings (Richard et al., 2005:209). Magerman (2011:90) recommends engaging IT with current teaching practices to be compulsory.

Technology literacy means that an individual has the capacity to design, develop, control, use and assess technological processes and systems (Shackelford, Brown & Warner, 2004:7). Servonsky, Daniels and Davis (2005:133), discuss various challenges that technology users face. However, they acknowledge that the Blackboard web-based programme is a strong and stable platform from which they deliver their Pediatric Nurse Practitioner distance education program.

The integration of technology depends on the way in which technology tools are used (Clapper, 2010:e12). According to Muir-Herzig (2004:129), technology is not the only solution for keeping at-risk students in the classroom, but it is a start in the right direction.

The following factors negatively influence computer technology integration in classrooms:

- the incomplete and inadequate professional development training due to lack of finances
- lack of guidance, support, and incentives
- technical problems and
- the students' computer literacy level
- (Eteokleous, 2008:680; Lofström & Nevgi, 2007:322; ChanLin, Hong, Horng, Chang & Chu, 2006:63 and Cuellar, 2002:9).

### 2.3.5.1 *IT assistance*

According to Magerman (2011: 90); Löffström and Nevgi (2007:320); Richard et al. (2005:210); Livingstone and Condie (2005:157) and Muir-Herzig (2004:129), IT assistance is important when the use of technology is implemented.

Lessen and Sorenson (2006: 46), identify four key actions to promote integration of technology:

- making the use of technology a priority
- establishing infrastructure
- focusing on development and
- creating training opportunities and support for students, faculty and staff.

Furthermore, they stress that multiple technologies must be supported in order to build an environment conducive to integration of technology.

Sixteen (16) general recommendations to ensure an inclusive technology literate faculty were listed, such as:

- access to real-time IT support staff
- IT staff with pedagogy or instructional design experience and
- university or campus-wide centers for faculty technology training that is staffed by college, and/or departmental faculty representatives who are technology-literate
- (Georgina and Olson, 2008:7).

Magerman (2011: 90) conducted research at a nursing college in the Western Cape and recommended:

- the introduction of a central depot on college premises to provide IT support and teaching equipment
- upgrading of lecture halls, with built-in data projectors, computers and internet access facilities, as compulsory in education today
- establishing of student friendly computer laboratories, accessible 24 hours around the clock, with the required IT support.

### 2.3.5.2 *Teachers and technology*

In research conducted by Georgina and Olson (2008:4), the majority respondents were Full Professors (20.7%), Associate Professors (21,6%) or Assistant Professors (33%) and the results showed that the majority (70%) of the faculty agreed it was the universities' responsibility for faculty technology training and of the minority (6%) strongly agreed that it was the faculty's sole responsibility to learn to use technology. Furthermore, a clear majority (70%) of the survey respondents preferred to teach in a technology-enhanced classroom environment (Georgina and Olson, 2008:6). The preference to teach in a

technology enhanced classroom environment was supported by the findings of Peluchette & Rust (2005:203).

Teachers/faculty must be trained in the use of the tools, not just be given access to the tools and be able to integrate new software as part of an interactive teaching and learning strategy (Magerman, 2011:91; Georgina and Olson, 2008:8; Löffström & Nevgi, 2007:314; Lessen & Sorenson, 2006: 49; ChanLin, Hong, Horng, Chang & Chu, 2006:63 and Neo (Ken) & Neo, 2004:124). According to Löffström and Nevgi, (2007:322), the continued high level commitment on the part of department heads is critical in the development of web-based teaching in order to maintain high pedagogical and technological support levels. Students consider themselves more internet-savvy than their teachers; report seeing better ways to use technology than do their teachers; and find their teachers' use of technology uninspiring (Oblinger, 2003:39).

Eteokleous (2008:680), report on the factors that aid teachers to use technology, such as:

- teacher computer literacy, computer skills and integration of computers as tools training through their college programme of study
- teacher education in fields related to computer technology beyond a bachelor degree
- teacher training in teacher's belief that the computer is an extremely important tool for students to possess
- teacher's instructional philosophies of student-centered environments

#### 2.3.5.3 *Students and technology*

According to Black and Watties-Daniels (2006:105), some students are hesitant to change from the traditional teaching-learning format to the use of the new technology and many feel that the latter would be difficult to use; several students questioned whether the software program would only operate on campus based computers, while other students were also resistant to pay for the specialised pen and notepad that would enable them to effectively use the software. Both faculty and students agreed that the success of this innovation was dependant on the consistent functioning of the computer campus system. Lessen and Sorenson (2006: 46) and Muir-Herzig (2004:111) state that it is the role of the leader to set the priorities for any academic unit and the dean must not just be a promoter but also a user of technology.

Furthermore, students referred to feelings of isolation and loneliness, and to problems in using the technology as the main obstacles for learning (Löffström & Nevgi, 2007:319). ChanLin, Hong, Horng, Chang and Chu (2006:62), found in their study that some students from remote urban areas or from low-income families might not have a Web-connected

computer at home which may be aggravated by the difficulties associated with accessing computers at home.

The nurse faculty must now decide if they will take a leadership role and influence the technology impact, or sit back and watch how others transform higher education (Nelson, Meyers, Rizzolo & Rutar, 2006:253). According to Richard et al (2005:211), the application of technology to the RN and to Baccalaureate Student Nurse (BSN) programs rose dramatically following the transition to a fully web-based format. Furthermore, faculty has embraced the courses as their own and are discovering and requesting new technologies to be added to the courses; faculty is also willing to pilot new tools and techniques with their students; students enjoy the flexibility of web-based delivery and expect interactive and innovative courses, since they have become savvy educational consumers.

## **2.4 VARIOUS OTHER TEACHING METHODS IN HEI**

According to Kiger (2004:109), selecting the most appropriate teaching strategies and teaching aids, assists the health teacher to present information effectively.

### **2.4.1 Traditional lecture**

Lecturing is a type of teaching encounter in which the teacher transmits information (Kiger, 2004:114) to a group of students whose main function is to listen and is thus a teacher-centered approach which features the teacher's direct instruction (Bruce et al., 2011: 207). Pure lectures may foster surface-level learning (Kiger, 2004:114). Billings and Halstead (2009:246), define a lecture as the lecturer's presentation of content to the students which usually is accompanied by some form of visual aid or handout. Quinn (2001:337), comments that with the predominance of this form of teaching method in Higher education it is not surprising that the academic personnel in educational institutions are called lecturers.

Costa, Van Rensburg and Rushton (2007:214), researched the question "does teaching style matter" and conducted a randomized trial of group discussion versus didactic lectures in orthopedic undergraduate teaching. The results revealed that the students in the interactive discussion group rated the presentation of their teaching more highly than those in the lecture group ( $p=0.003$ ). The students in the discussion group also performed better on their end-of-placement written test ( $p=0.025$ ). Research findings of Costa, Van Rensburg and Rushton (2007:217), suggest that interactive teaching facilitates better knowledge retention than didactic lectures.

#### *2.4.1.1 Advantages of lecture method*

- It is time efficient for covering complex content; large numbers of students can be reached; the lecturer is present

- it is useful for giving a framework upon which students can build; orientation to a whole program is possible
- lecturers can integrate the subject matter better than the students; and students can gain the views of the experts

(Bruce et al.,2011: 208; Quinn, 2001:339; Mellish et al., 2001:102; Billings & Halstead, 2009: 246 and Salyers, 2005:6).

#### 2.4.1.2 *Disadvantages of lecture method*

- Over-reliance on the lecturer may cause dependency on the part of the student, who is conditioned to expect all information to be handed to them by the lecturer (Quinn, 2001:339).
- Passivity of the students' involvement in learning could be, the pace of the lecture does not suit all students: lectures are often long and tedious and students' attention may decrease
- The lecture does not cater for the individual needs of the students
- Lecturer bias may become evident
- Students may experience class the lecture as boring
- There is little possibility of assessing the progress of the learning except by formal testing
- The lecture may run a high cost in preparation and development of handouts and visual aids
- The students obtain materials "second-hand" rather than from the primary source, such as their text book

(Bruce et al., 2011:209; Quinn, 2001:339; Mellish et al, 2001:103 and Billings & Halstead, 2009:246).

#### **2.4.2 Group work**

Effective group work requires that several people learn and work together to achieve their goal (Kiger, 2004:114).

##### 2.4.2.1 *Advantages of a group work environment*

- The small group teaching environment provides the opportunity for lecturers to more intimate and rewarding activities with students, than is possible in the traditional lecture environment (Quinn, 2001:354).
- Group work encourages students to think for themselves and to become confident in their ability to produce their own ideas and to express them to others (Mellish et al. 2001:118).
- Students can clarify issues in their own language (Wessels, 2011:9).

- An educational small group is student-centered
- It allows students the opportunities to interact face-to-face with other group members
- Students can exchange ideas and feelings, also to expand the student's universe of awareness

(Bruce et al., 2011:206 and Quinn, 2001:353).

Steinert (2004:286), conducted research with focus groups on the students' perceptions of the effectiveness of small group teachings. She found that students experience the small group teaching environment as a non-threatening group atmosphere that encourages independent thinking and problem solving. Furthermore, she found that the students perceive the lecturer as a "guide" to student learning.

Quinn (2001:371), describes a basic classification of small group teaching such as: seminar groups, tutorial groups, controlled-discussion groups, free-discussion groups, subject-centered groups, step-by-step discussion groups, problem-solving groups, learning-through-discussion groups, syndicate groups, project groups, experiential learning groups, focus groups and synergogy groups.

#### 2.4.2.2 *Disadvantages of a group work environment*

Quinn (2001:390), discusses common difficulties that can be experienced in small group environments such as:

- Multi-speak. All the members talking at once which may lead to a chaotic situation that slows down progress
- Hogging the limelight. Students engaging in a dialogue while excluding the rest of the group
- Conflict - however, productive conflict can be an effective aid in learning
- Emotional outbursts by a group member such as a student walking out of the group
- Unwillingness to participate. This opposes the whole purpose of an educational small group.

She furthermore states that all these difficulties require sensitive handling and sometimes the situation could benefit from having a private word with the group member after the session. Such difficulties can potentially culminate into a decrease in cooperation amongst group members (Volet & Mansfield, 2006:342) which can present motivational and socio-emotional challenges which raise the concerns about the students' readiness for group work. Very little research has been conducted to explore the students' readiness to interact effectively in group work activities (Prichard et al., 2006:120).



### Co-operative learning

Co-operative learning refers to a group or team learning together to achieve goals that they share (Wessels, 2011:9 and Prichard et al., 2006:119). It is a versatile, effective and motivating way to achieve academic and social learning outcomes, particularly in cultural diverse student groups (Wang, 2007:155). Being able to work in a team is a desirable attribute for university students (Volet & Mansfield, 2006:341). This learning style encourages students to think about their learning processes, and as they share and help other members they begin to learn peer teaching and mentoring skills (Bruce et al., 2011: 206; Wang, 2007:150). Not all students enjoy group learning and this can impact negatively on group learning outcomes. Furthermore, co-operative learning may be useful in developing student's communication skills, confidence levels and self-esteem (Wessels, 2011:9).

### Group assignments

Group assignments are a form of collaborative learning where teams of students work on assignments and assume responsibility for the group learning outcomes (Billings & Halstead, 2009: 248). Group assignments in content areas can be challenging for lecturers and students (Volet & Mansfield, 2006:342). Results of research show that introducing group assignments as part of a first year undergraduate accounting course are associated with an increase in the students' deep approach to learning and a decrease in the students' surface approach to learning (Hall et al., 2004 :501).

Disadvantages of group assignments include the following:

- students may resist the frequent use of it and there is a possibility that not all students will participate equally in it (Billings & Halstead, 2009:248)
- group assignments are emotionally and socially demanding for a student's participation and is complicated further when such group assignments are usually completed outside the class and without direct supervision of the lecturer

(Volet & Mansfield, 2006:342).

### **2.4.3 Peer group teaching**

A peer group is a composition of members of one's own kind (Mellish et al., 2001:159 and Cheng & Ku, 2008:6). A peer is of equal standing for example a fellow student (Cheng & Ku, 2008:6; Goldsmith, Stewart & Ferguson, 2005:124 and Tang, Hernandez & Adams, 2004:61). Peer group teaching can be informal such as using teachable moments or it may be formal (Mellish et al., 2001:159). Through this teaching method, students have to learn to accept constructive criticism, to evaluate their own performance and that of others so that they, in turn, can give constructive criticism to others (Mellish et al., 2001:160). The attitude between the peer teacher and fellow student is that of helpfulness, guidance,

constructive criticism and it must build the students' confidence rather than break it down (Cheng & Ku, 2008:6). However, in cohesive peer groups, the norms are strong and members feel obligated to conform (Schmuck, 2001:277).

Goldsmith et al. (2005:126) evaluated the peer learning partnership of 1<sup>st</sup> and 3<sup>rd</sup> year undergraduate nursing students and report that both groups felt comfortable in their learning relationship. It was reported that the 3<sup>rd</sup> year students felt that the peer learning partnership gave them an opportunity to review their skills and evaluate their own knowledge base (Goldsmith et al., 2005:126 and Tang, Hernandez & Adams, 2004:62). The 1<sup>st</sup> year students mostly reflected on the personal attributes of the 3<sup>rd</sup> year and found the 3<sup>rd</sup> years to be friendly, approachable and patient partners (Goldsmith et al., 2005:128 and Field et al., 2007: 411).

#### **2.4.4 Peer assessment**

According to Quinn (2001:223); Goldsmith et al. (2005:128) and Field et al. (2007: 411), in peer assessment many times the senior students (trainers) assist their junior colleagues (trainees). Peer feedback is more acceptable than feedback from the lecturer. Students find peer assisted learning (PAL) and reciprocal peer tutoring (RPT) members very helpful (Quinn, 2001:223). In a study by Cheng & Ku (2008:6), 54% participants reported that they were able to get help from a peer whenever needed, even at times when the lecturer is not available. A problem that may arise from peer assessment is the potential collusion amongst students to raise the level of marks (Quinn, 2001:224). She poses a solution to the problem, to use peer assessments as feedback rather than as a final grading, to ensure honesty of feedback (Quinn, 2001:224). Field et al. (2007: 412), suggest that frequent exposure and thorough preparation for PAL can improve the trainer's evaluation of the trainee.

#### **2.4.5 Self-activity**

According to Clapper (2010:e13), one of the goals of an educator should be to develop clinical professionals to become more self-directed, lifelong learners. Self-activity or self-directed learning (SDL) teaches the student to learn by discovery in a constructivist approach (Billings & Halstead, 2009:352 and McLeod, 2002:40). The constructivist approach assumes that students construct knowledge in an attempt to make sense of their experiences and such learners are active in seeking meaning (Billings & Halstead, 2009:197).

SDL is student-centered meaning that students can work at their own convenience within a defined period. Furthermore, individual responsibility and accountability is encouraged (Koerber, 2009:E2). Self-learning packets give students control of when and where learning will occur; without the presence of the teacher; and it makes learning flexible according to

the students' needs (Billings & Halstead, 2009:255). However, the student degree of self-discipline could be a major disadvantage (Billings & Halstead, 2009:248). Students may procrastinate and not complete work in a timely manner (Billings & Halstead, 2009:355).

According to Zimmerman (2002:66), the teachers' role in SDL is leading, advising, planning and evaluating the students' learning. Self-directed learners are aware of their shortcomings and limitations and are guided by the personal goals they set for themselves. Learners monitor their own behaviour in terms of their set goals and reflect on its effectiveness that eventually enhances their self-satisfaction, which then motivates them to continue to improve their learning methods.

Zimmerman (2002:69) claims that few teachers teach explicit study strategies. Students are rarely asked to evaluate their work and that teachers seldom assess the students' belief about self-learning (self-efficacy). Possessing skill can raise self-efficacy which in turn can lead to further skill acquisition (Schunk & Mecee, 2005:75). Clapper (2010:e13) suggests that learning packages be constructed in a way that maximises understanding and increases self-efficacy for students. Schunk and Mecee (2005:76), challenge teachers to facilitate optimism in students.

Significant correlations are shown between the deep approach to learning and all components of self-regulation. However, self-regulation factors were not significantly correlated to the surface approach to learning (Magno, 2009:8). In the deep approaches to learning, students actively and mentally engage themselves in study materials as a result of intrinsic motivation, self-regulation and awareness of their own learning capacity (Diseth & Martinsen, 2003:196; Haggis, 2003:90 and Magno, 2009:2). A person, who self-regulates learning, is perceived as an active problem solver (Magno, 2009:3). The ability to learn on one's own has become a prerequisite for living in the dynamic world of rapid change (Levett-Jones, 2005:364).

#### **2.4.6 Overhead projector with transparencies**

The overhead projector (OHP) is perceived as one of the most useful and versatile forms of educational media (Bruce et al., 2011:239; Mellish et al., 2001:187 and Quinn, 2001:252). It projects still images of information that are enlarged onto a reflective surface (Smaldino, Russel, Heinrich & Molenda, 2005:246).

An advantage of projected still visuals is that it is easy to produce and a quick way to project enlarged materials for large classrooms of students to see. However, a disadvantage is that the teaching venue needs to be darkened for optimal visibility of the projected content (Billings & Halstead, 2009:336). Another advantage is that the

transparencies can be prepared in advance which is not the case in the use of the whiteboard (Mellish et al., 2001:187 and Quinn, 2001:253).

The OHP projector uses a revelation technique or overlays. Students may find the glare from the bright light of the projector and the noise of the projector fan, to be distracting (Bruce et al., 2011:239 and Quinn, 2001:252). The teacher's choice of whether to sit or stand depends on the nature of the session or the size of the audience. However, a teacher that is standing could be perceived by students as being a declamatory or telling mode, which implies a one-way teaching encounter; while students perceive the teacher in a sitting position as an interactive and non-threatening encounter that may encourage them to contribute more freely (Quinn, 2001:253). The teacher is still in full control of the content/material at all times and never turns his/her back to the class, thus visual contact between student and teacher, are never lost (Mellish et al., 2001:187).

#### **2.4.7 Traditional green / whiteboard**

The chalkboard is one of the oldest and best known teaching aids in all forms of teaching institutions (Mellish et al., 2001:183). Orlander (2007:89), states that effective use of the chalk board/white board promotes shared ownership of teaching sessions between the teacher and learners that facilitates more interaction, which then allows better targeted and more effective learning. A white board can be both a daunting and a creative venue for artistic teaching and compared to other teaching methods can be more personal and inviting to a group of students (Orlander, 2007:92). According Stanford and Reeves (2007:133), teachers tend to teach as they were taught and most classroom teachers use these materials because they are familiar, available in most classrooms, and are somewhat easy to use.

##### *2.4.7.1 Whiteboard or ink board*

According to Quinn (2001:250), the whiteboard or ink board is the most common type of board in the higher education teaching rooms. The purpose of the whiteboard is to record the key points and explanations during a teaching session that would enable the student to see, as well as hear the points and to copy them down as a source of reference for the future (Quinn, 2001:250).

##### *2.4.7.2 Electronic whiteboard*

Electronic whiteboards such as the SMART board is an interactive whiteboard that operates as part of a system comprising the whiteboard, a projector, a computer and whiteboard software (Bruce et al., 2011:238). The popularity of electronic and interactive whiteboards has intensified, creating a varied market for devices that take teacher training, student interactivity, and free-form collaboration over distances to a new level (Liles, 2004:76 and Oz, 2005:271).

The portable tablets (mini-whiteboards) enable the teacher to control the display from anywhere in the classroom and allows continuous interaction with the students (Byrd, 2005:11; OZ, 2005:271 and Liles, 2004:76). Tactile, auditory and visual learners can all benefit from the way complex concepts can be demonstrated (Liles, 2004:76). This technology is useful for students of all age groups and in distance e-learning contexts it can accommodate different learning styles (Bruce et al., 2011: 238 and Oz, 2005:270).

#### **2.4.8 Data projector with PowerPoint slides**

Microsoft® PowerPoint presentations are classified under computer-assisted instruction (CAI) and have become an indispensable resource in the teaching-learning environment that is fast replacing the overhead projector as the medium of choice in lecture rooms (Bruce et al., 2011:246 and Quinn, 2001:261). It is computer graphic software that is used to highlight key points of the content to students who are unable to process large volumes of information (Arthurs, 2007:5). According to Quinn (2001:261), the disadvantage of PowerPoint is that it requires a darkened classroom for optimum visibility. This could be problematic for students who desire to take notes during the presentation (Arthurs, 2007:5).

Teachers, educators and speakers may use data projectors in various locations such as seminar rooms, conference venues, lecture theatres and boardrooms (Oz, 2005:271). Students may also use PowerPoint to present their work, such as research, case studies, videos, animations and images to their learning group (ChanLin, Hong, Horng, Chang & Chu, 2006:61).

### **2.5 CONCEPTUAL FRAMEWORK**

According to Miles and Huberman (2003:45), a conceptual framework explains either graphically, or in the narrative form the main aspects to be studied, the key factors, constructs, or variables and the presumed relationships among them. The overall purpose is to make research findings meaningful and generalisable (Polit & Beck, 2008:143).

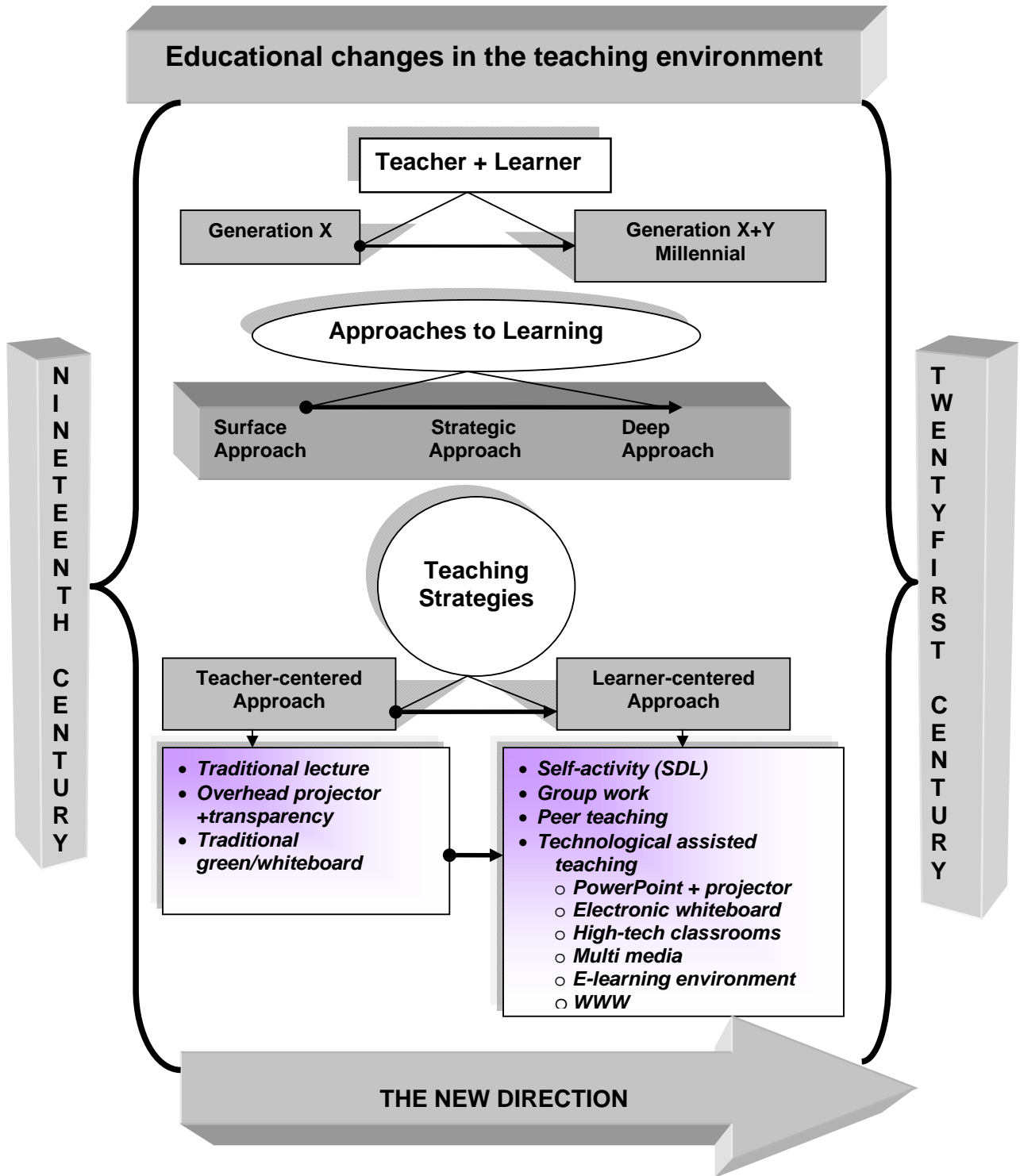


Figure 2.1: Educational changes in the teaching environment (Illustrated by the researcher)

### 2.5.1 Educational changes in the teaching environment

Figure 2.1 schematically illustrates all the various educational changes in the teaching environment since the move from the nineteenth century to the 21<sup>st</sup> century. This study aims to emphasise the important changes in the educational environment. The 21<sup>st</sup> century necessitates the reassessment of generational diversity approaches to learning and the teaching strategies to ensure that the most effective educational environment is created for nursing students today.

### 2.5.2 Bloom's taxonomy

Benjamin Bloom developed his theory on educational objectives in 1956 and proposed three specific domains such as: cognitive (person's ability to process and use information), affective (the role of feeling and attitude in the learning/education process) and psychomotor (physical skill or manipulation) domains (Forehand, 2005:2). Bloom's taxonomy is a multi-tiered model of classifying thinking according to six cognitive levels of complexity. The levels are depicted as a stairway, leading many teachers to encourage students to "climb to a higher level of thought." The lowest levels are knowledge, comprehension, and application, whereas the highest levels are analysis, synthesis, and evaluation. Each level is incorporated by the higher levels (Forehand, 2005:11).

Bloom's taxonomy is a classification of activities and behaviours that magnify higher order thinking skills (HOTS) and lower order thinking skills (LOTS) (Churches, 2008:1). In the 1990's Lorin Anderson (former student of Bloom) and David Krathwohl, revised Bloom's Taxonomy and published the Bloom's Revised Taxonomy (figure 2.2) in 2001 (Jansen, Booth & Smith, 2009:646). Elements in the revised Blooms taxonomy cover many classroom activities and objectives but they do not address the new objectives presented by the emergence and integration of Information and Communication Technologies in to the classroom and the lives of 21<sup>st</sup> century students (Thomas, 2008:1 and Forehand, 2005:3).

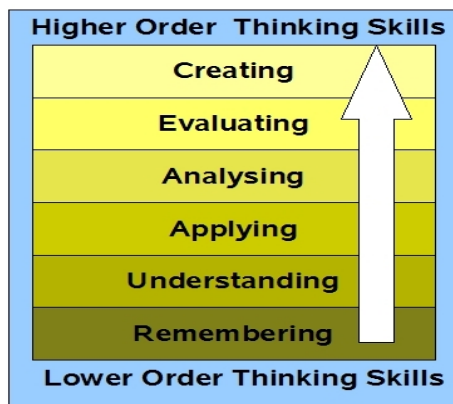


Figure 2.2: Bloom's Revised Taxonomy by Anderson and Krathwohl



Many teachers use Bloom's taxonomy and revised taxonomy in developing and structuring their teaching and learning experiences (Jansen et al., 2009:646). According to Churches (2008:2), the HOTS cover many of the activities and objectives but do not address the new objectives presented by the emergence of ICT in the classroom. Hence, Churches constructed the Bloom's digital taxonomy (figure 2.3) in an attempt to merge Bloom's revised taxonomy that is based on the cognitive domain with the key verbs to digital approaches to learning. It does not replace the verbs in the revised taxonomy, but rather supplements and supports it by including latest technological developments, processes and tools (Churches, 2008:2 & Thomas, 2008:1). Bloom's digital taxonomy addresses the struggles teachers face when attempting to integrate new technology into classroom lessons where the focus is on developing lesson plans that facilitate collaborative learning via digital technology (Johnson, 2009:1).

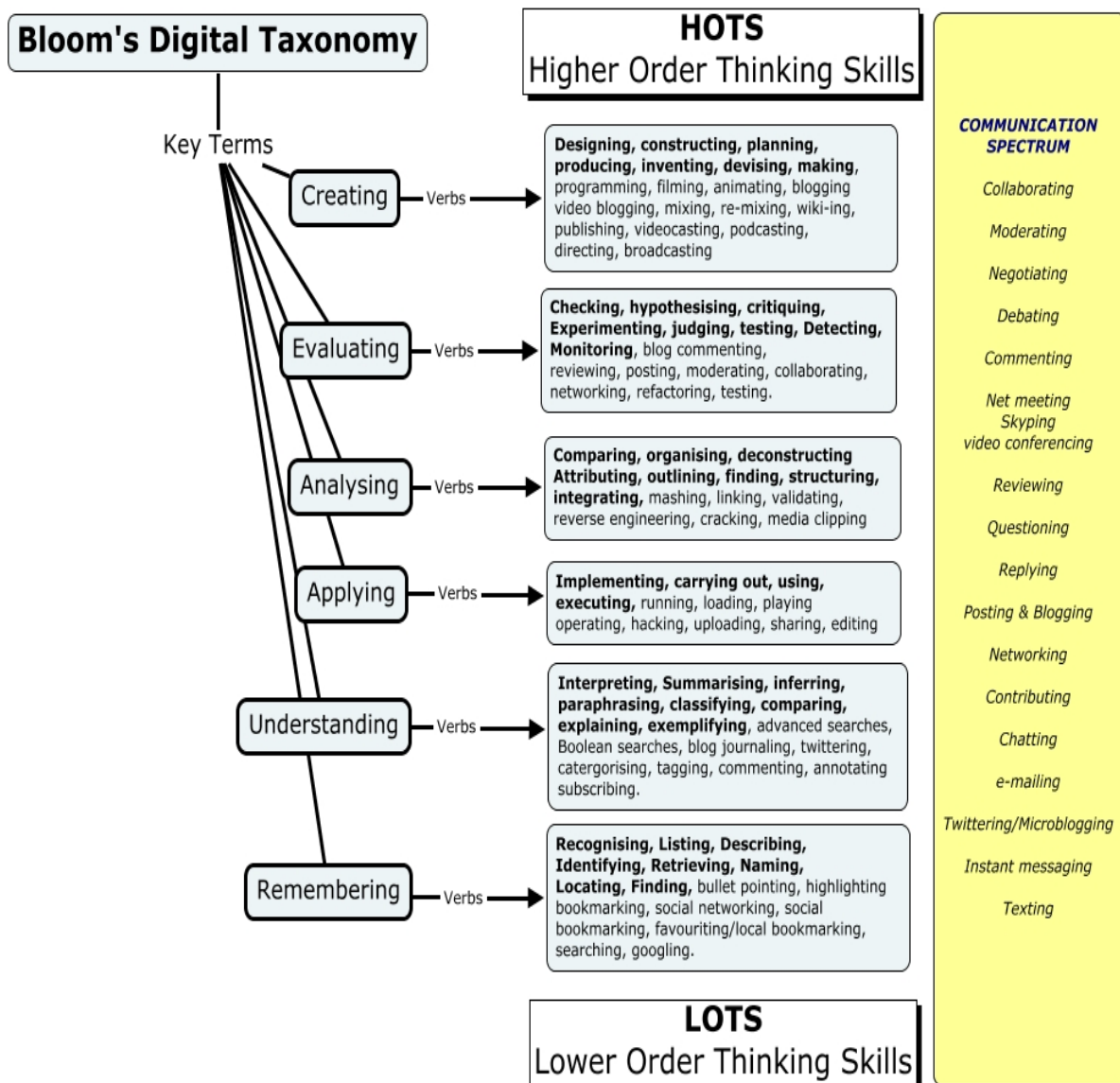
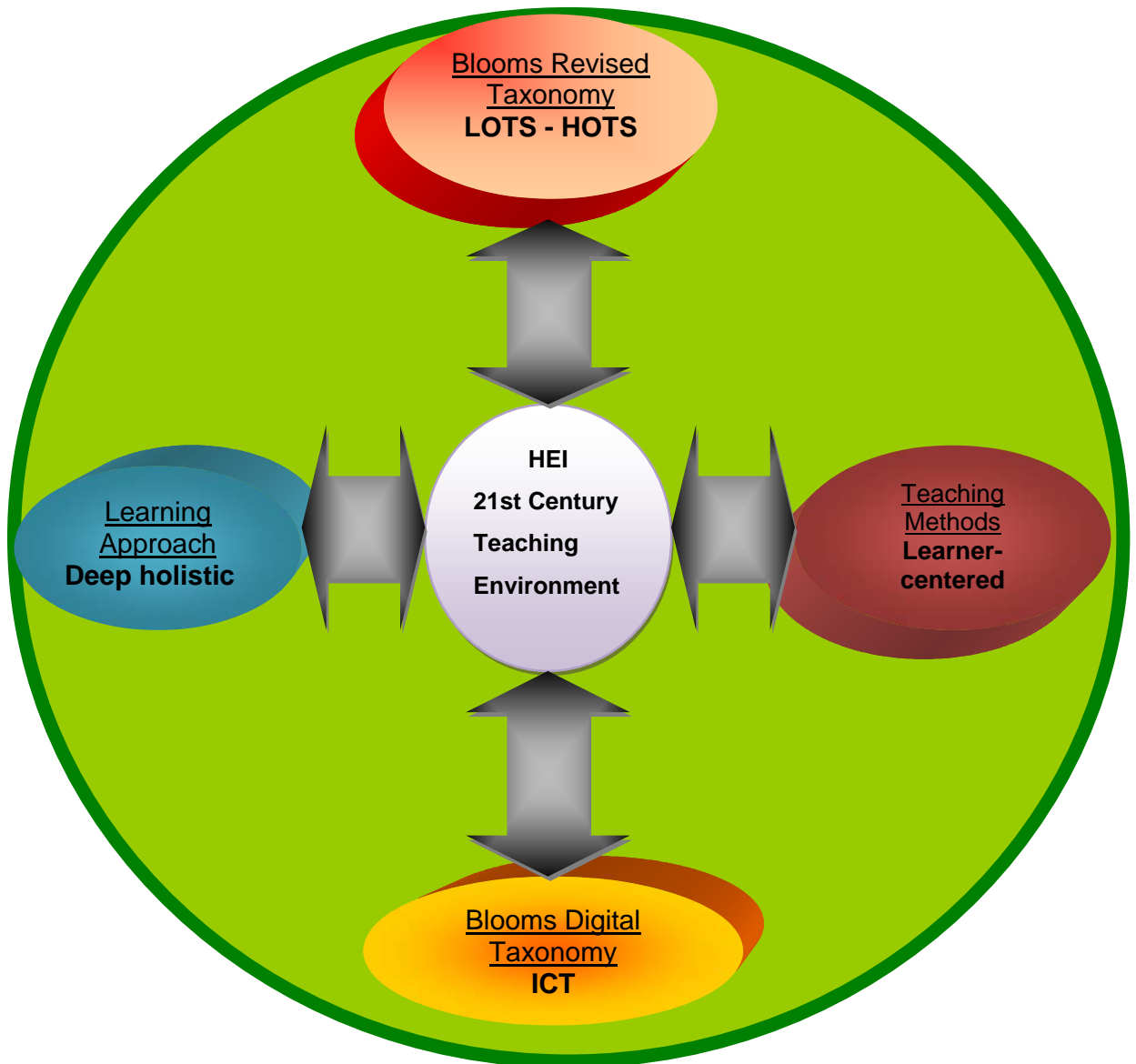


Figure 2.3: Bloom's Digital Taxonomy Concept map by Churches



The conceptual framework for this study was presented in a schematic form, followed by an explanation.



**Figure 2.4: Factors guiding the teaching methods of the 21st century teaching environment (Illustrated by Researcher)**

Learning is greatly influenced by the learning environment. In order to create and ensure the most appropriate/effective learning environment for the 21<sup>st</sup> century, academics have to evaluate the factors that influence effective teaching. In higher education today, the classrooms are filled with Generation X/Millennials as students who are technologically driven daily. Their learning is stimulated by technology as described in paragraph 2.2.1.2.

HEI should review their education strategies and align it with the student needs. In education today teaching methods should be learner-centered and not teacher-centered as

traditionally practiced. HEI should furthermore advocate the applications of teaching methods that stimulate students to deep-holistic approaches to learning that will produce higher order thinking skills (HOTS) as guided by Bloom's taxonomy. Lecturers should thus use pedagogical approaches by introducing relevant IT as guided by Bloom's digital taxonomy which further enhances the cognitive learning domain and is pivotal in addressing the technological thirst of students in the 21<sup>st</sup> century classrooms. IT is also the key role player in addressing the large classes which may be noisy and non-conducive to the interactive learning experience of students.

All of the above should stimulate learning and ensure a more academically friendly classroom experience that provokes satisfaction and success in the 21<sup>st</sup> century teaching environment.

## **2.6 SUMMARY**

Education is the process of leading someone from the known to the unknown with the aim to lead learners towards independence (Mellish et al., 2001:6). The ultimate intent is to educate and train nursing students to become competent and skilled qualified nursing practitioners (Mellish et al., 2001:7). McMahon proposes that various learning theories and teaching philosophies should be utilized to guide teachers to adapt appropriate teaching methods. These teaching methods, whether in isolation or combination should aim to facilitate learning in the technologically driven 21<sup>st</sup> century (McMahon, 2003:1).

## **2.7 CONCLUSION**

In this chapter, the literature regarding educational changes in the teaching environment such as generational diversity, learning diversity and teaching diversity was reviewed. The literature showed that higher education institutions, globally, face numerous similar challenges with regard to teaching and learning needs of the teaching faculty and the collective student body. An overview of the objectives of this study was thus provided by investigating the literature.

## **CHAPTER 3: RESEARCH METHODOLOGY**

### **3.1 INTRODUCTION**

The preceding chapters have described the background and rationale of the study. An in-depth literature review on various teaching and learning strategies was described. The purpose of this chapter is to describe the research methodology that was applied to investigate the perceived effect of the teaching methods at a nursing college in the Western Cape, as experienced by student nurses. Research methodology refers to the research process and to the steps that are followed to complete the research process (Babbie & Mouton, 2002:75 and Mouton, 2008:56).

### **3.2 RESEARCH QUESTION**

The research question “What was the perceptions of student nurses regarding the effectiveness of the teaching methods which they experienced at a nursing college in the WCP?” guided this study.

### **3.3 GOAL**

‘The goal of this research was to evaluate the perceptions of student nurses regarding the effectiveness of the teaching methods which they experienced at a nursing college in the WCP

### **3.4 OBJECTIVES**

Research objectives are clear, concise, declarative statements towards which desired goals are directed (Brink, 2008:79). The objectives set for this study were to evaluate the effectiveness of teaching methods as perceived and experienced by students of:

- the traditional ( green/white board) lecture on student learning
- group activity (small groups) on student learning
- self-activity on student learning
- the use of technology such as PowerPoint presentations and video clips on student learning.

### **3.5 RESEARCH METHODOLOGY**

#### **3.5.1 Research design**

Mouton (2008:55-57), describes the research design as the overall planning of how to conduct research. He also mentions that the research design will address different kinds of questions, while it emphasises the end product, using the logic of research. Babbie and

Mouton (2002:72), state that the research design facilitates the planning enquiry and it highlights the strategic plan to find out something. Burns and Grove (2003:27) reflect on quantitative research designs to be the traditional design in nursing. Babbie and Mouton (2002:49), believe that quantitative research designs are the best means of measuring properties of phenomena. Descriptive studies are designed to obtain more information about characteristics of a phenomenon (Burns and Grove, 2003:200). Furthermore, the authors state that the purpose is to provide a picture of the situation. Thus a quantitative exploratory descriptive, research design was applied to explore and describe the effectiveness of the teaching methods used at a nursing college in the Western Cape Province as perceived and experienced by the students. Neuman (2006:33), states that the aim of exploratory research is to formulate a more precise question that future researchers can answer. He furthermore indicates that such research adopts an investigative stance and reflects qualities of open-mindedness, creativity and flexibility to explore all sources of information.

### 3.5.2 Population and sampling

The population is the total group of persons or objects that meet the criteria that the researcher is interested in studying (Brink, 2008:123). For the purpose of this study the target population was the undergraduate 1<sup>st</sup> – 4<sup>th</sup> year nursing students that are studying for the basic diploma in nursing at a college in the WCP. A sample is a subset of the population that is selected for the study (Burns & Grove, 2003:495). Sampling is a process of selecting subjects who are representative of the population being studied (Burns & Grove, 2007:29). A stratified random sampling method was applied to draw a sample  $n=248$  of twenty percent (20%) from the population ( $N=1238$ ) of student nurses. Random sampling is indicative of a true representation of the population and it also allows the researcher to statistically calculate the relationship between the sample and the population (Neuman 2006:227). According to Neuman (2006:231), stratified sampling is when the population is divided into a sub-population “strata” and then a random sample is drawn from each sub-population. The stratified random sample was formed by drawing every fifth student on the class lists to participate in the study as shown in table 3.1.

**Table 3.1: Student Population of the College under study 2010**

Year of study	Total Population (N)	Sample $n= 20\%$
1st year	471	94
2nd year	320	64
3rd year	277	56
4th year	170	34
<b>TOTAL</b>	<b>N= 1238</b>	<b>248</b>

### 3.5.3 Instrumentation

A questionnaire is a printed, self-reporting form, designed to elicit information that can be obtained through the written responses of a participant (Burns and Grove 2009:717). The advantage of a questionnaire is that it offers the possibility of complete anonymity, which is vital in obtaining candid responses from participants. Furthermore, the absence of an interviewer prevents interview bias (Polit & Beck, 2008:424). An instrument is selected to examine a specific variable in the study (Burns and Grove 2003:45). The instrument in this study was a self-developed, self-administered 4-Likert scale type questionnaire designed by the researcher based on the literature and teaching experience of the researcher.

The questionnaire (Annexure A) consisted of mostly closed ended questions and was designed to have two (2) sections, i.e. A and B.

Section A (1 - 15) comprised the participant's biographical data that included:

- Age, gender, marital status, home language ;
- Year of matric completion, information on other studies prior to current nursing studies, current year of nursing study, information on nursing experience prior to commencing current nursing study; and
- Further questions assessing the participant's technology exposure profiles in various aspects of his/her life.

Section B (16 - 24) comprised of 4-Likert scale type questions regarding the perceived effect of the various teaching methods, based on the objectives set for this study:

- The traditional lecture
- Group work
- Self-activity
- Use of an overhead projector
- Content being explained on the green/ whiteboard
- Use of data projector with PowerPoint slides.

In section B (16 – 21) the close-ended questions determined the effectiveness of the teaching methods based on: the ability to concentrate during a lecture, making content easier to understand, making the studying of content easier, academic performance in general, and the stimulation of ones learning style. The 4-likert scale type questions identified the value of the teaching methods as:(1) not helpful, (2) minimally helpful, (3) moderately helpful and (4) very helpful. Numerical values of 4, 3, 2 and 1 were accordingly provided which were used for capturing of data on an Excel worksheet. Participants

indicated the most appropriate answers with an **X**. Likert scale questions are the most widely used scaling technique that consists of several declarative items that express a viewpoint on a topic. Respondents are typically asked to indicate the degree to which they agree or disagree with the opinion expressed in the statement (Polit & Beck, 2008:418). The summation feature of such a scale makes it possible to make fine distinctions amongst respondents with different points of view (Polit & Beck, 2008:420).

Close-ended questions offer respondents response options from which they must choose the one that most closely matches their answer (Polit & Beck, 2008:415). The advantage of close-ended questions is that the respondent understands the questions better, questions can be answered in the same framework and responses can consequently be compared much better. A disadvantage with the use of close-ended questions could be the omission of a possible alternative answer, which can lead to inadequate understanding of the issues or to an outright bias if the respondents choose an alternative that misinterprets their position (Polit & Beck, 2008: 415). Another objection to close-ended questions is that they can be superficial (Polit & Beck, 2008: 415). Hence, the questionnaire consists of open-ended questions in which the participant was required to give a written response to the open-ended questions in the provided space.

In section B (22 -24) the open-ended questions allowed participants the opportunity to indicate their suggestions to improve the current teaching methods. The questionnaire consisted of predominantly close-ended questions, with three out of 24 questions that allowed spaces for free comments. Open-ended questions allow for a richer and fuller perspective on the topic of interest if the respondents are cooperative. It affords the respondent the opportunity to respond in his/her own words in a narrative fashion and offers the possibility of spontaneity and elaboration (Polit & Beck, 2008:414,415). However, responses can vary between individuals and there is a high non-response rate, which could affect the generalisability of the findings (Watson et al., 2008:304). Polit and Beck (2008:414) support the use of a combination of both types of questions to offset the strengths and weaknesses of each, as used in this study. In addition, the questionnaire consisted of 7 filter questions, 3 dichotomous questions and 6 Likert style questions. Filter questions can facilitate the respondents to address only the questions relevant to them and thereby avoid the potential frustration of being faced with questions which do not apply to them (Watson et al., 2008:305). Dichotomous questions have only two response possibilities, which could markedly lengthen the questionnaire, as each question must be followed by questions further exploring both response options (de Vos et al., 2007:175).

### **3.5.4 Pilot study**

A pilot study or pre-test should be applied to a small sample before applying the final version in a situation (Neuman, 2006:191). It takes more time and effort, but it will ensure more reliable and valid measures. The questionnaire comprised of close-ended as well as a few open-ended questions and was administered to 10% (n=25) of the student population. It determined the feasibility and methodology of the study and furthermore supported the reliability and validity of the study. A pilot study highlights possible errors, areas of lack, potential high risk questions as well as the practical aspects that may need to be adjusted. According to the pilot study the instrument was found to be accurate and without any ambiguity. Furthermore, the methodology proposed for the study was found to be most suitable for the purpose of this study. The students that participated in the pilot study were not included in the actual study.

### **3.5.5 Reliability and validity**

Research cannot contribute to evidence based practices if the findings are inaccurate, show bias or misinterpret data (Richards, 2007:17). Reliability refers to the dependability and consistency and is an ideal that every researcher strives for, to ensure that the research outcomes are accurate (Neuman, 2006:188). Quinn (2001:204) defines reliability as the indicator of accuracy and consistency of information gathered in a study. It should consistently reflect similar results when it is applied to independent incidents. Cronbach alpha coefficient test was done to test the reliability of the questions, results varied between .89 and .94.

Validity of an instrument is a method of ascertaining how well the instrument reflects the abstract concept that is being studied (Burns & Grove, 2007:365). The most important aspect of validity is in the extent to which the test instrument measures what is intended to measure (Quinn 2001:204). Validity reflects how relevant the test instrument will be to the research objectives (Quinn 2001:204). Mouton (2008:103), highlights that a pilot study is helpful to eliminate problems regarding interpretation of language, leading questions, fictitious construction of questions and double-barrelled questions. To support the reliability and validity of this study a pilot study was conducted under similar circumstances as the actual study and the results were not included in the actual study. Reliability does not ensure accuracy, as bias may also be portrayed (Babbie & Mouton, 2006:120). In order to reduce bias in this study, voluntary participation was encouraged and the questionnaire was completed in the presence of the researcher. No discussions amongst the students were allowed in order to prevent them from influencing one another.

De Vos, Strydom, Fouché, and Delport (2007:160), state that one of the most common and useful classification schemes attempting to categorise the validities underlying

measurement is content, face, criterion and construct validity. Face validity concerns the superficial appearance or face value of a measurement procedure (De Vos et al 2007:161). It verifies that the instrument seems to or gives the impression of measuring the contents that is desired for the study (Burns & Grove, 2009:700). Criterion validity provides a more objective evidence of validity that involves multiple measurement and is established by comparing scores on an instrument with an external criterion known to measure the concept, trait or behaviour that is being studied (De Vos et al., 2007:161). Construct validity is concerned with the meaning of the instrument, i.e. what it is measuring and how and why it operates the way it does. It involves not only the validation of the instrument itself, but also of the theory underlying it (De Vos et al., 2007:162). According to Burns & Grove (2009:693), construct validity examines the fit between the conceptual and operational definitions of variables and it determines whether the instrument actually measures the theoretical construct that it purports to measure.

For the purpose of this study, the data collection tool was circulated to experts in the field of education and nursing, to peer review the validity prior to utilising it in the study. Furthermore, experts in the field research methodology and the statistician was consulted throughout the study to ensure construct, face and criterion validity.

### **3.5.6 Data collection**

In quantitative research, data collection involves obtaining numerical data to address the research objectives, questions, or hypothesis (Burns and Grove 2009:44). Data collection is the accurate, systematic gathering of information (Burns and Grove 2003:45). The quantitative approach proposed the use of a predetermined instrument such as surveys and questionnaires, using a self-designed 4-Likert scale type. The data collection spanned from the 8th September 2010 to 24th September 2010. The researcher disseminated questionnaires to the willing participants personally and collected the self-administered questionnaire after it was completed. The time of completion of the questionnaire was fifteen to twenty (15 – 20 minutes). The aim of the research study was explained to all participants at the college and the importance of having the questionnaires completed were emphasised. According to the sampling plan, the researcher identified and selected every fifth name from the class list. Participants then indicated whether they were willing to participate, or not. If a participant declined, the next name was identified and selected. The initially planned sample  $n=248$  (20%) was exceeded by  $n=19$  (1,5%) to give a total sample  $n=267$  (21,5%) of the total nursing student population ( $N=1238$ ). The total number of questionnaires, 280, was distributed to participants that included the 1<sup>st</sup> – 4<sup>th</sup> year nursing students of which  $n=267$  (95%) were completed and returned (table 3.2)



**Table 3.2: Summary of the number of questionnaire distributions and returns**

Year of study	Questionnaires distributed	Questionnaires returned
1 <sup>st</sup> year	100	97
2 <sup>nd</sup> year	80	79
3 <sup>rd</sup> year	60	56
4 <sup>th</sup> year	40	35
<b>TOTAL</b>	<b>280</b>	<b>267 (95%)</b>

### 3.5.7 Data analysis

Data analysis reduces, organizes and gives meaning to the data. Furthermore, the analysis of quantitative data involves the use of descriptive and exploratory procedures to describe the study variables and the samples, statistical techniques to test proposed relationships, and techniques to make predictions (Burns & Grove, 2009:44). Analysis of data reflects the "breaking up" of data into manageable themes, relationships, patterns and trends (Mouton, 2008:108). Polit and Beck (2008:556), state that statistical procedures enable researchers to organise, interpret and communicate numerical information. According to De Vos et al (2007: 218), statistics are not only used to describe some characteristics of a sample group, but also to test similarities, or differences between groups. Interpretation denotes taking the collected data, as well as rival explanations to reflect the level of support such data provides for the preferred interpretation (Mouton 2008:109).

A statistician was consulted throughout the study. Data was expressed in frequency tables and histograms. Histograms were created from the frequency distribution tables. Descriptive analysis completed, included the means and standard deviations (SD). A SD can be defined as a measure of dispersion that is calculated by taking the square root of the variance (Burns & Grove, 2009:723). Descriptive statistical analysis and associations between various variables were completed using the chi-square test. A follow up confirmatory analysis to test for equality of proportions across the levels of the variables was carried out using the chi-square test. The chi-square test for independence was also used to test for associations between demographic variables and the findings of questions according to section B, due to sparseness of the contingency tables for the two-way cross classifications between demographic data and responses to the questions under study. The chi-square tests for the best fit show that the responses were not equally distributed across the categories of variables and, for all the variables. Only some selected variables had statistically significant associations with the demographic variables.

The different teaching methods were compared using repeated measures ANOVA (analysis of variance). The following statistical tests were applied to analyse the data.

#### 3.5.7.1 *Analysis of variance*

Analysis of variance is a statistical test that is used to examine differences among two or more groups by comparing the variability between the groups with the variability within each of the groups (Burns & Grove, 2009:688).

#### 3.5.7.2 *Chi-square*

The chi-square test, a test for significance, is used to quantify the degree to which chance variability may account for the results observed in any individual study (Burns & Grove, 2009:499).

#### 3.5.7.3 *Cochran Q test*

Cochran Q test is a non-parametric test that is an extension of the McNemar test for two related samples (Burns & Grove, 2009:691).

#### 3.5.7.4 *Homogeneity of variances*

Homogeneity is the degree to which objects are similar (Polit & Beck, 2009:755). A variance is the measure of dispersion, where the larger the variances, the larger the dispersion of scores. Variance is calculated as one of the steps in determining standard deviation (Burns & Grove, 2007:558). In this study various tests of homogeneity of variances, such as: Hartley F-max; Cochran C; and Bartlett Chi-Square were conducted.

#### 3.5.7.5 *Kruskal – Wallis*

The Kruskal-Wallis test is a non-parametric test that is used to test the differences between three or more independent groups, based on ranked scores (Polit & Beck, 2008:757). The Kruskal-Wallis test is defined as a most powerful non-parametric analysis technique for examining three independent groups for differences (Burns & Grove, 2009:706).

#### 3.5.7.6 *Mann – Whitney U test*

The Mann-Whitney U test is a non-parametric statistic that is used to test the differences between two independent groups, based on rank and scores (Polit & Beck, 2008:596). According to Burns and Grove (2009:707), the Mann-Whitney U test, is used to analyse ordinal data with a 95% of the power of the T-Test to detect differences between groups of normally distributed populations. The level of measurement in the Mann-Whitney U test is ordinal for both the independent and dependent variables. The level of statistical significance was set at <0.05%. This means that the confidence level is 95%, that the sample results reflect the population accurately and are due to a real relationship in the population, not chance factors (Neumann, 2000:338).

### 3.5.7.7 *Mean*

A mean is defined as the value obtained by summing all the scores and dividing the total by the number of scores being summed (Burns & Grove, 2009:708).

### 3.5.7.8 *Median*

The median is a score at the exact center of the ungrouped frequency distribution (Burns & Grove, 2009:708).

### 3.5.7.9 *McNemar test*

McNemar test is a statistical test for comparing differences in proportions when values are derived from paired (nonindependent) groups (Polit & Beck, 2008:758).

### 3.5.7.10 *Mode*

Mode is the numerical value or score that occurs with the greatest frequency in a distribution but does not necessarily indicate the center of the data set (Burns & Grove, 2009:709).

### 3.5.7.11 *Post-hoc test*

A post-hoc test is statistical techniques that are performed in studies with more than two groups to determine which group is significantly different (Burns & Grove, 2007:405).

### 3.5.7.12 *Probability theory (p-value)*

Probability theory is used to explain the extent of a relationship, the probability that an event will occur in a given situation, or probability that an event can be accurately predicted. Probability is expressed in a lowercase letter p, with values expressed as percentages or as decimal value ranging from 0 – 1 (Burns & Grove, 2009:451). Probability values can also be stated as less than a specific value, such as 0,05, expressed as  $p < 0.05$  (Burns & Grove, 2007:406). The p-value is the measure reported from all tests of significance. It is defined as the probability that an effect at least as extreme as that observed, in a particular study, could have occurred by chance alone. If the p-value is greater than 0.05 by convention the chance cannot be excluded as a likely explanation and the findings are stated as not statistically significant at that level (Burns & Gove, 2003:328-331). Therefore the 95% confidence interval was applied in this study to determine whether there is an association between variables.

### 3.5.7.13 *Standard deviation*

A standard deviation (SD) can be defined as a measure of dispersion that is calculated by taking the square root of the variance (Burns & Grove, 2007:555).

### 3.5.7.14 *Spearman's rank-order correlations (Spearman's rho)*

Spearman rho is a correlation coefficient indicating the magnitude of a relationship between variables measured on the ordinal scale (Polit & Beck, 2008:766).

### **3.6 ETHICAL CONSIDERATIONS**

De Vos, Strydom, Fouché, and Delport (2007:56), highlight the importance for the researcher to adhere to the ethical considerations when implementing a research study. Informed consent refers to the right of full disclosure about the researcher's intent to do research. Permission to conduct this study was obtained from the Head of College under study (Annexure D and E) and from the Health Research Ethics Committee of the Faculty of Health Sciences of the University of Stellenbosch (Annexure F).

The questionnaires were given to the prospective participants with full information about the research study, their participation, the conditions of their participation and their rights with regard to their participation. The participants participated voluntarily in this research study and a consent form was signed by those who were willing to participate. The participants had the right to withdraw at any time without repercussion or penalty. Confidentiality and anonymity were assured. The participants were given a consent form (Annexure B) to sign and this was handed in separately from the questionnaires to ensure anonymity. The questionnaires were distributed personally and collected by the researcher.

Completed measuring instruments are being stored in a secured locked cupboard and will be kept for a period of five years. Only the researcher has access to the data.

### **3.7 CONCLUSION**

In this chapter the researcher described the methodology of the study. The various steps in the research process, goals and objectives and ethical considerations were described.

## **CHAPTER 4: DATA ANALYSIS, INTERPRETATION AND DISCUSSION**

### **4.1 INTRODUCTION**

In this chapter the results of the research study are presented and interpreted in tables, frequencies and histograms. The data in this study was analysed with the support of a statistician, using computerised data analysis software, namely the STATISTICA Version 9 programme. Quantitative data was captured on a Microsoft Excel spreadsheet developed by the statistician and care was taken to ensure accuracy in data entry. Qualitative data was supplied in the space left for comments on the questionnaire. The data in this study was predominantly presented in a quantitative form, whilst the responses to a few open-ended questions were presented in a narrative form.

### **4.2 DESCRIPTION OF STATISTICAL ANALYSIS**

A full description of the tests being performed during the data analysis was provided in 3.5.8.

### **4.3 SECTION A: BIOGRAPHICAL INFORMATION**

This section refers to personal data of the participants and it consists of fifteen questions with fifteen variables. Furthermore, section A is concerned with the biographical data of the respondents: i.e. age, gender, marital status, home language, the year matric / grade XII was completed or any other study courses prior to current nursing studies, etc.

#### **4.3.1 Variable A1: Age (How old are you?)**

The response rate to this question was ( $n = 267/100\%$ ) with a mean age of 24.5 and a median of 23. The minimum age was 18 and the maximum 44 years (Figure 4.1). According to Table 4.1, the majority of participants ( $n = 124/46\%$ ) were between 21 and 25 years. It reflects a 3 year delay for students applying to enter nursing studies after high school graduation. Billings and Halstead (2009:18), projected such delay of a student entering into nursing and hence resulting in a progressively older nursing student population.

Generation Y/ Millennials comprised ( $n = 227/85\%$ ) and Generation X comprised ( $n = 40/15\%$ ) of the student population in this sample. Millennials outnumber the previous generations, as described in Chapter 2 (paragraph 2.2.1.2). Results in this study show a statistical significant association between the Generation X participants and the preference of the traditional lecture as a teaching method (Spearman  $p$ -value =  $<0.01$ ). Further

statistical significant associations were also identified in this study between Generation X participants and the green/whiteboard teaching methods (Spearman p-value = 0.02).

**Table 4.1: Age (n=267)**

Age range	n	%
15 - 20	67	25
21 – 25	124	46
26 – 30	36	14
31 – 35	26	10
36 – 40	8	3
41 - 45	6	2
<b>TOTAL</b>	<b>267</b>	<b>100</b>

#### 4.3.2 Variable A2: Gender (n=267)

The majority of participants in this study were females (n = 230/86%) with the minority of males (n = 37/14%) (Table 4.2). Female dominance in the nursing profession is well known (Billings and Halstead, 2009:19, Dyck, Oliffe, Phinney & Garrett, 2009:649 and Mooney, Glacken & O' Brien, 2008:390). The attrition rates of male nursing students exceed those of females (McLaughlin, Muldoon & Moutray, 2010:303 and Dyck, Oliffe, Phinney & Garrett, 2009:649).

Meadus and Twomey (2007:14), reported that males are deterred from entering the nursing profession, due to the following reasons: patient preferences, public perceptions, the value of nursing to society, sex stereotyping and images of nursing. O'Lynn (2004:235) further supports the viewpoint that nursing education as a whole, has failed to provide an optimally conducive environment to attract and retain male students in preparation for the nursing profession.

In this study a statistical significant association is identified between gender and the use of the overhead projector with transparencies as a teaching method (Mann-Whitney U p-value = 0.01). A further significance association is identified between gender and the data projector with PowerPoint slides (Mann-Whitney U p-value = 0.03). In both associations, females preferred a more visual form of teaching. Females' interest in computer sciences is found to be mostly motivated by extrinsic factors such as employment prospects, where male interest is equally sparked by extrinsic and intrinsic factors (Papastergiou, 2008:604). However, older and female students displayed a positive attitude towards their professors' effective use of lectures in classrooms when they reflected a higher self-reported grade point average (GPA) (Tang & Austin, 2009: 1251). The students' GPA is seen as one of the best predictors of success in education (Tang & Austin, 2009:1244).

According to Brady and Sherrod (2003:161), recruiting and retaining male nurses in the nursing profession should become a high priority and their preferences should be explored. Results in a study by Papastergiou (2008:602-603) on Greek high school students' intention towards and against pursuing academic studies in computer sciences, where choices of different genders were examined, found that male participants viewed computer science and the IT profession as a masculine profession and that their daily computer use is significantly ( $p = < 0.001$ ) higher than females. The exclusive use of lecture format in class was listed number three (74,5%) on the top ten barrier presence rating list in a nursing education program (O'Lynn, 2004:233).

**Table 4.2: Gender (n=267)**

Gender	n	%
Female	230	86
Male	37	14
<b>TOTAL</b>	<b>267</b>	<b>100</b>

#### 4.3.3 Variable A3: Marital status (n=267)

According to table 4.3, the nursing profession tends to attract more single status ( $n = 230/86\%$ ) than married status ( $n = 35/13\%$ ) individuals. A minimal ( $n = 4/1\%$ ) of participants specified a divorced or widowed status. Mature students are often required to adapt to already existing structures in nurse education programs which as a result leave them vulnerable to attrition (O'Brien, Keogh and Neenan, 2009:634). Mature female students particularly those with children find balancing their home lives and studies (college life) challenging whereas single students with no external commitments find studies less disruptive to their lives. O'Brien et al. (2009:637), found that mature students are generally unhappy with support from academic staff and college in general and thus identified other mature students as their major source of support.

**Table 4.3: Marital status (n=267)**

Marital status	n	%
Single	230	86
Married	35	13
Other	4	1
<b>TOTAL</b>	<b>267</b>	<b>100</b>

#### 4.3.4 Variable A4: Home language (n=267)

Table 4.4 reflects the language diversity at the nursing college. The English teaching medium at the college poses a great challenge and language barrier for students being reared in a predominantly Afrikaans home language (n = 107/40%) and Isi-Xhosa home language (n = 119/45%) environment. Only (n = 33/12%) of the student population in this sample was reared in an English home language environment (n = 33/12%), while other home languages comprised of a minimal (n = 8/3%), varied between Tsonga home language (n = 2/25%), Sotho home language (n = 1/12.5%), Venda home language (n = 2/25%), Tswana home language (n = 2/25%) and Zulu home language (n = 1/12.5%) as reflected in table 4.5.

A statistical significant relationship was identified between language and group work as teaching method (Kruskal-Wallis p-value <0.01). Participants with Isi-Xhosa as home language indicated a strong desire to agree with the use of group work as teaching method. Participants in a study to evaluate a support programme for culturally and linguistically diverse nursing students, report that students feel at ease amongst such peers in the friendly and non-judgmental environment that alleviates the feelings of isolation and loneliness (Boughton, Halliday and Brown, 2010:4-5). A cooperative learning environment enhances communication amongst culturally diverse students (Giddens, 2007:80).

Mandatory group assignments were introduced by many professional programs to develop and practice the students' team skills (Volet & Mansfield, 2006:341). The knowledge gained during group work based learning (GWBL) is grounded through the process of deep learning and enhances personal and social development in students (Rossin and Hyland, 2003:161).

**Table 4.4: Home language (n=267)**

Home language	n	%
English	33	12
Afrikaans	107	40
Isi-Xhosa	119	45
Other	8	3
<b>TOTAL</b>	<b>267</b>	<b>100</b>



**Table 4.5: Other Home languages (n=8)**

Other Home languages	n	%
Tsonga	2	25
Venda	2	25
Tswana	2	25
Sotho	1	12.5
Zulu	1	12.5
<b>TOTAL</b>	<b>8</b>	<b>100</b>

#### 4.3.5 Variable A5: Year completed matric (What year did you complete Matric/ Grade XII) n=251

The majority of participants in this study, also known as millennials (1996 – 2010) according to table 4.6 completed their matric in the last ten to fifteen years while (n = 22/9%) of the generation x population matriculated more than 16 years ago. The younger the age group, the higher the percentage who uses the internet, for leisure, work and school (Oblinger, 2003:38). Research results revealed that younger students scored much higher in a multiple choice test via an e-learning environment than the older students (Reime, Harris, Aksnes & Mikkelsen, 2008:805).

Millennial children grow up in school with a focus on higher standards, cooperative learning and are team-orientated (Woempner, 2007:2). High school graduates acknowledge a gap between their high school education and the overall skills, abilities, and work habits that are expected of them at college today. High school graduates also see progressively less relevance in the traditional teaching methods and are disengaged by teachers who insist on lecture, text and segmented single tasks (Woempner, 2007:4).

**Table 4.6: Year completed Matric (What year did you complete Matric/ Grade XII) n=251**

Year completed Matric	n	%
1984 – 1990	2	1
1991 – 1995	20	8
1996 – 2000	30	12
2001 – 2005	83	33
2006 – 2010	116	46
<b>TOTAL</b>	<b>251</b>	<b>100</b>

#### 4.3.6 Variable A6: Have you completed any other study courses prior to your current nursing studies?

The majority (n = 226/85%) indicated that they had not followed any other course prior to their current studies as shown in Table 4.7.

**Table 4.7: Other study courses prior to current nursing studies (n=267)**

Other study courses prior to nursing studies	n	%
No	226	85
Yes	41	15
<b>TOTAL</b>	<b>267</b>	<b>100</b>

Table 4.8 shows various other courses that (n = 41/15%) participants followed prior to commencing their current studies.

**Table 4.8: Various other courses studied by participants (n=41)**

Other types of courses	n	%
Unspecified	11	26.5
Computer literacy courses	10	24
Project management	3	7
Office administration	2	5
Clothing production and management	2	5
Journalism and media studies	1	2.5
HIV Counselling	1	2.5
Dental assistant	1	2.5
Call center operation	1	2.5
Tourism management	1	2.5
Pharmaceutical Production company	1	2.5
Mechanical engineering	1	2.5
Diploma in Education (AETD)	1	2.5
Telephonic sales (Telesales)	1	2.5
Marketing	1	2.5
Human Resource Management	1	2.5
Business studies	1	2.5
B.A. Healthcare studies	1	2.5
<b>TOTAL</b>	<b>41</b>	<b>100</b>

Nursing studies are competing with a range of health-related disciplines and compared to it, many of these courses appear more exciting and appealing to students (Whitehead, Mason & Ellis, 2007:491).

When students enter the nursing field as a second career option they bring with them an energy and intensity of focus that younger students lack (Wujcik, 2010:5). Employees value the maturity, professionalism and advanced decision-making skills of older workers (Wujcik, 2010:5).

Middle school students still represent the future of nursing (Matutina, Newman & Jenkins, 2010:328). A change in an individual's perceptions and attitudes regarding nursing may influence his/her intentions to consider nursing as a career (Hoke, 2006:99). Almost 40% of participants in a study highlighted that they will not allow anyone to influence their career choice, yet 11 respondents stated that they may be influenced by friends, media (specifically hospital dramas) and parents (Whitehead, Mason & Ellis, 2007:495). Career presentations are most effective for students who are in the prime of their career decision-making stages; therefore nurses can promote nursing as an acceptable career choice by participating in career day fairs and classroom presentations for high school students (Hoke, 2006:99).

The low status of nursing and the stereotypical assumption that nursing is a woman's work is still a deterrent as a potential career choice for young people (Whitehead, Mason & Ellis, 2007:496). More older students are entering the nursing field as a second career option and bring with them an energy and intensity of focus that younger students lack (Wujcik, 2010:5). The reason why many are interested in nursing is still the fact that people like helping and making people well (Whitehead, Mason & Ellis, 2007:495).

#### **4.3.7 Variable A7: What year of nursing study are you currently in?**

The largest group of the participants were in their first year of study ( $n = 97/36\%$ ), followed by the second year students ( $n = 79/30\%$ ), then by ( $n = 56/21\%$ ) of third years, with only ( $n = 35/13\%$ ) in their fourth year of study (Table 4.9).

**Table 4.9: Year of current nursing study**

Year of study	n	%
1st year	97	36
2nd year	79	30
3rd year	56	21
4th year	35	13
<b>TOTAL</b>	<b>267</b>	<b>100</b>

#### 4.3.8 Variable A8: Have you practised nursing prior to commencing this R425 Nursing Program?

The majority of participants (n = 240/92%) indicated that they have not practised nursing prior to commencing the R425 Nursing program (Table 4.10).

Table 4.10: Practising nursing prior to commencing R425 Nursing program (n=261)

Practising nursing prior to commencing R425 Nursing program	n	%
No	240	92
Yes	21	8
<b>TOTAL</b>	<b>261</b>	<b>100</b>

A total of (n = 21) of the participants indicated that they practised some nursing before commencing the programme. Figure 4.1 shows that the majority practised home based care (n = 7/33%) followed by enrolled auxiliary nursing (n = 5/24%).

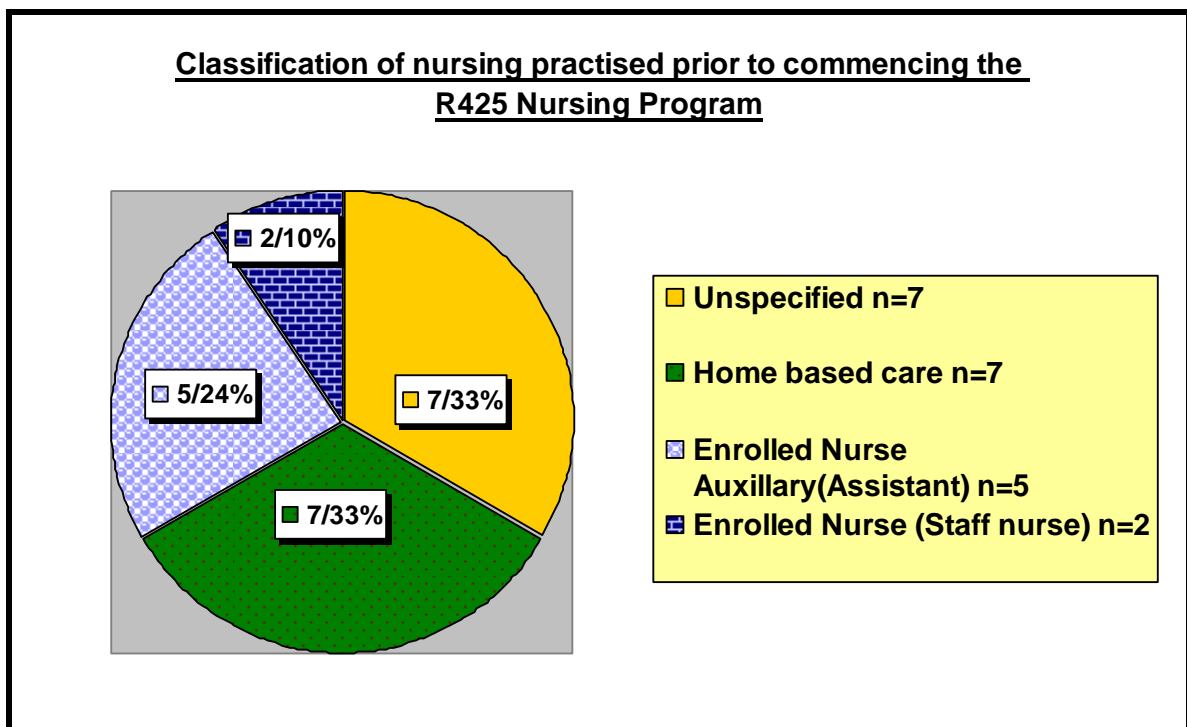


Figure 4.1: Various Nursing positions practised prior to commencing R425 Nursing program (n=21)

#### 4.3.9 Variable A9: Do you make use of library facilities?

Participants indicated the use of various library facilities, while the majority ( $n = 227/85\%$ ) used WCCN followed by the public library ( $n = 72/27\%$ ) (Figure 4.2).

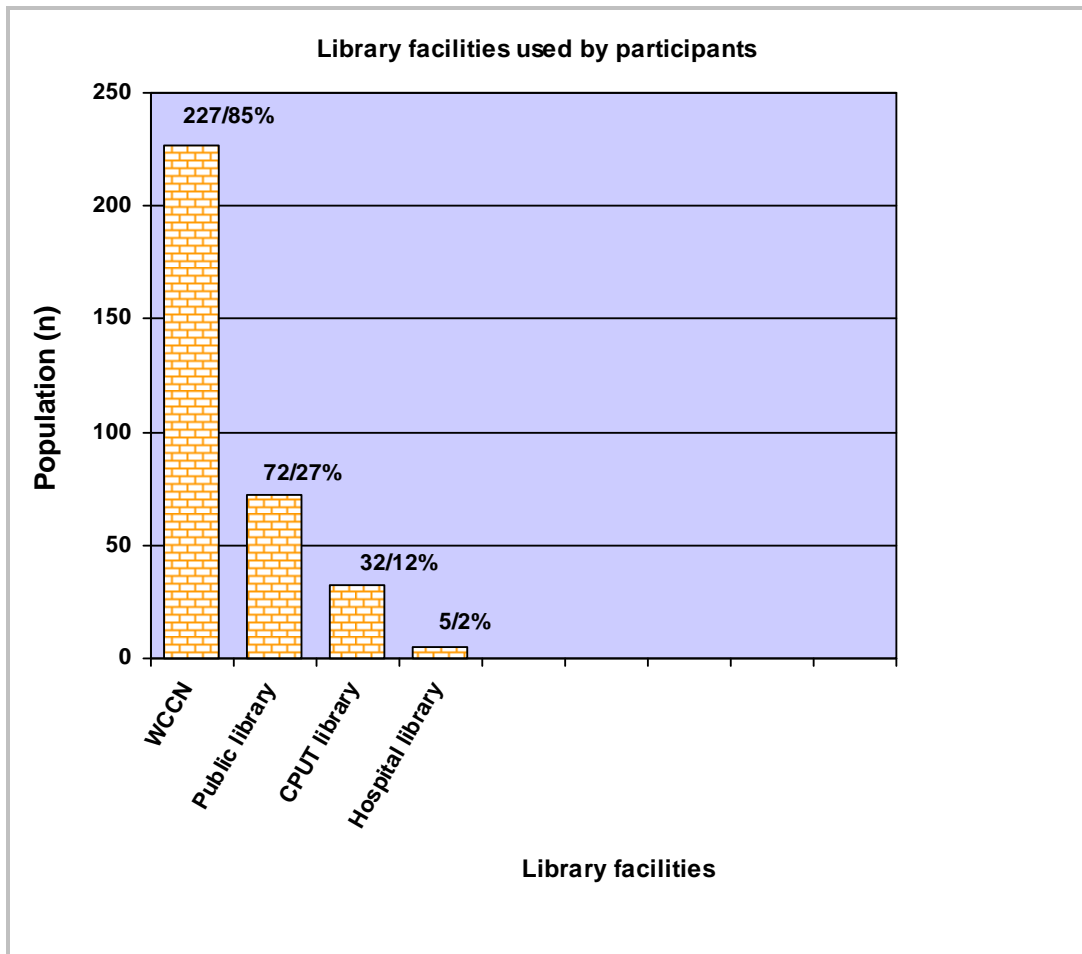
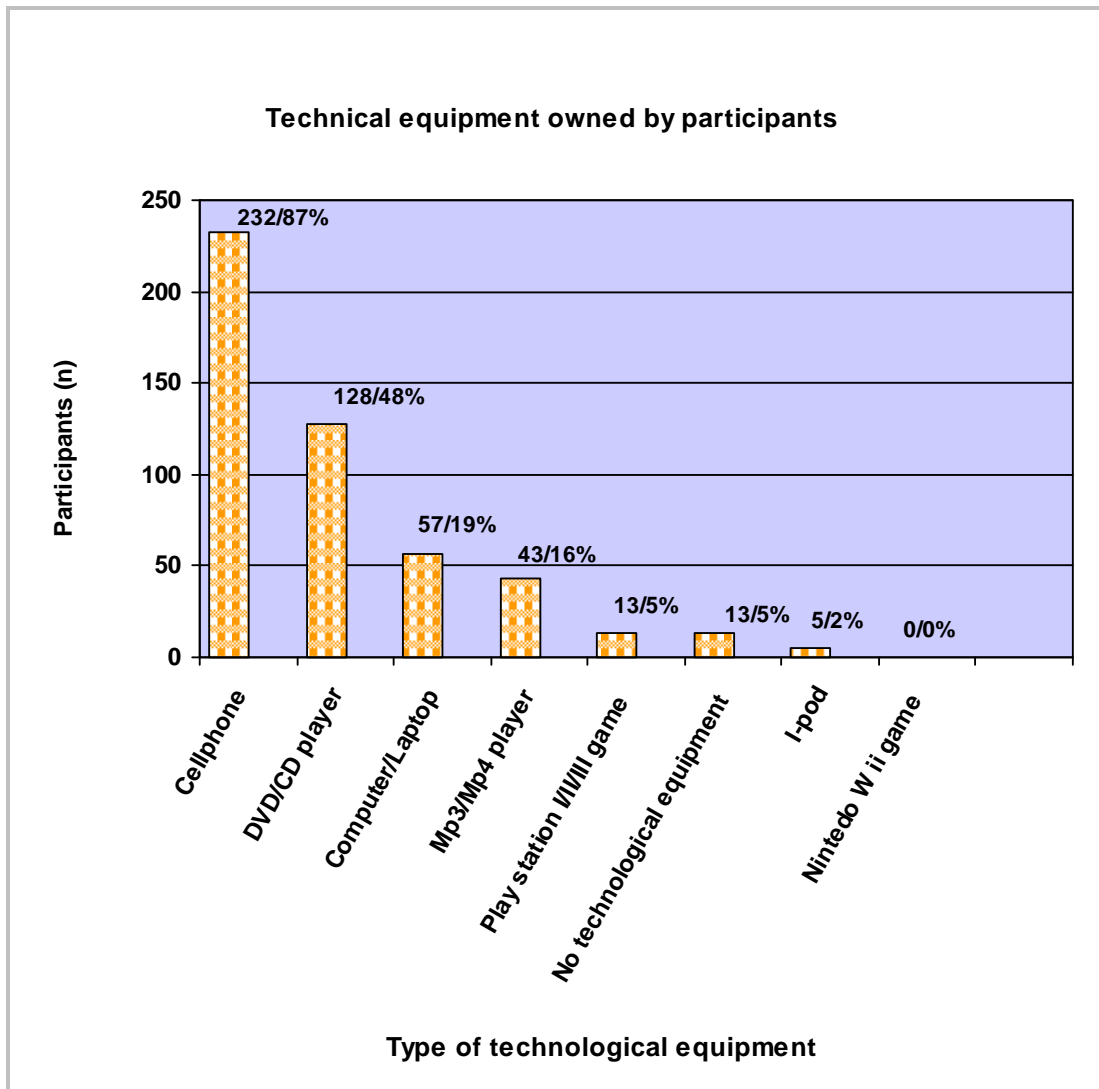


Figure 4.2: Library facilities used by participants  $n=267$

#### 4.3.10 Variable A10: Do you own a Play station I/II/III, Nintendo Wii game, Cell phone, I-pod, Mp3/Mp4 player, DVD/CD player, Computer/Laptop or none of the above?

The majority of participants ( $n = 267/100\%$ ) indicated that they own technical equipment such as a cell phone ( $n = 232/87\%$ ), DVD/CD player ( $n = 128/48\%$ ), computer / laptop ( $n = 57/19\%$ ), Mp3 / Mp4 player ( $n = 43/16\%$ ), Play station I/II/III game ( $n = 13/5\%$ ) and I-pod ( $n = 5/2\%$ ), only ( $n = 13/5\%$ ) participants indicated that they do not own any of the technological equipment listed. None of the participants own a Nintendo Wii game.



**Figure 4.3: Technological equipment owned by participants**

**4.3.11 Variable A11: Does your family (whom you have physical contact with) own television, Mnet decoder, computer/laptop, cell phone, DVD/CD player, Mp3/Mp4 player, home theatre entertainment system, digital camera or none of the above?**

Participants (n = 267/100%) indicated that they have physical contact with family who owns most of the technological equipment such as a television (n = 221/83%), cell phone (n = 216/81%), DVD/CD player (n = 184/69%), computer / laptop (n = 99/37%), home entertainment system (n = 93/35%), digital camera (n = 80/30%), Mp3 / Mp4 player (n = 51/19%), Mnet decoder (n = 48/18%), while only (n = 3/1%) indicated that they have contact with family who own none of the aforementioned technological equipment (Figure 4.4).

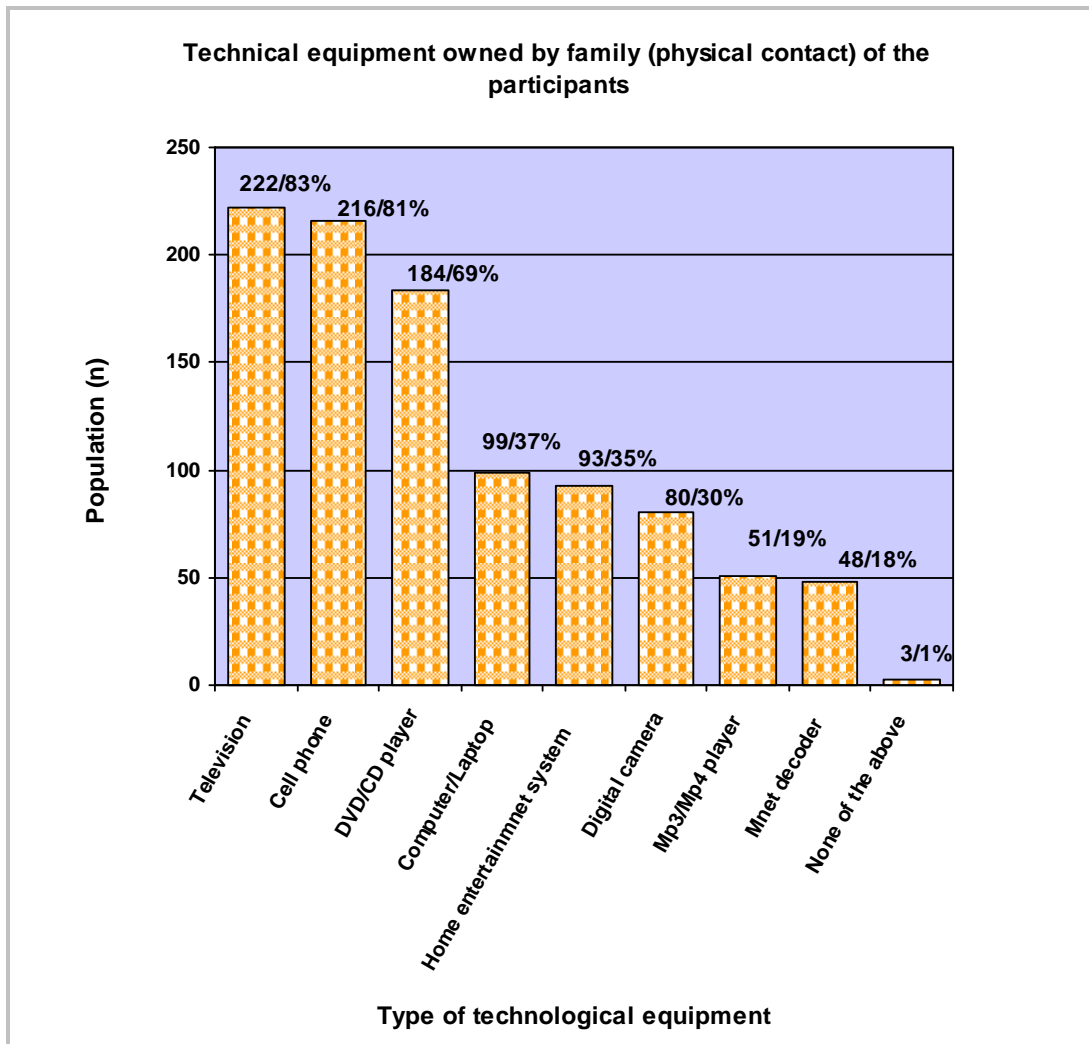


Figure 4.4: Technological equipment owned by family (with whom participants have physical contact)

4.3.12 Variable A12: Are you able to use a computer without assistance?

Table 4.11 shows that the majority of participants (n = 196/73%) are able to use a computer without assistance while (n = 71/27%) were not able to use a computer without assistance.

Table 4.11: Can use computer without assistance

Can use computer without assistance	n	%
No	71	27
Yes	196	73
<b>TOTAL</b>	<b>267</b>	<b>100</b>

#### 4.3.13 Variable A13: Have you ever used any of these computer programs before?

Most of the participants indicated the highest use of Microsoft office word ( $n = 222/83\%$ ), followed by the internet ( $n = 208/78\%$ ), and the lowest use of Microsoft office Publisher ( $n = 32/12\%$ ), while a few ( $n = 8/3\%$ ) participants have not used any of the computer programs indicated in Figure 4.5 before.

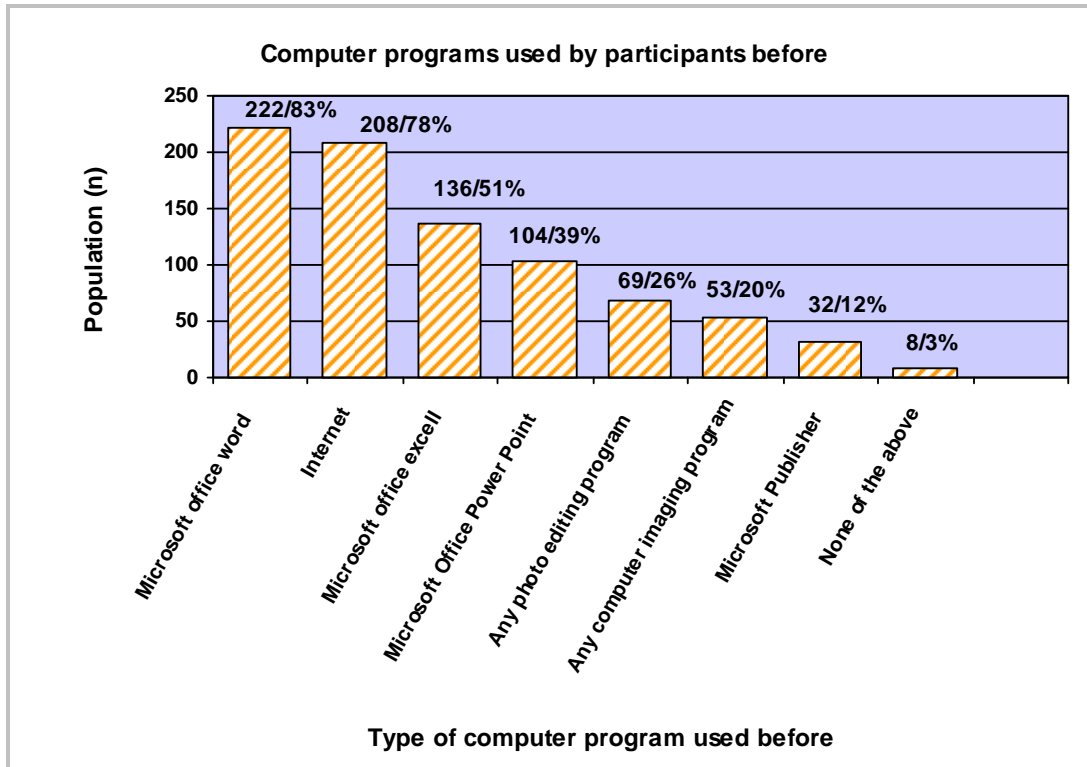
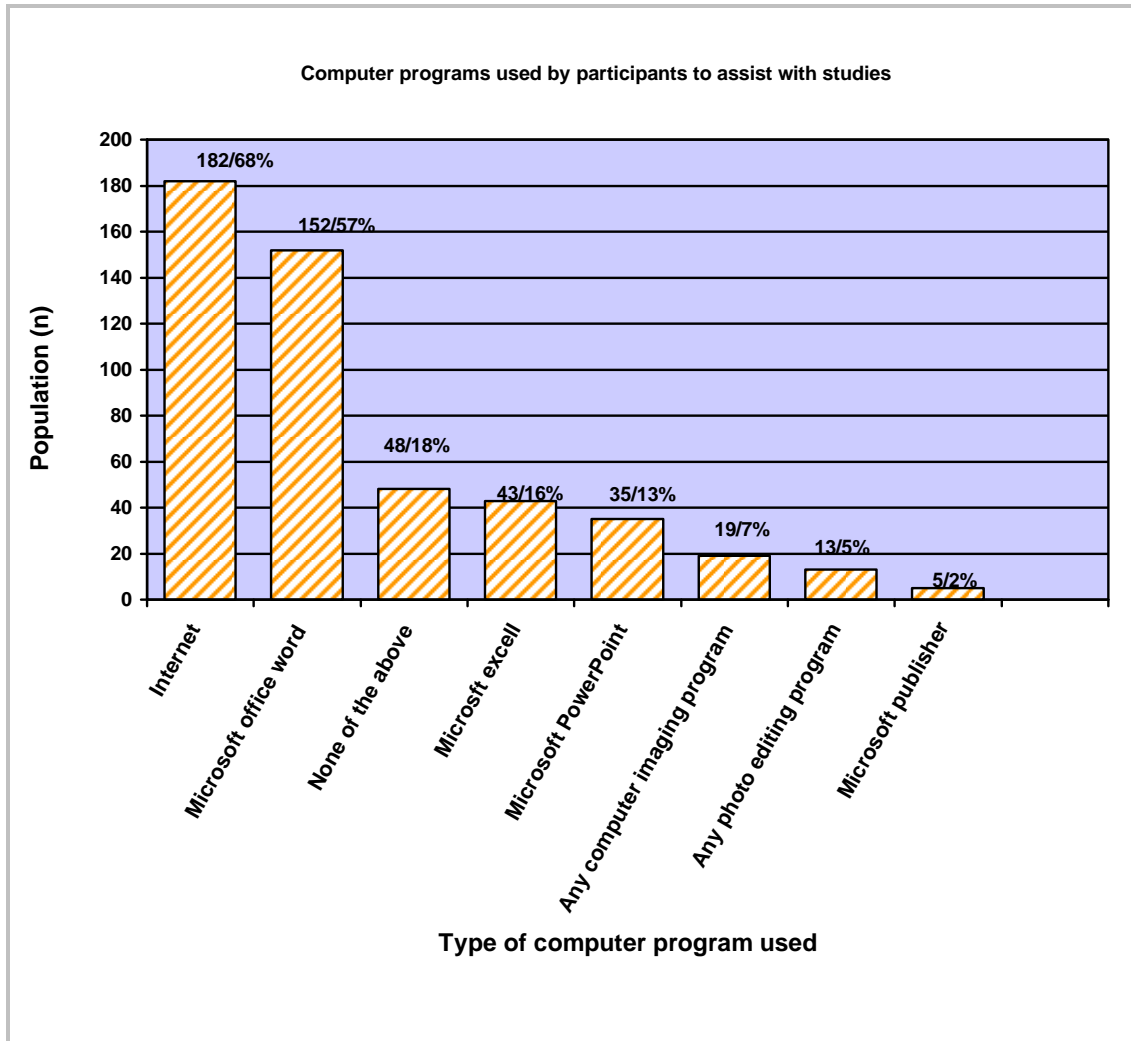


Figure 4.5: Participants' use of computer programs

#### 4.3.14 Variable A14: Do you use any of these technologies to assist you in your studies?

Figure 4.6 shows the participants use of technology to assist them with their studies. Results indicate the highest use of the internet ( $n = 182/68\%$ ), followed by Microsoft office word ( $n = 152/57\%$ ). The lowest use was Microsoft office Publisher ( $n = 5/2\%$ ). Only ( $n = 48/18\%$ ) of the participants indicated that they have never used any of these programs to assist them with their studies.

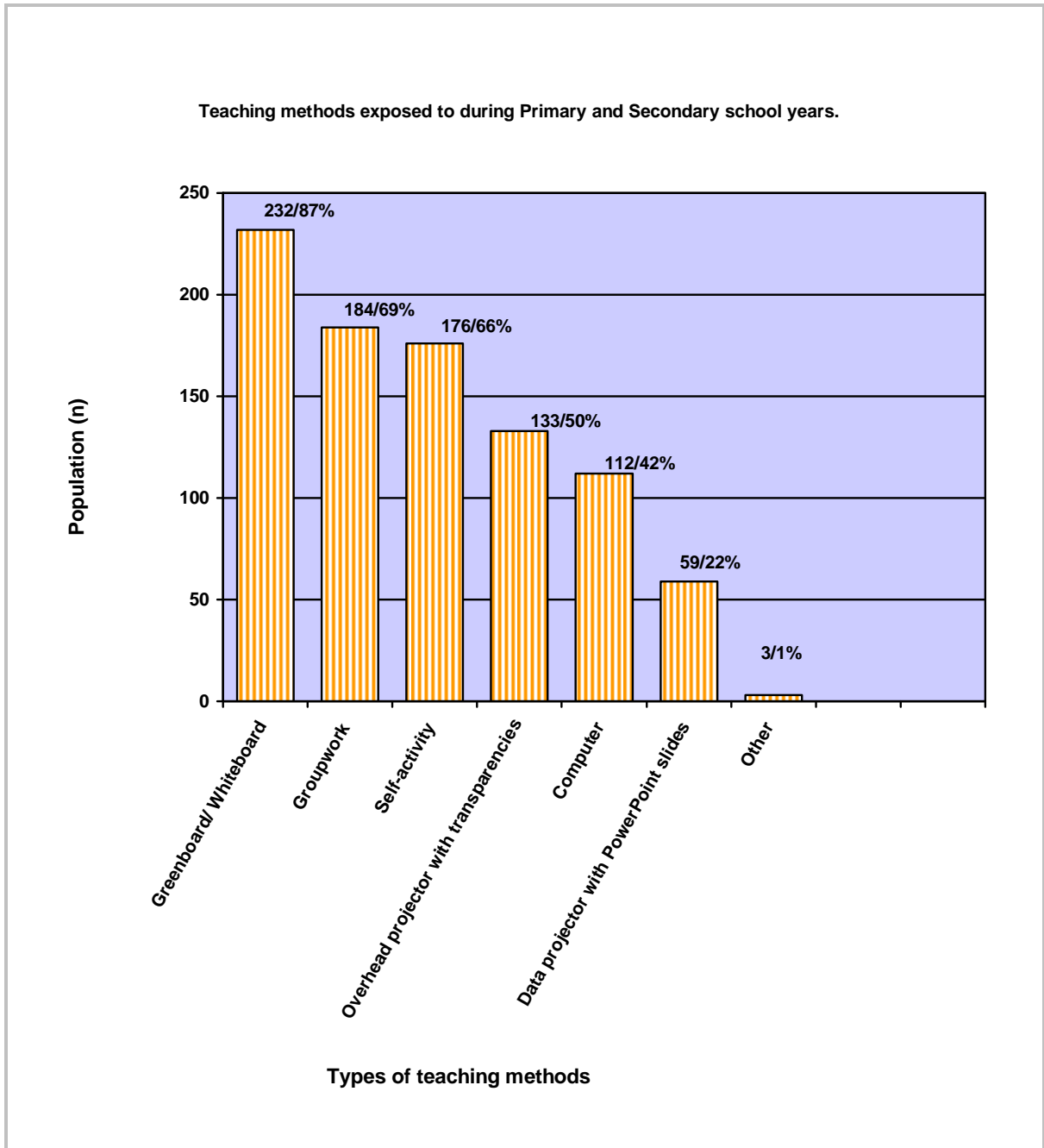




**Figure 4.6: Technologies used by participants to assist with their studies**

**4.3.15 Variable A15: Please indicate the teaching method(s) to which you were exposed to during primary/secondary school years.**

Participants indicated that they were mostly exposed to a green/chalkboard teaching method ( $n = 232/87\%$ ) during their primary and secondary school years. Half of the participants indicated their exposure to an overhead projector with transparencies as a teaching method ( $n = 133/50\%$ ), while only ( $n = 59/22\%$ ) of the participants indicated the use of the data projector with PowerPoint slides as a teaching method during their primary and secondary school years.



**Figure 4.7: Teaching methods exposed to during primary and/or secondary school years**

**Table 4.12: Other teaching methods to which you were exposed to during primary and/or secondary school years as indicated by participants (n = 5/1%)**

Other teaching methods during Primary and Secondary school years	n	%
Microscopic examinations	1	20
Unspecified	4	80
<b>TOTAL</b>	<b>5</b>	<b>100</b>

#### 4.4 SECTION B: EFFECTS OF TEACHING METHODS ON LEARNING

Section B describes the numerical value that participants gave to the effect that the various teaching methods have on five specific areas of their classroom experience. Numerical value range as follows: (4) very helpful, (3) moderately helpful, (2) minimally helpful and (1) not helpful.

##### 4.4.1 Question 16: Effect of the traditional lecture (Variable: 68 - 72)

Table 4.13 shows the participants' (n=267) indication of the effect that the traditional lecture had on their classroom experience.

**Table 4.13: Effect of the traditional lecture on:**

	Very Helpful	Moderately helpful	Minimally Helpful	Not Helpful	TOTAL n TOTAL%
<b>68. my ability to concentrate during a lecture</b>	n=72 (27%)	n=132 (49%)	n=53 (20%)	n=10 (4%)	<b>n=267 (100%)</b>
<b>69. making the content easier to understand</b>	n=83 (31%)	n=134 (50%)	n=45 (17%)	n=4 (2%)	<b>n=266 (100%)</b>
<b>70. making the studying of the content easier</b>	n=74 (28%)	n=131 (49%)	n=53 (20%)	n=7 (3%)	<b>n=265 (100%)</b>
<b>71. my academic performance in general</b>	n=49 (19%)	n=165 (63%)	n=46 (17%)	n=4 (2%)	<b>n=264 (100%)</b>
<b>72. the stimulation of my learning style</b>	n=58 (22%)	n=136 (52%)	n=63 (24%)	n=7 (3%)	<b>n=264 (100%)</b>

#### 4.4.1.1 Variable 68: “my ability to concentrate during a lecture” (n = 267/100%)

Most participants (n = 132/49%) indicated that the traditional lecture was moderately helpful for their ability to concentrate during a lecture, while (n = 10/4%) participants found it not helpful. Kohler (2006:4) agrees that it is challenging to get students prepared and ready to receive content at the start of a lecture.

#### 4.4.1.2 Variable 69: “making content easier to understand” (n = 266/100%)

Notwithstanding the fact that traditional lecturing mainly focuses on content and cognitive gain which very often results in passivity of students (Mikol, 2004:87), half of the participants (n = 134/50%) in the current study felt that the traditional lecture is moderately helpful in making content easier for them to understand. A further (n = 83/31%) of participants agreed and emphasised that they found it very helpful in making content easier to understand.

#### 4.4.1.3 Variable 70: “making the studying of content easier” (n = 265/100%)

Research results by Jeffries, Rew and Cramer (2002:18), found significant differences ( $p < 0.01$ ) in student satisfaction with interactive, student-centered teaching methods as opposed to students being taught with the traditional teaching methodology. Results in this study showed that only (n = 53/20%) participants indicated that they found the traditional lecture minimally helpful in making the content easier to understand, while (n = 131/49%) participants indicated the traditional lecture as moderately helpful for making content easier to study. Savoy, Proctor and Salvendy (2009:866) support current research findings with results indicating that students retained 15% more information, delivered verbally by the lecturer, during traditional class presentations than during PowerPoint presentations.

#### 4.4.1.4 Variable 71: “my academic performance in general” (n = 264/100%)

Some participants (n = 49/19%) find the traditional lecture generally very helpful in aiding their academic performance, while (n = 46/17%) of the participants indicated that the traditional lecture was only minimally helpful with their general academic performance, with a further (n = 4/2%) finding it not helpful to their academic performance. According to Banning (2005:503), the didacticism of lecturing raises constraints such as rote learning and the potential boredom because the traditional lecture limits students' participation and reflection.

#### 4.4.1.5 Variable 72: “the stimulation of my learning style” (n = 264/100%)

According to Jeffries, Rew and Cramer (2002:14), the traditionally used lecture and demonstration format does not make provision for the diverse learning styles of nursing students because all students must proceed at the same pace, regardless of their interest, learning style and prior experience. However, participants (n = 136/74%) in the current study indicated that the traditional lecture was moderately helpful in stimulating their own

learning style, compared to (n = 63/24%) indicating a minimally helpful result to their own learning style.

#### 4.4.2 Question 17: Effect of group work (Variable: 73 - 77)

Table 4.14 shows the maximum (n=267/100%) participants' indication of the effect that group work had on their classroom experience.

**Table 4.14: Effect of group work on:**

	Very Helpful	Moderately helpful	Minimally Helpful	Not Helpful	TOTAL n TOTAL%
<b>73. my ability to concentrate during a lecture</b>	n=88 (33%)	n=98 (37%)	n=65 (24%)	n=16 (6%)	<b>n=267 (100%)</b>
<b>74. making the content easier to Understand</b>	n=91 (34%)	n=123 (46%)	n=47 (18%)	n=6 (2%)	<b>n=267 (100%)</b>
<b>75. making the studying of the content easier</b>	n=107 (40%)	n=107 (40%)	n=45 (17%)	n=8 (3%)	<b>n=267 (100%)</b>
<b>76. my academic performance in General</b>	n=69 (26%)	n=128 (48%)	n=58 (22%)	n=11 (4%)	<b>n=266 (100%)</b>
<b>77. the stimulation of my learning style</b>	n=82 (31%)	n=114 (43%)	n=54 (20%)	n=17 (6%)	<b>n=267 (100%)</b>

##### 4.4.2.1 Variable 73: "my ability to concentrate during a lecture" (n = 267/100%)

Most participants (n = 98/37%) found group work moderately helpful with their ability to concentrate during a lecture, while (n = 88/33%) found it very helpful with their ability to concentrate during a lecture. Some (n = 16/6%) participants indicated that they experienced interference with their concentration during group work. Some students with aggressive or competitive spirits can cause obstruction for others during group work activities (Kiger, 2004:119).

##### 4.4.2.2 Variable 74: "making content easier to understand" (n = 267/100%)

Results in the current study show that (n = 123/46%) participants indicated that group work was moderately helpful in making content easier to understand, compared to (n = 47/18%) indicating minimally helpful and 2% (n=6) who found group work not helpful in making content easier to understand. Costa et al. (2007:216), found that participants in their study

rated discussion group presentation significantly higher ( $p < 0.01$ ) than those from the lecture group presentation.

*4.4.2.3 Variable 75: "making the studying of content easier" (n = 267/100%)*

Table 4.14 reflects that participants were evenly split by ( $n = 107/40\%$ ) each, who indicated that they found group work very helpful/moderately helpful in making studying of the content easier.

*4.4.2.4 Variable 76: "my academic performance in general" (n = 266/100%)*

The majority of participants ( $n = 128/48\%$ ) indicated that group work was moderately helpful with their academic performance in general. Student performance at an end-of-placement written test was significantly better ( $p < 0.01$ ) in a discussion group than performance of students in a lecture group (Costa et al., 2007:216). Similarly ( $n = 69/26\%$ ) participants, in the current study, indicated that group work was very helpful with their academic performance in general.

*4.4.2.5 Variable 77 "the stimulation of my learning style" (n = 267/100%)*

A total of ( $n = 82/31\%$ ) participants indicated that group work was very helpful in stimulating their learning style. A further ( $n = 114/43\%$ ) participants indicated that group work was moderately helpful in stimulating their learning style.

**4.4.3 Question 18: Effect of self-activity (Variable: 78 - 82)**

The effect that self-activity had on the classroom experience of participants is reflected in table 4.15.

**Table 4.15: Effect of self-activity on:**

	Very Helpful	Moderately helpful	Minimally Helpful	Not Helpful	TOTAL N TOTAL%
<b>78. my ability to concentrate during a lecture</b>	n=123 (47%)	n=104 (39%)	n=28 (11%)	n=9 (3%)	<b>n=264 (100%)</b>
<b>79. making the content easier to Understand</b>	n=105 (39%)	n=111 (42%)	n=44 (17%)	n=6 (2%)	<b>n=266 (100%)</b>
<b>80. making the studying of the content easier</b>	n=100 (38%)	n=114 (43%)	n=44 (17%)	n=6 (2%)	<b>n=264 (100%)</b>
<b>81. my academic performance in general</b>	n=102 (39%)	n=127 (48%)	n=32 (12%)	n=3 (1%)	<b>n=264 (100%)</b>
<b>82. the stimulation of my learning style</b>	n=105 (40%)	n=111 (42%)	n=43 (16%)	n=5 (2%)	<b>n=264 (100%)</b>

#### 4.4.3.1 Variable 78: “my ability to concentrate during a lecture” (n = 264/100%)

Participants (n = 123/47%) indicated that self-activity was very helpful for their ability to concentrate during a lecture followed by (n=104/39%) who indicated moderately helpful. Schunck and Mecee (2005:73), agree that learners who feel self-efficacious about learning are able to participate more readily, work harder, achieve at higher levels and persist longer when they encounter difficulties.

#### 4.4.3.2 Variable 79: “making content easier to understand” (n = 266/100%)

Schunck and Mecee (2005:73), also state that the learners’ own performances offer the most dependable guide for their self-efficacy. Results in the current study showed that (n = 111/42%) participants indicated that self-activity was moderately helpful in making content easier to understand followed by (n=105/39%) who indicated very helpful.

#### 4.4.3.3 Variable 80: “making the studying of content easier” (n = 264/100%)

A total (n = 100/38%) participants indicated that self-activity was very helpful in making content easier to study, while a further (n = 114/43%) indicated it to be moderately helpful. According to findings of Vermetten, Vermunt and Lodewijks (2002:281), self-directed learners are inclined to apply their own methods, find their own answers and use instructional measure merely as a control.

4.4.3.4 Variable 81: “my academic performance in general” (n = 264/100%)

The current study also showed that (n = 127/48%) participants indicated that self-activity was moderately helpful for their academic performance in general, while a further (n = 102/39%) participants indicated that self-activity was very helpful for their academic performance in general. According to Schunck and Mecee (2005:75), high-ability learners feel more successful about performing well than low-ability learners. Only (n = 3/1%) participants indicated that self-activity was not helpful with their academic performance in general.

4.4.3.5 Variable 82: “the stimulation of my learning style” (n = 264/100%)

A total of (n = 105/40%) participants indicated self-activity to be very helpful, with a further (n = 111/42%) indicating that self-activity is moderately helpful in stimulating their learning style.

**4.4.4 Question 19: Effect of using an overhead projector with transparencies, during teaching (Variable: 83 - 87)**

The maximum number of participants (n=267/100%) who indicated the effect that the use of an overhead projector with transparencies during teaching had on their classroom experience is reflected in table 4.16.

**Table 4.16: Effect of the use of an overhead projector with transparencies, during teaching, on:**

	Very Helpful	Moderately helpful	Minimally Helpful	Not Helpful	TOTAL n TOTAL%
<b>83. my ability to concentrate during a lecture</b>	n=102 (38%)	n=104 (39%)	n=47 (18%)	n=14 (5%)	<b>n=267 (100%)</b>
<b>84. making the content easier to understand</b>	n=105 (39%)	n=107 (40%)	n=47 (18%)	n=8 (3%)	<b>n=267 (100%)</b>
<b>85. making the studying of the content easier</b>	n=91 (34%)	n=119 (45%)	n=45 (17%)	n=11 (4%)	<b>n=266 (100%)</b>
<b>86. my academic performance in general</b>	n=69 (26%)	n=127 (48%)	n=62 (23%)	n=7 (3%)	<b>n=265 (100%)</b>
<b>87. the stimulation of my learning style</b>	n=77 (29%)	n=120 (46%)	n=56 (21%)	n=11 (4%)	<b>n=264 (100%)</b>



#### 4.4.4.1 Variable 83: “my ability to concentrate during a lecture” (n = 267/100%)

According to Den Beste (2003:501), students can and do learn from faculty who use nothing but chalkboards or an overhead projector. Participants (n = 104/39%) indicated that the use of an overhead projector with transparencies was moderately helpful for their ability to concentrate during a lecture, compared to (n = 47/18%) participants indicating it to be minimally helpful and (n = 14/5%) indicating that it was not helpful at all. It was found by Susskind (2008:1235), that the overhead projector with transparencies can be distracting when the transparency is changed and also that the placement of the projector can block the view of the students.

#### 4.4.4.2 Variable 84: “making content easier to understand” (n = 267/100%)

Participants (n = 107/40%) indicated that this teaching method was moderately helpful in making content easier to understand, while (n = 47/18%) of participants indicated that the use of an overhead projector with transparencies was minimally helpful in making content easier to understand. Results of research by Susskind (2008:1235), also found the students agreeing that when they compare the overhead projector and transparency with the use of PowerPoint presentations as a teaching method, the students had more positive comments about the latter when reflecting on it being easier to see (15%), easier to follow and understand (15%) .

#### 4.4.4.3 Variable 85: “making the studying of content easier” (n = 266/100%)

Less than half of the participants (n = 119/45%) indicated that this teaching method was moderately helpful in making content easier to study, while (n = 45/17%) participants indicated that the use of an overhead projector with transparencies was minimally helpful in making content easier to study. Students in a study by Susskind (2008:1233), found PowerPoint lectures and notes much more helpful when studying content than the presentations with an overhead projector with transparencies.

#### 4.4.4.4 Variable 86: “my academic performance in general” (n = 265/100%)

Results in the current study show (n = 69/26%) participants indicated that the use of an overhead projector with transparencies was very helpful with their academic performance in general, compared to (n = 62/23%) participants who indicated it to be minimally helpful with their academic performance in general. Findings in research by Susskind (2008:1236), concur that even though students claimed that they studied better with computer mediated lectures, their academic performance during exams was just as good with content taught by overhead projected transparency lectures.

#### 4.4.4.5 Variable 87: “the stimulation of my learning style” (n = 264/100%)

The use of overhead projectors may be primitive by today's standards, but it is still pedagogically sound (Klemm, 2007:123). The current study revealed that (n = 77/29%) participants indicated that the use of an overhead projector with transparencies was very

helpful in the stimulation of their learning style, compared to (n = 56/21%) participants who indicated that they found it minimally helpful in stimulation of their learning style. Students find the use of PowerPoint presentations more interesting and attention grabbing than the use of overhead projectors and transparencies (Susskind, 2008:1235).

#### 4.4.5 Question 20: Effect of content being explained on the green/whiteboard (Variable 88 - 92)

The effect that content being explained on the green/whiteboard had on the classroom experience of participants is reflected in table 4.17.

**Table 4.17: Effect of the content being explained on the green/whiteboard, on:**

	Very Helpful	Moderately helpful	Minimally Helpful	Not Helpful	TOTAL n TOTAL%
<b>88. my ability to concentrate during a lecture</b>	n=118 (45%)	n=100 (38%)	n=41 (15%)	n=6 (2%)	<b>n=265 (100%)</b>
<b>89. making the content easier to understand</b>	n=118 (45%)	n=102 (38%)	n=36 (13%)	n=11 (4%)	<b>n=267 (100%)</b>
<b>90. making the studying of the content easier</b>	n=107 (40%)	n=115 (43%)	n=35 (13%)	n=10 (4%)	<b>n=267 (100%)</b>
<b>91. my academic performance in general</b>	n=85 (32%)	n=128 (48%)	n=46 (17%)	n=8 (3%)	<b>n=267 (100%)</b>
<b>92. the stimulation of my learning style</b>	n=89 (33.5%)	n=126 (47.5%)	n=40 (15%)	n=10 (4%)	<b>n=265 (100%)</b>

##### 4.4.5.1 Variable 88: "my ability to concentrate during a lecture" (n = 265/100%)

Whiteboards and greenboards promote teaching as a shared ownership between teachers and learners as mentioned in paragraph 2.4.7. Participants (n = 118/45%) indicated that content being explained on the green/whiteboard was very helpful for their ability to concentrate during a lecture followed by (n = 102/38%) who found it moderately helpful. Orlander (2007:89), agrees that the effective use of boards can dramatically enhance and complement one's teaching efforts. When a teacher writes the instructions on the board, teaching slows down enough so the students are less overwhelmed and they can think about the content being presented (Klemm, 2007:123).

#### 4.4.5.2 Variable 89: “making content easier to understand” (n = 267/100%)

Research results by Hofsten, Gustafsson and Häggström (2010:536), support the current findings as students in their study indicated that a structured white board discussion made context clear and the discussion written on the whiteboard helped them to understand the information in a broader context. Results in the current study concur when (n = 118/45%) participants indicated that green/whiteboard was very helpful in making content easier to understand, compared to (n = 11/4%) participants who indicated that they found the use of green/whiteboard not helpful in making content easier to understand. Boards that are used ineffectively can distract or hinder the learning process (Orlander, 2007:89).

#### 4.4.5.3 Variable 90: “making the studying of content easier” (n = 267/100%)

Participants (n = 107/40%) indicated that they found the use of the green/whiteboard very helpful in making the studying of content easier, while (n = 10/4%) participants found it not helpful when they engaged with the content during study time.

#### 4.4.5.4 Variable 91: “my academic performance in general” (n = 267/100%)

A few participants (n = 8/3%) indicated that the use of the green/whiteboard is not helpful to their academic performance in general, compared to (n = 128/48%) who found it very helpful.

#### 4.4.5.5 Variable 92: “the stimulation of my learning style” (n = 265/100%)

The current study further shows that (n = 126/47.5%) participants indicated that content being explained on the green/whiteboard was moderately helpful to stimulate their learning style followed by (n=89/33.5%) who found it very helpful. Students experienced the teacher standing at the whiteboard and writing, more relaxing and nice, which motivated them to speak up and ask more questions (Hofsten, Gustafsson & Häggström, 2010:536).

#### 4.4.6 Question 21: Effect of using a data projector with PowerPoint slides, during teaching (Variable 93 - 97)

All the participants' indications of the effect that the use of a data projector with PowerPoint slides had on their classroom experience is displayed in table 4.18.

**Table 4.18: Effect of using a data projector with PowerPoint slides, during teaching, on:**

	Very Helpful	Moderately helpful	Minimally Helpful	Not Helpful	TOTAL n TOTAL%
<b>93. my ability to concentrate during a lecture</b>	n=119 (45%)	n=89 (33%)	n=46 (17%)	n=13 (5%)	<b>n=267 (100%)</b>
<b>94. making the content easier to understand</b>	n=97 (36%)	n=121 (46%)	n=38 (14%)	n=11 (4%)	<b>n=267 (100%)</b>
<b>95. making the studying of the content easier</b>	n=93 (35%)	n=116 (44%)	n=43 (16%)	n=13 (5%)	<b>n=265 (100%)</b>
<b>96. my academic performance in general</b>	n=84 (31%)	n=122 (46%)	n=53 (20%)	n=8 (3%)	<b>n=267 (100%)</b>
<b>97. the stimulation of my learning style</b>	n=77 (29%)	n=115 (44%)	n=62 (23%)	n=10 (4%)	<b>n=264 (100%)</b>

#### 4.4.6.1 Variable 93: “my ability to concentrate during a lecture” (n = 267/100%)

Students in a study by Susskind (2005:209), believed that it is easier to understand and take notes when PowerPoint presentations accompanied a lecture. Participants (n = 119/45%) in the current study indicated the use of a data projector with PowerPoint slides during teaching is very helpful for their ability to concentrate during a lecture, this is followed by participants who found it moderately helpful (n=89/33%). In results by Clarke (2008:41) students described that listening alone was boring compared to watching and listening together which they found enjoyable.

#### 4.4.6.2 Variable 94: “making content easier to understand” (n = 267/100%)

Participants (n = 121/46%) found the use of data projectors with PowerPoint slides moderately helpful in making content easier to understand, while a further (n = 97/36%) found it very helpful in making content easier to understand. In a study by Susskind (2005:208) students also reported that they find lectures with PowerPoint presentations more interesting and enjoyable and therefore were more motivated to attend such classes.

#### 4.4.6.3 Variable 95: “making the studying of content easier” (n = 265/100%)

Savoy, Proctor and Salvendy (2009:866), suggest that PowerPoint presentations may have an advantage over other teaching methods if students are expected to retain complex

graphics, animation and figures. Participants (n = 116/44%) indicated that PowerPoint presentations were moderately helpful in making studying content easier, while a further (n = 93/35%) agreed that it was very helpful in making content easier to study.

#### 4.4.6.4 Variable 96: “my academic performance in general” (n = 267/100%)

Results in the current study showed that (n = 122/46%) participants indicated that the use of a data projector with PowerPoint slides during teaching was moderately helpful with their academic performance in general, compared to (n = 53/20%) participants who indicated minimally helpful and (n = 8/3%) participants who indicated that it was not helpful with their academic performance in general. Susskind (2008:1236), supports a number of studies that have found that PowerPoint presentations have a positive effect on the academic performance of students.

#### 4.4.6.5 Variable 97: “the stimulation of my learning style” (n = 264/100%)

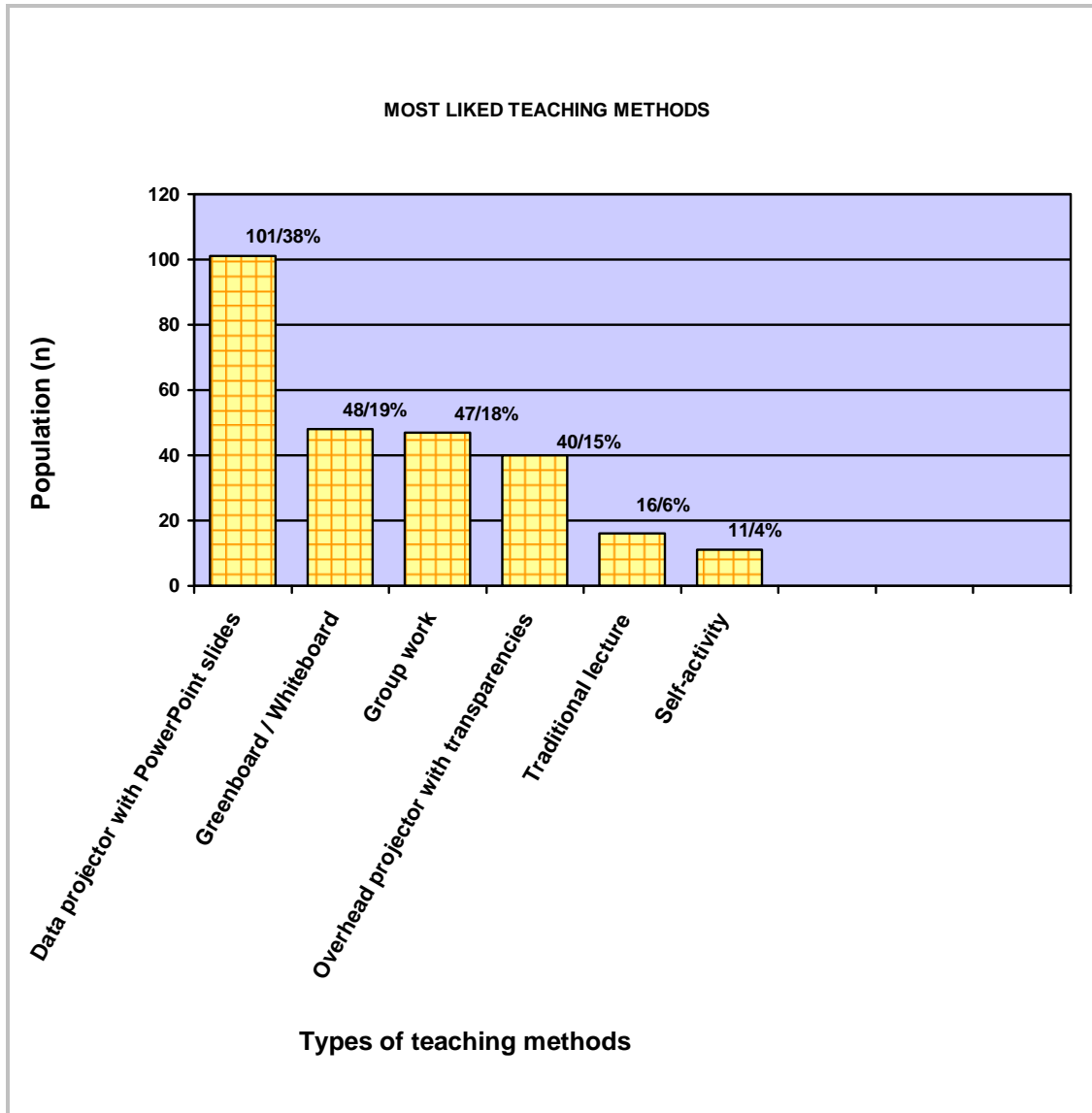
Participants (n = 77/29%) indicated that the use of a data projector with PowerPoint slides during teaching was very helpful in stimulating their learning style, while (n = 62/23%) participants found the use of PowerPoint minimally helpful in stimulating their learning style. Tarpley and Tarpley (2008:132), suggest that educators should acquire basic public speaking skills and learn to manipulate the basic features of PowerPoint to improve the effectiveness of teaching and communication. Den Beste (2003:496), states that she uses her PowerPoint presentation to augment her lecture and to encourage discussion and investigation into sources and not just to replace classroom interaction.

## 4.5 OPEN-ENDED QUESTIONS

These were open-ended questions to which participants could respond to as they feel. Responses were categorised as follows:

### 4.5.1 Question 22: My most liked teaching method:

Figure 4.8 presents the various teaching methods the participants indicated as their most liked teaching methods reflected from strongest to weakest liked method.



**Figure 4.8: Most liked teaching method**

The majority of participants ( $n = 101/38\%$ ) indicated their strongest most liked teaching method to be the data projector with PowerPoint slides compared to self-activity which was indicated as the lowest position of most liked teaching methods by ( $n = 11/4\%$ ) participants. The reason for the participants' choices follows.

#### 4.5.1.1 "Why this is my most liked teaching method"

In the motivation for the participants ( $n = 267/100\%$ ) choices of their most liked teaching methods ( $n = 263/99\%$ ) participants responded. These responses were categorised as follows:

##### 4.5.1.1.1 Data projector with PowerPoint slides

**Table 4.19: Motivation for liking data projector and PowerPoint slides**

<b>Reasons for liking data projector with PowerPoint slides</b>	<b>n</b>	<b>%</b>
Class more interesting, alive and enjoyable Keeps me awake and grabs my attention Pictures ensure better understanding of content Makes studying content unique and interesting	53	52
Visual and audible stimulation make content recall easier Use of colour makes content segregation, learning and studying easier	34	34
Stimulate my brain and my learning style Makes learning easier	5	5
Makes taking notes easier Assist in achieving excellent marks	5	5
It is quick Lecturer is more organised and better prepared	4	4
<b>TOTAL</b>	<b>101</b>	<b>100</b>

Many participants (n = 34/34%) indicated that being able to see what the lecturers were talking about helped them to better understand the content that was being explained. Visual and audible stimulation made recall of content easier, and the use of colour made them eager to learn and makes content segregation less confusing. These indications suggest that students perceive their experience with this teaching method positively (Apperson et al., 2006:125; Susskind, 2005:210).

Suggestions by participants (n = 4/4%) indicated that this teaching method was quick and that they found the lecturers to be better organised and better prepared. These findings are supported by Apperson et al. (2006:124) and Susskind (2005:210) who found that PowerPoint facilitated classes are more organised, more clear and interesting.

Findings that PowerPoint use is most effective for learning and motivation (Tang and Austin, 2009:1251) is supported by most participants (n = 53/52%) in this study. Participants indicated that the use of the data projector with PowerPoint slides made the class more interesting, active, alive and enjoyable. It is more effective for their concentration; keeps them awake, and grabs their attention, the work is explained better and the use of pictures tends to create a deeper (more intense) understanding of the content, and makes studying the content unique and interesting. Students in research by Susskind (2008:1235) and Susskind (2005:210), agree with these findings.

Some participants (n = 5/5%) reiterated that this teaching method does stimulate their brain, their learning style and conclusively makes learning easier for them.

Susskind (2008:1233), confirms the response of the final (n = 5/5%) participants who indicated that the use of data projection and PowerPoint slides facilitates in taking short notes and it assists them in achieving excellent marks.

#### 4.5.1.1.2 Green/whiteboard

**Table 4.20: Motivation for liking green/whiteboard teaching**

Reasons for liking green/whiteboard teaching	n	%
Lecturer gives step by step explanation which enhances my recall Lecturer engages more with content Lecturer breaks difficult terms down and I find it easier to focus and understand	24	50
Content not removed fast I am then able to read content and make notes while lecturer writes on the board	11	23
Written examples more clear Viewing how diagrams are drawn stays in my mind Concentrate better without distraction of bright lights	7	15
More interaction between lecturer and students Students participate better More time to think and ask questions	4	8
Are used to this method since secondary school	2	4
<b>TOTAL</b>	<b>48</b>	<b>100</b>

Most participants (n = 24/50%) indicated that they experienced that lecturers who used boards gave a more step by step explanation which enhanced their recall, The lecturers engaged more in the content and analysed difficult terms in the text book. Consequently, students found it easier to focus and understand. Students in research by Hofsten, Gustafsson & Häggström (2010:536) agree.

Participants (n = 11/23%) indicated that the content was not removed too fast from the boards which enabled them to read and make notes while the lecturer was writing on the board. According to Orlander (2007:90), the audience can dwell on content and it will also allow late arrivals and those whose minds have wandered off, to catch up quickly and become full participants.

Some participants (n = 7/15%) indicated that the written examples were more clear, by viewing how diagrams were drawn created a lasting memory. They concentrated better with no disturbances such as bright lights that were the case with other teaching equipment. By drawing in real time, the lecturer is building and reinforcing the relationships between content for students (Orlander, 2007:91).



The participants (n = 4/8%) indicated that they perceived an improved interaction between the lecturer and students. Students participated better, and there was more time to think and ask questions, which is also supported by Orlander (2007:89).

#### 4.5.1.1.3 Group work

**Table 4.21: Motivation for liking group work**

Reasons for liking Group work	n	%
Gain perspectives of other students	17	36
Gain more information		
Group members make me see where I've gone wrong		
When I explain to others, I am able to confirm my own knowledge of content		
Content is better explained at my level	16	34
When content is explained in my own language it makes understanding easier to study later on my own		
During group work everybody gets a chance to participate in activities	7	15
Students interact better in the group		
I feel more free to ask questions		
I enjoy the team spirit in the group	3	6
Group members support each other		
Group work helps me to better research information	2	4.5
It assist me to recall information during tests and exams		
Makes class time more fun	2	4.5
I lose interest in content when I am alone		
<b>TOTAL</b>	<b>47</b>	<b>100</b>

Group work maximized the opportunities for students to clarify coursework requirements, share resources and to enhance their academic potential (Boughton et al., 2010:3). Most of the participants (n = 17/36%) indicated that they liked group work because they gained perspectives of other students, they gained more information and group members could make them see where they went wrong. In addition, students also confirmed their own knowledge of content when they explained to others in the group.

Many participants (n = 16/34%) indicated that the content was better explained at their level and in their own language at times. The understanding of the content was made easier when they studied on their own at a later stage. Students adopt a deeper learning approach from engaging in group projects (Herington & Weaven, 2008:123).

Culturally and linguistically diverse students report that they enjoy belonging to a small group and that participating raises their self-esteem, decreases isolation and fulfills their

need for social acceptance (Boughton et al., 2010:5). Similarly a few participants (n = 3/6%) indicated that they enjoyed the team spirit that was created within the groups and group members support each other.

#### 4.5.1.1.4 Overhead projector with transparencies

**Table 4.22: Motivation for liking overhead projector with transparencies**

<b>Reasons for liking overhead projector with transparencies</b>	<b>n</b>	<b>%</b>
Content is summarised and easier to understand It is nice I can remember a lot of content	18	45
Content is visible and clear for the whole class to see	8	20
I feel more focused and find it easier to make notes Content is thoroughly explained I find it often easier to find the content in textbook	7	17.5
I find that it saves time The lecturer has more time to explain the content Lecturer can walk around in class Lecturer gets more involved with students Lecturer is able to pose questions to students	6	15
Used to it since high school	1	2.5
<b>TOTAL</b>	<b>40</b>	<b>100</b>

Most of the participants (n = 18/45%) indicated a liking for the use of an overhead projector with transparencies because the content was summarised and easier to understand, it is “nice” and they remember a lot of the content.

A few participants (n = 6/15%) indicated a liking in this teaching method because they experienced that it was timesaving. The lecturer has more time to explain content, walks around in the classroom, gets more involved with students and is also able to pose questions to the students.

## 4.5.1.1.5 Traditional lecture

**Table 4.23: Motivation for liking traditional lecture**

Reasons for liking Traditional lecture	n	%
I like verbal explanations	9	55
I am able to concentrate better in class		
It helps me understand content better		
I am a good listener and recall content better when I am alone	2	13
I can stop and question the lecturer if I don't understand	2	13
I get extra ideas from the lecturer and can easily make notes	2	13
I am used to this teaching method	1	6
<b>TOTAL</b>	<b>16</b>	<b>100</b>

Most of the participants (n = 9/56%) indicated that they liked the traditional lecture as a teaching method because the content was verbally explained, they were able to concentrate better in class, and it helped with their understanding. This finding is supported by results of Tang and Austin (2009:1252), that the low entertainment value of a traditional lecture ensures less distraction and enhances students' learning performances.

Any lecturers' lecture that is fun, interesting and informative, is deemed effective by students, even though it did not receive a high score for enjoyment in their study by Tang & Austin (2009:1251). Participants (n = 6/39%) in this study were evenly split at (n = 2/13%), each indicated their liking in this method because they were good listeners and recall of content was better when they are alone. They could stop and question the lecturer if they did not understand, they got extra ideas from the lecturer and could easily make notes.

## 4.5.1.1.6 Self-activity

**Table 4.24: Motivation for liking self-activity**

Reasons for liking Self-activity	n	%
I like to work on my own	5	46
There are less distractions and I can concentrate and understand more of the content on my own		
Studying on my own is easier and I can identify my mistakes easier	2	18
I have time to recite content on my own	1	9
I can research on my own and gain more knowledge	1	9
It teaches me responsibility for my own learning	1	9
The lecturer can evaluate the content understanding of students individually	1	9
<b>TOTAL</b>	<b>11</b>	<b>100</b>

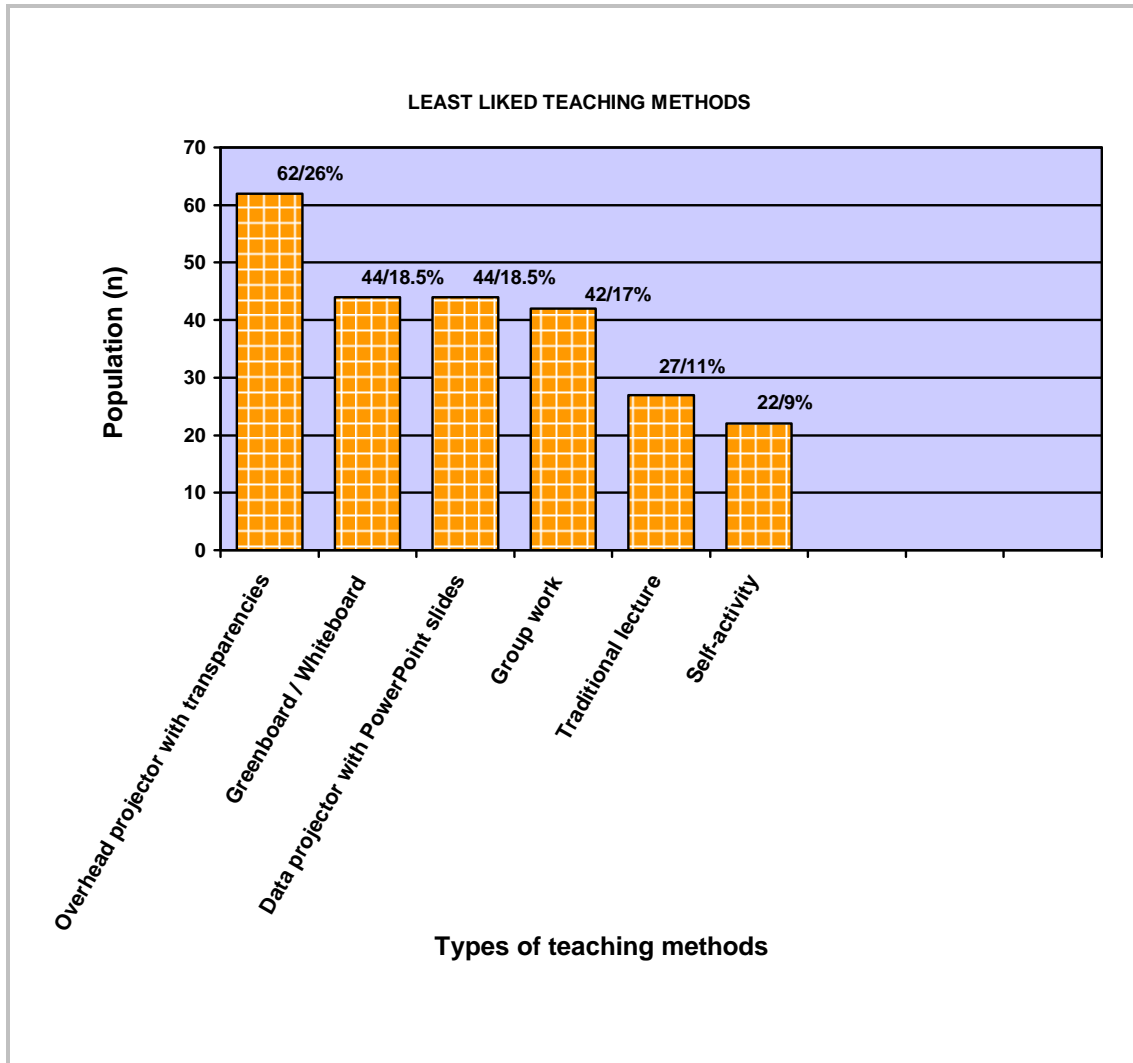
The lowest most liked teaching method is self-activity where most participants ( $n = 5/45\%$ ) indicated their reasons for liking it, amongst others they enjoyed working on their own, there are less distractions and they could concentrate and eventually understand more. A deeper approach to learning is significantly linked to self-activity (Magno, 2009:9). Deep and highly self-directed learners in a study by Vermetten et al. (2002:281), indicated that they do not need detailed manuals in comparison to the surface undirected learners who want to have detailed manuals more regularly.

The rest of the participants ( $n = 4/36\%$ ) were evenly split at ( $n = 1/9\%$ ) each who indicated their liking for self-activity because they had time to recite, could do research on their own and gained more knowledge, and it taught them responsibility for their own learning. Zimmerman (2002:66), agrees with these findings. Participants in the current study furthermore perceived that the lecturer could evaluate the content understanding of the students individually. Lecturers in a study by Herrington and Weaven, observed that more and more students were willing to take responsibility for their own learning and also observed that students bring in materials that they have resourced from the internet during their independent self-directed study (Herrington & Weaven, 2008:124).

**4.5.2 Question 23: My least liked teaching method**

This was an open-ended question to which ( $n = 241/90\%$ ) responded and ( $n = 26/10\%$ ) participants did not respond.

The various answers the participants ( $n = 241/100\%$ ) indicated as their least liked teaching methods are reflected from the highest least liked to the lowest least liked in Figure 4.9.



**Figure 4.9: Least liked teaching method**

*4.5.2.1 "Why this is my least liked teaching method"*

This was an open-ended question to which  $n=241$  (90%) of the participants responded and  $n=26$  (10%) did not respond of the total ( $n = 267$ ). Reason for the participants' choices follows.

## 4.5.2.1.1 Overhead projector with transparencies

**Table 4.25: Motivation for not liking overhead projector with transparencies**

Reasons for not liking overhead projector with transparencies	n	%
Image is vague and blurry and hurts my eyes Content too small and I cannot see Colourless (black and white) display is not stimulating and causes me to lose concentration and eventually I gain no new knowledge	17	27
Lecturers remove transparencies too quickly and I find it difficult to concentrate and make notes Lecturers explain too much and not enough time to write notes then I feel confused at home when I want to review the content	14	22
Too simple and boring I cannot concentrate so long and fall asleep Changing transparencies breaks my concentration	11	18
It is just the textbook content that is rewritten and lacks new insight Lecturers just read transparencies without giving good examples Some lecturers just show work with no explanation how to engage with the content	10	16
Content on the transparencies is too heavily concentrated (too much words close together) and makes it difficult to follow in my textbook Content looks too heavy and it discourages me to make notes	8	13
Sometimes looks like information is lacking	1	2
Decreased interaction between the lecturer and students And I feel too embarrassed to ask questions when the rest of the class indicates that they understand	1	2
<b>TOTAL</b>	<b>62</b>	<b>100</b>

Many participants (n = 17/24%) confirmed literature discussion in paragraph 2.4.6. with regard to the visibility of the content display.

Some participants(n = 14/23%) indicated that lecturers removed the transparencies too quickly (as supported by Susskind, 2008:1235) and furthermore, found it difficult to concentrate and make notes, lecturers explained too much and there was not enough time to write notes and this resulted in students feeling confused when they engage with content again.

A few participants (n = 8/13%) also indicated this method as least liked because the content on the transparencies were too heavily concentrated (too much wording close together) which made it difficult to follow in their textbooks and difficult to make notes, the content looked too much and it discouraged them from making notes. Students in a study

by Susskind (2008:1235), agree that there is more content on overhead projected transparencies, which increases the difficulty of making notes.

#### 4.5.2.1.2 Green/whiteboard

**Table 4.26: Motivation for not liking green/whiteboard teaching**

<b>Reasons for not liking Green/Whiteboard</b>	<b>n</b>	<b>%</b>
Lecturers write too slowly on the board It is time consuming and leaves less time for explaining of content	13	29.5
It looks ancient, boring and not interesting It is limited and lacks illustrations	9	20
Some handwritings are unclear and difficult to see	7	16
Important information is easily erased so I have to concentrate on writing quickly When content is erased you cannot get it back because it would be time consuming	6	14
The sound of writing on the boards is irritating and breaks my concentration	4	9
It reminds me of school when I am already in a higher education institution	3	7
I get easily distracted with this method	2	4.5
<b>Total</b>	<b>44</b>	<b>100</b>

Most participants (n = 13/30%) indicated that the board teaching methods were the second least liked because they experienced the lecturers writing on the board as too slow, time consuming and this resulted in less time for the lecturers to explain content.

Many participants (n = 9/20%) indicated that these methods looked ancient, boring and not interesting; they were limited and lacked the illustration. Other participants (n = 3/7%) agreed and indicated that this teaching method reminded them of school when they were already in a higher education institution, while n=2 (5%) indicated that they were easily distracted with this teaching method.

## 4.5.2.1.3 Data projector with PowerPoint slides

**Table 4.27: Motivation for not liking data projector with PowerPoint slides**

Reasons for not liking data projector with PowerPoint slides	N	%
Slides are moved too quickly from one topic to another I am unable to keep up and experience difficulty understanding the content	22	50
It takes longer to make notes	6	14
Lecturers don't put effort into teaching Lecturers just read content and don't explain Sometimes content on the slides doesn't explain content enough Lecturers who just repeat everything on the slides are not stimulating my learning process	6	14
Images are sometimes blurry With no pointer I cannot see clearly and my eyes cannot stare that long	5	11
Content on the slides are shortened and sometimes scattered everywhere Sometimes it feels like slides are missing some information	2	4.5
It makes me lazy and relaxed and I automatically put less effort into learning	2	4.5
Lecturers waste teaching time when they have to go around looking for technical support due to faulty equipment	1	2
<b>Total</b>	<b>44</b>	<b>100</b>

Most participants ( $n = 22/50\%$ ) indicated that the data projector with PowerPoint slides is also the second least liked teaching method because the slides were moved too quickly from one topic to the other therefore, students were unable to keep up and experienced difficulty understanding the content.

Many participants ( $n = 6/14\%$ ) also perceived that lecturers do not put effort in teaching, they just read content and do not explain, sometimes the content lecturers put on the slides doesn't explain content enough, and when lecturers just repeat everything on the slides it is not stimulating to their learning process.

Other participants ( $n = 2/4.5\%$ ) also indicated that the data projector with PowerPoint slides made students lazy and relaxed and they automatically put less effort in to learn, while only ( $n = 1/2\%$ ) participant mentioned that lecturers waste teaching time when they have to go around looking for technical support due to faulty equipment.



## 4.5.2.1.4 Group work

**Table 4.28: Motivation for not liking group work**

Reasons for not liking Group work	n	%
Too much distractions during group work I am unable to concentrate with other group members present	11	26
Group members are too playful Group members who don't participate put more unnecessary pressure on me and therefore, I find it difficult to commit to group work	10	24
I feel shy, don't participate and focus less The various different personalities in the group obstruct others to see my point of reference	9	21
Lecturers do not guide the group and group members get confused Sometimes other group members give me the wrong information When there are friends together in the group, they easily go off the topic Group opinions can sometimes be misleading and incorrect	8	19
Group work does not help me It does not help me to think outside the box	2	5
Group work is just time wasting because it delays my study time Lecturers do revision of that work again	2	5
<b>Total</b>	<b>42</b>	<b>100</b>

Most participants ( $n = 11/26\%$ ) indicated that during group work they experienced too many distractions and students were unable to concentrate with group members present. Kiger (2004:119), concur that obstructive members may go off on a tangent, reject ideas without consideration, or argue on a point everyone else has accepted.

Many participants ( $n = 10/24\%$ ) indicated their dislike in group work because many times group members were very playful and do not participate which increased the pressure on the other group members, consequently students found it difficult to commit to group work. Kember and Leung (2006:195), agree that student-student relationship have an indirect effect on student's perception of their workload.

Potential problems with group work according to Kiger (2004:119), is failure to participate due to shyness, low-self-esteem, self-perceived lack of communication skills, obstructive moves that block progress; demands to meet personal needs; excessive aggression and competition. Many participants ( $n = 9/21\%$ ) in this study agreed that students felt shy and do not participate in group work and focused less, because the different personalities in the group obstructed other's viewpoints.

Some participants ( $n = 8/19\%$ ) indicated that they experienced that some lecturers do not guide the group and group members got confused, sometimes other members gave the wrong information, and when their friends were together in a group they easily went off the topic, therefore the group opinions could sometimes be misleading and incorrect. According to McGrath and Higgins (2006:179), students suggest that group facilitators use an icebreaker because it was found to be helpful in reducing tension and setting the tone for group interaction.

#### 4.5.2.1.5 Traditional lecture

**Table 4.29: Motivation for not liking traditional lecture**

Reasons for not liking Traditional lecture	N	%
It is uninteresting and boring	17	63
I get easily distracted, lose concentration and fall asleep		
Certain lecturers' voices are unclear, monotone, boring and difficult to understand		
Lecturers just keep talking and students only get a chance to challenge information later	3	11
Lecturers just read the textbook and I get lost because I can read the text book on my own	3	11
Just talking without visual aids makes content difficult to understand	3	11
Time is limited and some content get skipped with this method	1	4
<b>Total</b>	<b>27</b>	<b>100</b>

Tarpley and Tarpley (2008:132), warn that it is important to vary the tone of voice, and project interest and contagious excitement in your topic, as this holds the attention of your audience. Most participants ( $n = 17/63\%$ ) indicated that they disliked the traditional teaching method because students experienced it as uninteresting and boring, students lost concentration, got distracted easily and fell asleep. This is supported by Bruce et al. (2011:209), and has been addressed under the disadvantages of a traditional lecture (paragraph 2.4.1.2). Participants furthermore described certain lecturers' voices as unclear, monotone, boring and not easy to understand. Boredom is one of the negative aspects of a lecture and the lecturers should vary their ways of giving a lecture (Bruce et al., 2011:211).

Some participants ( $n = 3/11\%$ ) indicated that just talking without examples and visual aids made the content difficult to understand. Bruce et al. (2011:211), suggest that real life objects or subjects can be incorporated to stimulate the students' curiosity and interests.

## 4.5.2.1.6 Self-activity

**Table 4.30: Motivation for not liking self-activity**

Reasons for not liking Self-activity	n	%
I find it difficult to understand content when I am alone at home Especially if I misunderstood the content in class, I have no assistance at home	14	64
I am too lazy to do self-study because I get bored I am not motivated to work on my own I get easily distracted on my own	4	18
My life at home is stressful I do not have much time for studying and doing academic work at home	2	9
Self-activity normally covers the nice to know content and I never do it Lecturers never come back to explain the content given for self-study	2	9
<b>Total</b>	<b>22</b>	<b>100</b>

Self-activity was the lowest least liked of all the teaching methods. Most participants (n = 14/64%) indicated that it was difficult for them to understand content when they were alone at home especially if they have misunderstood the content and have no assistance at home during self-activity. According to Zimmerman (2002:69), a self-regulated process or belief can be learned from instruction and modelling by parents, teachers, coaches, peers and self-regulated students seek out help from others to improve their learning.

Some participants (n = 4/18%) indicated that they were too lazy to do self-study because they got bored and were not motivated to work on their own, and students got easily distracted on their own.

A few participants (n = 2/9%) indicated that they disliked self-activity because their lives at home were stressful and they do not have much time for studying and academic work.

The last participants (n = 2/9%) indicated that self-activity work normally covered the nice-to-know content and that they never do it, also the lecturers never come back to explain the content given for self-activity.

#### 4.5.3 Question 24: My suggestion(s) to improve the current teaching methods at the nursing college is/ are:

This was the last open-ended question to which (n = 217/81%) of the participants responded, with (n = 50/19%) not responding. Participants indicated their suggestions to improve the current teaching methods at the nursing college and the following themes according to table 4.31 emerged.

**Table 4.31: Themes for response to open-question: Suggestion(s) to improve the current teaching methods at the nursing college**

Themes	n	%
Academic staff	58	27
Academic guidance with self-activity	30	14
Technology assisted learning	23	11
Group work	22	10
Workload perception	21	10
Class sizes	16	7
Visual stimulation	14	6
Continues & summative assessments	13	6
Students' preparation for class	9	4
Teaching environment	4	2
Diverse learning needs of students	4	2
Library support/study center support	3	1
<b>Total</b>	<b>217</b>	<b>100</b>

#### 4.5.3.1 *Academic staff*

A common response amongst the majority of participants was that the lecturers should be more student friendly and even relax more (loosen up) to enable them to create a more fun-filled class time. According to Rodgers and Raider-Roth (2006:278), when lecturers assume a connected stance, students sense that the lecturer can see them, as well as their learning, their strengths and weaknesses. When students realise that they are in the presence of a real learning partner, then they extend themselves to the very edge of their learning, and to the borders of their known world because they know that someone will be there to meet them (Rodgers and Raider-Roth, 2006:278-9).

Some suggest that more real life examples should be discussed to make lectures more interesting, also that the lecturers should be more active and walk around in the class. These suggestions are in keeping with comments from students who appreciated their lecturers' special efforts in making tutorial activities interesting by using real life examples (Herrington & Weaven, 2008:126).

Participants referred to lecturers who just read the textbook and suggested that these lecturers put more effort in to explaining until students understood the work. According to Rodgers and Raider-Roth (2006:279), the most visible aspects of presence include interaction between the lecturer and students, amongst students, and between the students

and the subject matter. The lecturer needs to pay close attention to the subject matter and their students' engagements with it.

Participants also referred to the problem of lecturers whose word pronunciation was unclear, or spoke in a monotone as these created language barriers for students. Lack of verbal or cognitive clarity on the lecturer's part leads to lack of understanding in the student (Bruce et al., 2011:210). Kember and Leung (2006:195), warn that student-teacher relationships do affect the students' perception of their workload.

Participants pleaded that the institution recruit lecturing staff who are well equipped with good subject knowledge and who are able to communicate content effectively to them. In order for lecturers to be free to be "present" to learning, it is necessary that they have a deep knowledge of the subject matter (Rodgers and Raider-Roth, 2006:279). Many teachers are knowledgeable of the subject matter without necessarily being able to decompress it in a way that makes it accessible for their students (Rodgers and Raider-Roth, 2006:279).

According to Boe, Shin and Cook (2007:168), a highly qualified teacher is defined as having full state certification and a high level of content knowledge. Teaching preparation is divided into three levels such as extensive, some, and little/no preparation. Results of their research revealed that extensive preparation in content and practice teaching were more effective than only some or no preparation in beginner teacher, who were fully certified and reported being well prepared to teach subject matter and well prepared in respect of pedagogical skills (Boe et al., 2007:158).

A prerequisite for presence is a lecturer who poses knowledge that is deep enough to free their minds from preoccupation with knowledge and who has the ability to connect students to an appropriate point of entry (Rodgers and Raider-Roth, 2006:280). Banning (2005:504) reiterates that lecturers must be competent in their knowledge base, show compassion and be accomplished in the educational attributes they want their students to acquire.

#### *4.5.3.2 Academic guidance with self-activity*

Participants suggest that students should take responsibility for self-activity, but that the lecturers also structure teaching in a way that enables students to engage with content on their own. According to Entwistle et al. (2002:5), university teachers' conceptions of teaching stems from their prior experience and beliefs about learning and teaching, which affect their current decisions on how to teach.

Participants suggest that page number references should be clearly communicated, more notes should be supplied as there is not enough class time to summarise and write notes. Notes that are given should be clear, and more time should be given for writing of notes.

Lecturers should accommodate students and not explain content while students are writing their notes. Noble, Miller and Heckman (2008:251) agree and suggest that field-dependant nursing students will benefit from the provision of written organisers such as handouts and lecture outlines.

#### *4.5.3.3 Technology assisted learning*

Participants suggest the use of technology assisted learning but highlighted the problem they encounter with faulty equipment and therefore suggest that old technology be replaced. Noble et al. (2008:252), support the use of technology as a teaching strategy for field-dependant nursing students.

Participants indicated that the lecturers trying to fix old equipment is time consuming, and lecturers strain their voices in big venues with broken sound equipment. Another suggestion from participants was that the lecturers who utilise overhead projectors with transparencies and PowerPoint should not remove or move too fast with slides and transparencies.

First year participants suggest that videos be used especially when teaching basic nursing science (BNS). Results of a study by Tang and Austin (2009:1251), support the students' suggestion that the use of videos as teaching strategy is associated with high levels of fun, entertainment, enjoyment and subsequently, learning. In addition, participants suggest that more computer activities such as internet assisted learning be used and that notes should even be placed on the K-drives for students' accessibility. A final suggestion was that lecturers be recorded for students to review while they are studying for a test or exam preparation.

#### *4.5.3.4 Group work*

Participants suggested that students interact more frequently with each other in group work sessions so that they can learn how to use different study methods. According to Noble et al. (2008:251), an interactive small group setting may provide an increased students and faculty interaction, which by clarifying difficult topics and by providing additional cues will increase the learning of field-dependent nursing students. Students indicated that depending on the classroom layout, large classes are best suited for group work (Leufer, 2007:324).

Further suggestions include an increase in student participation in class activities in order to boost students' self-confidence. Lecturers should encourage students to form working and study groups. Before groups are formed lecturers should explain the content because groups need guidance from the lecturer. A teacher's ability to motivate his/her students is considered an important contributing factor to excellence in teaching (Rossetti & Fox, 2009:

12). The extent to which a teacher is able to develop a sense of belonging in their class groups will affect the class's perceptions of their workload (Kember and Leung, 2006:195).

Prichard et al. (2006:136), suggest that team skills training do enhance the outcomes of group work and helps prepare students for collaborative interactions.

#### *4.5.3.5 Workload perception*

Most of the participants indicated the short teaching time as the major problem and students ended up cramming content into their brain because they do not have time to just read and familiarise themselves with content. Participants also suggest that students be sent home earlier for self-activity because students struggle to concentrate after 12:00. Kember and Leung (2006:186) and Kember (2004:179), state that students who perceive their workload to be excessive will apply a surface learning approach. Furthermore, the teaching and learning environment affects the students' perception of workload (Kember & Leung, 2006:189) and teachers who are able to promote effective cooperative learning environments are able to make greater demands without making the workload seem excessive for their students (Kember & Leung, 2006:195).

According to Kember (2004:165), workload can be measured as the number of contact hours for classes plus the time spent on independent study. Some participants in the current study perceive all the time they spent in hospitals for their practical training as zero learning time and that students would rather spend more time in class with content. A high workload perception tends to be in relation to hours of work and prompts students towards a surface approach to learning (Kember, 2004:179).

A few students suggested changing the current block system to 3 days theory and 2 days clinical practice. Block systems can become periods of cramming and as a result students easily forget information, which can be deemed as educationally unsound (Bruce et al., 2011:288). The integrated system should be well organised otherwise students may experience stress if they miss lectures or arrive late for their practica (Bruce et al., 2011: 291). Kember (2004:182), concluded that students are prepared to work long hours for courses which are well designed, however with the piling on of more work students will eventually become counterproductive, will resort to short cuts, and undesirable study approaches to cope with the excessive demands.

#### *4.5.3.6 Class sizes*

All participants (n = 16/7%) strongly suggested that the number of students per class be reduced. Leufer (2007:322), observed that students' participation levels were lower in large class settings. According to Stork (2003:335), large cohorts of students often make it difficult for lecturers to create an environment in which students feel that their own personal

needs are being met. Students in the study by Leufer (2007: 324), commented that in large classrooms, the overhead projector is too far away, the lecture is rushed, the lecturers' attention is focused on those nearest to them, and more talk on unrelated topics by students makes it hard to concentrate.

#### *4.5.3.7 Visual stimulation*

Most participants suggested that more visual stimulation be incorporated in lectures such as more pictures, more visual effects and more creativity. Some participants even suggested including more white board drawings when lecturers use the board method.

#### *4.5.3.8 Continuous and summative assessments*

Participants suggested that more class tests be written before exams, more revision be done before class tests, that time should not be wasted with homework while students are studying for tests. Other participants also suggested that more individual assignments be structured if their marks will contribute to their continuous assessment marks (CA). Participants also suggest that terminology and structure used during tests be consistent with terminology and structure for exams, and all information should be given in alignment with content outcomes. Noble et al. (2008:251), suggest that field-dependant nursing students are characteristically unable to determine salient elements of information and would thus benefit from efforts that would signal the important learning facts, concepts, principles and skills.

#### *4.5.3.9 Students' preparation for class*

Participants suggested that students should take responsibility to daily revisit class content but that lecturers guide students in preparation for class the next day. Such preparation will ensure better student participation in content revision the next day. Participants suggest that content revision every morning before class forces students to engage with the content every day.

#### *4.5.3.10 Teaching environment*

Participants suggested that various teaching methods should be used to satisfy and facilitate the students' learning needs. Banning (2005:07), affirms that effective preparation strategies should be put in place in order to train lecturers to effectively use various teaching methods.

Participants also suggested that all distractions such as cell phones ringing, announcements and the broadcasting system should be avoided to be able to ensure a teaching environment that is conducive to learning. Results of a study by Leufer (2007: 324), supports the fact that noise distractions impact students' concentration levels negatively.



#### *4.5.3.11 Diverse learning needs of students*

The diversity in students' learning needs should be considered in order to ensure that all nursing students have an opportunity for success (Noble et al., 2008:245). Banning (2005:504), acknowledges that teachers will find students with mixed abilities in every classroom. Participants in this study acknowledge that the classroom consists of students who learn at various paces and suggest that faster learners be separated from slower learners and that learners be divided into groups thereafter. According to Noble et al. (2008:245), nursing students are classified as being field dependent, who due to the cognitive processing this field requires, puts them at risk for academic failure. Giddens (2007:80), identifies high risk students as those students who prefer high content discussions in the teaching environment and also suggests that a multicontextual approach is best suited for a diverse learning needs environment. Banning (2005:504), stresses the importance for lecturers to maintain a relaxed atmosphere where students are allowed to set their own learning objectives and later involve students in group work that supports their learning.

Mature learners experienced difficulties such as extreme anxiety, distress and unhappiness when the pace of learning was much slower (Banning, 2005:505). Therefore, participants in the current study suggested that more attention be given to slower learners in remedial classes, and that all assistance facilitated to students should be in the language that students prefer or are most comfortable with. Instructional strategies tailored for students' needs should be incorporated into the nursing curriculum (Noble et al., 2008:246).

#### *4.5.3.12 Library support/study center*

Participants identified that the library and study support center at this institution close too early and suggest that the time should be revisited, and library logistics be improved because it becomes overcrowded when too many students visit these centers at the same time. In a study by Karemera, Reuben and Sillah (2003:303), the adequacy of library services was found to be significantly associated with college performance of academic majors at the University's School of business. Students who rated library resources as adequate were more likely to be better students (Karemera, Reuben & Sillah, 2003:305).

## **4.6 CONCLUSION**

In this chapter, the data being collected during this study was analysed, interpreted and discussed. The researcher succeeded in exploring, investigating and successfully addressing the research question, i.e.:

“What was the perceptions of student nurses regarding the effectiveness of the teaching methods which they experienced at a nursing college in the Western Cape Province?”

By using scientific, investigative techniques, the perceptions of student nurses regarding the effectiveness of the teaching methods which they experienced at a nursing college in the Western Cape, were successfully identified.

The following objectives were thus achieved:

1. The perceived effectiveness of the traditional (green/whiteboard) lecture on student learning
2. The perceived effectiveness of group activity (small groups) on student learning
3. The perceived effectiveness of self-activity on student learning
4. The perceived effectiveness of the use of technology such as PowerPoint presentations, video clips on student learning.

In the final chapter, recommendations are made, based on the study outcomes being generated during this research.

## **CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 INTRODUCTION**

In this chapter conclusions based on the scientific evidence obtained during this study are drawn, with reference to the outcomes from similar studies. The purpose, research question, objectives, as well as the limitations of this study are briefly discussed. Finally, the recommendations as derived from this study are presented.

### **5.2 CONCLUSIONS FROM THE SURVEY OUTCOMES**

The following objectives were set for this research study, namely to evaluate the perceived effectiveness of:

- the traditional (green/whiteboard) lecture on student learning
- group activity (small groups) on student learning
- self-activity on student learning
- the use of technology such as PowerPoint presentations and video clips on student learning.

These objectives were met through an in-depth research study that aimed at evaluating the perceptions of student nurses regarding the effectiveness of the teaching methods which they experienced at a nursing college in the Western Cape Province in the recent years.

#### **5.2.1 The perceived effectiveness of the traditional (green/whiteboard; overhead projector with transparencies) lecture on students learning**

Participants in this study mostly liked the traditional (boards and overhead with transparencies) lectures because they perceive that content is better summarised and mostly easy to understand. As a result students experienced that they concentrate better, lecturer-students interaction is enhanced and they experienced note-taking as easy (Table 4.20; Table 4.22; Table 4.23). In the presence of the positive review for the traditional teaching methods, participants in this study also rated the overhead projector with transparencies (n = 62/26%) and boards (n= 44/18.5%) of the traditional teaching methods the highest on the least liked question. In both methods, participants experienced it as too simple, boring and ancient looking and non-stimulating to learning. Furthermore, they experienced the content or handwriting as unclear and that important information is easily removed or erased in the case of the boards. Participants indicated that they experienced even the traditional lecture as uninteresting and the voice tones of lecturers to be

monotonous, unclear, boring and eventually difficult to understand (Tables: 4.25; 4.26; 4.29).

### **5.2.2 The perceived effectiveness of group work on student learning**

Results from this study show that (48%) of the participants perceive group work to be moderately helpful with their academic performance in general, while a further (43%) perceived it to be moderately helpful in stimulating their learning style (Table 4.14). However, participants ( $n = 47/19\%$ ) in this study rated group work third on the most liked teaching method question (Figure 4.8). The majority ( $n = 17/36\%$ ) of those participants liked group work because they are able to gain perspectives of the fellow students, they gain more information, group members help them to see where they are going wrong and when they explain to others, it confirms their own content knowledge (Table 4.21). Additional motivating factors were that they enjoyed the team spirit and support that the group work environment creates. Face-to-face group work engages students to learn about the self, to explore new and different relationships and to develop assertiveness (Baskin, Barker & Woods, 2005:24).

Group work was also rated fourth on the least liked teaching methods graph (Figure 4.9), mostly because students experience too many distractions during group work which hinder their ability to concentrate (Table 4.28). Some other motivations were that group members were too playful, and members who do not participate placed unnecessary pressure on the rest of the participating group members.

### **5.2.3 The perceived effectiveness of self-activity on student learning**

Participants in this study perceived mostly high positive effects from self-study. They indicated that they perceived self-activity moderately helpful ( $n = 111/42\%$ ) with an additional ( $n = 105/40\%$ ) who indicated it very helpful with stimulation of their learning style.

Even though participants in this study perceived self-activity very positively, they have rated it the lowest ( $n = 11/4\%$ ) of the most liked teaching methods in an open question (Figure 4.8). The strongest motivation once again seems to be less distractions and the ability to concentrate and understand content better on their own (Table 4.24).

As rating of the least liked of all teaching methods, self-activity was identified as the worst method for students in an open question (Table 4.30). ( $n = 22/9\%$ ) participants indicated that they do not like self-activity because if they misunderstood the content in the class, they found it difficult to understand it when there is no assistance at home for them. Some participants acknowledge that they are too lazy and unmotivated to work on their own because they get easily distracted. According to Zimmerman (2002:69), self-regulated students seek out help from others to improve their learning. Two participants stated that

their lifestyle at home is too stressful and does not accommodate their academic work. These statements are supported in paragraph 4.3.3.

#### **5.2.4 The perceived effectiveness of the use of technology such as PowerPoint presentations and video clips on student learning**

Results from the current study show that (45%) of the participants found PowerPoint use very helpful with their ability to concentrate during the lecture, and (46%) participants found it moderately helpful with their academic performance in general. Comparatively PowerPoint was also rated second highest by participants ( $n = 84/31\%$ ) when they indicated its effect on their academic performance in general (Table 4.18).

PowerPoint presentation was rated most liked by the majority of participants ( $n = 101/38\%$ ) in the open questions on Figure 4.8. The ability of PowerPoint presentations to keep class room experiences interesting, alive, enjoyable, attention grabbing and unique was highly rated by participants (Table 4.19). Secondly, on table 4.19 participants indicated that they experienced PowerPoint with the help of its graphic stimulation made content recall and segregation, as well as learning and studying easier.

Participants ( $n = 44/18.5\%$ ) ascribed most of the reasons (50%) why they disliked the PowerPoint presentation to poor execution abilities of lecturers when they moved slides too fast, with some referring to the lecturer's lack of effort and inability to explain content and stimulate the learning process for students (Table 4.27).

### **5.3 RECOMMENDATIONS BASED ON THE OBJECTIVES**

#### **5.3.1 Traditional green/whiteboard lectures and overhead projector with transparencies lecture**

Despite the negative perceived effectiveness yet some positive aspects about the use of the traditional green/whiteboard and overhead projector with transparencies, there is still merit in the use of these methods. The following are recommended to circumvent these problems:

##### *5.3.1.1 Lectures*

Before the start of the lecture get students prepared for receiving content such as getting everyone's attention, ensuring that all students are seated, and everyone to be mentally prepared to move forward with content, as supported by Kohler (2006:4). Traditional presentations appear best suitable if students are expected to retain information and/or concepts that are best conveyed through dialogue or verbal explanation, as supported by Savoy, Proctor and Salvendy (2009:866).

Establish a rapport with students, in order to focus on gaining the students' understanding, as well as their attention. Without rapport, the class is dull and lethargic as indicated by participants in this study.

Challenge students, arouse their curiosity and stimulate their imagination for creative thought. Clarify complex points and identify student problems, then try to clarify and remedy students' problems. Bruce et al. (2011:208), support this and further state that in larger groups of students identifying a problem is more difficult but it is still important to remedy the students' problems in understanding. Lack of clarity on the lecturers' part leads to lack of understanding in the students (Table 4.25).

In order to achieve verbal clarity during the presentation pronounce your words clearly and distinctively, ensure that you can be heard by everyone (with or without a microphone). Vary the tone of voice to avoid speaking in a monotone and do not rush your words. Look at the audience and not just at your notes or the textbook as valuable feedback can be picked up indicating understanding or lack of understanding, even emotions such as frustration, confusion and anxiety from the non verbal cues of students.

More visual stimulation should be incorporated by using more pictures, more visual effects and more creativity. Change the types of questions that are asked, change teaching materials and stimulate the students' curiosity by incorporating more real-life objects or subjects into the lecture.

#### *5.3.1.2 Overhead projector with transparencies*

The use of overhead projectors with transparencies and paper handouts are valuable and should be used in situations when it is the most effective teaching strategy as substantiated by Orlander (2007:90).

Ensure that the placement of the equipment does not obscure the vision of the audience. Also ensure that the projected image is clear and visible for all to see. Do not change the transparencies without confirming that the audience understood the content on it, as this was the case in the research findings (Table 4.25)

Use practical examples to enable the audience to apply content in real life situations. Colour images and diagrams on transparencies can be used to add more visual stimulation to the listening audience.

Various font types, styles and sizes should be used to add interesting aspects to the lecture. Refrain from adding too much information on one transparency as students found it very confusing (Table 4.25).

### 5.3.1.3 *Green/whiteboard lectures*

According to Stanford and Reeves (2007:133), university teachers cannot connect to “the millennial generation” as described in paragraph 2.2.1.2 of today’s learners by using chalk and dull outdated textbooks. The talk and chalk method which traditionally dominated nurse education, achieved very little success and nurse facilitators of learning should seek new ways and methods to actively involve students with the curriculum, as agreed by McGrath and Higgins (2006:180).

Boards can create a dead time when the teachers back is turned to the audience and this should as far as possible be circumvented (Orlander, 2007:90). As far as possible gain access to the venue before class time and write the most important points, highlight them and have diagrams on the boards to prevent the inevitable prolonged dead time for the audience. Assign students to self-activity or group work while writing content on the board in order to prevent distractions and boredom amongst students.

More whiteboard drawings should be used with the board teaching method to help with explaining and discussion of content.

### **5.3.2 Group work**

The purpose of group work is not only for academic use, but also in the field of nursing during which a multidisciplinary team approach is applied. The teamwork approach and the foundations of working in groups start in the classroom. The strengths of group members put together have a compound effect and therefore the following are recommended:

Lecturers should promote communication ethics to ensure the success of discussions in the small groups. Effective communication and team skills training should be provided to students to enable them to function effectively within their groups. According to Prichard (2006:136), there is evidence that team skill training enhances collaborative group outcomes and has been found useful in preparing students to work with other members in group work activities.

Rules and guidelines for effective group work sessions should be work-shopped with students. Group work activities and strategies should be introduced and used at regular intervals for students to become more accustomed to this teaching strategy. Discussions and planning during group work develop higher order thinking skills, such as logical reasoning, open-ended problem solving, synthesis and analysis as guided by Bloom’s Taxonomy (paragraph 2.5.2).

Lecturers should encourage students to form working and study groups. Diversity in group members could have a negative impact on the group functioning, but lecturers should continually affirm and reinforce the unique abilities and contributions of individual students

in order to decrease unwanted effects. During group work the lecturers should circulate, monitor progress of an activity, assess students continually for misinterpretations of content, and guide students back onto the right path of knowledge. Minimize distractions during group work activities to enable all members to participate effectively.

Include the content of group work activities in summative and formative assessments to encourage students to participate. Group assignments can be used and marks can contribute to continuous assignment marks.

### **5.3.3 Self-activity**

Even though self-activity has been rated last on both (most liked and least liked) open questions, some students have indicated that it is moderately and even very helpful with their learning styles. Hence, the following recommendations are made:

Minimize distractions in the classroom environment because it interferes with the students' ability to concentrate, as supported in paragraph 4.5.3.10. Allow students to take responsibility for self-activity as this is the requirement for students of HEI and it forms the basis of adult learning.

Self-directed learning (SDL) is also a student-centered approach that actively involves the students in their learning. The successful introduction of SDL into curricula requires adequate teacher and student preparation, there must be a balance between teacher-directed and student-directed learning, and an agreement needs to be reached between students and teachers as to mutual role expectations and learning preferences. Levett-Jones (2005:367), emphasises that negotiation between the teacher and learner is paramount to the success of the learning process.

Lectures should guide the learning process by pushing students to think deeply. By questioning the students the lecturers model the type of questions which students need to ask themselves when they engage in SDL. Probing the students' knowledge and scaffolding their learning the lecturer keeps the learning process on track.

Self-directedness is vital for students accessing resources, learning and applying what they have learnt back to the problem. SDL often requires students to use their own time, therefore time for SDL should be included on the timetable so that students can actively plan and organise their learning.

Subject guides and program guides should be developed to promote understanding when students engage with content during SDL. Subject guidelines should be clear, precise, and transparent to the users, and free from any ambiguities and misconceptions. It should contain at least the essential concepts that students should address, the possible and likely



responses that students will give at different stages of problem solving, as well as the background and resources information that students might need. A well-developed subject and programme guide will also be useful for lecturers who are not necessarily experts in the field. Zimmerman (2002:70), believes that the teaching of self-regulated learning processes has become extremely relevant.

Students suggest that content notes should be availed for them with clearly marked page references. Literature (Noble, Miller and Heckman, 2008:251) support the provision of handouts and lecture outlines in paragraph 4.5.3.2.

#### **5.3.4 Technology**

Noble et al. (2008:252), indicate that field-dependant nursing students can use technology to extend their interactions with each other beyond the walls of the classroom through online technologies. Technology makes it possible for teachers to ask students to email weekly reflections about the class content, which reduces students' misunderstanding about lectured materials and help develop metacognitive learning strategies (Stanford &Reeves, 2007:135).

Susskind (2005:213), recommends the use of technology to prevent decrease in enthusiasm and class participation.

Administrators should create a sense of need for technology and remove all barriers with regard to achieving set goals (Zhao & Cziko, 2001:1). By maintaining higher-levels of goals, teachers will be encouraged to expand their use of technology.

The advantages and disadvantages have to be identified for proper use of educational technologies. IT assistance is paramount to the lecturers' ability to include technology into their lesson plan, as discussed in paragraph 2.3.5.1. Furthermore, cognisance should be taken of the factors that influence the lecturer's ability to use technology (paragraph 2.3.5.2).

##### *5.3.4.1 PowerPoint, video clips and animation*

Evidence was found (paragraph 4.3.10) to display the technological profile of the participants in this study. Students of today have knowledge about accessing the internet (World Wide Web), how to use video streaming when talking to friends and to chat in chat rooms. Even if students cannot afford their own technological equipment, they are in contact with family members who own such equipment (Figure 4.4).

Today millennial students are intellectually ready to build hypertext video links to show PowerPoint demonstrations (Stanford & Reeves, 2007: 133). The Blooms' digital taxonomy by Churches (Figure 2.3) illustrates how technological programs can be designed and

utilized to engage students with content in a way that enables them to develop from being lower order thinkers to higher order thinkers.

Ultimately, such higher order thinking students experience a deep-holistic learning approach (paragraph 2.2.4.2) with the help of a deep approach learning environment (as supported by paragraph 2.2.5.2). The following recommendations are made:

#### 5.3.4.1.1 In-service training for lecturers

Lecturers should start integrating technology into their teaching. Supported by Stanford & Reeves (2007:135), lecturers should take small steps in developing the ability to use technology and then move from using no technology at all to building PowerPoint presentations on the highlights of content and finally display these in their classes with an LCD projector.

Effective use of PowerPoint requires skillful manipulation rather than a casual approach, therefore it is essential that attention be paid to every detail when designing an understandable and appropriate presentation. According to Apperson, Laws and Scepanisky (2006:125), students prefer the use of graphic presentations especially PowerPoint and that it is worth the financial, personnel and time resources to train faculty and equip classrooms with projection equipment and software.

#### 5.3.4.1.2 Preparation of PowerPoint lessons or video clips

Font style, size, layout, backgrounds and colour must be chosen carefully with the subject matter, audience, and legibility, as well as readability in mind. Graphics provide interest and visual appeal; therefore learn to use the format picture feature that offers size, colour, position, and resolution adjustments of graphics. Empirical evidence in Apperson et al. (2008:149,152) support specifications of suggested graphics that is preferred by students and academics who are experienced in the use of PowerPoint presentations.

Never view your presentation on screen for the first time at the venue because errors on the slides should be fixed. Students enjoy PowerPoint when lecturers are effective in maintaining student interest, presented material is organised and clear, and content is summarised in a way that enhance content retention (Apperson et al., 2008:149 and Apperson et al., 2006:124). Therefore, avoid placing too much text on slides and too close to any slide margin.

As soon as the lecturer arrives at the venue, the laptop should always be tested for the connection or disk or flash drive to make sure that the specific file as required will appear when it is projected.

Whenever possible go ahead of time to the teaching venue and make sure that the microphone and all other electronics are in working order. Ultimately students will always observe the lecturers ability before observing the ability of IT support staff.

#### 5.3.4.1.3 During PowerPoint presentation

Do not move too quickly from one slide to the other, because students find this distracting, consequently they lose concentration and are left confused in the end (Table 4.27). Take cognisance of the diverse learning needs of students and be accommodative. Use PowerPoint lectures as interactive tools and involve students during presentation to prevent them from losing focus of content.

According to Clark (2008:42), student comments of their experience show that a preoccupation with movement, change, difference and variety is a reason why students' interest is maintained and their attention held during PowerPoint presentations.

Observe the audience and be guided by their interaction with the content on the slides. Clark (2008:43), states that the lecturer is responsible for encouraging the interest of students by remaining student-focused, rather than presenter-focused and that the success of the class is equated to the lecturer's ability to use PowerPoint as a teaching tool. Lecturers should encourage the students to engage in technology in their search for information. Apperson et al. (2006:124), support the demonstration of technological abilities. The introduction of electronic learning (e-learning) should be implemented as a matter of urgency, as supported by Magerman (2011:90).

#### 5.3.5 Blended approach to teaching

A blended approach i.e. a mixed teaching method approach is strongly recommended to keep students on a high level of deep thinking, preventing a drop in concentration and boredom. Results in this study have indicated the various positive and negative contributions that participants perceived of the various teaching methods used at the college. Thus, to circumvent the negative aspects as shown in the results the blended approach is recommended. However, the availability, familiarity, or sheer preference should not dictate the use of educational technologies, rather the course material (i.e., type of information) and objectives should influence the use of educational technology to develop a learning environment that fosters increased student performance and attitude (Savoy, Proctor and Salvendy, 2009:866). Brown et al. (2008:283), support and state that the non-traditional pedagogies result in a learning climate that is more cooperative and egalitarian.

Banning (2005:504), states that to achieve comprehensive learning skills in students, a compilation of learning materials and academic support, especially when students are neophytes in the discipline are required. Lecturers should apply the most effective teaching

strategy. This is supported by findings in a study by Leufer (2007:325), where students advocate that lecturers alternate their style of delivery in order to maximise levels of class interaction.

Den Beste (2003:491), states that she can enhance any old history lecture such as world war II, Winston Churchill and even the Russian Revolution, if her classroom is equipped with an internet connection and wireless technology. She states that the time issue is one of the major downsides to incorporate technology into one's classroom (Den Beste, 2003:501).

There is no one teaching method that is optimal for all content and contexts and therefore, the blind use of a particular presentation type for all course material is not advised. If a photo or video is relevant and useful to a discussion, then it should be deemed the best option and be used (Orlander, 2007:90).

Furthermore, there is also no benefit to be derived from limiting the presentation to a single format (Tang & Austin, 2009:1252 and Orlander, 2007:90). A good match between materials and technology leads to students learning, their satisfaction and good teaching evaluations (Savoy, Proctor and Salvendy, 2009:866; Tang & Austin, 2009:1252 and Giddens, 2007: 82).

### **5.3.6 The teaching environment**

As lecturers, in classrooms and in the clinical field, they need to know how their performance reflects in the school at large, achieves curriculum goals, influences students and makes a difference in the quality of graduates they produce (Polifroni, 2008:95). Administrators need to know whether students are satisfied, the integrity of the curriculum is maintained, the faculty members have the resources they need and the outcome of the curriculum is in accordance with its design (Polifroni, 2008:96).

Professors in a study indicated that becoming static and bored is not one of their goals because they understood the importance of keeping their teaching methods current to enable them to be on the cutting edge of teaching (Rosetti & Fox, 2009:15).

The use of students' evaluations could be a valuable method of introducing the transformation of teaching methods and course design in nursing education, as supported by Magerman (2011:89) and Hessler and Humphreys (2008:187).

#### *5.3.6.1 Academic staff*

Students in a study by Kassab, A-Shboul, Abu-Hejeh and Hamdy (2006:463), perceive effective lecturers as those who are able to establish a good rapport (52.38%) with students, provides academic help (25.40%) for students and who has good content

knowledge related to the problems at hand (22.22%). Conclusively these students rated effective teaching not just on their preference and specific teaching styles, but also on the personal attributes and content knowledge of the lecturers (Kassab et al., 2006:463). The informal tone of humor is an important contributor to the learning climate and is characterised as a relaxed and familiar teaching atmosphere (Chauvet & Hofmeyer, 2007:289). To create this environment that is conducive to learning the following recommendations are made:

Teaching methods should move from being teacher-centered and become learner-centered as discussed in paragraph 2.2.6.2. Lecturers should use teaching methods that are stimulating and interactive, and more creative, which will draw students to participating more during class time. Make use of more real examples that would enable students to integrate and consolidate content into reality.

Lecturers should be “present” during teaching to be able to observe students’ engagement with content (paragraph 4.5.3.1).

The institution should recruit academic staff, who are field experts, who not only possess a high level of content knowledge, but who are able to educate students in a 21<sup>st</sup> century teaching environment. Academic staff should have the drive and energy to change and conform to new approaches in teaching and learning (paragraph 5.3.6.2).

#### *5.3.6.2 Re-training of academic staff*

A transformation in nursing education is required for the desired change in the approach to teaching to meet the challenges of the millennial learners. It has become essential that lecturers are trained and equipped in current trends in teaching to enable them to achieve effective instruction. The 21<sup>st</sup> century is a new world dominated with astronomical advancement in technology. Brown et al. (2008:283), furthermore state that the information age of computers has challenged all facets of education to keep the pace. The students that fill the classrooms today challenge the learning environment and conversely would also like to be challenged, otherwise they easily become bored. It is therefore imperative to change the teaching perspectives of the academic staff.

Academic staff need a paradigm shift from a teacher-centered classroom environment to a learner-centered one. Based on the findings of this study lecturers should undergo training at facilitated workshops on IT facilitated classrooms and be exposed to regular updates in IT. Technology currently in use worldwide includes the use of i-pods, web-based learning, webct, interactive whiteboard and cell phones. Millennials (paragraph 2.2.1.2) mostly use the internet for search of current up to date information; they sit in wireless environments that link them to the broader body of knowledge on cyberspace. Such rapid access to

information enables students not just to challenge the knowledge of the teaching body, but also the teaching environment. Therefore, it is strongly recommended that academic staff be re-trained to align them with the current challenges in education and to be prepared for the most effective teaching methods that challenge the millennial.

#### *5.3.6.3 Counteracting a boring classroom environment*

To counteract a boring teaching environment is to present students with the core of the lecture content, initiate debate and allow students to continue the debate and discussions in groups away from the classroom. Students will develop a deeper understanding about the specific content, once they have had time to work through the content in group work and SDL, peer reviewed assessment should follow in the classroom when groups present their discussions in the classroom at a later stage.

#### *5.3.6.4 Orientation for neophyte academics*

An orientation workshop for new lecturers is recommended to introduce them to current teaching methods and techniques, suitable to higher education environment and to prepare them for possible challenges that are commonly encountered. Continuous professional development in education which includes regular refresher courses and how to teach in a modern, higher education environment are critical to remain on par in a rapidly changing teaching environment as supported by Kember et al. (2009:44).

#### *5.3.6.5 Orientation of students*

One of the reasons why adult learners engage in learning is generally to be equipped for life's tasks (Bruce et al., 2011:100). Orientation is thus the unique time to emphasise the value of applications of study content to real-life situations, by moving from the known to the unknown, and by making students aware of their knowledge gaps by cultivating the right attitude towards the learning environment, to identify learning resources and to find strategies for using these resources in order to achieve the learning objectives.

Results in this study show that the majority (n = 227/85%) participants are millennials (Table 4.1) who have a confirmed high technology profile (Figure 4.3), are in physical contact with family that owns technology (Figure 4.4), can use a computer without assistance (n = 196/73%) and have used the internet to assist them with their studies (n = 182/68%) (Table 4.1, Figure 4.5 and Figure 4.6). Therefore, students enrolled in nursing programs at this college came prepared for a technologically infused learning environment. Placing such technological infused students back into old traditional ways, leaves them uninspired and uninterested in academic content.

During the orientation process students should be exposed to an environment that is different to their high school educational environments that they come from. Findings in this research has proven that students were mostly taught with greenboard and whiteboards (n

= 232/87%), followed by group work (n = 184/69%) and self-activity (n = 176/66%) during their primary and high school education (Figure 4.7). These teaching methods are still dominantly used at the nursing college under study. It is merely an extension of high school. Therefore, it should come as no surprise that students find the traditional teaching methods boring, ancient looking and uninteresting (paragraph 5.3.1.1).

To break the vicious cycle of perpetuating high school practices in always wanting to be on the receiving end such as wanting lecture notes during lecture presentation and traditional styles a change in the mind set of students is required. An orientation of the students to higher education including the nursing programme is imperative. In addition, it is recommended that an IT enriched environment be part of the orientation package for nursing students. When students enter the professional students' fraternity they should experience a paradigm shift away from their previous educational exposure to the realities of a student's life in HEI in the 21st century. In the teaching environment today HEI students should be nurtured in a 21st century teaching environment (Figure 2.4), guided by the conceptual framework that underpins the current study. Despite that group work and self-activity were shown to be their least liked teaching methods, these methods are the dominant teaching methods of HEI, which students already have the baseline knowledge of (Figure 4.7). In HEI self-activity dominates and therefore, the negative mentality that participants in the study displayed about SDL will have to be transformed.

It is recommended that the change in the students' perception of teaching methods not only be an orientation strategy but that it will be actively implemented at all levels of training (from 1<sup>st</sup> year through to 4<sup>th</sup> year) in the college under study as a future HEI. Students should be challenged to rise above their own perceived learning strategies and become deep holistic learners who become higher-order thinkers, in a learner-centered teaching environment.

Students need to be aligned with HEI students, not just socially but more so intellectually.

#### 5.3.6.6 *Workload perception of students*

The student perception of workload is discussed in paragraph 4.5.3.5 .Therefore, it is recommended that:

1. The orientation as recommended for students (paragraph 5.3.6.5) should include the change from a high school approach to HEI approach which should emphasise the change in content of the curriculum. This should not frighten students away but be an awareness of the change to come. They should be reassured that guidance will be given with regard to the content of the curriculum. They will be given guidance about what is critical to know, to be skilled and competent and to ensure



safe patient practice, whilst there is content that is good to know about but not essential for examination purposes.

2. Study guides should be designed with clear learner outcomes to ensure that students do not feel overwhelmed by content.

#### 5.3.6.7 *Class size*

In light of nursing throughput and output the reality is that class sizes will not be decreasing. Therefore, the academic lecturers of today should think “out of the box” to ease their academic load. The following recommendations are therefore made in this regard:

1. Implement teaching methods that are most effective for larger classes such as technology assisted teaching, group work and self-directed learning.
2. Large amounts of the content of the curriculum should be facilitated in group and individual self-activities. Lecturers should oversee the interpretation of content amongst students and provide students with guidelines to enhance success both in self and group activities.
3. Assessment remains a challenge when teaching large numbers of students which could be made easier with electronic assessment. Various options are available in assessing students electronically which include the actual marking of activities by computers. Examples of electronic assessment include quizzes, short answers and assignments. The use of software such as TURNIT to scan assignments for plagiarism is a useful measurement which could assist the academic lecturer and student about the percentage of plagiarism in an assignment.
4. Live group presentations and panel discussions with peer group assessment could be introduced for all group activities. Marks could be allocated with the use of an assessment instrument which may add to the continuous assessment mark. Lecturers should follow through with group work and self-directed learning strategies as this has proven to be effective for large content as well as large class sizes as discussed and supported by literature in paragraph 4.5.3.5 and paragraph 4.5.3.6.
5. Academic staff should be restructured more effectively and efficiently, to enable the human resource of the institution to match the student capacity in classrooms.

## 5.4 FURTHER RESEARCH

Further research is recommended with regards to the following:

- The lecturers’ perspective of the perceived effectiveness of their teaching methods.
- What are the perceived barriers to implementing IT enriched class rooms?
- This study should be seen as a pilot or forerunner to a research study on a wider scale.



## 5.5 LIMITATIONS OF THIS STUDY

The study was only conducted in one college of approximately a 1000 students despite the fact that it is a large college it may limit generalizing results to other institutions. Furthermore, it would have been of value if the target group included the lecturers as well to have compared their views with that of the students.

## 5.6 CONCLUSION

The results from this study have highlighted many changes required that have been predictable since the dawn of the 21<sup>st</sup> century. Research findings are evident of the type of teaching environment for the 21<sup>st</sup> century classroom. Much unhappiness expressed by the participants about teaching methods stems from the differences in the needs of millennials and lack of change and obstinacy existing in the academic fraternity.

In order to educate the students of today, academics will have to admit to the inevitable and change, or face an already short staffed institution as not only are fewer students attracted to such institutions but an increase in the loss of valuable academics also results.

Students in the classrooms of today are different and a different approach is needed to satisfy these knowledge-lacking eager minds. Teaching methods should be student-centered and no longer teacher-centered. Academic staff should take nursing students on a training journey that will enable them to apply a deep holistic approach to learning. Students should be developed to change from lower order thinkers to become higher order thinkers. With the help of Bloom's Digital Taxonomy (Figure 2.3), Bloom's Revised Taxonomy (Figure 2.2) and the conceptual framework (Figure 2.4) the college under study should actively embark on the highway to change.

A complete transformation of the college under study is therefore required which not only includes students and academics but the management and administrative staff as well. The challenges of today forces education institutions to move out of an environment of complacency to a much more vigorous and dynamic education environment in order to bring about the change required and to emerge as an HEI of good standing. The worse scenario is that should nursing institutions continue to exist in their current form it will bring about the demise for that particular college which may have a detrimental effect on the nursing profession already faced with global challenges almost insurmountable for the South African public.

## REFERENCES

- Arhin, A. O. & Johnson-Mallard, V.2003. Encouraging alternative forms of self expression in the generation Y student: A strategy for effective learning in the classroom. *The ABNF Journal*, 121–122, November / December
- Arthurs, J.B.2007. A juggling act in the classroom: Managing different learning styles. *Teaching and Learning in Nursing*, 2:2–7.
- Asmal, K.2002. Restructuring of Higher Education Systems in South Africa, 31 January 2002:1-80. [Online].  
Available:<http://www.info.gov.za/view/DownloadFileAction?id=70286> [2010, May 21].
- Apperson, J.M., Laws, E.L. & Scepansky, J.A.2006. The impact of presentation graphics on students' experience in the classroom. *Computers & Education*. 47:116-126.
- Apperson, J.M., Laws, E.L. & Scepansky, J.A.2008. An assessment of student preferences for PowerPoint presentation structure in undergraduate courses. *Computers & Education*. 50:148-153.
- Babbie, E. & Mouton, J.2002. *The practice of social research*. Cape Town, Oxford University Press.
- Badenhorst, Z. & Axmann, M.2002. The educational use of videoconferencing in arts faculty: shedding a new light on puppetry. *British Journal of Educational Technology*, 33(3) 291-299.
- Baskin, C., Barker, M. & Woods, P.2005. When group work leaves the classroom does group skills development also go out the window? *British Journal of Educational Technology*, 36(1):19-31.
- Banning, M.2005. Approaches to teaching: Current opinions and related research. *Nurse Education Today*, 25:502-508.
- Becta .2007.A briefing for Policy Makers, Becta, Coventry. [Online]. Available: [http://www2.warwick.ac.uk/fac/soc/wie/research/centre/centre\\_projects/current\\_projects/eng/summary\\_lit\\_review.docx](http://www2.warwick.ac.uk/fac/soc/wie/research/centre/centre_projects/current_projects/eng/summary_lit_review.docx) [2010, July 24].
- Biggs, J.B.2003.*Teaching for quality learning at University*. 2<sup>nd</sup> Edition. Berkshire: The Society for Research into Higher Education & Open University Press.
- Billings, D.M. & Halstead, J.A.2005. *Teaching in Nursing: A guide for Faculty*, 2<sup>nd</sup> Edition. St. Louis: Elsevier.

- Billings, D.M. & Halstead, J.A.2009. *Teaching in Nursing. A guide for Faculty*. 3<sup>rd</sup> Edition. St Louis: Saunders Elsevier.
- Brady, M.S. & Sherrod. D.R. 2003. Retaining men in nursing programs designed for women. *Journal of Education*, 42(4):159-162.
- Brink, H. 2008. *Fundamentals of Research Methodology for Health Care Professionals*, 2nd Edition. Cape Town: Juta.
- Brown, S.T., Kirkpatrick, M.K., Mangum, D. & Avery, J.2008. A review of narrative pedagogy strategies to transform traditional nursing education. *Journal of Nursing Education*, 47(6):283–286.
- Bruce, J.C., Klopper, H.C. & Mellish, J.M.2011. *Teaching and Learning the Practice of Nursing*. 5<sup>th</sup> Edition. Cape Town: Heinemann.
- Black, C.D. & Watties-Daniels, A.D.2006. Cutting edge technology to enhance nursing classroom instruction at Coppin State University. *The ABNF Journal*, 103–106, Summer.
- Boe, E. E., Shin, S. & Cook, L.H.2007. Does teacher preparation matter for the beginning teachers in either special or general education? *The Journal of Special Education*, 41(3):158-170.
- Boughton, M. A., Halliday, L.E. & Brown.2010. A tailored program of support for culturally and linguistically diverse (CALD) nursing students in a graduate entry Master of Nursing course: A qualitative evaluation of outcomes, *Nurse Education in Practice*, 1–6.
- Burns, N. & Grove, S.K. 2003. *Understanding nursing research*. 3<sup>rd</sup> Edition. United States of America: Saunders.
- Burns, N. & Grove, S.K. 2007. *Understanding nursing research. building an evidence-based practice*. 4<sup>th</sup> Edition. St Louis: Saunders Elsevier.
- Burns, N. & Grove, S.K. 2009. *The practice of nursing research: appraisal, synthesis and generation of evidence*. 6<sup>th</sup> Edition. St Louis: Saunders.
- Buzetto-More, N.A.2008. Student perceptions of various e-learning components. *Interdisciplinary Journal of E-Learning and Learning Objects*, 4:113–135.
- Byrd, D.2005. Sixteen whiteboards capture student's attention. *Media & Methods*, 11-12, January/February
- Carlson, E., Wann-Hansson, C. & Pilhammar, E.2009. Teaching during clinical practice: strategies and techniques used by preceptors in nursing education. *Nurse Education Today*, 29:522–526.

- Case, J & Marshall, D.2004. Between deep and surface: procedural approaches to learning in engineering education contexts. *Studies of Higher Education*, 29(5):605-615.
- Chang, Y.2005. The use of PowerPoint as a learning aid for international students. United States of America: Indiana University South Bend. (Research Report-Master of Education).
- ChanLin, L., Hong, J., Horng, J., Chang, S. & Chu, H.2006. Factors influencing technology integration in teaching: a Taiwanese perspective. *Innovations in Education and Teaching International*, 43(1):57–68.
- Chauvet, S. & Hofmeyer, A.2007. Humor as a facilitative style in problem-based learning environments for nursing students. *Nurse Education Today*, 27:286-292.
- Cheng, Y.C. & Ku, H.Y.2008. An investigation of the effects of reciprocal peer tutoring, *Computers in Human Behaviour*. ,1-10, doi:10,1016/j.chb.2008.06.001
- Churches, A.2008. Educational Origami, Bloom's and ICT Tools. [Online]. Available:<http://edorigami.wikispaces.com/Bloom%27s+and+ICT+tools>[2011, July 9].
- Clarke, J.2008. PowerPoint and pedagogy: Maintaining student interest in university lectures. *College Teaching*, 56(1):39-45.
- Clarke, J.2010. Student centred teaching methods in a Chinese setting. *Nurse Education Today*, 30:15–19.
- Clapper, T.C.2010. Beyond Knowles: What those conducting simulation need to know about adult learning theory. *Clinical Simulation in Nursing*, (6):e7–e14.
- Conceiçã, S.C.O. & Taylor, L.D.2007. Using a constructivist approach with online concept maps: relationship between theory and nursing education. *Nursing Education Perspectives*. 28(5):268–275.
- Cope, C.2003. A framework for using learning technologies in higher education to enhance the quality of students' learning outcomes. *Interact, Integrate, Impact: Proceedings of the 20<sup>th</sup> Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education*. Adelaide, 7-10 December 2003:134–141.
- Costa, M.L., Van Rensburg, L. & Rushton, N.2007. Does teaching style matter? a randomised trial of group discussion versus lectures in orthopaedic undergraduate teaching. *Medical Education*, 41:214–217.
- Cooper, C., Taft, L.B. & Thelen, M.2004. Examining the role of technology in learning: an evaluation of online clinical conferencing. *Journal of Professional Nursing*, 20(3):160-166, May-June

- Creswell, J.W.2009. *Research Design: qualitative, quantitative, and mixed methods approaches*. 3<sup>rd</sup> Edition. Los Angeles: Sage.
- Cuellar, N.2002. The transition from classroom to online teaching. *Pro Quest Medical Library*, 37(3):5–13.
- Den Beste. M.2003. Power Point, technology and the Web: more than just an overhead projector for the New Century? *The History Teacher*, 36(4):491–504.
- Department of Health.2008 Nursing Strategy for South Africa 2008. Pretoria: Government Printers. [Online]. Available: [http://www.doh.gov.za/docs/nursing\\_strategy-f.html](http://www.doh.gov.za/docs/nursing_strategy-f.html)[2010, June 28].
- Department of Health.2010 Provincial Nursing Strategy for 2010. [Online]. Available:[http://www.capegateway.gov.za/other/2010/5/nursing\\_strat\\_intranet.pdf](http://www.capegateway.gov.za/other/2010/5/nursing_strat_intranet.pdf)[2010, June 28].
- Department of Health. Provincial Government Western Cape.2010. Directorate Human Resource Development. Cape Town: Provincial Government Western Cape.
- Department of Health and Social Services.1996. Re-organisation of Nursing Colleges: Creation of the Western Cape College of Nursing. Letter Reference H4/0/20.
- De Vos, A.S., Strydom, H., Fouche, C.B. & Delpont, C.S.L.2007. *Research at grass roots. for the social sciences and human service professions*. 3<sup>rd</sup> Edition. Pretoria, Van Schaik Publishers.
- Diseth, A.2007. Students' evaluation of teaching approaches to learning, and academic achievement. *Scandinavian Journal of Educational Research*, 51 (2):185-204.
- Diseth, A. & Martinsen, O.2003. Approaches to learning, cognitive style, and motives as predictors of academic achievement. *Educational Psychology*, 23 (2):195-207.
- Distler, J.W.2007. Critical thinking and clinical competence: results of the implementation of student-centered teaching strategies in an advanced practice nurse curriculum. *Nurse Education in Practice*, 7:53-59.
- Dyck, J. M., Oliffe, J., Phinney, A. & Garrett, B.2009. Nursing instructors' and male nursing students' perceptions of undergraduate, classroom nursing education. *Nurse Education Today*. 29:649-653.
- Entwistle, N., McCune, V. & Hounsell, J.2002. Approaches to studying and perceptions of university teaching-learning environments: concepts, measures and preliminary findings. *Enhancing Teaching-Learning Environments in Undergraduate Courses*, (1):1- 19.

- Entwistle, N.2008 Approaches to learning and levels of understanding influences and responsibilities. [Online]. Available: <http://www.ed.ac.uk/etl> [2011, April 1].
- Eteokleous, N.2008. Evaluating computer technology integration in a centralized school system. *Computers & Education*, 51:669-686.
- Evans, C.J., Kirby, J.R & Fabrigar, L.R.2003. Approaches to learning, need for cognition, and strategic flexibility amongst university students. *British Journal of Educational Psychology*, 73:507-528.
- Field, M., Burke, J.M. Mc Allister, D. & Lloyd, D.2007. Peer-assisted learning: a novel approach to clinical skills learning for medical students. *Medical Education*, 41:411-418.
- Frey, B.A. & Birnbaum, D.J.2002. Learners' perceptions on the value of PowerPoint in lectures. United States of America: University of Pittsburgh (Research report - ERIC Document Reproduction Service No. ED467192).
- Forehand, M.2005 .Bloom's taxonomy: Original and revised. In M. Orey (Edition), Emerging perspectives on learning, teaching, and technology. [Online]. Available:[http://projects.coe.uga.edu/epltt/index.php?title=Bloom%27s\\_Taxonomy](http://projects.coe.uga.edu/epltt/index.php?title=Bloom%27s_Taxonomy)[2011, July 9].
- Garde, S., Heid, J., Haag, M., Bauch, M., Weires, T.& Leven, F.J .2007. Can design principles of traditional learning theories be fulfilled by computer-based training systems in medicine: The example of CAMPUS. *International Journal of Medical Informatics*. 76:142-129.
- Georgina, D.A. & Olson, M. R.2008. Integration of technology in higher education; a review of faculty self-perception. *The Internet and Higher Education*, 11:1-8.
- Giddens, J. F.2007. Achieving diversity in nursing through multicontextual learning environments. *Nursing Outlook*, 56(2):78-83.
- Gijbels, D., Segers, M & Struyf, E.2008. Constructivist learning environments and the (im)possibility of changing students' perceptions of assessments demands and approaches to learning. *Instructional Science*, 36:431–443.
- Goldsmith, M., Stewart, L. & Ferguson, L.2006. Peer learning partnership: an innovative strategy to enhance skill acquisition in nursing students. *Nursing Education Today*, 26:123-130.
- Guhde, J.A.2003. English-as-second language (ESL) nursing students: strategies for building verbal and written skills. *Journal of Cultural Diversity*, 10(4):113–117.

- Haggis, T.2003. Constructing images of ourselves? a critical investigation into 'approaches to learning' research in higher education. *British Educational Research Journal*. 29(1):89-104.
- Hall, M., Ramsay, A. & Raven, J.2004. Changing the learning environment to promote deep learning approaches in first –year accounting students. *Accounting Education*, 13(4):489–505.
- Health Western Cape.2003. Health Care 2010: *Health Western Cape's plan fro ensuring equal access to quality health care*. Department of Health, Western Cape: Cape Town. [Online]. Available:[http://www.capegateway.gov.za/Text/2005/7/healthcare\\_2010\\_full.doc.pdf](http://www.capegateway.gov.za/Text/2005/7/healthcare_2010_full.doc.pdf) [2008, October 13].
- Herington, C. & Weaven, S.2008. Action research and reflection on student approaches to learning in large first year university classes. *The Australian Educational Researcher*, 45(3):111–134.
- Hessler, K. & Humphreys, J.2008.Students evaluations: advice for novice faculty. *Journal of Nursing Education*, 47(4):187-189.
- Hofsten, A., Gustafsson, C. & Häggström, E.2010. Case seminars open doors to deeper understanding – nursing students' experiences of learning. *Nurse Education Today*, 30:533-536.
- Hoke, J. L.2006. Promoting nursing as a career choice. *Nursing Economics*. 24(2):94-101.
- Jansen B.J., Booth, D. & Smith, B.2009. Using the taxonomy of cognitive learning to model online searching. *Information Processing and Management*. 45:643-663.
- Jeffries, P., Rew, S. & Cramer, J. M.2002. A comparison of student-centered versus traditional methods of teaching basic nursing skills in a learning laboratory. *Nursing Education Perspectives*, 23(1):14-19.
- Johnson, C.2009. Learning telecollaboratively. [Online]. Available: <http://clifmims.wetpaint.com/page/Blooms+Revised>[2011, July 9].
- Juniu, S.2006. Use of technology for constructivist learning in performance assessment class. *Measurement in physical education and exercise science*, 10(1)67-79.
- Kassab, S., A-Shboul, Q., Abu-Hejeh, M. & Hamdy, H.2006. Teaching styles of tutors in a problem-based curriculum: students' and tutors' perception. *Medical Teacher*, 28(5):460-464.
- Karemera, D., Reuben, L.J. & Sillah M.R.2003. The effects of academic environment and background characteristics on student satisfaction and performance: the case of



- South Carolina State University's School of Business. *College Students Journal*, 1(2):298-308.
- Kember, D.2004. Interpreting student workload and the factors which shape students' perceptions of their workload. *Studies in Higher Education*. 29(2):165–184.
- Kember, D. & Leung, D.Y.P.2006. Characterising a teaching and learning environment conducive to making demands on students while not making their workload excessive. *Studies in Higher Education*, 31(2):185-198.
- Kember, D., Leung, D.Y.P. & McNaught, C.2009. A workshop activity to demonstrate that approaches to learning are influenced by the teaching and learning environment. *Active Learning in Higher Education*, 9 (1):43–56.
- Kiger, A. M.2004. *Teaching for health*. 3<sup>rd</sup> Edition. Philadelphia: Elsevier.
- Klemm, W.R.2007. Computer slide shows. a trap for bad teaching. *College Teaching*, 55(3):121-124.
- Koerber, K.L.2009. Using self-study modules to improve wound care documentation by the staff nurse. *Journal for nurses in Staff development*, 25 (4):E1-E4.
- Kohler, P.2006. How to get wet without plunging in: creative ways to start class. *The Teaching Professor*, January, 4-5.
- Leahy, S., Lyon, C., Thompson, M. & William, D.2005. Classroom assessment. minute by minute, day by day. *Educational Leadership*, November,19–24.
- Lessen, E. & Sorensen, C.2006. Integrating technology in schools, colleges, and departments of education. *Pro Quest Education Journals*, 38(2):44–49.
- Leufer, T.2007. Students' perceptions of learning experience in a large class environment. *Nursing Education Perspectives*, 28(6):322-326.
- Levett-Jones, T.L.2005. Self-directed learning: implications and limitations for undergraduate nursing education. *Nurse Education Today*, 25:363-368.
- Liles, B.2004. Technology showcase. electronic white boards. presentation tools that change everything. *Primedia Business Magazines & Media*, 76-81, March.
- Lindahl, B., Dagborn, K. & Nilsson, M.2009. A student-centered clinical educational unit – description of a reflective learning model. *Nurse Education in Practice*, 9: 5-12.
- Livingston, K. & Condie, R.2005. The impact of an online learning program on teaching and learning strategies. *Theory into practice*, 45(2):150-158.



- Löfström, E. & Nevgi, A.2007. From strategic planning to meaningful learning: diverse perspectives on the development of web-based teaching and learning in higher education. *British Journal of Education*, 38(2):312–324.
- Magerman, Y. N. 2011. Academic factors affecting learning at a nursing college in the Western Cape. Cape Town: Stellenbosch University. (Research Thesis-M-Cur.)
- Magno, C.2009. Self-regulations and approaches to learning in English composition writing. *TESOL Journal*, (1):1-16, December
- Marsh, B., Marais, D., Van der Waldt, S., Van Deventer, I., Steyn, M. & Labadarios, D.2006. Assessment of the quality in distance learning programmes utilizing the internet or interactive television: perceptions of students and lecturers. *Medical Teacher*, 28(1):e1-e9.
- Matutina, R.E., Newman, S.D. & Jenkins, C.M.2010. Measurement of students' perceptions of nursing as career. *Journal of Nursing Scholarship*, 42(3):319-329.
- McGrath, D. & Higgins, A.2006. Implementing and evaluating reflective practice group sessions. *Nurse Education in Practice*, (6):175-181.
- McLaughlin, B.N.2007. Teaching tips: English as second language students – how can we help them to be successful in associate degree nursing education, *Teaching and Learning in Nursing*, 2:58–59.
- McLaughlin, K., Muldoon, O. T. & Moutray, M.2010. Gender, gender roles and completion of nursing education: A longitudinal study. *Nurse Education Today*, 30:303-307.
- McLeod, G.2003. Learning theory and instructional design. *Learning Matters*. (2):35-43, Fall
- McMahon, J.D.2003. Teaching /learning philosophies. [Online]. Available:<http://OI/AMchonOther12.19.02/alltrainingmaterials1.24.03/studentrole.html> [2010, May 25].
- Meadus, R.J. & Twomey, J.2007.Men in nursing: making the right choice. *The Canadian Nurse*, 103(2):13-16.
- Merrill, E.B., Reinckens, T., Yarborough, M. & Robinson, V.I.2006. Retaining and assisting nontraditional nursing students in a baccalaureate nursing program utilizing blackboard & tegrity technologies. *The ABNF Journal*, 107-110, Summer.
- Mellish, J.M., Brink, H.I.L. & Paton, F.2001. *Teaching and learning the practice of nursing*. 4<sup>th</sup> Edition. Sandton: Heinemann Higher and Further Education Ltd.
- Meyer, S.M. & Van Niekerk, S.E.2008. *Professional nurse educator in practice*. Cape Town: Juta.

- Mikol, C.2004. Teaching nursing without lecturing. Critical pedagogy as communicative dialogue. *Nursing Education Perspective*, 26(2):86-89.
- Miles, M. & Huberman, A.M.2003. *Qualitative data analysis*. London: Sage Publication.
- Milliken, J. & Barnes, L.P.2002. Teaching and technology in higher education: student perceptions and personal reflections. *Computers & Education*. 39:223-235.
- Ministry of Education.2002. *Language policy for higher education*. Language policy 5 November 2002.doc. [Online]. Available:  
[http://education.pwv.gov.za/DoEsites/Higher Education/revised \[2011, March 31\]](http://education.pwv.gov.za/DoEsites/Higher Education/revised [2011, March 31]).
- Mooney, M., Glacken, M. & O'Brien, F.2008. Choosing nursing as a career: a qualitative study. *Nursing Education Today*. 28.:385-392.
- Mouton, J.2008. *How to succeed in your Masters' and Doctoral Studies*. Pretoria, Van Schaik Publishers.
- Muir-Herzig, R.G.2004. Technology and its impact in the classroom. *Computers & Education*. 42:111-131.
- Nelson, R., Meyers, L., Rizzolo, M. & Rutar, P.2006. The evolution of educational information systems and nurse faculty roles. *Pro Quest Medical Library*, 27(5):247-253.
- Neo (Ken), T. & Neo, M.2004. Classroom innovation: engaging students in interactive multimedia learning. *Campus-Wide Information Systems*. 21(3):118–124.
- Neuman, W.L.2006. *Social research methods*. qualitative and quantitative approaches. 6<sup>th</sup> Edition. Boston: Pearson International.
- Newby, T.J., Stepich, D.R., Lehman, J.D. & Russell, J.D.2000. *Instructional technology for Teaching and Learning. Designing Instruction, Integrating Computers and Using Media*. New York: Prentice Hall.
- Noble, K. A., Miller, S.M & Heckman, J.2008. The cognitive style of nursing students: educational implications for teaching and learning. *Journal of Education*, 47(6):245-253).
- O'Brien, F., Keogh, B. & Neenan, K.2009. Mature students' experiences of undergraduate nurse education programmes: The Irish experience. *Nurse Education Today*, 29:635-640.
- Oblinger, D. 2003. Boomers & Gen-Xers Millennials. Understanding the new students. *Educause Review*, 37-45, July/August

- O'Lynn, C. E. 2004. Gender-based barriers for male students in nursing education programs: prevalence and perceived importance. *Journal of Education*, 43(5):229-236.
- Orlander, J.D. 2007. Twelve tips for use of a white board in clinical teaching: reviving the chalk talk. *Medical Teacher*, 29:89-92.
- Oxford Dictionary of Current English. 2001. 3<sup>rd</sup> Edition. New York: Oxford University Press.
- Oz, H.H. 2005. Synchronous distance interactive classroom conferencing. *Teaching and Learning in Medicine*, 17(3):269-273.
- Padalino, Y. & Peres, H. H. C. 2007. E-learning: a comparative study for knowledge apprehension among nurses. *Rev Latino – am Enfermagem. Artigo Original*, 15(3):397–403.
- Papastergiou, M. 2008. Are computer science and information technology still masculine fields? high school students' perceptions and career choices. *Computers & Education*, 51:594-608.
- Patterson, B., Kilpatrick, J. & Woebkenberg, E. 2009. Evidence for teaching practice: the impact of clickers in a large classroom environment. *Nurse Education Today*, 1-5, doi:10.1016/j.nedt.2009.12.008.
- Paurelle, S. 2003. E-learning and constructivism. Learning and Teaching Enhancement Unit (LTEU). Canterbury Christ Church University College. *Briefing paper*. Revision 1.
- Peluchette, J. V. & Rust, K. A. 2005. Technology use in the classroom: preferences of management faculty members. *Journal of Education for Business*. March-April, 200-205.
- Polifroni, E.C. 2008. Evaluating teaching strategies: a blended perspective. *Journal of Education*, 47(3):95-97.
- Polit, D.F. & Beck, C. T. 2008. *Nursing research. generating and assessing evidence for nursing practice*. 8<sup>th</sup> Edition. Philadelphia: Lippincott Williams & Wilkins.
- Prichard, J S., Bizo, L A. & Stratford, R.J. 2006. The educational impact of team-skills training: preparing students to work in groups. *British Journal of Educational Psychology*, 76:119-140.
- Quinn, F.M. 2001. *Principles and Practice of Nurse Education*. 4<sup>th</sup> Edition. United Kingdom, Nelson Thornes Ltd.
- Ramsden, P. 2003. *Learning to teach in higher education*. 2<sup>nd</sup> Edition. London: Routledge Falmer.

- Reime, M. H., Harris, A., Aksnes, J. & Mikkelsen, J. 2008. The most successful method in teaching nursing students infection control - e-learning or lecture? *Nurse Education Today*, 28:798-806.
- Richards, L.E.2007. Perceptions of registered nurses with regard to continuing formal education.). South Africa: University of South Africa. (Research Report No. ETD. 01292008-133544).
- Richard, P. L., Mercer, Z. B. & Bray, C. O.2005. Transitioning a classroom-based rn-bsn program to the web. *Nurse Educator*, 30(5):208–210.
- Riley, W. & Anderson, P.2006. Randomized study on the impact of cooperative learning in distance education in public health. *The Quarterly Review of Distance Education*, 7(2):129–144.
- Rodgers, C.R. & Raider-Roth, M.B.2006. Presence in teaching. teachers and teaching. *Theory and Practice*, 12(3):265-287.
- Rollnick, M., Davidowitz, B., Keane, M., Bapoo, A. & Magadla, L.2008. Students' learning-approach profiles in relation to their university experience and success. *Teaching in Higher Education*, 13(1):29–42.
- Rossetti, J.R. & Fox, P.G.2009. Factors related to successful teaching by outstanding professors: an interpretive study. *Journal of Nursing Education*, 28(1):11-16.
- Rossin, D. & Hyland, T.2003. Group work-based learning within higher education: an integral ingredient for the personal and social development of students. *Mentoring and Tutoring*, 11(2):153-162.
- Rovai, A.P.2004. A constructivist approach to online college learning. *The Internet and Higher Education*, 7:79-93.
- Salter, G.2003. Comparing online and traditional teaching – a different approach. *Campus–Wide Information Systems*, 20(4):137–145.
- Salyers, V.L.2005. Web-enhanced and face-to-face classroom instructional methods: effect on course outcomes and student satisfaction. *International Journal of Nursing Education Scholarship*, 2(1):1-11.
- Sanner, S. & Wilson A.2008. The experience of students with English as a second language in a baccalaureate nursing program. *Nurse Education Today*, 28:807–813.
- Savoy, A., Proctor, R.W. & Salvendy, G.2009. Information retention from PowerPoint and traditional lectures. *Computers and Education*. 52:858-867.

- Schaefer, K. M. & Zygmunt, D.2003. Analyzing the teaching style of nursing faculty. does it promote a student-centered or teacher-centered learning environment? *Teaching Styles*, 24(5):238–245.
- Schmuck, R.A.2001. Peer groups as setting for learning. *Theory into Practise*, 16(3):272-279.
- Schunk, D.H. & Mecee, J.L.2005. Self-efficacy beliefs of adolescents. *Information Age Publishing*, 3:71-96.
- Servonsky, E.J., Daniels, L.W. & Davis, B.L.2005. Evaluation of blackboard™ as a platform for distance education delivery. *The ABNF Journal*, November / December, 132–135.
- Shackelford, R., Brown, R. & Warner, S.2004. Using concepts and theoretical models to support the standards for technological literacy. *Technology Teacher*, 63(5):7-11.
- Skiba, D.J.2005. The millennials: have they arrived at your school of nursing?. *Nursing Education Perspectives*, 370–371.
- Smaldino, S.E., Russel, J.D., Heinrich, R., & Molenda, M.2005. *Instructional technology and media for learning*. 8<sup>th</sup> Edition. Upper Saddle River: Pearson Merrill Prentice Hall.
- Smart, K.L. & Cappel, J.J.2006. Students' perceptions of online learning; a comparative study. *Journal of Information Technology Education*. (5):201–219.
- Smith-Glasgow, M.E. and Cornelius, F.H.2005. Benefits and costs of integrating technology into undergraduate nursing programmes. *Nursing Leadership Forum*, 9(4):175-179.
- South African Nursing Council, Approval of minimum requirements for education and training of a nurse (general, psychiatric and community) and midwife leading to registration. Regulation 425 of 22 February 1985 as amended.
- Stanford, P. & Reeves, S.2007. Access, consider, teach: act in your classroom. *The Clearing House*. 80(3):133-136.
- Starr, K.2009. Nursing education challenges: students in English as an additional language. *Journal of Nursing Education*, 48(9):478–487.
- Steinert, Y.2004. Student perception of effective small group teaching. *Medical Education*. 38:286-293.
- Stork, D.2003. Teaching statistics with students survey data: a pedagogical innovation in support of student learning. *Journal of Education for Business*, 78(6):335-339.
- Susskind, J.E.2005. PowerPoint's power in the classroom: enhancing students' self-efficacy and attitudes. *Computer & Education*, 45:203-215.

- Susskind, J.E.2008. Limits of PowerPoint's power: enhancing students' self-efficacy and attitudes but not their behaviour. *Computer & Education*, 50:1228-1239.
- Tang, T.L. & Austin, M.J.2009. Students' perceptions of teaching technologies, application of technologies, and academic performance. *Computers & Education*. 53:1241-1255.
- Tang, T.S., Hernandez, E.J. & Adams, B.S.2004. Learning by teaching: a peer teaching model for diversity training in medical school. *Teaching and Learning in Medicine*, 16(1):60-63.
- Tarpley, M.J. & Tarpley, J.L.2008. The basics of PowerPoint and public speaking in medical education. *Journal of Surgical Education*. 65(2):129-132.
- Thomas, K.2008. Bloom's Taxonomy and the Digital World. *Open Education*. [Online]. Available:<http://www.openeducation.net/2008/04/11/blooms-taxonomy-and-the-digital-world/>[2011, July 5].
- Vaughn, L. & Baker, R.2001. Teaching in the medical setting: balancing teaching styles, learning styles and teaching methods. *Medical Teacher*. 23(6):610 – 612.
- Vermetten, Y.J., Vermunt, J.D. & Lodewijks, H.G.2002. Powerful learning environments?: how university differ in their response to instructional measures. *Learning and Instruction*, 12:263-284.
- Volet, S & Mansfield, C.2006. Group work at university: significance of personal goals in the regulation strategies of students with positive and negative appraisals. *Higher Education Research and Development*, 25(4)341-356.
- Wang, L.2005. The advantage of using technology in second language education. *Teaching Higher Education Journal*, 32(10):38-42.
- Wang, L.2007. Sociocultural learning theories and information literacy teaching activities in higher education. *Reference & User Services Quarterly*. 47(2):149-158.
- Watson, R., McKenna, H., Cowman, S. & Keady, J.2008. *Nursing Research designs and methods*. Toronto: Elsevier.
- Wessels, M.2011. *Practical guide to facilitating language learning*. 3<sup>rd</sup> Edition. Cape Town: Oxford university press.
- Whitehead, E., Mason, T. & Ellis, J.2007. The future of nursing :career choices in potential student nurses. *British Journal in Nursing*. 16(8):491-496.
- Woempner, C.2007. Teaching the next generation. *Mid-continent Research for Education and Learning*, April,1–5.

- Wujick, D.M.2010. Nursing is a good choice for a second career. *Oncology Nursing Society Connect (ONS)*. 5.
- Zhao, Y. & Cziko, G.A.2001. Teacher adoption of technology: a perceptual control theory perspective. *Journal of Technology and Teacher Education*. (9). [Online]. Available: <http://www.mikebrown.com/6329indproj/article3.pdf> [2010, July 19]
- Zimmerman, B.J.2002. Becoming a self-regulated learner: an overview. *Theory into Practice*, 41(2):64-70.

## ANNEXURES

### Annexure A: Questionnaire



### **The effect of teaching methods as experienced and perceived by nurses at a college in the Western Cape Province**

#### **Survey Questionnaire**

#### **Study Aim**

The purpose of this study is to evaluate the effectiveness of current teaching methods at this nursing college.

There is no right or wrong answers to this questionnaire. Your information is of importance for the success of this study and to help students in the future. Therefore it is important that you answer honestly and accurately.

All information will be treated as confidential and the researcher undertakes not to reveal any individual information that appears in this questionnaire. Do not record your name or any form of identification on this questionnaire.

To complete this 8 paged questionnaire will take no longer than 15 - 20 minutes.

All you need to do is to mark off with a cross (x) your most appropriate response(s).

The response scale is as follows:

1. Not helpful
2. Minimally helpful
3. Moderately helpful
4. Very helpful

A numerical value of 1, 2, 3 and 4 will be awarded to each response, with 1 being awarded to the most negative answer and 4 to the most positive answer.



**An example follows:**

For each of the statements below, indicate the extent of the effect by placing an **X** in the appropriate box.

**EXAMPLE**

<b>Effect of teaching method on:...</b>	<b>Very Helpful (4)</b>	<b>Moderately Helpful (3)</b>	<b>Minimally Helpful (2)</b>	<b>Not Helpful (1)</b>
<b>1. making the studying of the content easier</b>	<b>4</b>	<b>X</b>	<b>2</b>	<b>1</b>
<b>2. my academic performance in general</b>	<b>4</b>	<b>3</b>	<b>X</b>	<b>1</b>
<b>3. the stimulation of my learning style</b>	<b>X</b>	<b>3</b>	<b>2</b>	<b>1</b>

Please answer the other questions by following the instructions, by awarding the most applicable answer a cross (x) or writing where this option is indicated.

**Thank you for agreeing to partake in this survey.**

**L. Fürst**

**Researcher**

**Tel: 083 9951977**

**SECTION A: Biographical data**

**Please answer all questions. Where applicable indicate your answer by marking a X in the open box, next to the question.**

**1. How old are you?**

1.	<input type="text"/>
----	----------------------

**2. Gender**

2.	Female	<input type="checkbox"/>
3.	Male	<input type="checkbox"/>

**3. Marital Status**

4.	Single	<input type="checkbox"/>
5.	Married	<input type="checkbox"/>
6.	Other: Specify	<input type="text"/>

**4. Home Language**

7.	English	<input type="checkbox"/>
8.	Afrikaans	<input type="checkbox"/>
9.	Isi- Xhosa	<input type="checkbox"/>
10.	Other: Specify	<input type="text"/>

**5. What year did you complete Matric / Grade XII?**

11.	<input type="text"/>
-----	----------------------

**6. Have you completed any other study courses prior to your current nursing studies?**

12.	No	<input type="checkbox"/>
13.	Yes	<input type="checkbox"/>
14.	If yes: Please specify	<input type="text"/>

**7. What year of nursing study are you currently in?**

15.	1 <sup>st</sup> year	
16.	2 <sup>nd</sup> year	
17.	3 <sup>rd</sup> year	
18.	4 <sup>th</sup> year	

**8. Have you practised nursing prior to commencing this R425 Nursing Program?**

19.	No	
20.	Yes	
21.	If yes: Please specify	

**9. Do you make use of... (Mark all appropriate answers with X)**

22.	Public library	
23.	CPUT library	
24.	WCCN library	
25.	Hospital library	

**10. Do you own a ... (Mark all appropriate answers with X)**

26.	Play Station I /II/III game	
27.	Nintendo Wii Game	
28.	Cell phone	
29.	I-pod	
30.	Mp3 / Mp4 player	
31.	DVD/CD player	
32.	Computer / Laptop	
33.	None of the above	

**11. Does your family (whom you have physical contact with) own.....****(Mark all appropriate answers with X)**

34.	Television	
35.	Mnet decoder	
36.	Computer/Laptop	
37.	Cell phone	
38.	DVD / CD player	
39.	Mp3 /Mp4 player	
40.	Home theatre entertainment system	
41.	Digital camera	
42.	None of the above	

**12. Are you able to use a computer without assistance?**

43.	Yes	
44.	No	

**13. Have you ever used any of these computer programs before?****(Mark all appropriate answers with X)**

45.	Internet	
46.	Microsoft office word	
47.	Microsoft office excel	
48.	Microsoft office PowerPoint	
49.	Microsoft office Publisher	
50.	Any photo editing program	
51.	Any computer imaging program	
52.	None of the above	

14. Do you use any of these technologies to assist you in your studies?

(Mark all appropriate answers with X)

53.	Internet	
54.	Microsoft office word	
55.	Microsoft office excel	
56.	Microsoft office PowerPoint	
57.	Microsoft office Publisher	
58.	Any photo editing program	
59.	Any computer imaging program	
60.	None of the above	

### Teaching Methods

15. Please indicate the teaching method(s) to which you were exposed during Primary / Secondary school years...

(Mark all appropriate answers with X)

61.	Green/whiteboard	
62.	Overhead projector with transparencies	
63.	Data projector with PowerPoint slides	
64.	Computer	
65.	Group work	
66.	Self- activity	
67.	Other: please specify	



**SECTION B: Teaching Methods (Continued on the next page)**

**The following questions pertain to your current experience as a student. Please indicate the value that the following teaching methods have on your academic performance**

**Choose the most appropriate answer and mark in column with an X**

<b>Very Helpful (4)</b>	<b>Moderately Helpful (3)</b>	<b>Minimally Helpful (2)</b>	<b>Not Helpful (1)</b>
-----------------------------	-----------------------------------	----------------------------------	----------------------------

**16. Effect of the traditional lecture on:**

68. my ability to concentrate during a lecture	4	3	2	1
69. making the content easier to understand	4	3	2	1
70. making the studying of the content easier	4	3	2	1
71. my academic performance in general	4	3	2	1
72. the stimulation of my learning style	4	3	2	1

**17. Effect of Group Work on:**

73. my ability to concentrate during a lecture	4	3	2	1
74. making the content easier to understand	4	3	2	1
75. making the studying of the	4	3	2	1

content easier				
76. my academic performance in general	4	3	2	1
77. the stimulation of my learning style	4	3	2	1

**18. Effect of Self-Activity on:**

78. my ability to concentrate during a lecture	4	3	2	1
79. making the content easier to understand	4	3	2	1
80. making the studying of the content easier	4	3	2	1
81. my academic performance in general	4	3	2	1
82. the stimulation of my learning style	4	3	2	1

**19. Effect of using an Overhead projector with transparencies during teaching, on:**

83. my ability to concentrate during a lecture	4	3	2	1
84. making the content easier to understand	4	3	2	1
85. making the studying of the content easier	4	3	2	1
86. my academic performance in general	4	3	2	1
87. the stimulation of my learning style	4	3	2	1

**20. Effect of the content being explained on the Green/whiteboard, on:**

88. my ability to concentrate during a lecture	4	3	2	1
89. making the content easier to understand	4	3	2	1
90. making the studying of the content easier	4	3	2	1

91. my academic performance in general	4	3	2	1
92. the stimulation of my learning style	4	3	2	1

**21. Effect of using a Data Projector with PowerPoint slides during teaching, on:**

93. my ability to concentrate during a lecture	4	3	2	1
94. making the content easier to understand	4	3	2	1
95. making the studying of the content easier	4	3	2	1
96. my academic performance in general	4	3	2	1
97. the stimulation of my learning style	4	3	2	1

**22. My most liked teaching method is: .....**

Why this is my most liked teaching method:

.....

.....

.....

.....

.....

**23. My least liked teaching method is: .....**

Why this is my least liked teaching method:

.....

.....

.....

.....

.....



**24. My suggestion(s) to improve the current teaching methods at the nursing college is/are:**

.....  
.....  
.....  
.....  
.....  
.....

**THANK YOU FOR YOUR PARTICIPATION.**

**Annexure B: Participant consent form**

**PARTICIPANT INFORMATION LEAFLET AND CONSENT  
FORM**

**TITLE OF THE RESEARCH PROJECT:**

THE PERCEIVED EFFECT OF TEACHING METHODS AS EXPERIENCED AND  
BY NURSES AT A COLLEGE IN THE WESTERN CAPE PROVINCE

**REFERENCE NUMBER: N10/08/256**

**PRINCIPAL INVESTIGATOR: LAETITIA NICOLE FURST**

**ADDRESS:**

**19 Gazania Way  
Belhar  
7493**

**CONTACT NUMBER:**

**(H) 0219528716  
(W) 2016841266  
(CELL) 0839951977**

You are being invited to take part in a research project. Please take some time to read the information presented here, which will explain the details of this project. Please ask the researcher any questions about any part of this project that you do not fully understand. It is very important that you are fully satisfied that you clearly understand what this research entails and how you could be involved. Also, your participation is **entirely voluntary** and you are free to decline to participate. If you say no, this will not affect you negatively in any way whatsoever. You are also free to withdraw from the study at any point, even if you do agree to take part.

This study has been approved by the **Committee for Human Research at Stellenbosch University** and will be conducted according to the ethical guidelines and principles of the international Declaration of Helsinki, South African Guidelines for Good Clinical Practice and the Medical Research Council (MRC) Ethical Guidelines for Research.

**What is this research study all about?**

- This study is aimed at identifying the effect of the current teaching methods being practised at the nursing college as it is experienced and perceived by the student nurses. The study will be conducted at the Western Cape College of Nursing.

- Students have been selected randomly from each year of study i.e. 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> year. Every 5<sup>th</sup> student from the class register will be selected from each year.
- 20% of the total student population will be requested to participate in this study. A total of 248 students will contribute to the population sample. This total will reflect a fair indication of the effect of the current teaching methods as experienced and perceived by the student nurses at the Western Cape College of Nursing and will allow the researcher to investigate further.

**Why have you been invited to participate?**

- As a student nurse at the Western Cape College of Nursing you have been randomly selected to participate in this study.

**What will your responsibilities be?**

- You will be requested to complete a questionnaire. To complete this questionnaire should take you no longer than 15-20 minutes.

**Will you benefit from taking part in this research?**

- The information provided in the questionnaire will assist in measuring the effect of the teaching methods that is currently being used at the college. Ultimately the aim is to find the best teaching methods that will assist students to be successful in their studies and academic performance.

**Are there any risks involved in you taking part in this research?**

- There is no risk involved in this study.

**Who will have access to your records?**

- All information provided will be treated with the utmost confidentiality. The researcher will be the only person working with the information that you have provided.

**Will you be paid to take part in this study and are there any costs involved?**

- No you will **not** be paid to take part in the study.
- There will be no costs involved for you in this study.

**Is there any thing else that you should know or do?**

- You can contact the Committee for Human Research at 021-938 9207 if you have any concerns or complaints.
- You will receive a copy of this information and consent form for your own records.

**Declaration by participant**

By signing below, I ..... agree to take part in a research study entitled; The perceived effect of teaching methods as experienced and by nurses at a college in the Western Cape Province.

I declare that:

- I have read this information and consent form and it is written in a language with which I am fluent and comfortable.
- I have had a chance to ask questions and all my questions have been adequately answered.
- I understand that taking part in this study is **voluntary** and I have not been pressurised to take part.
- I may choose to leave the study at any time and will not be penalised or prejudiced in any way.

Signed at (*place*) ..... on (*date*) ..... 2010.

**Signature of participant .....Signature of witness**

**Declaration by investigator**

I **LAETITIA FURST** declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did not use a translator

Signed at (*place*) ..... on (*date*) ..... 2010.

.....

**Signature of investigator**

**Signature of witness**

**Annexure C: Letters of permission to conduct research at college under study.**

19 Gazania Way  
Belhar  
7493  
20 October2008

The Head of College  
Western Cape of College  
Private Bag  
PO Surwell

Re: Research at Western Cape College of Nursing

Dear Mr Govin

I am presently registered for the Masters in Nursing (MCur) at the University of Stellenbosch (US) and therefore need permission to conduct a research project at the WCCN. The topic of my research is: The effects of teaching methods at a Nursing College in the Western Cape Province.

I have a keen interest in the effects of the various teaching methods used at the college and my research is guided by the increasing failure rate of nursing students, which is a shared concern of management, lecturers and the Department of Health and which affect the supply and production of human resources and particularly, registered nurses in this country.

The plan is to disseminate and then collect questionnaires from students during the months of March and April 2009. The participation consent will be obtained from the respective participants as soon as my proposal is approved by the Ethics Committee of US. My supervisor is Dr Ethelwynn L Stellenberg at the University of Stellenbosch She is available at (Tel) 021-9389244 / 0829696574 (Fax): 021-9326588.

Your kind consideration will be appreciated.

Regards

Ms.L.Fürst

19 Gazania Way  
Belhar  
7493  
30 August 2010

Mrs B. Rafferty  
Head of College (Acting)  
Western Cape College of Nursing  
Private Bag X3  
Athlone  
7762

Dear Mrs Rafferty

**Permission to Conduct Study at Western Cape College of Nursing**

**Topic:** The effect of teaching methods as experienced and perceived by nurses at a college in the Western Cape Province.

My research proposal for the above topic has been approved by the Committee for Human Research at the University of Stellenbosch.

(Ethics reference no: N10/08/256 {letter attached})

I now request permission to continue with my study at the Western Cape College of Nursing with the aim of completing this study in December 2010. My next step is doing my research methodology which includes data collection. I will commence with this process as soon as approval has been granted.

An urgent response will be appreciated.

NB: Attached please find my original request.

Yours Sincerely

Laetitia Furst  
Social Science lecturer

**Annexure D: Letter of permission from participating health care institutions**



DEPARTMENT  
of HEALTH  
Provincial Government of the Western Cape

Western Cape College of Nursing

jmdavids@pgwc.gov.za  
Tel: +27 21 6841202  
Private Bag, Surwell, 7762

**REFERENCE:**

**ENQUIRIES:** MRS J.M.DAVIDS

20 NOVEMBER 2010

**Dear Mrs. L. Furst,**

**CONSENT TO CONDUCT RESEARCH**

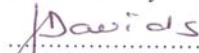
Your letter dated 20 October 2008 hereby refers.

Your request to conduct research at the college was presented to the Executive Management Committee members. Permission has been granted for you to conduct your research.

Kindly contact the relevant Head of the Department should you need permission to gain access to the students to disseminate and collect the questionnaires.

The college management wishes you well with your studies

Yours sincerely

  
.....

MRS J.M.DAVIDS

HOD: POST BASIC

FOR

MR. D.GOVIN

COLLEGE PRINCIPAL

**Annexure E: Letter of permission from participating health care institutions**



**DEPARTMENT  
of HEALTH**

Provincial Government of the Western Cape

**Western Cape College of Nursing**

Mmleonar@pgwc.gov.za  
Tel: +27 21 6841231  
Private Bag Surwell, 7762

**REFERENCE:** Mrs. L Furst  
**ENQUIRIES:** Mrs. M M Leonard  
**Date:** 08/09/10

University Stellenbosch

To Whom It May Concern,

Your request for conducting a research at WCCN (Letter dated 30/08/10) was considered and is granted on condition of the following:


- ❖ Your research project complies with the ethical principles evaluated and accepted by your institution of training (Stellenbosch University).
- ❖ Prior to publication research information need to be availed to the Western Cape College of Nursing.

Yours faithfully,

Mrs. M M Leonard  
Head of Department



**Annexure F: Ethical approval**



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY  
jou kennisvenoot • your knowledge partner

26 August 2010 **MAILED**

Mrs L Furst  
Department of Nursing  
2nd Floor Teaching Block

Dear Mrs Furst

The effect of teaching methods as experienced and perceived by nurses at a college in the Western Cape Province.

**ETHICS REFERENCE NO: N10/08/256**

**RE : APPROVED WITH STIPULATIONS**

It is a pleasure to inform you that a review panel of the Health Research Ethics Committee has approved the above-mentioned project with STIPULATIONS on 25 August 2010, including the ethical aspects involved, for a period of one year from this date.

1. The synopsis has several typing errors, please correct these.
2. The stated goal of the study is different to the research question. It would be more accurate to change the study goal and objectives to "perceived effectiveness" rather than absolute effectiveness, which is not measured by the questionnaire and would need to be measured quite differently.

This project is therefore now registered and you can proceed with the work. Please quote the above-mentioned project number in ALL future correspondence. You may start with the project. Notwithstanding this approval, the Committee can request that work on this project be halted temporarily in anticipation of more information that they might deem necessary.

Please note a template of the progress report is obtainable on [www.sun.ac.za/rds](http://www.sun.ac.za/rds) and should be submitted to the Committee before the year has expired. The Committee will then consider the continuation of the project for a further year (if necessary). Annually a number of projects may be selected randomly and subjected to an external audit.


Translations of the consent document in the languages applicable to the study participants should be submitted.


Federal Wide Assurance Number: 00001372  
Institutional Review Board (IRB) Number: IRB0005239

The Health Research Ethics Committee complies with the SA National Health Act No.61 2003 as it pertains to health research and the United States Code of Federal Regulations Title 45 Part 46. This committee abides by the ethical norms and principles for research, established by the Declaration of Helsinki, the South African Medical Research Council Guidelines as well as the Guidelines for Ethical Research: Principles Structures and Processes 2004 (Department of Health).

Please note that for research at primary or secondary healthcare facility permission must still be obtained from the relevant authorities (Western Cape Department of Health and/or City Health) to conduct the research as stated in the protocol. Contact persons are Ms Claudette Abrahams at Western Cape Department of Health ([healthres@pgwc.gov.za](mailto:healthres@pgwc.gov.za) Tel: +27 21 483 9907) and Dr Hélène Visser at City Health ([Helene.Visser@capetown.gov.za](mailto:Helene.Visser@capetown.gov.za) Tel: +27 21 400 3981). Research that will be conducted at any tertiary academic institution requires approval from the relevant hospital manager. Ethics approval is

26 August 2010 15:17 Page 1 of 2



Fakulteit Gesondheidswetenskappe • Faculty of Health Sciences 

Verbind tot Optimale Gesondheid • Committed to Optimal Health  
Afdeling Navorsingsontwikkeling en -steun • Division of Research Development and Support  
Posbus/PO Box 19063 • Tygerberg 7505 • Suid-Afrika/South Africa  
Tel.: +27 21 938 9075 • Faks/Fax: +27 21 931 3352



UNIVERSITEIT • STELLENBOSCH • UNIVERSITY  
jou kennisvenoot • your knowledge partner

required BEFORE approval can be obtained from these health authorities.

Approval Date: 25 August 2010

Expiry Date: 25 August 2011

Yours faithfully

**MS CARLI SAGER**

**RESEARCH DEVELOPMENT AND SUPPORT**

Tel: +27 21 938 9140 / E-mail: [carlis@sun.ac.za](mailto:carlis@sun.ac.za)

Fax: +27 21 931 3352

26 August 2010 15:17

Page 2 of 2



Fakulteit Gesondheidswetenskappe · Faculty of Health Sciences



Verbind tot Optimale Gesondheid · Committed to Optimal Health  
**Afdeling Navorsingsontwikkeling en -steun · Division of Research Development and Support**  
Posbus/PO Box 19063 · Tygerberg 7505 · Suid-Afrika/South Africa  
Tel.: +27 21 938 9075 · Faks/Fax: +27 21 931 3352

**Annexure G: Language editing and translation**



3 Beroma Crescent  
Beroma  
Bellville 7530

***TO WHOM IT MAY CONCERN***

This letter serves to confirm that the undersigned

**ILLONA ALTHAEA MEYER**

has proof-read and edited the document contained herein for language correctness.

(Ms IA Meyer)

SIGNED