CHAPTER 4

AN EMPIRICAL INVESTIGATION INTO THE NEEDS OF LIFELONG LEARNING FOR ACADEMICS AND AN ANALYSIS AND INTERPRETATION OF DATA

4.1 INTRODUCTION

The researcher was motivated by advent many changes that are taking place in higher education to look at how lecturers view training and development. There is no doubt that this training require lecturers to acquire new roles through training. The questionnaire explore issues of how important is lifelong learning, how are training needs analysed, how committed is management in creating learning environment within their institutions, etc. There is clearly more research to be carried out to get clarity of all the issues raised.

In the previous chapters a theoretical perspective was discussed as a frame of reference regarding institutions of higher learning as learning organisations. From the literature study that the researcher has conducted it is evident that the concepts of lifelong learning as well as learning organisations play a major role in keeping employees abreast of new information and technology.

In this chapter the theoretical assumptions stated in previous chapters will be put into empirical context. A detailed description of the empirical investigation will be given, thus explaining the method of investigation, the research sample, the measuring instrument and the statistical technique.

A further objective of the empirical investigation is to compare lifelong learning processes at colleges of education and technikons in the Gauteng Province. This investigation wanted to establish how training needs analyses are conducted and how lecturers evaluate those training programmes. Those training programmes are evaluated by lecturers at technikons as well as colleges of education.

The research will not necessarily improve the present status, but will give an idea of how lecturers view lifelong learning. The hypothesis is going to be tested by means of data gleaned from the process of lifelong learning for the development of academics at colleges of education and technikons situated in the Gauteng Province.

4.2 RESEARCH

4.2.1 Nature of investigation

The empirical investigation was conducted to investigate the process of lifelong learning for the development of academics at colleges of education and technikons situated in the Gauteng Province. A comparative study was conducted to compare lifelong learning in the two types of institutions of higher education.

The researcher is of the opinion that institutions of higher learning are teaching as well as learning organisations. A study of literature indicated that winning institutions need to refresh their knowledge from time to time in order to be reservoirs of knowledge.

Academics as human resources of institutions of higher learning should have the desire to continue to learn for personal development and growth, which in turn will lead to competitive institutions. Institutions of higher learning have to position themselves for change and growth and should take the lead in this regard.

For this reason the researcher looked into the learning process of academics at colleges of education and technikons. These institutions which are situated in the Gauteng Province were selected for practical reasons. She observed the learning process of academics, while working as a teaching advisor but is cautious of reaching a conclusion based on observation only. She decided to

embark on this research project to clarify some questions concerning lifelong learning for the development of academics.

4.2.2 Aims and objectives of the study

The objectives of the empirical investigation were:

1. The accumulation, recording, analysis and interpretation of data which can be used to improve the present situation.
2. The comparison of learning patterns and interests at technikons and colleges.
3. To produce research results which will serve as a source of knowledge and decision-making in encouraging lifelong learning.
4. To stimulate further research and dialogue with regard to institutions of higher learning as learning organisations.
5. To investigate an acceptable way of effective staff development.
6. Identification of needs, and possible reasons for lack of interest, in staff development and training programmes.

4.2.3 Structure of the questionnaire

The researcher chose a structured questionnaire, which consisted of close-ended questions that called for brief answers and mere indications.

A questionnaire was developed which incorporated various aspects. One questionnaire was designed for all categories, i.e. junior lecturers, lecturers, senior lecturers, principal lecturers and heads of departments. Only lecturers who were employed full time during the research were asked to fill in the questionnaire.

The questionnaire consisted of six sections. **Section 1** contained personal and biographical details in order to gain more insight into the status of the respondent (gender, age, academic qualifications, rank, experience and the type of institution

where the respondent is employed). This information contributes to the pattern and interest in learning and will address the following questions:

- Do highly qualified lecturers' needs for training differ from those with lower qualifications?
- Is there a difference in training needs of lecturers at technikons and those at colleges of education?
- Does the rank of the lecturer affect the training needs of academics?

Section 2 contained questions that tested the attitudes of lecturers towards lifelong learning. **Section 3** required lecturers to rank the effectiveness of training and development programmes. **Section 4** contained questions regarding the objectives of training. **Section 5** focused on mechanisms used to identify training needs. Lastly **Section 6** required lecturers to evaluate training programmes that are offered at their institutions. Random questions throughout the questionnaire probed the involvement of management towards training and development at their respective institutions.

4.2.4 Observation

The researcher worked as a teaching advisor, mainly to train academics. She observed how academics reacted to voluntary and mandatory training. She noticed concerns expressed when a course was too long, for example three days. At the end of each training programme the academics completed an evaluation form, giving the researcher insight into how they really feel about training. She also talked to teaching advisors at other institutions and realised that the concerns were rather similar. To analyse the data, two-way frequency tables were drawn and investigated for possible significant dependence between variables. Steyn, Smit, Du Toit & Strasheim (1994: 559) state that "in two-way contingency tables where one or both factors have more than two categories, the independence hypothesis is very important". The researcher used the chi-square test for this purpose.

4.2.5 Selection of respondents

The respondents were selected by choosing every fifth lecturer from staff lists which the researcher obtained from all the colleges of education and technikons in the Gauteng Province.

These questions were open-ended with direct response.

4.3 THE EMPIRICAL RESEARCH

4.3.1 The problem

The research problem that will be investigated in this study is contained in the following questions:

- How do training and development improve productivity of academics at institutions of higher learning?
- How do lecturers rate the training and development programmes at their institutions?
- Do lecturers believe that lifelong learning will improve competency?

4.3.2 The research population

Though the research is focussed on institutions of higher learning, for practical reasons the researcher decided to restrict the investigation to institutions in the Gauteng Province only. The researcher is convinced that this area is sufficiently representative because five of the nine Technikons in South Africa are situated in the Gauteng Province. Furthermore five colleges of education were still functioning in the province during the investigation.

4.3.3 The sample under investigation

Memos were sent out to all the rectors of colleges of education and technikons (see appendix A) to request the total numbers of all the permanent lecturing staff. Internal telephone lists were also obtained. It was calculated that 20% of permanent staff would serve as a sample size. The sample included lecturers and heads of departments. Deans and administrative personnel were not selected, for practical reasons. The following table shows exactly how the researcher arrived at the sample size.

Table 4.1: Full-time lecturing staff

Stratified random sample

TECHNIKONS Stratum 1	POPULATION SIZE (N1j)	SAMPLE SIZE OF THE STRATUM (N1j)
• Technikon Northern Gauteng	233	47
• Technikon Pretoria	439	88
• Technikon Southern Africa	242	48
• Technikon Witwatersrand	299	60
• Vaal Triangle Technikon	514	102
Total	**N1 = 1727**	**n1 = 345**

COLLEGES	N2j	N2j
• South African College for Teacher Education	182	37
• Johannesburg College	91	18
• East Rand College	74	15
• Pretoria College	99	20
• Sebokeng College	37	7
Total	**N2 = 483**	**n2 = 97**

N = N1 + N2 = 2210

N = 442

n = n1 + n2 = 442

An example of how the sample size of the sub-stratum (n1j) was calculated.

$$nij = \frac{N1j \times ni}{N1}$$

Technikon Northern Gauteng: $\frac{233 \times 345}{1727}$

= 47

More technikon lecturers (166) responded as opposed to (61) from colleges of education. This parity was expected because the sample size was n1 = 345 and n2 = 97.

4.4 ROLE OF QUESTIONNAIRE, DESPATCH AND RETURN

The researcher identified contact persons in each institution, mainly people who are involved with research. The questionnaires were delivered by hand at most of the institutions that are within reach, and a few were posted – Vaal, Sebokeng and East Rand. The questionnaires were numbered and their numbers were recorded. The return was not satisfactory the first time, especially from the technikons. The researcher followed up the remaining questionnaires, again through contact persons. This exercise ensured a better, though not satisfactory return to validate the research findings.

Responses were received from the following institutions; Technikon Northern Gauteng, Vaal Technikon, Technikon Pretoria, Technikon Witwatersrand, Technikon South Africa, Pretoria College, East Rand College, Johannesburg College and SACTE.

Responses were received from colleges of education and technikons in the Gauteng Province. All respondents were full-time lecturing staff in those institutions. The response rate was 52%.

PERSONAL PARTICULARS

Personal particulars are important because the researcher is interested to find out how gender and age affect some issues that were addressed in the questionnaire.

GENDER OF RESPONDENTS USED IN THIS EMPIRICAL RESEARCH

Table 4.2: Gender of respondents

V3	f	%
Male	**111**	**48,3**
Female	**119**	**51,7**
Total	**230**	**100**

Analysis

The feedback results show that of the 231 questionnaires returned, 111 (48,3%) were from males whilst 119 (51,7%) were from females both from colleges of education and technikons, and one person did not answer this question.

Interpretation of data

Since the respondents were selected by choosing every fifth lecturer from staff lists from both institutions it was not the intention of the researcher to compare female respondents (51,5%) and male respondents (48,3%). The question was merely posed to know how many male and female respondents responded. No meaningful conclusion can be drawn from the data.

Table 4.3 Age of respondents

AGE GROUP	20 –30	31-40	41-50	OLDER THAN 50	TOTAL
TOTAL	11,4%	35,5%	33,3%	19,7%	100

Analysis of data

It is obvious from the above data that the majority of respondents fall under the categories of "31-40" years and "41-50" years which is a slightly older generation than the first. There were fewer respondents in the "older than 50" category and least in the "20-30" years category.

Interpretation of data

Age might affect the participation of lecturers in training and development programmes. Older lecturers might show little interest in training and development programmes because they have reached their training objectives and is no longer interested in further staff development. On the other hand young lecturers might be energetic and enthusiastic to learn more to develop their careers.

Table 4.4: Highest academic qualification of lecturers used in this empirical research

V5				
ACADEMIC LEVEL OF RESPONDENTS	**Colleges of education**		**Technikons**	
	f	**%**	**f**	**%**
• Diploma	**3**	**4.92**	**3**	**1.81**
• Bachelors degree	**10**	**16.39**	**9**	**5.42**
• Higher Diploma/B.Tech	**7**	**11.48**	**38**	**22.89**
• Honours degree	**18**	**29.51**	**34**	**20.48**
• Masters Degree/M.Tech	**18**	**29.51**	**65**	**39.16**
• Doctorate Degree/D. Tech	**5**	**8.20**	**17**	**10.24**
TOTAL	**61**	**100**	**166**	**100**

Analysis of data

It is encouraging to note that from the data collected, the high percentage of lecturers have a Masters' degree (29.51%) at colleges of education and (39.16%) at technikons, diploma (4.92%) at colleges of education and (1.81%) at technikons. The percentage of lecturers with a doctorate/D.Tech is (8.20%) at colleges of education, and (10.24%) at technikons. More lecturers at colleges of education have a bachelors degree (16,39%) while at technikons it is only (5.42%). B.Tech/higher diploma (11.48%) at colleges of education, and (22.89%) at technikons, Honours degree, colleges (29.51%) and (20.48%) at technikons.

Interpretation of data

Lecturers should be encouraged to further their studies in order to improve the status of their institutions. Research should be encouraged for every lecturer even if he/she has a PhD. It is evident that colleges of education and technikons need to work harder in order to catch up with Universities concerning the qualifications of their lecturing staff.

Table 4.5: Rank of lecturers

V6		
RANK OF RESPONDENTS	**F**	**%**
• Junior lecturer	**17**	**7,5**
• Lecturer	**98**	**43,0**
• Senior lecturer	**59**	**29,9**
• Principal lecturer	**16**	**7,0**
• Head of Department	**38**	**16,7**
TOTAL	**228**	**100**

Analysis of data

The data contained in table 4.4 indicates that (7.5%) are junior lecturers (4.3%), lecturers (29.9%), senior lecturers (7.0%), principal lecturers and (16.7%) head of departments.

Interpretation of data

It should be noted that the above ranking does not apply to both institutions. Colleges of education ranking are as follows, lecturers, senior lecturers, head of departments and senior head of department. Therefore, the above data does not reflect the true status of rank in the colleges of education.

4.6 COMPARISON OF COLLEGES AND TECHNIKONS

4.6.1 Attitudinal approach towards training

Table 4.6: Those who believe that to compete successfully with global rival institutions of higher learning need to accelerate the development of their educators

	COLLEGES OF EDUCATION	TECHNIKONS	TOTAL
• Agree	54	153	207
Percentage %	90%	93.29%	91.64%
• Uncertain	5	5	10
Percentage %	8.33%	3.05%	3.69%
• Disagree	1	6	7
Percentage %	1.67%	3.66%	2.66%
TOTAL	60	164	224
TOTAL%	100%	100%	100%

Analysis of data

The data contained in table 4.6 indicates that (91.64%) of lecturers both from colleges of education and technikons are of the opinion that to compete successfully with global rival institutions, training and development are the answer. Most of the respondents agreed with this view, (90%) from colleges of education and (93.29%) from technikons. Percentages of respondents who were uncertain were (8.33%) from colleges of education and (3.05%) from technikons. (1.67%) Respondents from colleges disagreed and (3.66%) from technikons disagreed with this view.

Interpretation of data

Higher education sector is experiencing major changes and competition. The cut in subsidies at universities and technikons is a threat to institutions thus converting them into businesses. The comfort enjoyed in the past by this sector

is gradually diminishing. Colleges of education were reduced. The decision by the education ministry threatens jobs of lecturers at these institutions. Multiskilling would help lecturers to be employable. Technikons are also faced with mergers to reduce the number of institutions of higher learning proposed by the ministry of education. The impact of the merger to lecturers is still to be seen.

Table 4.7: No educator will remain qualified without some form of ongoing education

	COLLEGES OF EDUCATION	TECHNIKONS	TOTAL
• Agree	57	156	213
Percentage %	93.44%	94.55	94%
• Uncertain	3	5	8
Percentage %	4.92%	3.03	3.97%
• Disagree	1	4	5
Percentage %	1.64%	2.42	2.03%
TOTAL	61	165	226
TOTAL%	100%	100%	100%

Analysis of data

It appears that most of the respondents realise that ongoing education is the only vehicle to prepare them for the changes that are taking place everyday. The statistics show that (93,33%) in colleges of education and in (94,55%) technikons agree with the statement. A very low percentage (4,92%) of respondents at colleges of education is uncertain and (3,03%) of the respondents at technikons. Those who disagree are also insignificant, namely (1,64%) respondents at colleges of education and (2,42%) respondent at technikons.

Interpretation of data

The role of lecturers has become more demanding. The introduction of technology and the formulation of new acts make it impossible for lecturers to continue with their careers without some form of ongoing education.

Table 4.8: Those who believe that learning can no longer be confined to one period in a person's life

	COLLEGES OF EDUCATION	TECHNIKONS	TOTAL
• Agree	60	156	216
Percentage %	98.63%	94.55%	96.59%
• Uncertain	1	6	7
Percentage %	1.64	3.64	2.64%
• Disagree	0	3	3
Percentage %	0	1.82	0.91%
TOTAL	61	165	226
TOTAL %	100%	100%	100%

Analysis of data

It is obvious from the respondents that learning can no longer be confined to one period in a person's life. The majority (98,63%) of respondents at colleges of education agrees, while (94,55%) of respondents at technikons also agree with this statement. An insignificant percentage of respondents at both institutions are uncertain or disagree with the statement. Colleges of education (0%) and technikons (1.82%).

Interpretation

The changes that are taking place globally, force everybody to either reskill, or keep on learning throughout his/her career. In South Africa, lecturers are

confronted, not only by technology but also by acts that call for transformation of education and new modes of teaching.

Table 4.9: Staff development's objective is to ensure that there is training to ensure production

	COLLEGES OF EDUCATION	TECHNIKONS	TOTAL
• Agree	52	140	192
Percentage %	86.67%	5.37%	47.52%
• Uncertain	7	19	26
Percentage %	11.67%	11.59%	11.63%
• Disagree	1	5	6
Percentage %	1.67%	3.05%	2.36%
TOTAL	60	164	224
TOTAL %	100%	100%	100%

Analysis of data

The majority of lecturers (86,67%) at colleges of education and (85,37%) at technikons support the above statement. The percentages of respondents who are uncertain do not differ much between the institutions: (11,67%) at colleges of education, (11,59%) at technikons. A small percentage of respondents disagree, namely (1,67%) at colleges of education and (3,05%) at technikons.

Interpretation of data

The researcher agrees that staff development sections or departments at higher education institutions should be proactive and initiate training and development initiatives. It is important that they should monitor the trends, be they educationally, technologically or regulatory driven. It is also important for these sections to work with management and staff in order to get buy-in from all the stakeholders.

Table 4.10: Staff development will develop academia if correctly managed

	COLLEGES OF EDUCATION	TECHNIKONS	TOTAL
• Agree	57	148	205
Percentage %	93.44%	89.70%	91.57%
• Uncertain	4	10	14
Percentage %	6.56%	6.06%	6.31%
• Disagree	0	7	7
Percentage %	0%	4.24%	2.12%
TOTAL	61	165	226
TOTAL %	100%	100%	100%

Analysis of data

It is clear from the above data that the majority of respondents are of the opinion that staff development, if correctly managed, will develop staff (93,44%) at colleges of education and (89,70%) at technikons. Respondents expressed no opinion on "disagree" for colleges of education, while (4,24%) of respondents at technikons disagreed. Respondents who were uncertain were (6,56%) at colleges of education and (6,06%) at technikons.

Interpretation of data

The researcher, from her experience as a teaching advisor, realises that a participatory approach is a better way of managing staff development. Lecturers should buy into whatever training and development programmes are introduced. Using this method, however, does not guarantee a 100% buy-in. Some lecturers might believe that they "know it all", but this method will reduce the negative feelings towards training and development initiatives.

Table 4.11: Lifelong learning maximises human potential

	COLLEGES OF EDUCATION	TECHNIKONS	TOTAL
• Agree	55	149	204
Percentage %	90.16%	90.30%	90.23%
• Uncertain	4	10	14
Percentage %	6.56%	6.06%	6.31%
• Disagree	2	6	8
Percentage %	3.28%	3.64%	3.46%
TOTAL	61	165	226
TOTAL %	100%	100%	100%

Analysis of data

The highest percentage of respondents both from colleges of education (90,16%) and at technikons (90,30%) agree that lifelong learning maximises human potential.

Interpretation of data

It is clear that all lecturers agree that lifelong learning will help to develop human potential. This statement though vague, can only be true if training and development is properly managed through the conduction of needs analysis. Proactive actions should be taken through participation of all stakeholders.

Table: 4.12: Lifelong learning keeps staff up to date

	COLLEGES OF EDUCATION	TECHNIKONS	TOTAL
• Agree	54	147	201
Percentage %	90.00%	89,09%	89.54%
• Uncertain	6	10	16
Percentage %	10.00%	6.06%	8.03%
• Disagree	0	8	8
Percentage %	0%	4.85%	2.42%
TOTAL	60	165	225
TOTAL %	100%	100%	100%

Analysis of data

A high percentage of lecturers (90%) at colleges of education agree and (89,09%) at technikons are aware of the importance of lifelong learning. (10%) at colleges of education are uncertain, (6,06%) at technikons are uncertain and, lastly (0%) at colleges of education and (4,85%) at technikons disagree with the statement.

Interpretation

It is encouraging to learn that most lecturers agree that lifelong learning keep staff up to date with global changes and events in the academic sphere. No one can afford not to be informed and to lag behind. Changes are taking place in people's working environment. Staff should be informed about the changes as well as the impact of the changes.

Table 4.13: Lifelong leaning as a vehicle to help organisations to realise their visions

	COLLEGES OF EDUCATION	TECHNIKONS	TOTAL
• Agree	52	149	201
Percentage %	85.25%	90.30%	87.77%
• Uncertain	8	10	18
Percentage %	13.11%	6.06%	9.58%
• Disagree	1	6	7
Percentage %	1.64%	3.64%	2.64%
TOTAL	61	165	226
TOTAL %	100%	100%	100%

Analysis of data

The majority of respondents agree that they view lifelong learning as a vehicle to help organisations to realise their visions. (85,25%) Respondents at colleges of education and (90,30%) at technikons agree. Few lecturers (1,64%) at colleges of education and (3,64%) at technikons disagree. A higher percentage, (13,11%) of respondents at colleges of education are uncertain and a lower percentage, (6,06%) of the respondents at technikons are uncertain about whether lifelong learning is a vehicle to help organisations to realise their visions.

Interpretation of data

Lecturers realise that institutions are both teaching and learning organisations. Institutions of higher learning's core business, is teaching. Due to changes they are also learning organisations. A learning organisation should be able to read, analyse and interpret the signs of changes correctly.

Table 4.14: Management's commitment towards training

	COLLEGES OF EDUCATION	TECHNIKONS	TOTAL
• Agree	19	73	92
Percentage %	31.15%	44.51%	37.83%
• Uncertain	25	55	80
Percentage %	40.98%	33.54%	37.26%
• Disagree	17	36	53
Percentage %	27.87%	21.95%	24.91%
TOTAL	51	164	215
TOTAL %	100%	100%	100%

Analysis of data

More respondents at technikons agree (44,51%), while a lesser percentage (31,15%) at colleges of education agree that management should be committed to training. A large percentage of respondents at colleges of education (40,98%) are uncertain, while (27,87%) disagree. At technikons (33,54%) of the respondents are uncertain while (21,95%) of them disagree with the statement.

Interpretation

It is apparent that most respondents of colleges of education are uncertain about management's commitment towards training while the majority of respondents at technikons agree that management is committed to training. The disparity may be caused by the present uncertainties at colleges of education because many colleges of education are facing either closure or mergers with tertiary institutions. If management is not committed to training, the organisation will find it difficult to become a learning organisation.

Table 4.15: Management at my institution encourages staff to identify their training needs

	COLLEGES OF EDUCATION	TECHNIKONS	TOTAL
• Agree	17	54	71
Percentage %	27.87%	32.73%	30.3%
• Uncertain	25	42	67
Percentage %	40.98%	25.45%	32.21%
• Disagree	19	69	88
Percentage %	31.15%	41.82%	36.48%
TOTAL	61	165	226
TOTAL %	100%	100%	100%

Analysis of data

Data contained in table 4.15 indicates that (27.87%) at colleges of education agree and (32.73%) at technikons agree. The majority of lecturers at colleges of education are uncertain (40.90%), while (41.82%) of technikon lecturers disagree (41.82%).

Interpretation of data

It is disturbing to note that more lecturers at colleges of education are uncertain about this statement. The reason could be because they are not involved in the identification of their training needs. The majority of Technikon lecturers disagreed with the statement. Management should encourage lecturers to participate in identifying their own training needs. This process would encourage ownership of the training programmes to be instituted or implemented.

Table 4.16: The most important function of the head of department regarding training is to encourage the culture of lifelong learning

	COLLEGES OF EDUCATION	TECHNIKONS	TOTAL
• Agree	42	116	158
Percentage %	68.85%	70.30%	69.57%
• Uncertain	11	32	43
Percentage %	18.03%	19.39%	18.71%
• Disagree	8	17	25
Percentage %	13.11%	10.30%	11.70%
TOTAL	61	165	226
TOTAL %	100%	100%	100%

Analysis of data

More respondents of colleges of education (68,85%) and (70,30%) of lecturers at technikons agree that the head of department should encourage the culture of lifelong learning. At colleges of education (18,03%) of the respondents are uncertain and (13,11%) of them disagree with the statement. At technikons (19,39%) of the respondents are uncertain while (10,30%) of them disagree with the statement.

Interpretation of data

It is encouraging that the majority of lecturers from colleges of education and technikons agree that the head of department should encourage the culture of lifelong learning in his/her department. If the head of department buys into training, it will motivate lecturers to attend the training programmes. He/she will also encourage and motivate them to participate actively in such training programmes.

Table 4.17: Lifelong learning is a priority in departments

	COLLEGES OF EDUCATION	TECHNIKONS	TOTAL
• Agree	22	80	102
Percentage %	36.07%	48.78	42.42%
• Uncertain	25	43	68
Percentage %	40.98%	26.22	33.6%
• Disagree	14	41	55
Percentage %	22.95%	25.00	23.97%
TOTAL	61	164	225
TOTAL %	100%	100%	100%

Analysis of data

Data contained in table 4.17 indicates that (36,07%) of lecturers of colleges of education and (48,78%) at technikons agree that lifelong learning is a priority in departments. The highest percentage at colleges of education (40,98%) is uncertain while (26,22%) at technikons are uncertain. The difference between lecturers who disagree at colleges of education (22,95%) and (25,00%) at technikons is relatively small.

Interpretation of data

Less than half of the respondents in both colleges of education and technikons (42.42%) agree that lifelong learning is a priority in their departments. It is disturbing that the majority of respondents fall under the category of either uncertain or disagree. It is a serious concern taking into account changes and challenges facing higher education.

Table 4.18: Management is reactive rather than proactive with regard to training needs

	COLLEGES OF EDUCATION	TECHNIKONS	TOTAL
• Agree	22	86	114
Percentage %	44.07%	52.44%	48.25%
• Uncertain	19	49	68
Percentage %	32.20%	29.88%	31.04%
• Disagree	14	29	43
Percentage %	23.73%	17.68%	20.70%
TOTAL	59	164	223
TOTAL %	100%	100%	100%

Analysis of data

Data contained in table 4.18 indicates that (44,07%) of the respondents at colleges of education and (52,44%) of the respondents at technikons agree that management is reactive rather than proactive in nature with regard to training needs. At colleges of education (32,20%) of the respondents are uncertain and (29,88%) of them at technikons are uncertain whereas (23,73%) of respondents at colleges of education, and (17,68%) of the respondents at technikons disagree with the statement.

Interpretation of data

Being proactive with regard to training needs is important, but unfortunately most of the respondents agree that management is reactive rather than proactive with regard to training needs.

Table 4.19: How committed is management regarding training

	COLLEGES OF EDUCATION	TECHNIKONS	TOTALS
• Agree	10	30	40
Percentage %	16.39%	18.18%	17.28%
• Uncertain	43	111	154
Percentage %	70.49%	67.27%	68.88%
• Disagree	8	24	32
Percentage %	13.11%	14.55%	13.83%
TOTAL	61	165	226
TOTAL %	100%	100%	100%

Analysis of data

There is a clear indication that management both at colleges of education and technikons is not fully committed to training. These results are supported by the results contained in table 4.19 where (16,39%) of respondents at colleges of education agree and (18,18%) at technikons agree with the statement. The majority of respondents at both institutions namely (70,49%) at colleges of education and (67,27%) at technikons are uncertain about management's commitment towards training.

Interpretation of data

The effectiveness of training and development may be improved if management was highly committed to training. Management would understand the need for training and provide enough money for training and development and they would motivate and encourage lecturers to attend training programmes. The recent worldwide movement is to create learning organisations. It is important that leaders at institutions of higher learning do the same in order to be able to compete and be knowledgeable about the latest trends in training development for their staff members.

4.7 RANKING OF TRAINING

Table 4.20: Training and development courses offered at my institution are meaningful and relevant to my job, as well as to the organisation as a whole

	COLLEGES OF EDUCATION	TECHNIKONS	TOTALS
• Agree	23	72	95
Percentage %	37.70%	43.64%	40.67%
• Uncertain	20	43	63
Percentage %	32.79%	26.06%	29.42%
• Disagree	18	50	68
Percentage %	29.51%	30.30%	29.90%
TOTAL	61	165	226
TOTAL %	100%	100%	100%

Analysis

The majority of lecturers from both institutions (37,70%) agree at colleges of education and (43,64%) at technikons that training courses offered at their institutions are meaningful to their jobs. At colleges of education (32,79%) are uncertain and (26,06%) at Technicons are uncertain about the statement (29,51%) of respondents at colleges of education and (30,30%) of respondents at technikons disagree with the statement.

Interpretation of data

A higher percentage of lecturers at technikons agree and a slightly lower percentage at colleges of education agree. The percentages of the lecturers who are uncertain and those who disagree, are of concern since they are in the majority. This trend is disturbing as it is expected of both types of institutions to provide meaniingful training and development programmes. Institutions should devise and provide mechanisms that will address this problem to their staff members.

Table 4.21: Teaching assessment

	COLLEGES OF EDUCATION	TECHNIKONS	TOTALS
• Agree	25	77	102
Percentage %	41.67%	46.95%	44.31%
• Uncertain	22	51	73
Percentage %	36.67%	31.10%	33.88%
• Disagree	13	36	49
Percentage %	21.67%	21.95%	21.81%
TOTAL	60	164	224
TOTAL %	100%	100%	100%

Analysis of data

This table reveals that academics both in colleges of education (41,67%) and at technikons (46,95%) agree that teaching assessment is effective as a form of training. It is surprising to find that nearly the same percentage of respondents (21,67%) at colleges of education and (21,95%) at technikons disagree with this viewpoint.

Interpretation of data

Less than half of the respondents at colleges of education and technikons agree that teaching assessment is one of the forms of training and development that improves the performance of lecturers. It is also evident from the above data that there are still a disturbing percentage of lecturers who either disagree or are uncertain about the effectiveness of teaching assessment as a training form to lecturers. Objectives of assessment should be clearly presented to the lecturers so that they would know what is expected of them and how it will contribute to their academic development.

Table 4.22: Seminars

	COLLEGES OF EDUCATION	TECHNIKONS	TOTALS
• Agree	28	78	106
Percentage %	47.46%	48.15%	47.80%
• Uncertain	22	56	78
Percentage %	37.29%	34.57%	35.93%
• Disagree	9	28	37
Percentage %	15.25%	17.28%	16.26%
TOTAL	59	162	221
TOTAL %	100%	100%	100%

Analysis of data

There exist a perception from both respondents at colleges of education (47,46%) and at technikons (48,15%) that seminars fulfil their training needs, though (37,29%) at colleges of education and (34,57%) at technikons are uncertain about this. Lastly (15,25%) respondents at colleges of education and (17,28%) of respondents at technikons disagree that seminars are an effective form of training.

Interpretation of data

Less than half of the respondents at both colleges of education and technikons agree that attending seminars is also a good form of training and development, the high percentage of those respondents who disagree or are uncertain is alarming. The question arises as to what is wrong with seminars? Maybe a questionnaire should be designed and be distributed to lecturers to determine why seminars are not regarded as a good form of training.

Table 4.23: Conferences

	COLLEGES OF EDUCATION	TECHNIKONS	TOTALS
• Agree	20	89	109
Percentage %	33.33%	55.28%	44.30%
• Uncertain	32	45	77
Percentage %	53.33%	27.95%	40.64%
• Disagree	8	27	35
Percentage %	13.33%	16.77%	15.05%
TOTAL	60	161	221
TOTAL %	100%	100%	100%

Analysis of data

From the data contained in table 4.23 it will be observed that respondents at colleges of education (33,33%) agree, while at technikons (55,28%) agree. (53,33%) of respondents from colleges of education are uncertain and (27,95%) at technikons are uncertain. Lecturers who disagree are (13,33%) at colleges of education and (16,77%) at technikons.

Interpretation of data

It is evident from the data that lecturers at colleges of education do not rate conferences highly while in contrast technikons' lecturers rate them higher. The question is why is there such a difference of opinion? A questionnaire may give the researcher a clear idea of the reasons why the colleges of education feel rather negative about conferences.

Table 4.24: Workshops

	COLLEGES OF EDUCATION	TECHNIKONS	TOTALS
• Agree	40	105	145
Percentage %	66.67%	64.02%	65.34%
• Uncertain	14	42	56
Percentage %	23.33%	25.61%	24.47%
• Disagree	6	17	23
Percentage %	10.00%	10.37%	10.18%
TOTAL	60	164	224
TOTAL %	100%	100%	100%

Analysis of data

It was found that respondents at both types of institutions are very much in agreement that workshops are an effective way of training: colleges of education with (66.67%) respondents and (64,02%) respondents at technikons. Whereas (23,33%) of the respondents at colleges of education are uncertain and (25.61%) of the respondents at technikons are uncertain. Lastly (10,00%) of respondents at colleges of education and (10,37%) of respondents at technikons disagree with the statement that workshops are an effective way of training staff members.

Interpretation of data

It is significant to note that the percentages of respondents at institutions do not differ much. It is also interesting that workshops were voted the best way of training at these institutions. It is the researcher's observation that academics resent to be taught like students. Workshops afford them the opportunity to be actively involved and they are able to contribute much of their experience, expertise and knowledge with regard to the topic of the training programme under consideration.

Table 4.25: Orientation

	COLLEGES OF EDUCATION	TECHNIKONS	TOTALS
• Agree	22	70	92
Percentage %	37.93%	42.68%	40.30%
• Uncertain	27	48	75
Percentage %	46.55%	29.27%	37.91%
• Disagree	9	46	55
Percentage %	15.52%	28.05%	21.78%
TOTAL	58	164	222
TOTAL %	100%	100%	100%

Analysis of data

This table reveals that orientation is also not a good form of training. It was found that (37,93%) of the respondents at colleges of education and (42,68%) of the respondents at technikons agree with the statement, whereas (46,55%) of respondents at colleges of education and (29,27%) respondents at technikons are uncertain about the statement. (15,52%) of the respondents at colleges of education and (28,05%) of the respondents at technikons disagree with the statement that orientation is a good form of training.

Interpretation of data

Orientation was ranked number seven hierarchically spoken by respondents of colleges of education and number eight by respondents of technikons out of nine programmes. Orientation is not seen as a mode of training, however, its nature of introducing both new and old employees to the current state of the organisation gives it the status of development.

Table 4.26: Job rotation

	COLLEGES OF EDUCATION	TECHNIKONS	TOTALS
• Agree	13	51	64
Percentage %	22.41%	31.48%	26.94%
• Uncertain	28	60	88
Percentage %	48.28%	37.04%	42.66%
• Disagree	17	51	68
Percentage %	29.31%	31.48%	30.39%
TOTAL	58	162	220
TOTAL %	100%	100%	100%

Analysis of data

It is clear from the table that job rotation is not the academics' favourite form of training. This training programme was ranked hierarchically last. At colleges of education (22,41%) of the respondents agree and (31,48%) of the respondents at technikons agree, whilst (48,28%) of the respondents at colleges of education and (37,04%) of them at technikons are uncertain. (29,31%) of the respondents at colleges of education and (31,48%) of the respondents at technikons disagree with the job rotation as a good method of training.

Interpretation of data

The researcher is not surprised by the fact that job rotation has a low rating amongst academics. The response makes sense because job rotation with regard to teaching would mean a lecturer may be required to teach a course that the lecturer has no experience in and this may result in frustration and more research in order to get to know the course.

If job rotation is to be considered as a training mode, lecturers should be well informed about its value for the lecturer concerned.

Table 4.27: On-the-job training

	COLLEGES OF EDUCATION	TECHNIKONS	TOTALS
• Agree	40	84	124
Percentage %	66.67%	51.53%	59.1%
• Uncertain	13	4	17
Percentage %	21.67%	25.77%	23.72%
• Disagree	7	37	44
Percentage %	11,67%	22.70%	17.18%
TOTAL	60	125	185
TOTAL %	100%	100%	100%

Analysis of data

A large percentage of respondents at colleges of education (66,67%) and (51,53%) at technikons agree that on-the-job training provides value to training and development. (21,67%) respondents from colleges of education and (25,77%) respondents at technikons are uncertain about this training mode. Whilst (11,67%) of the respondents from colleges of education and (22,70%) of the respondents at technikons disagree with the appropriateness of on-the-job training.

Interpretation of data

On-the-job training is viewed by the respondents as the best because a person will experience the job he/she has to perform first hand. It is not surprising that academics are of the opinion that on-the-job training is the best possible training mode for staff members.

Table 4.28: Mentoring

	COLLEGES OF EDUCATION	TECHNIKONS	TOTALS
• Agree	37	86	123
Percentage %	62.71%	53.09%	57.90%
• Uncertain	11	37	48
Percentage %	18.64%	22.84%	20.74%
• Disagree	11	39	50
Percentage %	18.64%	24.07%	21.35%
TOTAL	59	162	221
TOTAL %	100%	100%	100%

Analysis of data

It was determined that mentoring is a favourite form of training for academics at both types of institutions with (62,71%) of the respondents at colleges of education and (53,09%) of the respondents at technikons agreeing with this notion. A small percentage of 18.64% at colleges of education and 22.84% at technikons are uncertain while 18.64% at colleges of education and 24.07% at technikons disagree.

Interpretation of data

Mentoring is ranked third best hierarchically spoken by both respondents at colleges of education and respondents at technikons. Every lecturer might need some form of mentoring at some stage in his/her career in order to perform his/her task effectively and efficiently.

Table 4.29: Summary of ranking of training and development courses by respondents at colleges of education and technikons

COLLEGES	%	TECHNIKONS	%
1. Workshops	**66.67**	1. Workshops	**64.02**
2. On-the-job Training	**66.67**	2. Conferences	**55.28**
3. Mentoring	**62.71**	3. Mentoring	**53.09**
4. Seminars	**47.46**	4. On-the-job training	**51.33**
5. Teaching assessment	**41.67**	5. Seminars	**48.57**
6. Orientation	**37.93**	6. Teaching assessment	**46.95**
7. Conferences	**33.33**	7. Orientation	**42.68**
8. Job-rotation	**22.41**	8. Job-rotation	**31.48**

Key: 1 indicates highest ranking
8 indicates the lowest priority

Respondents at both types of institutions agree that workshops are ranked in first place, mentoring in third place, seminars fifth, teaching assessment in sixth place and lastly job-rotation.

Table 4.30: Lecturers both at colleges and technikons who prefer shorter modules of 2 to 3 hours at a time

	COLLEGES OF EDUCATION	TECHNIKONS	TOTALS
• Agree	**49**	**118**	**167**
Percentage %	**84.48%**	**71.95%**	**78.21%**
• Uncertain	**5**	**29**	**34**
Percentage %	**8.62%**	**17.68%**	**13.15%**
• Disagree	**4**	**17**	**21**
Percentage %	**6.90%**	**10.37%**	**8.63%**
TOTAL	**58**	**164**	**222**
TOTAL %	**100%**	**100%**	**100%**

Analysis of data

Lecturers need training in order to update their skills. The majority of lecturers at both colleges of education and technikons (84,48%) and (71,95%) indicated a preference for shorter modules and (8,62%) and (17,68%) of the respondents are uncertain about this and (6.90%) and (10,37%) of the respondents, respectively disagreed that shorter modules of 2 to 3 hours are preferable to longer training sessions.

Interpretation on data

The higher percentage of respondents at both colleges of education and technikons favour shorter training modules. The researcher observed this preference while working as a teaching advisor at a technikon. The workload and deadlines which academics have to meet will most definitely influence the duration of the training programme. Organising training programmes when lecturers are too busy marking tests and examination papers or even during registration of new students, is fatal as these activities consume most of their precious time.

Table 4.31: Due to workload it would be difficult to attend training courses of one week's duration both at colleges and technikons

	COLLEGES OF EDUCATION	TECHNIKONS	TOTALS
• Agree	42	122	164
Percentage %	70.00%	73.94%	71.97%
• Uncertain	9	12	21
Percentage %	15.00%	7.27%	11.13%
• Disagree	9	31	40
Percentage %	15%	18.79%	16.89%
TOTAL	60	165	225
TOTAL %	100%	100%	100%

Analysis

Most respondents were found to agree that due to workload it would be difficult to attend training courses of one week's duration. (70,00%) of the respondents at colleges of education and (73,94%) of the respondents at technikons agreed. A very small percentage was uncertain with (15,00%) and (7,27%) respectively. Respondents who disagreed with the statement were (15,00%) at colleges of education and (18,79%) at technikons.

Interpretation of data

It is obvious that workload would prevent lecturers both at colleges and technikons to attend courses of one week's duration. In this case, the institutions should split the courses for greater flexibility.

Table 4.32: Objectives of training and development programmes at colleges of education

	PERCENTAGES		
	YES	NO	UNCERTAIN
Improve performance	90.00%	3.33%	6.67%
Update employee's skills	95.00%	0%	5.00%
Avoid managerial obsolescence	29.31%	29.31%	41.38%
Solve organisational problems	43.33%	31.67%	25.00%
Orientate new employees	75.00%	13.33%	11.67%
Prepare for promotion and Managerial succession	41.67%	31.67%	26.67%
Satisfy personal growth needs	71.67%	3.33%	25.00%
Programme objectives are realistic	28.81%	6.78%	64.41%
The objectives of training and development programmes that I have attended are consistent with internal objectives	38.98%	18.64%	42.31%

Table 4.33: Objectives of training and development programmes at technikons

	PERCENTAGES		
	YES	NO	UNCERTAIN
Improve performance	**90.74%**	**2.47%**	**6.79%**
Update employee's skills	**95.68%**	**0%**	**4.32%**
Avoid managerial obsolescence	**41.61%**	**16.77%**	**41.61%**
Solve organisational problems	**49.38%**	**26.25%**	**24.37%**
Orientate new employees	**74.05%**	**18.35%**	**7.59%**
Prepare for promotion and managerial succession	**48.43%**	**28.30%**	**23.27%**
Satisfy personal growth needs	**72.44%**	**13.46%**	**14.10%**
Programme objectives are realistic	**48.15%**	**20.37%**	**31.48%**
The objectives of training and development programmes that I have attended are consistent with internal objectives	**40.99%**	**26.71%**	**32.30%**

Analysis of data

The majority of the objectives of training and development programmes received equal support from respondents at colleges of education and technikons alike, the highest being updating employee's skills is (95,00%) at colleges of education and (95,68%) at technikons.

The respondents agreed on six options. Lecturers at both types of institutions disagreed on the last three options. Colleges of education's number seven was "the objectives of training and development programmes that I have attended are consistent with internal objectives" (38,98%) and number eight for technikons (40,99%); "avoid managerial obsolescence" was ranked number eight by colleges of education (29,31%) and number nine by technikons (41,61%); "programme objectives are realistic" (28,81%) colleges said yes and ranked it nurnber seven.

Interpretation of data

It is interesting to find that six options were ranked the same by respondents at colleges of education and technikons and the percentages of those variables were close. It is obvious that despite the difference between these institutions in terms of qualifications offered, numbers and diversity of students to name just a few, objectives of training and development are very similar.

Table 4.34: Summary of objectives of training and development programmes both at colleges of education and technikons

	COLLEGES	TECHNIKONS
Improve performance	**90%**	**90.74%**
Update employee's skills	**95%**	**95.68%**
Avoid managerial obsolescence	**29.31%**	**41.61%**
Solve organisational problems	**43.33%**	**49.38%**
Orientate new employees	**75%**	**74.05%**
Prepare for promotion and managerial succession	**41.67%**	**48.43%**
Satisfy personal growth needs	**71.67%**	**72.44%**
Programme objectives are realistic	**28.81%**	**44.15%**
The objectives of training and development programmes that I have attended are consistent with internal objectives	**38.98%**	**40.99%**

Table 4.35: The mechanism used to identify training and development needs at colleges of education

	YES	NO
Questionnaires to staff only	**33.33%**	**66.67%**
Discussions with staff members	**71.19%**	**28.81%**
Interviews with staff members	**26.32%**	**73.68%**
Advisory Committee	**37.50%**	**62.50%**
Observations by management	**58.18%**	**41.82%**
Performance appraisals of staff members	**28.57%**	**71.43%**
Attitude surveys of staff members	**30.91%**	**69.09%**
Skills tests of staff members	**15.79%**	**84.21%**

Table 4.36: The mechanism used to identify training and development needs at technikons

	YES	NO
Questionnaires to staff only	**48.67%**	**51.33%**
Discussions with staff members	**39.87%**	**60.13%**
Interviews with staff members	**26.85%**	**73.15%**
Advisory Committee	**55.26%**	**44.74%**
Observations by management	**56.21%**	**43.79%**
Performance appraisals of staff members	**43.33%**	**56.67%**
Attitude surveys of staff members	**40.54%**	**59.46%**
Skills test of staff members	**14.38%**	**85.62%**

Analysis of data

According to Table 4.35 and 4.36 academics at both types of institutions agree to an extent about the mechanisms used to identify training and development needs. At colleges of education the following ranked higher than (50%) discussions with staff members and observations by management. At technikons those categories which ranked higher than (50%) were: Advisory Committee, observations by management.

Table 4.37: Summary of the mechanisms used to identify training and development needs both at colleges of education and technikons

	COLLEGES	TECHNIKONS
Questionnaires to staff only	5	6
Discussions with staff members	8	3
Interviews with staff members	2	2
Advisory Committee	6	7
Observations by management	7	8
Performance appraisals of staff members	3	5
Attitude surveys of staff members	4	4
Skills tests of staff members	1	1

Key: 1 indicates the lowest priority
8 indicates the highest priority

4.7 SIGNIFICANT FINDINGS FROM THE EMPIRICAL INVESTIGATION

According to the data collected from the respondents by means of a questionnaire survey the following findings became evident:

4.7.1 The investigation has revealed that lecturers agree that no educator will remain qualified without some form of on-going education.

4.7.2 Lecturers agreed that training programmes succeeded in transmitting new knowledge and skills, improve performance, update skills and satisfy personal growth.

4.7.3 Objectives of training and development initiatives are not consistent with internal objectives of the institution. Institutions should clearly state the objectives of training and development initiatives.

4.7.4 According to the lecturers at both institutions, management is not committed to training, only (16.39%) at colleges of education agreed, and (18.18%) at technikons agreed. However, the study showed that lecturers at both institutions agreed that staff development if correctly managed, the process will develop lecturers and maximise their potential (Table 4.18, 4.9 and 4.10).

4.7.5 Staff at both institutions is not encouraged to identify their own training needs. It is important to allow staff to be involved in identifying their training needs.

4.7.6 The duration of training courses should not be too long. Institutions should split the courses for greater flexibility.

The research was directed at colleges of education and technikons. Though these institutions both offer higher education, there are differences like in the structure of institutions, the type of programmes offered, their targets and staff. The lecturers are exposed to different challenges and their environments differ as well. The differences might have influenced the responses of the questionnaires.

The lecturers from both institutions agree on more issued than they disagree. Even where there are differences, the percentages of the ratings are not so huge that they warrant a serious investigation. Major similarities were spotted on Table 4.37 summary of the mechanisms used to identify training and development needs both at colleges of education and technikons. Of the eight mechanisms given, the institutions agreed on three, ratings given on the other three were either more or less in one. The big difference was shown in only one mechanism where colleges of education rated it at eight and technikons at three.

The summary of similarities and differences are clearly captured on Table 4.34 Summary of objectives of training and development programmes both at colleges of education and technikons and Table 4.37 Summary of the mechanisms used

to identify training and development needs both at colleges of education and technikons.

4.8 RELIABILITY AND VALIDITY OF THE RESEARCH

According to Niemann (2000:285) "reliability in quantitative research methods is traditionally associated with accuracy, stability, consistency and repeatability of the research.

The researcher used literature review and questionnaires. She also observed the process of training and development as a teaching advisor and a participant at training sessions at a technikon. With regard to the technikon sector the researcher have no reason to question the reliability because the environment was stable. However, the reliability of the responses from colleges of education are questionable because the environment was not stable in terms of closure of other colleges. The researcher has reservations because the responses might have been affected by the closure. Due to the uncertainty and may be the frustration, the objectivity of the respondents might have been influenced.

The researcher looked at lifelong learning within the higher education sector. The higher education sector consists of universities, colleges of education and technikons, however the focus of the study was on colleges of education and technikons.

The research is confined to academics who are permanently employed in institutions of higher learning, namely technikons and colleges of education in the Gauteng province. At the beginning of the research there were 15 technikons in South Africa, and due to mergers proposed by the ministry of education, Technikon Natal merged with M L Sultan Technikon to form Durban Institute of Technology. However, the study focuses on institutions in Gauteng province.

Of the 14 technikons, 5 are in Gauteng province. Gauteng province has the largest population in South Africa. The population under investigation was strategically picked due to the above reasons. It was also convenient for the researcher because the institutions are accessible.

Of all the chosen institutions, two of the colleges of education were disadvantaged. With regard to technikons, only one was disadvantaged. The aim of the study was not to compare advantaged and previously disadvantaged institutions, however it is important to note that environments provided by institutions in terms of resources (teaching and learning resources) can influence the quality of lecturing, the need for training and the provision of training.

This research on "A study of lifelong learning in academic institutions" presents general findings. The responses from the empirical research may change with time, may be when the changes are effected and there is stability within institutions of higher learning. These findings are based on research that was undertaken during what the research can call higher education revolution. The point is the situation then might have influenced the responses.

The responses of the questionnaires called for three responses, that is agree, uncertain and disagree. The researcher noted with dismay responses that fell under the category of uncertain. All questions were simple and straightforward. The researcher did not expect lecturers to be uncertain especially with simple questions like "lifelong learning maximises potential" or "Lifelong learning keeps staff up to date". Though the percentages of lecturers that were uncertain is very low (6.56% at colleges of education, 6.06% at technikons and 10.00% at colleges of education and 6.06% at technikons, it was something that the researcher did not expect from highly educated lecturers with due respect. The responses expected were straightforward agree or disagree.

A significant number of responses on Table 4.19 How committed is management regarding training were uncertain, 70.49% colleges of education and 67.27% at technikons. The response shocked the researcher, why such a huge number of lecturers at both institutions are uncertain. There is clearly more probing to be done to find out why were they uncertain? May be there are underlying factors that influenced that kind of response and it would be very interesting to find out.

4.9 CONCLUSION

In this chapter a comparison was made between lecturers at colleges of education as well as technikons regarding lifelong learning and their needs for satisfactory training. This comparison was based on the following dimensions: The attitude towards lifelong learning, type of training and development programmes; objectives of training and needs analysis at their institutions.

The empirical data were analysed and interpreted and various sections were discussed briefly.