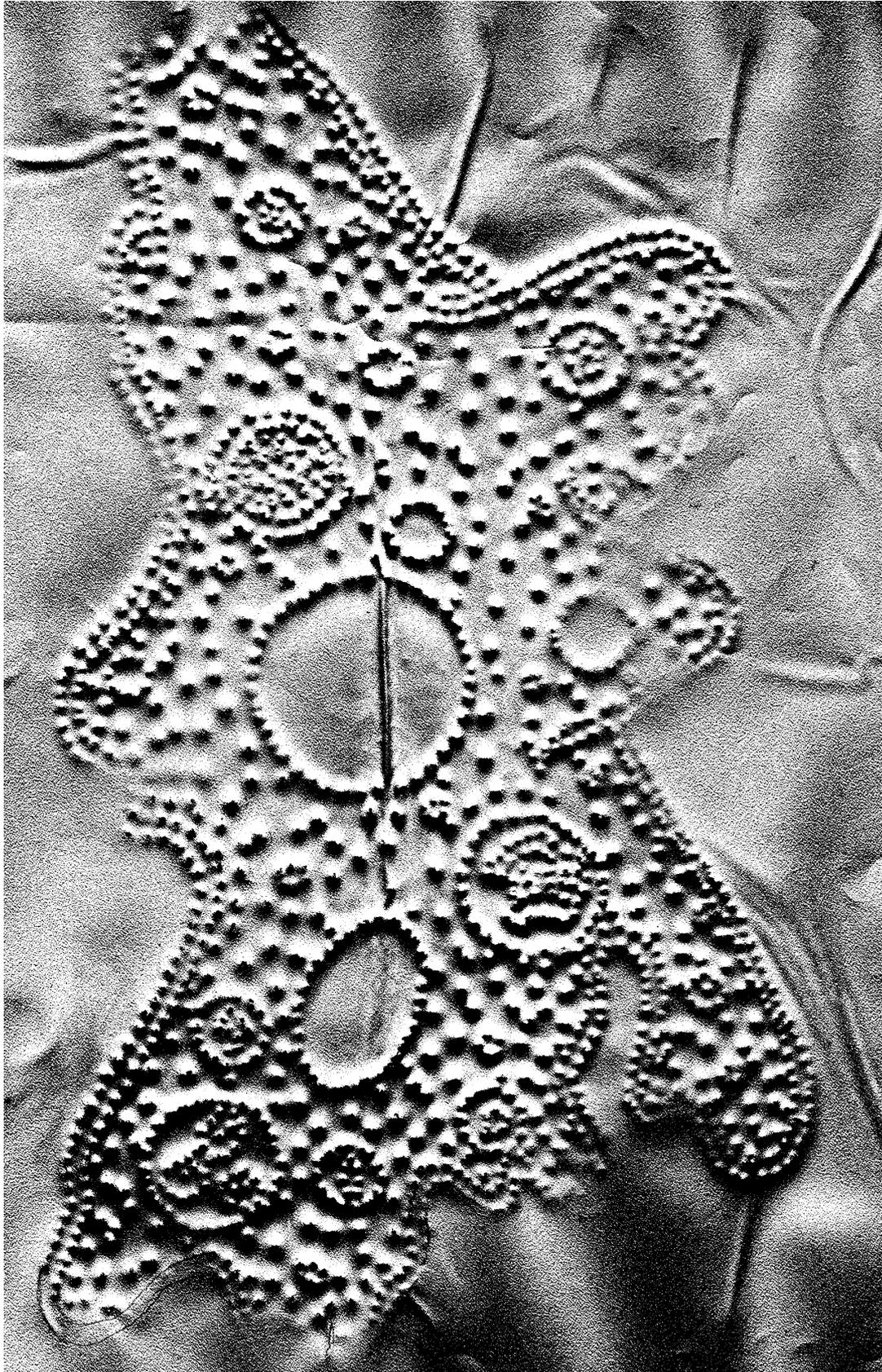


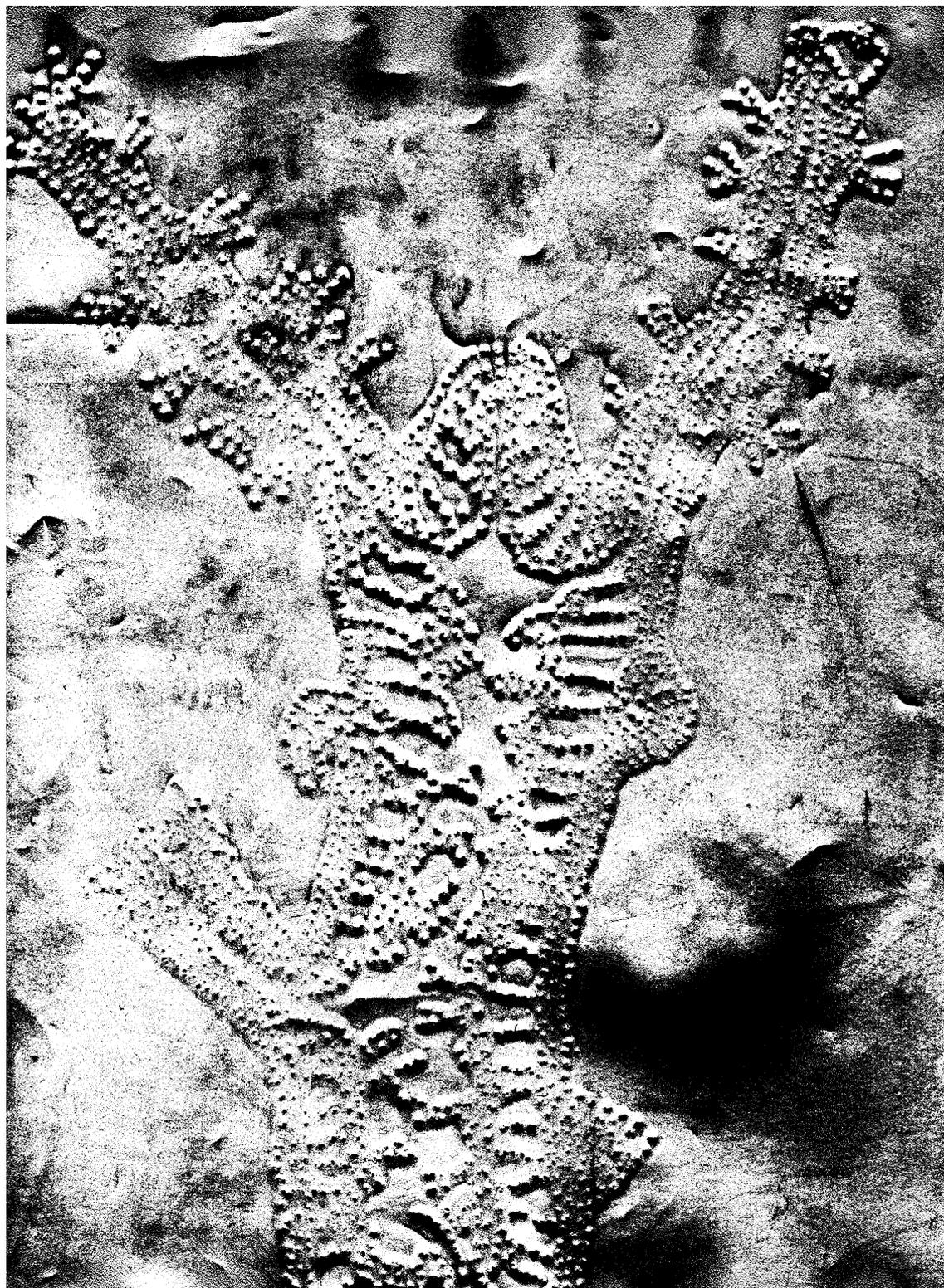
APPENDIX A

A PHOTOCOPY OF A SCANED TACTILE AMOEBA SKETCH ILLUSTRATING HOW A SMALL THING COULD BE BLOWN OUT OF PROPORTION IN A TACTUAL FORMAT



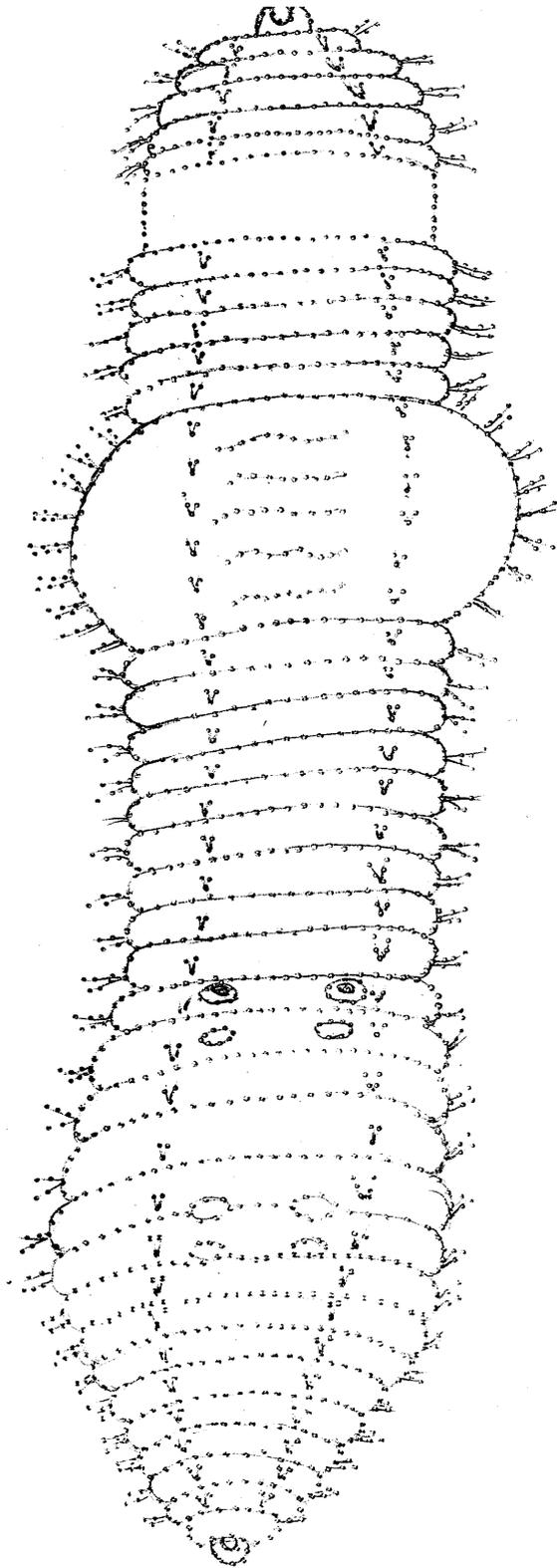
APPENDIX B

A PHOTOCOPY OF A SCANED TACTILE HYDRA SKETCH ILLUSTRATING HOW COMPLICATED IT BECOMES FOR A BLIND LEARNER TO UNDERSTAND A TOO DETAILED TACTILE SKETCH



APPENDIX C

A PHOTOCOPY OF A TACTILE EARTHWORM SKETCH DRAWN FROM THE ZYTEC MACHINE USING A SWELL-PAPER ILLUSTRATING THE POOR QUALITY OF SUCH SKETCHES AS COMPARED TO THERMOFORM ONES



APPENDIX D

SA National council for the Blind
P.O. Box 11149
Hatfield
0028
2003-08-11
To the School Principal

Dear Sir/Madam

A REQUEST TO CONDUCT MY Ph.D. RESEARCH AT YOUR SCHOOL

I M.O. Maguvhe Co-ordinator: Education Services at the SANCB is a Ph.D. student at the University of Pretoria. My research title is: "A STUDY OF INCLUSIVE EDUCATION (POLICY) IN SOUTH AFRICA AND ITS IMPACT ON THE MEDIATION OF BIOLOGY TO BLIND LEARNERS IN AN OUTCOMES-BASED EDUCATION AND TRAINING CLASSROOM."

I am at the present moment through with the literature review and should be involved with the real research. I therefore, request you to grant me permission to visit your learning site to conduct the research which would involve interviewing educators and learners, observing (by the sighted assistant), photographing, videotaping and recording lessons. Since I am blind, my promoter wants as much information as possible so that he could help me analyse and synthesize the collected data. I know that it is possible that your school is not teaching biology but, any life science class would still serve the purpose. I have to conduct the research either towards the end of this month or, in the middle of September.

Your immediate and positive response pertaining to this matter shall be highly appreciated.

Sincerely yours
M.O. Maguvhe

Tel.: (012) 3461171 ext. 343

Fax.: (012) 3461177

E-mail.: Obert@sancb.org.za

APPENDIX E



UMnyango WezeMfundo
Department of Education

Lefapha la Thuto
Departement van Onderwys

TO: **BMT MEMBERS
DISTRICT POLICY & PLANNING OFFICIALS
HEADS OF INSTITUTIONS**

DATE: **9 April 2003**

SUBJECT: **RESEARCH REQUEST PROCESSES WITHIN THE GDE**

The Strategic Policy Development, Management and Research Coordination Directorate wishes to provide an outline to all those listed in this communiqué, the key research request approval processes that prevails within the Gauteng Department of Education (GDE).

The organisational structure of Gauteng Department of Education makes provision for research to be conducted across all the different tiers of the Department, namely, Head Office Branches, Divisions, Directorates, District Offices and Institutions. The primary function of the Research Coordination and Advocacy Unit within the Strategic Policy Development Directorate is to perform a liaison, co-ordination and advisory role to both researchers and officials of the GDE.

The steps that follow, intends to provide all prospective researchers that wish to utilise the GDE (at whatever level) as a focus of their research, with a sense of the manner in which they may seek and be granted approval for their particular research request.

1. All students and organisations that wish to conduct any study within the GDE have to complete the prescribed **GDE Research Request Form**. The form may be obtained from both the Policy & Planning Officials in the 12 Districts and from the Research Coordination & Advocacy Unit at Head Office. Among the key details to be completed in the form are the following:
 - 1.1 Particulars of the researcher
 - 1.2 Details of the proposed research to be undertaken
 - 1.3 The Proposed research methodology to be utilised
 - 1.4 The GDE organ (Institution/s and/or District/s and/or Head Office Branch, Division/s and/or Directorate/s) that would be involved
 - 1.5 A declaration by the researcher and the supervisor and/or promoter of the research

**SIBONILE SCHOOL
TEL: (011) 903-8803**

2003 -05- 0 7

**PO BOX 534
KLIPRIVIER 1871**

Office of the Senior Manager – Strategic Policy Development, Management & Research Coordination
Room 904, 111 Commissioner Street, Johannesburg, 2001 P.O.Box 7710, Johannesburg, 2000
Tel: (011) 355-0475 Fax: (011) 355-0512 E-mail: SallyVR@gog.gov.za Cell: 083 310 1910

2. All prospective researchers must submit the following documents before any research request may be entertained:
 - 2.1 The full Research Proposal i.e. a full and detailed outline of the research plan
 - 2.2 A full list of the institutions and/or offices that would be participating in the study (a list of the names and addresses of all GDE institutions and offices is available from the Department of Education on a paper cost-recovery basis)
 - 2.3 Copy/ies of questionnaire/s and interview schedules to be utilised in the study
3. The Gauteng Department of Education will interact with the research proposal, and when satisfied that all the required criteria have been met, will issue an approval letter, that would serve as a formal contract between the Department and the researcher. The approval letter will contain a GDE registration number that will be used for tracking, monitoring and database maintenance purposes.
4. A research request approval letter would only indicate that a researcher has been granted permission to conduct research within the GDE. The final say would however rest with the Principal and School Governing Body of an institution and the Branch/Divisional and/or Senior Manager in charge of any office. Once the Principal and SGB and/or relevant District or Head Office manager has granted permission for the research to proceed, all research processes may only commence from the beginning of the second week of February and has to be concluded by the end of the third quarter of the academic year.
5. Listed below are some key considerations for a researcher to bear in mind once permission has been granted:
 - 5.1 All Social Research Ethics must be honoured
 - 5.2 The researcher must utilise his/her own resources to complete the study.
 - 5.3 The name/s of the official/s, school/s, principal/s, educator/s and learner/s may not appear in any research report without the written consent of each of the individuals and/or structures listed.
 - 5.4 On completion of the study the researcher must supply the Department with 2 bound copies of the approved, final report and must be prepared to present his/her main findings and recommendations to both the officials of the Department and the institutions that were involved in the study.
 - 5.5 The senior manager of the relevant office and both the principal and SGB of each institution must be notified by the researcher, in writing, about the study being undertaken within their respective offices and/or institutions respectively. The official letter issued by the Senior Manager: Strategic Policy Development & Research Coordination granting approval for such request must be attached to the letter of notification sent by the researcher/s.
6. Researchers are requested to apply for permission at least 2 months before the actual research investigations are to be conducted at any site within the GDE. During this time the Research Coordination Team would interact with all the relevant documents submitted by researcher and facilitate a process within the GDE in order to make a decision around whether approval should/should not be granted.

2. PURPOSE & DETAILS OF THE PROPOSED RESEARCH

2.1	Purpose of the Research (Place cross where appropriate)
	Undergraduate Study - Self
	Postgraduate Study - Self x
	Private Company - Commissioned by Provincial Government or Department
	Private Research by Independent Researcher
	Non-Governmental Organisation
	National Department of Education
	Commissions and Committees
	Independent Research Agencies
	Statutory Research Agencies
	Higher Education Institutions

2.2	Full title of Thesis / Dissertation / Research Project
	A Study of Inclusive Education (Policy) and its effects on the teaching of Biology to blind learners in an outcomes - Based education classroom in SA

2.3	Value of the Research to Education (Attach Research Proposal)
	It is going to benefit blind learners and educators when coming to the facilitation or learning mediation of Biology.

2.5	Student and Postgraduate Enrolment Particulars (if applicable)
Name of institution where enrolled:	University Of Pretoria
Degree / Qualification:	Ph.D.
Faculty and Discipline / Area of Study:	Education Curriculum studies
Name of Supervisor / Promoter:	W.J. Frasek (Prof.)

2.6	Employer (where applicable)
Name of Organisation:	S.A.N.C.B
Position in Organisation:	Co-ordinator Education Services
Head of Organisation:	Doctor W. P. Rowland
Street Address:	514 White street Bailey Muckleneuk - Pretoria
Postal Code:	0181
Telephone Number (Code + Ext):	(012) 346-1171 ext 343
Fax Number:	012 346-1177
E-mail:	Obest@sancb.org.za

2.7	PERSAL Number (where applicable)

3. PROPOSED RESEARCH METHOD/S

(Please indicate by placing a cross in the appropriate block whether the following modes would be adopted)

3.1 Questionnaire/s (If Yes, supply copies of each to be used)

YES		NO	
-----	--	----	--

3.2 Interview/s (If Yes, provide copies of each schedule)

YES	X	NO	
-----	---	----	--

3.3 Use of official documents

YES	X	NO	
-----	---	----	--

If Yes, please specify the document/s:

all subject related official policy documents.			
--	--	--	--

APPENDIX F

For Official Use	
Ref. No.	

GAUTENG DEPARTMENT OF EDUCATION



RESEARCH REQUEST FORM

REQUEST TO CONDUCT RESEARCH IN INSTITUTIONS AND/OR OFFICES OF THE GAUTENG DEPARTMENT OF EDUCATION

1. PARTICULARS OF THE RESEARCHER

1.1	Details of the Researcher
Surname and Initials:	Maguvhe
First Name/s:	Obekt Mbulaheni
Title (Prof / Dr / Mr / Mrs / Ms):	Mr
Student Number (if relevant):	21226475
ID Number:	67062659082

1.2	Private Contact Details
Home Address	Postal Address (if different)
P.O. Box 11149	
Haitfield	
Postal Code 0028	Postal Code
Tel: (012) 346-1171	
Cell: 0826681717	
Fax: (012) 346-1177	
E-mail: obekt@sancb.org.za	

7. The Department is involved, on an ongoing basis, of developing and updating its own list of Research Priorities and is prepared to engage with prospective researchers around adopting those research topics that may be considered of importance to the organisation. A full list of the GDE Research Priorities will be made available to all prospective researchers on written request.
8. All prescribed forms are available electronically and prospective researchers are encouraged to utilise the electronic means of communication (e-mail) when both requesting and forwarding any information related to their research requests. The sole proviso in this respect relates to those pages that require the original signatures of the researcher and his/her supervisor or promoter. These pages may be faxed to the relevant office only after the researcher has communicated with the Research Coordination & Advocacy Unit and has acquired a reference number. The reference number must be quoted when forwarding all outstanding information through fax.

Notwithstanding paragraph 8 above, should you require any additional information pertaining to research activities within the GDE, kindly contact the Convenor of the Research Coordination Team: **Ms Nomvula Ubisi** and/or her assistant **Ms Ntombi Maswanganyi** (See contact details below).

Tel: (011) 355 0483/0488

Fax: (011) 355 0512

Street Address: Room 904/910, 111 Commissioner Street, Johannesburg

Postal Address: P.O. Box 7710, Johannesburg, 2000

E-Mail: nomvulau@gpg.gov.za or violetm@gpg.gov.za

Sally Rowney (Senior Manager)

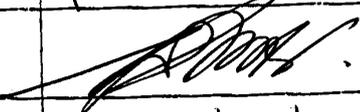
4.9 *Time of day that you propose to conduct your test/research.*

School Hours	During Break	After School Hours
X		

4.10 *School term during which the research would be undertaken*

First Term	Second Term	Third Term
		X

DECLARATION BY THE RESEARCHER	
1. I declare that all statements made by myself in this application are true and accurate.	
2. I have taken note of all the conditions associated with the granting of approval to conduct research and undertake to abide by them.	
Signature: M. O. Maguvhe	
Date: 08/11/2003	

DECLARATION BY SUPERVISOR / PROMOTER / LECTURER	
<i>I declare that: -</i>	
1. The applicant is enrolled at the institution / employed by the organisation to which the undersigned is attached.	
2. The questionnaires / structured interviews / tests meet the criteria of: <ul style="list-style-type: none"> • Educational Accountability • Proper Research Design • Sensitivity towards Participants • Correct Content and Terminology • Acceptable Grammar • Absence of Non-essential / Superfluous items 	
Surname:	FRASER
First Name/s:	William John
Institution / Organisation:	University of Pretoria
Faculty / Department (where relevant):	Education
Telephone:	(012) 420 2207
Fax:	(012) 420 3003
E-mail:	wfraser@katuna.up.ac.za
Signature:	
Date:	29/03/08 / 22

N.B. This form (and all other relevant documentation where available) may be completed and forwarded electronically to either Ntombi Maswanganyi (violetm@gpg.gov.za) or Nomvula Ubisi (nomvulau@gpg.gov.za). The last 2 pages of this document must however contain the original signatures of both the researcher and his/her supervisor or promoter. These pages may therefore be faxed or hand delivered. Please mark fax - For Attention: Ntombi Maswanganyi at 011 355 0512 (fax) or hand deliver (in closed envelope) to Ntombi Maswanganyi (Room 910) or Nomvula Ubisi (Room 914), 111 Commissioner Street, Johannesburg.

APPENDIX G

SA National Council for the Blind
P.O. Box 11149
Hatfield
0028
2003-08-11
To the School DISTRICT MANAGER

Dear Sir/Madam

A REQUEST TO CONDUCT MY Ph.D. RESEARCH AT SIBONILE SCHOOL

I M.O. Maguvhe Co-ordinator: Education Services at the SANCB is a Ph.D. student at the University of Pretoria. My research title is: "A STUDY OF INCLUSIVE EDUCATION IN SOUTH AFRICA AND ITS IMPACT ON THE MEDIATION OF BIOLOGY TO BLIND LEARNERS IN AN OUTCOMES-BASED EDUCATION AND TRAINING CLASSROOM."

I am at the present moment through with the literature review and should be involved with the real research. I therefore, request you to grant me permission to visit your learning site to conduct the research which would involve interviewing educators and learners, observing (by the sighted assistant), photographing, videotaping and recording lessons. Since I am blind, my promoter wants as much information as possible so that he could help me analyse and synthesize the collected data. I know that it is possible that your school is not teaching biology but, any life science class would still serve the purpose. I have to conduct the research either towards the end of this month or, in the middle of September.

Your immediate and positive response pertaining to this matter shall be highly appreciated.

Sincerely yours
M.O. Maguvhe

Tel.: (012) 3461171 ext. 343

Fax.: (012) 3461177

E-mail.: Obert@sancb.org.za

SIBONILE SCHOOL

For visually impaired pupils

PO Box 534
KLIPRIVIER
1871

Tel/Fax: [011] 9038909

E-mail: sibonile@iafrica.com

Fundraising No: 01 101346 000 4

NPO Reg No: 004 664

TO: MR MAGHUVHE

FROM: MRS MORTHANE

TEL: 012 3461171

4.5 Number of pupils to be involved per school

Grade	1		2		3		4		5		6	
Gender	B	G	B	G	B	G	B	G	B	G	B	G
Number	10											

Grade	7		8		9		10		11		12	
Gender	B	G	B	G	B	G	B	G	B	G	B	G
Number							2	2	2	2	2	2

4.6 Number of educators/officials involved in the study */per school*

Type of staff	Teachers	HODs	Deputy Principals	Principal	Lecturers	Office Based Officials
Number	2					

4.7 Are the participants to be involved in groups or individually?

Participation	
Groups	X
Individually	X

4.8 Average period of time each participant will be involved in the test or other research activities (Please indicate time in minutes)

Participant/s	Activity	Time
<i>Cluster of 10 learners per school</i>	<i>Focus group analysis</i>	<i>1 - 2 hours</i>

APPENDIX H



DEPARTMENT OF EDUCATION

DEPARTMENT OF EDUCATION
PRIVATE BAG X895
PRETORIA
0001

TO			
The Principal			
Fax Number:	(013) 262 2084		
Institution: Bosele School for the Deaf and Blind, NEBO			
Remarks: Please find attached			
NO. of pages: (including this one) 3		Date: 02 September 2003	
FROM			
Name:	Wendy Ndlovu		
Room number:	228	Tel No:	(012) 312 5485
		Fax No:	(012) 312 5029
Directorate: INCLUSIVE EDUCATION.			
* Please phone immediately if the transmission is not satisfactory. Thank you.			



**DEPARTMENT: EDUCATION
REPUBLIC OF SOUTH AFRICA**

Private Bag X895, Pretoria, 0001 Tel: +27 12 312 5911 Fax: +27 12 321 6770
Sol Plaatje House, 123 Schoeman Street, Pretoria, 0001, South Africa
Private Bag X9023, Cape Town, 8000 Tel: +27 21 465 1701 Fax: +27 21 461 8110
120 Plein Street, Cape Town, 8000, South Africa
<http://education.gov.za>

The Principal

Bosele School for the Deaf & Blind

Private Bag X128

NEBO

1059

Fax: 013 262 2084

Dear Sir/Madam

A REQUEST TO CONDUCT PH.D. RESEARCH AT YOUR SCHOOL

Mr Maguvhe is a co-ordinator of Education Services at the South African National Council for the Blind (SANCB). He is currently pursuing a Ph.D at the University of Pretoria.

Mr Maguvhe made a request to visit your learning site to conduct the research that would involve interviewing educators and learners, observing (by the sighted assistant arranged by Mr Maguvhe), photographing, videotaping and recording lessons. Since he is a blind person, his supervisor wants as much information as possible so that he could help him to analyse and synthesize the collected data. The focus of his research is on the possible impact of Inclusive Education policy in South Africa on the mediation of biology to blind learners in Outcomes-Based Education and Training classrooms. In a case where biology is not offered in a particular school, any life science class would still serve the purpose. He has to conduct the research either towards the end of this month or, in the middle of September 2003.

Tirisano: Working together to build a South African education and training system for the 21st century.

It will be appreciated if you could please allow him to do this valuable research, which may be of enormous benefit to Education in South Africa.

May you please communicate directly with Mr Maguvhe to make the necessary arrangements. His contact details are as follows:

SA National Council for the Blind

P.O. Box 11149

Hatfield

0028

Tel.: (012) 3461171 ext. 343

Fax.: (012) 3461177

E-mail.: Obert@sancb.org.za

Yours sincerely

pp. *M. Schoeman*
Dr S Naicker
Directorate: Inclusive Education

APPENDIX I



DEPARTMENT OF EDUCATION

DEPARTMENT OF EDUCATION
PRIVATE BAG X895
PRETORIA
0001

TO					
The Principal					
Fax Number:		(012) 793 1358			
Institution: Filadelfia Secondary School, Soshanguve					
Remarks: Please find attached					
NO. of pages: (including this one) 3				Date: 02 September 2003	
FROM					
Name:		Wendy Ndlovu			
Room number:		228	Tel No: (012) 312 5485		Fax No: (012) 312 5029
Directorate: INCLUSIVE EDUCATION.					
* Please phone immediately if the transmission is not satisfactory. Thank you.					



**DEPARTMENT: EDUCATION
REPUBLIC OF SOUTH AFRICA**

Private Bag X895, Pretoria, 0001 Tel: +27 12 312 5911 Fax: +27 12 321 6770
Sol Plaatje House, 123 Schoeman Street, Pretoria, 0001, South Africa
Private Bag X9023, Cape Town, 8000 Tel: +27 21 465 1701 Fax: +27 21 461 8110
120 Plein Street, Cape Town, 8000, South Africa
<http://education.gov.za>

The Principal
Filadelfia Secondary School
Private Bag X76
SOSHANGUVE
0152

Fax: 012 793 1358

Dear Sir/Madam

A REQUEST TO CONDUCT PH.D. RESEARCH AT YOUR SCHOOL

Mr Maguvhe is a co-ordinator of Education Services at the South African National Council for the Blind (SANCB). He is currently pursuing a Ph.D at the University of Pretoria.

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SA National Council for the Blind

P.O. Box 11149

Hatfield

0028

Tel.: (012) 3461171 ext. 343

Fax.: (012) 3461177

E-mail.: Obert@sancb.org.za

Yours sincerely

M. Swerman

Sp.

Dr S Naicker

Directorate: Inclusive Education

APPENDIX J



DEPARTMENT OF EDUCATION

DEPARTMENT OF EDUCATION
PRIVATE BAG X895
PRETORIA
0001

TO					
The Principal					
Fax Number:		(011) 905 1123			
Institution: Katlehong School f/t Deaf and Blind. Leondale					
Remarks: Please find attached					
NO. of pages: (including this one) 3			Date: 02 September 2003		
FROM					
Name:		Wendy Ndlovu			
Room number:	228	Tel No:	(012) 312 5485	Fax No:	(012) 312 5029
Directorate: INCLUSIVE EDUCATION.					
* Please phone immediately if the transmission is not satisfactory. Thank you.					



**DEPARTMENT: EDUCATION
REPUBLIC OF SOUTH AFRICA**

Private Bag X895, Pretoria, 0001 Tel: +27 12 312 5911 Fax: +27 12 321 6770
Sol Plaatje House, 123 Schoeman Street, Pretoria, 0001, South Africa
Private Bag X9023, Cape Town, 8000 Tel: +27 21 465 1701 Fax: +27 21 461 8110
120 Plein Street, Cape Town, 8000, South Africa
<http://education.gov.za>

The Principal

Katlehong School f/t Deaf & Blind

P O Box16008

LEONDALE

1424

Fax: 011 905 1123

Dear Sir/Madam

A REQUEST TO CONDUCT PH.D. RESEARCH AT YOUR SCHOOL

Mr Maguvhe is a co-ordinator of Education Services at the South African National Council for the Blind (SANCB). He is currently pursuing a Ph.D at the University of Pretoria.

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SA National Council for the Blind

P.O. Box 11149

Hatfield

0028

Tel.: (012) 3461171 ext. 343

Fax.: (012) 3461177

E-mail.: Obert@sancb.org.za

Yours sincerely

M. S. Swerman

Dr S Naicker
Dr S Naicker
Directorate: Inclusive Education

APPENDIX K



DEPARTMENT OF EDUCATION

DEPARTMENT OF EDUCATION
PRIVATE BAG X895
PRETORIA
0001

TO					
The Principal					
Fax Number:		(015) 303 1655			
Institution: Letaba School for the Handicapped, Tzaneen					
Remarks: Please find attached					
NO. of pages: (including this one) 3				Date: 02 September 2003	
FROM					
Name:		Wendy Ndlovu			
Room number:		228	Tel No:	(012) 312 5485	Fax No: (012) 312 5029
Directorate: INCLUSIVE EDUCATION.					
* Please phone immediately if the transmission is not satisfactory. Thank you.					



**DEPARTMENT: EDUCATION
REPUBLIC OF SOUTH AFRICA**

Private Bag X895, Pretoria, 0001 Tel: +27 12 312 5911 Fax: +27 12 321 6770
Sol Plaatje House, 123 Schoeman Street, Pretoria, 0001, South Africa
Private Bag X9023, Cape Town, 8000 Tel: +27 21 465 1701 Fax: +27 21 461 8110
120 Plein Street, Cape Town, 8000, South Africa
<http://education.gov.za>

The Principal

Letaba School for the Handicapped

P O Box 2445

TZANEEN

0850

Fax: 015 303 1655

Dear Sir/Madam

A REQUEST TO CONDUCT PH.D. RESEARCH AT YOUR SCHOOL

Mr Maguvhe is a co-ordinator of Education Services at the South African National Council for the Blind (SANCB). He is currently pursuing a Ph.D at the University of Pretoria.

Mr Maguvhe made a request to visit your learning site to conduct the research that would involve interviewing educators and learners, observing (by the sighted assistant arranged by Mr Maguvhe), photographing, videotaping and recording lessons. Since he is a blind person, his supervisor wants as much information as possible so that he could help him to analyse and synthesize the collected data. The focus of his research is on the possible impact of Inclusive Education policy in South Africa on the mediation of biology to blind learners in Outcomes-Based Education and Training classrooms. In a case where biology is not offered in a particular school, any life science class would still serve the purpose. He has to conduct the research either towards the end of this month or, in the middle of September 2003.

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P.O. Box 11149

Hatfield

0028

Tel.: (012) 3461171 ext. 343

Fax.: (012) 3461177

E-mail.: Obert@sancb.org.za

Yours sincerely

M. S. Swerman

Dr S Naicker
Dr S Naicker
Directorate: Inclusive Education

APPENDIX L



DEPARTMENT OF EDUCATION

DEPARTMENT OF EDUCATION
PRIVATE BAG X895
PRETORIA
0001

TO					
The Principal					
Fax Number:		(011) 903 8909			
Institution:		Sibonile School, KLIPRIVER			
Remarks: Please find attached					
NO. of pages: (including this one) 3				Date: 02 September 2003	
FROM					
Name:		Wendy Ndlovu			
Room number:		228	Tel No:	(012) 312 5485	Fax No: (012) 312 5029
Directorate:		INCLUSIVE EDUCATION.			
* Please phone immediately if the transmission is not satisfactory. Thank you.					



**DEPARTMENT: EDUCATION
REPUBLIC OF SOUTH AFRICA**

Private Bag X895, Pretoria, 0001 Tel: +27 12 312 5911 Fax: +27 12 321 6770
Sol Plaatje House, 123 Schoeman Street, Pretoria, 0001, South Africa
Private Bag X9023, Cape Town, 8000 Tel: +27 21 465 1701 Fax: +27 21 461 8110
120 Plein Street, Cape Town, 8000, South Africa
<http://education.gov.za>

The Principal
Sibonile School
P O Box 534
KLIPRIVER
1836

Fax: 011 903 8909

Dear Sir/Madam

A REQUEST TO CONDUCT PH.D. RESEARCH AT YOUR SCHOOL

Mr Maguvhe is a co-ordinator of Education Services at the South African National Council for the Blind (SANCB). He is currently pursuing a Ph.D at the University of Pretoria.

Mr Maguvhe made a request to visit your learning site to conduct the research that would involve interviewing educators and learners, observing (by the sighted assistant arranged by Mr Maguvhe), photographing, videotaping and recording lessons. Since he is a blind person, his supervisor wants as much information as possible so that he could help him to analyse and synthesize the collected data. The focus of his research is on the possible impact of Inclusive Education policy in South Africa on the mediation of biology to blind learners in Outcomes-Based Education and Training classrooms. In a case where biology is not offered in a particular school, any life science class would still serve the purpose. He has to conduct the research either towards the end of this month or, in the middle of September 2003.

Tirisano: Working together to build a South African education and training system for the 21st century.

It will be appreciated if you could please allow him to do this valuable research, which may be of enormous benefit to Education in South Africa

May you please communicate directly with Mr Maguvhe to make the necessary arrangements. His contact details are as follows:

SA National Council for the Blind

P.O. Box 11149

Hatfield

0028

Tel.: (012) 3461171 ext. 343

Fax.: (012) 3461177

E-mail.: Obert@sancb.org.za

Yours sincerely

M. S. Swerman

Dr S Naicker
Dr S Naicker
Directorate: Inclusive Education

APPENDIX M



DEPARTMENT OF EDUCATION

DEPARTMENT OF EDUCATION
PRIVATE BAG X895
PRETORIA
0001

TO			
The Principal			
Fax Number:	(015) 651 0222		
Institution: Siloe School, Pietersburg			
Remarks: Please find attached			
NO. of pages: (including this one) 3		Date: 02 September 2003	
FROM			
Name:	Wendy Ndlovu		
Room number:	228	Tel No:	(012) 312 5485
		Fax No:	(012) 312 5029
Directorate: INCLUSIVE EDUCATION.			
* Please phone immediately if the transmission is not satisfactory. Thank you.			



**DEPARTMENT: EDUCATION
REPUBLIC OF SOUTH AFRICA**

Private Bag X895, Pretoria, 0001 Tel: +27 12 312 5911 Fax: +27 12 321 6770
Sol Plaatje House, 123 Schoeman Street, Pretoria, 0001, South Africa
Private Bag X9023, Cape Town, 8000 Tel: +27 21 465 1701 Fax: +27 21 461 8110
120 Plein Street, Cape Town, 8000, South Africa
<http://education.gov.za>

The Principal
Siloë School
Private Bag X7354
PIETERSBURG
0700

Fax: 015 651 0222

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Yours sincerely

M. S. Swerman

Dr S Naicker
Dr S Naicker
Directorate: Inclusive Education

APPENDIX N



DEPARTMENT OF EDUCATION

DEPARTMENT OF EDUCATION
PRIVATE BAG X895
PRETORIA
0001

TO			
The Principal			
Fax Number:	(012) 328 4170		
Institution: Prinshof School, Pretoria			
Remarks: Please find attached			
NO. of pages: (including this one) 3		Date: 02 September 2003	
FROM			
Name:	Wendy Ndlovu		
Room number:	228	Tel No:	(012) 312 5485
		Fax No:	(012) 312 5029
Directorate: INCLUSIVE EDUCATION.			
* Please phone immediately if the transmission is not satisfactory. Thank you.			



**DEPARTMENT: EDUCATION
REPUBLIC OF SOUTH AFRICA**

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The Principal
Prinshof School
P O Box 2817
PRETORIA
0001

Fax: 012 328 4170

Dear Sir/Madam

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Yours sincerely

M. S. Swerman

Dr S Naicker
Dr S Naicker
Directorate: Inclusive Education

APPENDIX O



DEPARTMENT OF EDUCATION

DEPARTMENT OF EDUCATION
PRIVATE BAG X895
PRETORIA
0001

TO					
The Principal					
Fax Number:		(015) 964 1843			
Institution: Tshildzini School for Special Education					
Remarks: Please find attached					
NO. of pages: (including this one) 3				Date: 02 September 2003	
FROM					
Name:		Wendy Ndlovu			
Room number:	228	Tel No:	(012) 312 5485	Fax No:	(012) 312 5029
Directorate: INCLUSIVE EDUCATION.					
* Please phone immediately if the transmission is not satisfactory. Thank you.					



**DEPARTMENT: EDUCATION
REPUBLIC OF SOUTH AFRICA**

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<http://education.gov.za>

The Principal

Tshilidzini School for Special Education.

Private Bag X910

SHAYANDIMA

0945

Fax: 015 9641 843

Dear Sir/Madam

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Mr Maguvhe is a co-ordinator of Education Services at the South African National Council for the Blind (SANCB). He is currently pursuing a Ph.D at the University of Pretoria.

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APPENDIX P

INTERVIEWS

Mr Maguvhe and a lady teacher

Interviewer: Its Mr Maguvhe, “I just want to ask you short questions, thank you. Each short question is a follow up to what I asked you last year. “A le a e gopola ya science, ehk ka ehk October?” (Do you remember the science lesson in October?)

Respondent: Not clear ... li be le ruta ko Tshilidzini?

Interviewer: Ehk, Emm. Ok, there are a number of issues that remain unclear to me after conducting that research last year. I just want to check with you whether my interpretation was correct or not. Emm, it appears to me that drawing remains a problem to blind learners and in my investigation I revealed that learners are given “ready-made drawings” and are not taught how to draw. Is it therefore sensible for blind learners to draw objects and observations? If not what other activities are there to supplement a loss in drawing ability? How often do you use tactile diagrams and do learners have the capacity to draw and interpret tactile diagrams? Do you have equipment to produce tactile diagrams?

Respondent: Ok, normally it is not that easy but, fortunately now we have a machine from people from America whereby the machine can also draw the type of drawings that we need the learners to do. But in actual fact, we don't normally encourage them to specifically draw. Normally we give them a drawing where by they have to label that drawing. Even with the cited ones, because most of them their drawings are not that clear. So initially in the final exam for grade 12 question papers like this one they normally take a drawing out and they ask for labeling.

Interviewer: But then you confirm that you give them ready-made drawings?

Respondent: Ja.

Interviewer: Ok, how often do you use tactile diagrams?

Respondent: With the tactile diagrams, we don't use those diagrams especially because we only received the machine after July. it is something that is still new, newly introduced to us. Ja, but this time what I basically can say to you is that we don't have facilities like the thing that we encounter now is that we don't have textbooks that is one thing that we are trying to get from Pioneer but still they are not OBE books. So initially what I have to do is that I have to try to make Braille notes for them from the OBE books.

Interviewer: But then according to your experience are these learners able to interpret ehh I mean this diagrams?

Respondent: Ja, that's why I said that sometimes like even with the learners in grade 9 they normally don't draw because is not easy to give the blind learner a diagram what they do is that maybe is a goat, and water, the boy and green grass. We narrate a story looking at that drawing which will help us change those questions and answer those questions based on the story. Like if there is this situation like a boy, there is this green grass and everything we take out ...(not clear) that the learners will say ok, it was said that there is a green grass and it needs ...so initially, "ke gore" basically we don't give them drawings. We try to change those drawings into sort of stories and set questions based on those stories.

Interviewer: And you said you have just received the machine in July.

Respondent: Pardon

Interviewer: Ehh, you, you received that machine in July.

Respondent: We received the tactile producing drawing machine in July, but to show that it Is a very good machine even the map and so on it make all very nice structures. Ja.

Interviewer: Emm, are you able to operate the machine?

Respondent: Oh, only two teachers.

Interviewer: Only two teachers

Respondent: Only two teachers were asked to go for training that is one other teacher from here and the other problem that we have is that the department does not give us books for the blinds like when they introduce this OBE they only introduced it for the fine kids but for the blinds kids there are no reference that we can introduce in the mediation of these kids.

Interviewer: Okay, the other thing is that ehh, I realized that learners are seldom engage in practical work, field trips and related activities, so ehh, ehh I just want to understand in your opinion ehh regarding this statement, is it true or is it not true.

Respondent: That they are not, they are not introduced to the field work?

Interviewer: Ja

Respondent: It is not that true because with us we have Mrs Grobber who basically who try train them

to like doing the cards and all those things like building a car and all those things. But she is very much involved with the blind ones.

Interviewer: No, I mean like in science where you have to do experiments and so on, eh, how, how often do you eh, do experiments with them? Are they able to do them on their own or not?

Respondent: There are situations where that is not a problem. But the other problem that we have is that we should look at the point that Biology or natural science is only being done in grade 8 and 9, do you understand? So the experiment like if they have to do an experiment of, of soil mixing it with water so that we can see types, the different types of soil. It is a very easy experiment but basically they won't be able to see it. Do you get the point, so I have to do an extra explanation that this soil have larger particles. So in a way we try to teach them with the aim that they should also use their imagination. You can take them to try and feel the soil the different types of soil but doing that experiment practically like I do it with the blind learners is not going to, is not going to help them. You understand, but the only thing that you can do you can take them to feel that soil, the different textures of soil. If some of them are totally blind, they haven't seen, you understand the only thing that you can do you can take them and try to make them feel the texture of different kinds of soil. If maybe some of them are totally blind they haven't seen, if maybe I want to teach them about roots, stem and leaves, then I will go and look for a small tree and try to make them feel the roots, the stem and the leaves, do you understand. I take that initiative of trying to make them at least have the imagination specifically of what I'm trying to talk about.

Interviewer: To me that is just simple stuff, what about the, the complex types of activities, do you do them?

Respondent: If we have facilities we would be able to do even complex things. But as I have said to you that initially we don't have textbooks, if the books were there whereby the learners will be able to feel those structures and will even be able to prepare for the class and study on their own, it will be easier whereby we will be able to do even the complex activities.

Interviewer: Are you saying that this is the reason why you are not doing the complex things?

Respondent: Like one major issue is lack of textbooks and chemicals. That one is frustrating. Also, because they do not have books and I am the only one who has the book I am the only reliable source. Like now I have finished teaching all the chapters.

Interviewer: But, do you have equipment for, for, for complex things?

Respondent: Yes, basically what I'm saying is that if we had textbooks then from there we will be able

to go hand in hand with them, without the help of it how should we tackle the section. So the problem is that I'm the only one having the book meaning that I'm their only reliable resource. And that is one negative impact because if I make a mistake, as a teacher you should be willing that is to be rectified by those learners, but are they in a position of rectifying you because they don't have the resources.

Interviewer: So, so, I also wanted to ask you but my impression was that learners have, I mean very few of them have access to subject related information so you are just confirming that they don't have things like computers, encyclopedias and recent publications.

Respondent: Ehh, and the computers have just been introduced in the beginning of the year sponsored by Telkom Foundations. Where by the have the micro... what do they call that, those that they put it on their ears. Teachers have been trying to teach them how to use a computer. You understand? And if we can have things like that whereby we can teach Mathematics and even Science and they encyclopedias where you give them an assignment and they are able to know that they will get it from an encyclopedia through the computer it will make life much easier for me and for them.

Interviewer: So how do you go about ehh, helping them ehh, collect, information independently to do their own assignments?

Respondent: That is the problem, so the teacher who is in charge with media, there are people who assist us in the library they do help them. As I've said basically even it means that if we don't have the everyday textbooks, can we expect that the library will have those textbooks, the recent resources or it might be outdated that have been used from 1987, 1989 and 1990.

Interviewer: But the other question that I want to ask, it seems as if the strategy of telling and talking ehh, seems to be the most popular when teaching blind learners. However, educators and learners rely heavily on a "tell and talk strategy".

Respondent: It has to be popular, because of the problem, like for instance if I do an experiment whereby I have to check whether the leaf has starch obviously I have to boil the leaf. They won't see the process and the procedure when I'm boiling them. The problem is that if you teach a blind learner you must try to be very ehh like aware of doing funny mistakes, you understand. And you should accept that you are the resources like if I throw iodine on top of that, they won't see that it is blue-black unlike if I'm teaching the sighted learners they will see the whole procedure and they will even see the results and they will be able to get to a conclusion. But with the blind learners when I go to them I have to tell them that if you want to test for starch the procedure is to do this and the results you should expect would be the following. You understand the problem. So it is not that teachers are not

willing but the other thing is because of the different problems. But although some are at least short sighted but we can do that with them.

Interviewer: Do you have other strategies besides that one of “telling and talking” that you use in your classes to accommodate learners who are blind?

Respondent: Ja, that is the strategy one uses so far but I don’t know with other teachers that is why we have been complaining about this and we manage to get the donation of the computers with the intention of being able to try and use the computers and the teacher can give each learner an attention. When the learner is trying to solve a sum on his own then he encounter a problem then he will raise the hand and we’ll go and assist that child but most of the time he will be trying to do things on his own and that is where we try to encourage outcomes-based education so that teachers must be there to assist and not to feed them with information.

Interviewer: Okay, ehh, the second to the last question, at your school do blind and partially sighted learners attend the same class or do they attend separate classes?

Respondent: Partially sighted are you referring to the B2 or the albinos?

Interviewer: Ja.

Respondent: No, is only blind. But we do have learners from Tshilidzini nehh, some are very short sighted but they basically belong to the B1 but normally we don’t mix the blinds with the albinos, no, the albinos go with the crippled.

Interviewer: Okay, then if you would encourage ehh, ehh, a co-operative learning as a strategy so that these learners can benefit from, would it be possible if they are separate?

Respondent: Do you mean whether it could or couldn’t work?

Interviewer: Ja.

Respondent: It is also fine if they are separated but being combined it will encourage the issue of inclusion and if the learners are comfortable with other disabilities I won’t deprive them of that but for me it depends on them but on the other hand we should look at learner attention. Do you understand, but if they feel like maybe they want to be mixed with physically disabled is also not a problem. But the problem is that as a teacher you are going to be divided for other leaning group like I was saying that if you are doing an experiment those who are short sighted they won’t be in a position to see that experiment meaning that after that they have to wait for me to explain to the blind learners. But it

depend on the education system if it want to propose that if it want every teacher have to accept that.

Interviewer: Okay, the last question now, I also got the impression that during teaching and learning, educators do not stimulate and develop the senses of blind learners during the teaching of science, ehh, how do you respond to this observation.

Respondent: Ehh, ee yona ye buti' (this one brother) I don't know.

Interviewer: Like ehh, you know that, that blind learners depend largely on their senses, say the sense of touch, sense of hearing, feeling smelling and so on. Ehh, I have realized that not much has been done regarding that, do you agree that not much has not been done or do you have a different opinion.

Respondent: I have a different opinion, I think teachers are trying their best. I'm not trying to protect them. To be honest they are trying their best and if the learners could use these committed teachers I think they will make it. We do try it is just sometimes we might have in a class whereby there are B ones, a learner may say I don't want Braille notes I want sighted ones. Ja, in a way you take it like say if the learner has not accepted her or his disability. Because in a class of ten learners I have to do six Braille notes and then four sighted ones. But when you give them answer sheets they can read Braille but when they do it through the notes they don't want to, do you understand. We can try to make them touch like for instance if you teach them about the parts of their body they will laugh at you and say Mum, you make us like grades 2 and 3 and they touch your tongue is for what, for tasting, your ear and from there they laugh but we do try to do that.

Interviewer: Okay, thanks very much for your time.

Respondent: Okay, "buti" (brother), okay bye bye.

Mr Maguvhe and Mr Mhlari

Interviewer: Okay let me see, (answering a phone call) hello are you there! I will ask very short questions. I have realized that drawing is a problem to blind learners, so ehh, I also observed that they are given ready made drawing. They cannot draw on their own. So would you tell me whether it is sensible for the blind learners to draw or whether it is not sensible.

Respondent: You mean partially sighted or totally blind?

Interviewer: Ehh, the totally blind.

Respondent: The totally blind, I don't know how to make them draw but if there was a way of which we can help to make them draw it would be a great thing I think. But at the moment I just don't know how.

Interviewer: Ja, but at your school do you have enough tactile drawings?

Respondent: No, we don't have enough but we use models but plastic ones. But, they are also no more there. We have models, let say I'm teaching Science I use models so that they can touch them. But now I don't see them anymore. They are no more there. And we don't find them even at shops.

Interviewer: But then if you give them drawings would they be able to interpret them?

Respondent: Ja, we don't have drawings as such. We, we I try to make a model like when teaching Science so that they can touch it because real things are, most of them are dangerous.

Interviewer: So do you have equipment to produce drawings?

Respondent: Except for that machine, the thermorform we don't have any equipment.

Interviewer: Ehh, I also realized that, blind learners are engaged in very few practical activities in science, what is your opinion on that?

Respondent: It is true there are very few because I do teach them science especially biology. With biology it is difficult to give them practical work. But we do try to teach them. Let's say I am teaching them about a flower, I do take them out and let them touch parts of the flower. But they seem to understand because when I ask them questions they do answer. Maybe they just memorise I don't know. In terms of ratio, it is more theory than practical work. I may say 75 % theory and 25 % practical.

Interviewer: Do you teach them complex experiments or do they only do simple experiments?

Respondent: Ehh, since I'm not teaching them ehh this what do they call physical science, is difficult for me to even start because the students can't see. But according to me I don't because even the sighted people it is difficult for them what more about blind people.

Interviewer: When I talked to learners they told me that they did not have subject related information with special reference to computers, encyclopedias and the recent publications. What is the situation here?

Respondent: Ja, now we have and in future it will be of a great help but at the moment they are few and we have to make room especially for the blinds. But at the moment very little.

Interviewer: One strategy that seems to be popular when I did my previous investigation was that of telling and talking. Ehh, would you say that the things have changed or teachers are still relying on this method of teaching for the blind?

Respondent: Telling method to the blind is still the only one mostly used by teachers.

Interviewer: Are there other popular strategies that are seen to be so powerful in accommodating blind learners?

Respondent: Of course there are, an example where they use this a radio and TV they can hear the person talking even if there are some drawings that they can show them and they can explain also.

Interviewer: Okay, are you as a science teacher, especially science teachers at special schools invited to workshops where the development of learning strategies is shared?

Respondent: Not invited at all, we have never been to any except when we come to Optima. So nothing. From the department side we do go to workshops but is not for the blinds but for the normal people. Most things we get are for the normal people only and not blind people. My view is blind teachers are reluctant to go to such workshops but they do force them to go and listen.

Interviewer: So at your school, do you teach blind learners and partially sighted learners in separate classes? So if you teach them at separate classes what happens when they have to be involved in cooperative learning?

Respondent: That's right. What made us, in fact I will answer that one in this way, what made us to separate them in the past is when we went to special education workshops we discovered that it was better to separate them because it is difficult to teach them both groups in one class. So we decided it is better to separate them because the other ones are writing in print while the others are writing in Braille. And let say in my school, for example I have blind teachers I think it will be difficult for the blind teacher to teach both the shortsighted and the totally blind learners because she can't see what the partially sighted is writing.

Interviewer: Okay, the last question now, ehh I've also realized that ehh blind learners senses are not stimulated enough. How would you respond to this observation? The senses of touch, the sense of hearing and so on.

Respondent: As I've said that there have been very little like what I've request myself, I will add, I do give the model the only thing that I have and for class I take them out to the flower garden and touch them. Those are the examples. But in most cases it is just the telling and talking method.

Interviewer: OH is just telling and talking. Okay, Mr Mhlari thanks for your time. Those were the questions that I had, thank you very much.

Respondent: I wish you well, bye.

MR MAGUVHE AND MUM RALETJENA

Interviewer: Morning Mum Raletjena how are you?

Respondent: I'm fine, and you?

Interviewer: I'm fine. Do your learners draw? And if not, what other activities are there to supplement this loss of drawing ability?

Respondent: Ahh, I will say for us we are trying we are trying. In fact I cannot say it is drawing because it is tracing. Thus far we are to help them do something like that, they trace that is what we are doing. The partially sighted ones they do draw.

Interviewer: How often do you use diagrams?

Respondent: Often, very often because we especially for Maths and science natural science we do give them such drawings. But most unfortunately they do not do drawings by themselves. During examinations and lessons we make the them use drawings in their textbooks.

Interviewer: Do you have equipment to produce drawings?

Respondent: Yes we do have that, yes they are in a good condition and sometimes they don't, let say you draw something to show children a, the stages of maybe something is rough, fine and so forth and so forth so for that like they are not so tractable in that way so we do it by hand where we put sand, we put saw dust, we put... so that they can differentiate that is what we are doing.

Interviewer: Ja, my other observation was that educators engage blind learners seldom in practical work. Ehh I mean conducting experiments, taking field trips or related activities. Would you also regard that to be your opinion with regard to this observation?

Respondent: Emm, not in my school because we have field trips with learners. And especially because I'm offering Maths and Science we do involve them a lot. Yes.

Because let say we are doing measurement of distances we have the meter wheels with which they do measure their class. They do that. So to me is not that in our case they do go the kitchen if it is a practical lesson, which let say have to go to the kitchen to do that.

Interviewer: If you were to give percentages to practical work and theoretical work how much, what percentage will you allocate to practical work and how much will you allocate to theoretical work?

Respondent: I would say theory is 60% and practical is 40%, ja this are my observations but I will estimate it like that.

Interviewer: Emm. So emm the other thing that I would like to ask, is that it appears to me that blind learners are only engaged in simple exercises or practical work, is this statement correct or not?

Respondent: Simple like the easy ones not the complex ones is that what you are saying? But I cannot say that is 100% correct because I would say that if the lesson demands something that is what we offer to the learners. I cannot say that it is simple if simple that I what is offered by the syllabus and if it is complex I don't see a situation especially in my school that we jump other things because is difficult and you don't give learners such things I don't see that. I really don't agree with that statement because we teach learners what the syllabus or the especially using the environment because nowadays OBE concentrate too much on what is given by or offered outside learning area and the outcomes. If the outcomes ask this you have to offer that if it is simple that could be the outcome that would have asked it. But it would depend on individual teachers who are teaching that.

Interviewer: Okay, when I visited schools learners told me that they don't have enough or don't have good access to things like computers, encyclopedias and recent publications but educators told me that, I mean the opposite of that and what is the situation in your school?

Respondent: At my school our learners do have access to computers. It start from grade 5 that is standard 3, is typing ordinary typing, they type preparing them for computers to go to the computer level. Now recently we from grade 6 they have afternoon lessons unfortunately we don't have teachers who are willing to give them those extra lessons but there are some the few that are there to offer them these extra lessons are doing that they do that to introduce them to computers. And so far what I've discovered is that our computers for totally blind learners are not in a good number we have 1 or 2 which are talking which are, all the totally blind learners can use. But for partially sighted ones we have about 8 computers and they use then in the afternoon they do go for lessons in grades of course

they cannot all go at the same time.

Interviewer: But do you have ehh enough books, recent books like encyclopedias?

Respondent: Oh yes, we have encyclopedias and then if there is an information they are allowed to go there, they make arrangement with the educator the educator arranges with the relevant person who is responsible with the encyclopedias. There are available for them.

Interviewer: Educators also told me that they adapt the traditional facilitation and instructions such as demonstrations to enhance learning with the blind learners. The learners on the other hand indicated that many of the activities rely heavily on tell and talk activities. Could you please indicate to me through the use of 1 or 2 examples on how actually you go about adapting the traditional strategies?

Respondent: Ahh, I'll say that, we cannot avoid it of course. But we engage learners to participate. Infact, for learners let say they, they, they see that we, teachers use the tell and talk ehh, the, your approach of OBE engage learners you cannot avoid it of course that it keep learners to participate and in fact learners direct you how you must teach them. I cannot say if you follow OBE correctly there'll be no way that you can just tell you will be the main participant in the lesson I don't think there is such a thing that you can do that it will be unfair to the educator not to say that it is not happening but I will say that it will be unfair because learners will give you, you ask learners what you, and they will give you that and you go around until you get to give them what you've prepared to give them. Or sometimes you prepare yourself to give them this and they direct you into a direction that you would never thought of I mean if you are a teacher you have to be flexible and direct, look at what your learners need especially for blind learners sometimes we take things for granted that they know them and if you find that they don't know them you have to go back and teach them that you build it gradually so that they know such things. I wouldn't say that is a, is the way you are asking about the demonstration, we do demonstrate but involving them because it is of no use where you expect them to do something while children could not see it. I don't find it possible that you can just demonstrate you go to individual learners to show how the child how to do something and they help each other in groups as maybe recommended by the office that they must also acknowledge each other that so and so can help and personally I ask the learner would you like the learner to help you and the learner can say learner B can help me, that is how we do it I don't know if I have answered your question.

Interviewer: Okay, do you know of any workshops or have you ever been invited to workshops where the development of adapted learning facilitation strategies were shared with educators?

Respondent: Particularly, you mean for the blind learners, not necessarily but there are educators from

our school who attended such workshops but they come back and share that with us.

Interviewer: Ja, but there are, I mean were they taught special methods for teaching the blind or were they just taught ordinary methods for sighted learners?

Respondent: To us to adapt to blind learners, no I cannot say that because we have a volunteer here particularly for maths who is very experienced in teaching blind learners and personally that I get my help mostly from her because she knows that there are methods that are used particularly for blind learners. But for the workshop I cannot say it was particularly on how you teach blind learners. As teachers for blind learners we do apply what we think it will be, it will accommodate blind learners.

Interviewer: But do you think such workshops are necessary?

Respondent: Very necessary. I think that they are very necessary.

Interviewer: Ehh, at your school do blind and partially sighted learners attend the same, I mean are they, are they in the same classes or separate classes, are they taught in separate classes or are they combined?

Respondent: Partially sighted are you meaning those who use ordinary print, no we don't combine them. We are, they are not combined, those who are using Braille are in their own classes and those who are using print are in their own classes. We don't combine them.

Interviewer: But when you have to encourage maybe co-operative learning, how is it possible when they are in separate classes.

Respondent: Really we have not thought of that yet, we only say, we only said that because we are a primary school. We have to make a child to find things out herself better and then we are giving them the basics and the other activities, for the other activities like music and other things they are combined but for teaching really teaching we don't combine them. We only combine them with partially sighted partially sighted those who are using Braille.

Interviewer: What are the major reasons for not combining them?

Respondent: Initially we were afraid that sometimes the teacher is overloaded with work he has to write on the board for the partially sighted ones, she has to go around help the totally blind learners and then we find that one group is neglected and that has been our fear. We did that before we started with the section for the partially sighted learners so that really one group is suffering and mostly the group that suffers is the totally blind learners and we find that we were unfair to them and sometimes we don't we don't do it deliberately it just

happen, it just happen but we saw it in that way that if you teach Braille teach Braille and for large print teach large print. And one other thing is that you write on the board if you write in a hurry saying that you have to help another learner you are not going to write typically for the partially sighted learner and that is going to really influence the child especially the learner's writing as well.

Interviewer: Okay, the last question now, I also got the impression that educators are not stimulating and developing the senses of blind learners during the teaching of science, how would you respond to this observation?

Respondent: I would say that ahh, I don't agree with it 100% because personally I'm also for a fact we do go out with learners they touch things even for things that, what I don't let them touch is hot things that of course will put me in danger and I do we do give them things to touch, things to do.

MR MAGUVHE AND MR SEMELANE

Interviewer: Let me put on the speakerphone, actually what I'm doing is to observe is check whether my interpretation of the data that I got last year is correct or not, ja.

Respondent: okay, that's fine.

Interviewer: Okay, Mr Semelane I observe that drawings remain a problem to blind learners and in my investigation I discovered that blind learners are given ready made drawings and not taught how to draw, ja but then would you say it is sensible for blind learners to draw objects and if not what other activities are there to supplement a loss of drawing activities?

Respondent: Okay, right I'm gonna answer that one in two ways, the first well sometimes it does not make sense to actually engage them in drawings normally in some cases we all go for an alternative it depends what kind of drawing that you are searching but some drawings is a must that they have to be done like if can make an example, we are talking about the globe, a nature of the globe the one that can actually actualize look at it directly rather than being told. And then once again some of these pictures we can also get for them some that are even related to the pictures and drawing that is where one will go for a verbal description of that drawing what it looks like, what is it doing and all sort of things. Although it is difficult, the last thing that I would like to submit is something different is for this year, there is programme by Freedom Scientific where it come up with drawings as I can make an example a dog it will come up like a real dog, it will come with an actual drawing although we have not reach that level our school have not yet purchase the product but that one I think it will be an answer to many things rather than that what we

are doing because now we are ...not clear, we are giving them a scenario or verbal description. Sometimes they don't have, you can even see that they don't ehh comprehend the whole picture you are trying to give them.

Interviewer: So how often do you use tactile diagrams?

Respondent: Very seldom, we do have this thermorform but really you know these objects we are now not in a position to...obtain these things as we like that they can see at this point of time although we are moving towards that but at the moment no. Some can interpret and others cannot. We make associations in order to accommodate them.

Interviewer: Do blind learners have the capacity to interpret those diagrams?

Respondent: Well there are two kinds of people we've got like some were born blind and there are some who got blind after birth and really they do have the vivid description, they do have a picture in case you give them the description verbally that learner will comprehend that for you, but the total blind one who was born blind still remain a problem maybe as he describe it herself you can feel that he haven't got the theme, the comprehensive part of the picture or the structure it remains a problem, it remain a problem if I can make an example if I have to teach, I'm teaching natural science I have to teach them about the cell, the parts the nucleus, the cytoplasm and the chromosome and also what is in there in order to give them a picture of how it looks like maybe imagine I have to start by taking an example of an egg is more like a round look like an egg all sort of at the end of the day the child don't have a real concept of a cell but something like an egg where you always relate it to an egg of which this things is not in line of an egg. So the problem is that we did not...(not clear) we make associations but we do accommodation to...(not clear).

Interviewer: Ehh, do you have equipment to produce tactile drawings?

Respondent: Ehh, no, we don't have but the province has ... (not clear) and give us a demonstration and all sort, they said the school with the department to purchase that. They have a budget for the province although it is expensive but is available at this time not in my school but in ... (not clear). In fact they can purchase it if they do like, but I so really absorbed with it because it also help the teachers who don't know Braille the problem that they come with is its gonna be doing it in one printing the Braille and the print on top of the Braille ... not clear. Again is what we call that package we are having now it having the ability to do some of the drawings so which we won't imagine I even look at up to so far some of the drawings they can actual come up with like this one can create a number of things is quiet a nice thing.

Interviewer: Ja, my other observation was that many educators engage their blind learners very seldom

in practical work, field trips or related activities, eh this observation was also supported by some of the teachers and by learners participating in the focus group, what is your opinion regarding this statement or observation?

Respondent: That statement is absolutely true we do not engage them in 100% of that, you know the thing that, that is very true although some are trying some are trying to move an inch and some are not even attempting the thing is that it is actually rooted in the minds of people because some of the thing you can take with steps attempting some of the thing are difficult to do but the purpose suppose to engage the learners is rooted in his or her minds that agg, because they are...the change will be in the child's attitudes regarding the whole situation that is where...not clear.

Interviewer: But if you would take your whole years' activities into consideration what would you regard as the ratio between theoretical work and practical work in the teaching of sciences to blind learners?

Respondent: In the teacher of science if I can quiet...not clear, like me I am also blind person I happen to become blind after my matric I've seen experiments being done I've been to the laboratory really I would love to have my learners have the same feeling of thing how they go by a real touch of it I can give it 30% to me of it I'm not so sure but that is my thought and another thing, that is 30% of practical work and 70% of theory ja, that is the estimations. Because somewhere somehow we found that there is no support from the school, the school lack resources to can... even like to moving for an inch but you find that it is not supportive materials. Imagine we don't have a laboratory in a school, when we are talking about a number of things in science they don't...I can just a make a lousy example for you look the school does not have a laboratory they don't even know a measuring cylinder if you talk of a measuring cylinder, even if you think of a jug used in the kitchen at home that is what I usually do I just go to the kitchen and borrow their jug because if you...a measuring cylinder, so all the problems have to be balanced like we don't have in the school and looking at that we can do it especially with the measuring forces they can measure and do the actual pulling and see how much weight of this one and they match. And the heavy can help in looking at the accurate measurement reflected by the...not clear, but because of the school don't have that they have to depend on the theoretical basis on that ...not clear.

Interviewer: So am I correct to say blind learners are involved only in limited, simple and elementary exercises that involves very little intellectual challenges or advanced problem solving?

Respondent: That is very true and somewhere somehow is the fault of the schools or the department actually to avail these things. Sometime we feel like doing it but you know we are from a background that our department availing top...but as you can see we might be able to

deliver this, this whole stuff like this when we are in a blind school so now because of lack of understanding looking at the background really resources and also teachers some need to be internally trained especially the conditioning part of it maybe that their pattern of thinking when using. ...learners they have to change their minds as well. It is not only the teachers but also the people from our department because they don't know they are actual leading but heading at us in a special school but they actually don't know how the school operates. Now and again we are fighting saying this and that is not, hey why this, no, no, no and start with apologies through ehh restructuring and all those things.

Interviewer: Last year when I spoke to learners I got the impression that very few of them had access to subject related information with specific reference to computers, encyclopedia and the recent publications, however when I spoke to educators many of them indicated that such information systems were available to their learners at their schools at all times, learners complain about the scarcity of information so I just want to know, would you say the learners are correct that they don't have access to computers, encyclopedias and recent publications because they complain that their books are outdated?

Respondent: Ja, I can say that there is an element of weakness on that one, but what we do have a center where they can actually...not clear. And also they have got the...not clear of CD that can be accessed through a computer by the learner we do have that but then we have a problem with those of doing observations it was a question of three year having such resource available in the school so it was not been applied to learners so I'm quiet sure with that one but still the whole problem was with the arrangement and managing how to actually apply also they have got the skilful person could apply that the question and mindset actually in the attitudes of people is one of the organization running of the problem. So people were not doing things with the people who are in charge they are doing it for them, they thinking for them, they claim it imposing it the way feel it has to be and it is wrong otherwise...

Interviewer: Okay, many educators indicated that they adapt the traditional facilitation strategies such demonstrations to enhance learning for the blind learners, the learners on the other hand indicated that many of the activities relied heavily on tell and talk activities, could you please indicate to me through the use of good examples how you actually go about adapting traditional strategies, if you would argue that it remains the task of educators to engage blind learner to tell and talk activities instead of engaging them in this adapted strategies, please feel free to confirm or reject this observations.

Respondent: Ja, although I don't fully agree with that statement, look the traditional approach was about the teacher giving all the information to the learner and the teacher being the only source of knowledge so we are seldom applying that somewhere somehow we do apply that maybe you find that they have got nothing no background they don't have any concept on

that subject that you might be delivering but now we are approaching the outcomes-based one that one that is where the teacher becomes the facilitator although we know that we all not doing that at the same level same degree but the approach is different altogether, the approach is like the learners can, I'm making an example with that one, you just give them an example you just give them a topic and you let them to interact you trying to get from them how much they know about the problem, explore the concept with them when they come up without the understanding of what they know you assimilate with them you give them summaries of information and you try to ...their problems here and there you bring that close discussions... like if I can come to them I have to teach them about the water already the learners know what water is, they know water can be in the different form I think then I will start with giving them the concept now you have to start analyzing the concept...not clear. Where I end up being the source of knowledge and I will end up coming with a summary, summarizing appropriately to their responses and all sort of things. And the feeling where the approach have changed is not only myself and the activities with the previous method as the only source of information they have to come up with...not clear, that is appropriate to that. Sometimes is not like in a traditional way and where possible we try to release them in a practical way of doing this the problem is that there are limited resources.

Interviewer: Do you know of any workshops, or have you ever been invited to workshops where the development of learning strategies was shared with educators?

Respondent: Meaning from our department?

Interviewer: Ja,

Respondent: Ehh, although not so well, in, no, no except the one that was once called by the national council although some of our schools did not attend it the question of management has important and less important and it is always a problem of information you see in one occasion if one has a background of normal functioning school...not clear, it is different thing altogether because that person will weight other things as weightless...not clear.

Interviewer: Ehh, at your school do you teach the blind and short sighted learners combined or are they taught in separate classes?

Respondent: No, in ehh combine classes.

Interviewer: So would you say combining these classes is useful in terms of co-operative learning strategies?

Respondent: Well, there is no and yes answer to that one because somewhere somehow we find that the

combined classes does not work properly somewhere somehow it works properly look group work works very well whilst one would ...not clear. And once again we found that the partially ones help the total blinds with pictures that ...not clear it becomes strategy...not clear. And one would, my comment on that it will always depend on the educators up to each an every ...of the strategies they applied to reach them all because somehow we will do the grouping but you can't do the common work and the group work you group the partial sighted alone and the total blind alone and ...not clear.

Interviewer: Okay, eh, the last question, I got the impression that educators do not stimulate and develop the senses of blind learners during the teaching of sciences, how would you respond to this observation?

Respondent: Eh, come up, come up...

Interviewer: Repeated the question.

Respondent: Ja, that one I'm not ...I I'm not sure if you are referring to the ethical of the practical part I don't get the issue.

Interviewer: No, what I mean is that blind learners' senses have to be stimulated like the sense of touch, sense of smelling, sense of feeling, testing and so on, my impression was that in this department particularly with sensory stimulation not much is being done by educators during the teaching of sciences to stimulate and develop these senses.

Respondent: Eh, that one honestly is gonna be an individual different situation we are referring to how, that question can never be asked of course it depends on who you are teaching and what you are teaching some of the things really have got nothing to do with developing their senses some of the things you have to embark much on that one. If I can just make an example, collection and ...not clear, population dynamics right based on that there is nothing that you will actually, there is nothing much for me that you will engage them in developing the sense of touching blar, blar because I'm talking population.... not clear.

Interviewer: Okay, thanks for your time Mr Semieane and once again thanks for being prepared to respond to my questions. Thank you, good day.

Respondent: Thank you very much for your time as well.

MR MAGUVHE AND MR NETSHITUNI

Interviewer: I would need to ask you 8 short questions, it is just the follow-up of what I did last year.

Ehh according to my observation drawing remains a huge problem to blind learners and my investigation revealed that learners are given ready made drawings and are not taught how to draw, ehh, is it therefore sensible for blind learners to draw objects and observations, and if not what other activities are there to solve this problem?

Respondent: Well, in case of drawing ja, I remember blind learners are not drawing, ehh in case of drawing we ask them to give the names of drawing such as to label. The challenge here is that there are no mechanisms that we can employ to draw; we do not have the equipment that we can use also.

Interviewer: So do you think drawings play an integral part during the learning mediation or rather they should be avoided at all?

Respondent: Drawings are necessary but currently we are not using drawings for blind learners.

Interviewer: Is it because you don't have equipment to produce them?

Respondent: Exactly.

Interviewer: Okay, the other observation is that educators engage their blind learners seldom in practical work and field trips or related activities, this observation was supported by some of the teachers and some learners who participated in the focus group interviews, what is your opinion regarding this?

Respondent: Ehh, with the fact of practical work here, most of the blind learners don't take part in practical work but in-group work are combined with other learners they can participate with other learners where they observe and if they cannot hear they touch, they can smell in case of chemical reaction etc.

Interviewer: If you are to take your whole year activities into consideration, what would you regard as the ratio for the theoretical work and practical work?

Respondent: Well, ehh, practical work is minimal to be honest. Theory, yes. I would say one is to ten.

Interviewer: One is to ten, okay, I also got the impression that when I looked at practical activities that blind learners were involved in, the activities were limited to very simple and elementary exercises that called for very little intellectual challenges or advanced problem solving skills, how would you respond to such an observation?

Respondent: Practicals that are based on primary schools demand like hands-on things like measuring things, observing some reactions, we have a very few of that but they do not take part on

those things because of lack of capital, equipment, etc. Lack of resources and maybe also the dangers posed by some of the reactions that may take place. For the blind learner to be exposed in some chemical reactions might cause some danger. So, one must take care of that.

Interviewer: So those are your reasons why they are not engaged in many experiments?

Respondent: Ja, lack of resources and maybe the dangers caused by some of the reaction like I said, for a blind learner to be exposed to chemical reaction may cause some dangers. One must take extra care of that.

Interviewer: I also got the impression that blind learners had limited access to subject related information with specific reference to computer, encyclopedias and recent publications, what is your opinion on this?

Respondent: My opinion is books are there but some books are there but learners are not so motivated to go to the resource centers to find information by the themselves they need to be pushed is like when given assignment you need to push them to get information. When it comes to computers usage, well some are getting these lessons, computer lessons from time to time but they do not use computers as a source of information at the resource centers for information like making you mentioned encyclopedia they can't go to a computer and search for information they can only go to the library for such information.

Interviewer: But do they have enough research books in the library, are there new publications there, are they there in Braille?

Respondent: Most of the books that we have now are outdated but emm most companies are supplying us with books like Juta, Maskew Miller they are bringing books here that we keep in our library for the learners to refer to them you see. But emm it is quiet rare to find learners going to the library to search for information.

Interviewer: Is this not what discourages them from going to the library?

Respondent: Exactly. There are very few books in there, very, very few. If we need that book to be there we have to scan the book and all that.

Interviewer: And I also got the impression that many educators like to use the tell and talk strategy during the teaching of natural science, may you indicate to me through very good examples how you go about adapting the traditional strategies?

Respondent: The 'tell and talk' method that you are referring to here is of course the order of the day, I

did mention that we do not complement it with with experiments and so forth because of lack of equipment or facilities. We theorize most of the things but where necessary like in grade 7 there is measurement acids and bases we use, we improvise get this whousehold things that we can get that we bring them to class. We take them to class and work with them.

Interviewer: Do you know of any workshop or, have you ever been invited to workshops where the development of adapted learning strategies was shared?

Respondent: Not at all, not at all.

Interviewer: If that is the case have you raised this concern say with the department of education?

Respondent: We always raise concerns when we go for workshops based on not necessarily blind learners but these other learners. That we should get for instance science books in Braille, workshops geared to the needs of the blind, etc. But, to update us, there is nothing happening.

Interviewer: At your school do you combine partially blind learners together with totally blind learners or are they taught separately?

Respondent: No, they are combined; both partially and totally blind learners are in one class.

Interviewer: What would you regard as the advantages of combining them?

Respondent: Well, doing that as far as science is concerned is concern is to there advantage because they can observe those who are partially sighted can help those ones who are blind who cannot see and so they are doing that to help each other.

Interviewer: So would that encourage co-operative learning.

Respondent: And moreover most of the books are in sighted so the sighted ones will help read to the blind ones. So, yes. This encourages co-operation between these two groups of learners.

Interviewer: But then as a teacher doesn't that make you to be stressful to concentrate on two different groups?

Respondent: Well as you know, ehh, all learners are unique and they need individual care, one way or the other you will have to reach every one of them that does not put any pressure on me.

Interviewer: Ehh, I've also realized that very little is done in terms of stimulating and developing the

senses of blind learners during the teaching of science, how would respond to this observation?

Respondent: Stimulating the senses?

Interviewer: Ye, senses, stimulating the sense of touch, sense of smell, taste, hearing and so on.

Respondent: Ja, like you said there is only one sense that is stimulated that one of touch the rest is underdeveloped you are right.

Interviewer: But the sense of touch, how do you stimulate learners in that one?

Respondent: The sense of touch can be stimulated in various ways by giving them books to read, by giving them objects to feel and so forth.

Interviewer: Oh, those are the questions that I wanted to ask because I needed to verify whether I understood the educators correctly or not. Thanks Mr Netshituni for your time.

Respondent: My pleasure Mr Maguvhe. Have a nice day, sure, sure.

Interviewer: You too bye.

MR MAGUVHE AND MR SEKGOBEELA

Interviewer: Thanks Mr Sekgobela for your time, I'm just going to ask you 8 short questions. Ehh, this is just the follow up of last year's interview, it appears to me that drawing remains a problem to blind learners and in my investigation it was revealed that learners are given ready made drawings and are not taught how to draw ja, I just want to know in a way what activities are the in place to supplement this loss of drawing ability.

Respondent: I think practically, I haven't been able to see a situation where a blind child is able to draw. In most cases they would rather make sort of models using clay but drawing I really don't know how we can do it. They rather do some sort of modeling, you have written up what do we call...ja, but to put drawing right on a paper I don't know how they can do it.

Interviewer: But at your school do you have diagrams?

Respondent: We do but not that much present here.

Interviewer: Can your learners interpret those diagrams?

Respondent: To be fair to you Mr Maguvhe, we are having a very big problem you know. Teachers no longer have that dedication to teach the blind unlike during the old days. Those teachers who used to offer teaching to the blind learners, they were taught how to make drawings.

Interviewer: As a school do you have equipment to produce tactile diagrams?

Respondent: We do have the equipment to make drawings but teachers are reluctant to make use of those equipment. The problem is with our educators and not necessarily with the equipment because somewhere somehow teachers have improvise and make drawings.

Interviewer: You said you do have the equipment but the problem is?

Respondent: The problem is teachers are reluctant to make use of those equipments; they did even enquire skills...not clear (noise)

Interviewer: Ja, okaynot clear

Respondent: With our ...not clear

Interviewer: Ehh, I also observed that learners are seldom engaged at practical activities or related activities. are my observations correct?

Respondent: I can say with activities like ourselves we have blind learners mostly relying on the sighted ones but it unfortunate even educators do condone such situations. Even if they work for the sighted and to ask the sighted to help the blind learners the ultimately make the blind learners not to engage themselves but rely on the sighted ones.

Interviewer: If you are to take your whole year's activities into consideration, what will be the ratio between theoretical work and practical work?

Respondent: To be most honest with you I would say theory is about 90 % because every time we avoid practical work when it comes to the blind learners and with theory they observe very well and they have the outcomes-based education.

Interviewer: Am I also correct to say blind learners are only engaged in simple activities?

Respondent: Exactly, more especially with the primary schools.

Interviewer: So what is the reason is it because they are in primary or there are other reasons?

Respondent: If we see here not necessarily because they in primary just as indicated previously that they should acquire skills and the teacher should be dedicated because if you have learners who acquired some basic theory you will not have a problem rather than maybe to attend those problems that should have been acquired in a lower primary school with the results that the actual standard of education is being jeopardized.

Interviewer: I also got the impression that blind learners have a limited access to subject related information with specific reference to computers, encyclopedias and recent publications, is my observation correct?

Respondent: I think so, a bit of some information is quite correct.

Interviewer: But then how do you as a school address this problem?

Respondent: I think so. I think so. Your observations are quite correct. I think with the acquisition of computers, the newly developed software and the dedication of teachers dedicated to make use of the equipment, learners will benefit. A teacher who cannot ...not clear, cannot just work on his own you need the dedication of teachers, you need teachers who are very much keen to make use of these equipments so that they are available to the learner. Otherwise I can say ...not clear (noise)

Interviewer: The method that seems to be popular in the teaching of science to blind learners to me appear that one of telling and talking and is that a correct observation or according to you how is it?

Respondent: to an extent yes, because it requires knowledgeable teacher who can improvise. If the teacher is not very much skilled in the teaching of the blind, he is not aware of the teaching of the blind he might not be able to teach correctly he may always try to avoid this practical side, this experimental side he will only use talking and telling because that is the easiest way out he might not even go an extra mile to think of what he can do in order for those learners to know.

Interviewer: The other, do you know of any workshops or have you ever been invited to workshops where the development of adapted learning facilitation strategies was shared as an educator?

Respondent: No, not to my knowledge, the only workshops not necessarily workshops where you have a software displaying and you should bear in mind that such exhibitions they are not necessarily workshops because they developers or the suppliers of that software are not competent in teaching of science to blind learners.

Interviewer: You were saying that the workshops that you only attend are not necessarily workshops with exhibitions. Okay, one last question now I realize that not much is being done in terms of stimulating and developing the senses of blind learners that is the senses of touch, smelling you name them, was my observation correct or not?

Respondent: Yes, exactly we also had a meeting exactly on this issue. Unfortunately some teachers do stimulate learners' senses and others are not. We think we should embark upon a continuation process where the teacher goes to the next grade with his learners so that those who are doing it sensory stimulation could carry on and those who are not doing it to be encouraged to do it as well. We talk about it all time unfortunately teachers are no longer interested on that ... very experienced teachers who could offer ... we seldom engaged them on what we normally call teaching from the ... We seldom do that where learners hurry things ... not clear. Such things no longer happen.

Interviewer: How would the management address this problem?

Respondent: We are busy engaged in trying to bring back the teaching of a continuation classes because we realized that we have teachers who have more that 10 years here who cannot even need to write or read Braille.

Interviewer: Oh, that is a problem.

Respondent: A very serious one, it is very, very difficult nowadays to engage educators in such a practice.

Interviewer: Well Mr Sekgobela those were the questions that I wanted to verify if my understanding was correct or not, thanks for your time.

Respondent: Thanks, bye.

MR MAGUVHE AND ELIZABETH

Interviewer: Thank you for your time, Elizabeth, ehh I just need to ask you very short questions they are 8 in number. The first thing that ...I've realized that drawing is a huge problem to blind learners, drawing is a difficult issue to blind learners, of course they cannot draw what do you do to supplement a loss in this activities?

Respondent: Ehh, most of the time I totally don't let them draw, I draw for them and then I show them the different items or let them tell me the ...not clear.

- Interviewer:** But then, if you give them the ready-made drawings, are they able to interpret?
- Respondent:** Sometimes, that is not much a complication but first you have to explain to them and let them find out what they can feel.
- Interviewer:** Did you have, I mean their school, are there equipment to produce such drawings?
- Respondent:** Ehh, we have a thermorform machine that we are using but those cannot use Braille we let them all print.
- Interviewer:** Ehh, okay lets go to the second question, I've realized that blind learners seldom do practical work undertake fieldtrips and relate activities, what is the situation in your school?
- Respondent:** At our school of course they are normally taken and most of the time the totally sighted goes with the blind ones so that they show them exactly what is done although is sometimes is difficult especially during lessons when we have to do the experiments nehh, so in some cases they cannot even think or recognize what is in the container or what, those days I was doing experiment with the grade 9s most 8 of them are partially sighted 7 of them and 1 of them is totally blind we were dealing with water with different chemicals they had to observe the color all the ...in the container but it was difficult for the blind one to really know the what the color is and whatsoever I had to explain to him so that now I have added the coffee into the water the color of water now is brown so it difficult.
- Interviewer:** But then if you would take your whole year's activities into consideration what would you regard as the ratio between practical work and theoretical work?
- Respondent:** Practical work is less.
- Interviewer:** Is less? In terms of ratio would you say or if you would allocate percentages, how much would that be?
- Respondent:** Ehh, I believe 20% is practical work and 80% is theoretical.
- Interviewer:** Or you would say 20:80. Okay, the other question is that ehh, it seems as if the blind learners are only engaged in simple a, a, a experiments or exercises, is my observation correct or not?
- Respondent:** It is correct, because I am a teacher who is responsible for science and maths, and I realized that most of the time they do simple things because if you do not see must experiments are difficult ot perform.

- Interviewer:** But then do you have the equipment to perform complex experiments?
- Respondent:** Yes, we do.
- Interviewer:** You do, okay last year when I spoke to learners they gave an idea that they have limited access to subject related information with a specific reference to computers, encyclopedias and recent publications, have that changed or the situation is still the same?
- Respondent:** The situation is still the same, even though computers are available, they only attend the computer lessons infrequently. We don't have a library a such where we can say this is a library they can go and some research there are books and encyclopedias some encyclopedias that we have they are the old ones we don't have the new ones andnot clear. They think of getting us a librarian we don't have librarian at the moment. The recent publications the problem is that are, we are addicted to that Sunday Times bring us a newspaper every week so the they havenot clear from the newspaper.
- Interviewer:** Okay, other question is that tell and talk strategy seem to be the most effective strategy used by teachers, are there other strategies that you use when you teach science to blind learners in order to accommodate them?
- Respondent:** Well, I only use tell and listen, I leave the practical but they have to be practical.
- Interviewer:** Okay, you as an educator do you know of any workshops or have you ever been invited to any workshops where the development of adapted learning facilitation strategies were shared?
- Respondent:** I was never invited in such the only one I've been invited was for grade 9s adaptation otherwise the rest we are not invited.
- Interviewer:** But do you think such workshops are important?
- Respondent:** Yes, they are especially...there are those that we don't have problems because we have the Braille workshop but with that one is a problem because we never had workshops and those educators who do not know...not clear.
- Interviewer:** But have you ever raised your concern with say the department of education?
- Respondent:** No I raised it with the representatives of the council of education for the blind learners while I was part of the committee.

Interviewer: Was it taken up to the relevant authority to address it?

Respondent: I don't think it was taken up because the only one I was taking about is that one of maths because last year we had maths and science was not applicable.

Interviewer: So from your previous answer I understand that at your school you combine both blind and partially sighted learners in one class, what are the advantages of doing that combining them in one class?

Respondent: They are advantages because if you take the blind ones with the partially sighted, yes the disadvantages most of the blind ones are disadvantaged because most of the we write it on the board or some diagrams we do them on the chalkboard why...not clear.

Interviewer: So it means that you write on the chalkboard and you never give blind learners Braille notes and that one can be the disadvantage.

Respondent: Yes, the disadvantage unless if we write them in the computer that way they will have their Braille notes.

Interviewer: Ehh, the last question is I also realized that not much is being done to stimulate and develop senses of blind learners during the teaching of science, that is the sense of touch, smell, hear you name them, how would you respond to this observation?

Respondent: Ja, most of the time is not done though it is not....not clear, we let them go out especially when we deal with animals, they have to go and listen to the different sound of animals the birds, especially the birds because they are the one which they can hear anytime. With trees they can also go out and feel the different parts of the plant, and sometimes when you work with chemicals those kinds of chemical we bring them to the class so that they could smell them and it becomes easier for them to identify them.

Interviewer: Okay, those were the questions that I wanted to ask, thanks for your time. Have a good day.

Respondent: All right.

MR MAGUVHE AND MR PRINSLOO

Interviewer: I wonder could I ask you just any question.

Respondent: Hold it a minute because I'm jut getting in here...okay.

Interviewer: Thanks for your time Mr Prinsloo, according to my observation drawing remains a problem to blind learners and in most instances they are given ready-made drawings and not taught how to draw. I want to know whether is sensible for blind learners to draw objects and observations and if not what are the other activities that are there to supplement a loss in this ability?

Respondent: I can tell you that I think that in primary schools in the junior classes they might definitely be able to differentiate between the different forms that is a triangle and shapes and make sure that they are three dimensional orientated in other words they must recognize shapes. And they must also get used to certain structures and they ...because they get ...not clear. They must get themselves orientated earlier on and in connection of the ...that you ask there are certain ways in which we handle that we normally ask ...not clear, in order words they must look at a sketch and they must be able to give an answer from the sketch. Sometimes if they are asked to draw a certain sketch they must ...I normally teach them to be able to work out all the information that I required and that is what I basically can to answer that question so I don't know if there is something that you want to add to that question.

Interviewer: How often do you use tactile diagrams?

Respondent: Ehh, you see because they are costly I don't use this ...not clear, they are very expensive so I only use the ...I can only draw the sketch by myself, I also ask some of the parents to help to draw all the sketches required so that way I did draw the sketches that I like for my class so it makes it much easier for me to teach because I don't have to draw for everyone in class so that is how I conduct this matter.

Interviewer: So do your learners have the capacity to interpret drawings?

Respondent: Ja, well they get used to the idea as well initially especially with Geometry they are few, they don't normally want to get involved because its quiet a thing to get in touch to all the things on the sketch all the circles, the ...and the blinds but the longer they work with the more they get to know the things that are asked from that.

Interviewer: Does your school have equipment to produce such diagrams?

Respondent: Yes, we've got the machines here and we also have the computers added here but I so prefer to draw them with the hands because I can leave out things that are less important. One can make changes on a paper whereas to do it with a machine it is permanent and that part cannot actual change

Interviewer: My observation is that educators engage their learners very seldom to practical work, fieldtrips or related activities, what is your opinion in this regard?

Respondent: The practical observation?

Interviewer: Yes.

Respondent: Yes, you see it I in fact a bit of a draw back for a blind learner say for instance we do linear programming like that they don't normally get the whole picture because it is very visual and there are certain things that I normally can't even try and I try to teach them the basic principles because is part of the art and the end of the matric exam so they must just be able to concentrate on certain things but it is really impossible for me to say for instance explain to them the different areas that we use to apply to a linear programming and the stuff like that. So I don't but do concentrate on certain basic principles that they gonna need to answer some of those questions but to really ask them to get the whole picture and interpret of a specific problem is very difficult.

Interviewer: Ja, so if you would take your whole year' activities in to consideration what would you regard as the ratio between the theoretical and practical work?

Respondent: The ratio between theoretical and practical, well I will say in the case of mathematics they do have to do all the work you know I can't leave anything out so in the case of mathematics okay, more or less, well it is difficult to say mathematics because you basically you will have to be able to do calculations ja, well in the case of science is another story because obviously they can't do all the chemical experiments we did the portfolio with them last year and they attended all the experiments and we explained to them what really happened during the experiments but very different other stories look at that give a layout of the experiments and what is gonna happen but they can't be involved in the activities the experiments as such. So what I basically do I normally ehh, prepare them and tell that they have to ... not clear for a certain practical test depending on what they are going to do that specific day so I'm going to them a tutorial before the practical and test their general knowledge on that specific subject and then I explain to them the experiment and then latter on I just discuss the observations with them and then ask them to jot it down but it is very difficult to get them completely involved in this scientific practical work so I would say if you wanted 10 pictures for the science is about, lets make it 75% theoretical and 25% practical.

Interviewer: The other impression that I got is that blind learners are engaged in simple and elementary exercises and particular in science, do you share the same sentiments?

Respondent: I would agree completely because they must also do all the work I couldn't leave out

anything. When we do the paper for the blinds we can't leave out some of the work, say for example try to change the questions that we so deprive knowledge so they must know all the chemical equations they must know how to balance a chemical equations they must know all the different calculations ... not clear.

Interviewer: Ok, in terms of access to subject related information with specific reference to computers, encyclopedias and recent publications, what is the position at your school?

Respondent: At present here we are still busy at developing it we are I attended the course at Telkom because they brought us notice to help the school in reference to certain school programmes and stuff like that, we are getting there we are still struggling to, we are getting there and at present those who necessarily used the computers in those learning area I think is of a tremendous help to them if they can get access to the internet and make use of that information from the internet. Ja but at present we rely on the textbooks and the notes that we got that we try to convert anything and to try to make ... not clear.

Interviewer: Am I correct to say telling and talking seems to be the most popular method employed by educators at blind schools?

Respondent: Telling and talking, ja well basically that's the ... ja it must be the most important ... because they can't do the discovery on their own you have to help them to make them, ja I agree with that one.

Interviewer: Do you know of workshops or have you ever been invited to the workshop where the development of adapted learning facilitation strategies were shared with you?

Respondent: Oh, well not a hundred percent you see we attended that one you were there as well last year at the blind conference and Mrs Viljoen went to Holland few years ago and she came back with a book on adaptations that can be made. Well but I think one can concentrate on that a little bit more but in my learning area I had to do everything on my own well you more or less sometimes develop a sense to know how to adapt things for the blind. You think know how they gonna interpret a thing, its easier for me to say for instance to make them know the infor.. in a specific sketch and to make it more accessible to them and not to confuse them you see because sometimes they turn to put too much infor.. in a sketch and is difficult for them to absorb all the information in that sketch so I try to minimize but these ask you that, you can really concentrate, especially for somebody who has never work with blinds and you can really concentrate and try to give basic layout for adaptation by the blinds.

Interviewer: And then at your school do blind and partially sighted learners share the same classrooms?

Respondent: Ehh, well unfortunately they have to because you see we struggle to get enough teachers and the we can't avoid to just have the blind kids in one class so we have them simultaneously and a bit of struggle but we manage to get it done because if you really think of that that the English and Afrikaans speaking kids in one class and they are partially sighted and the others blind and the preparations for those classes are tremendous and I don't really think that the teachers in the normal schools are aware of what the input really is to get those lessons ready for the blinds and partially sighted at one stage same time.

Interviewer: Are there any advantages for combining them?

Respondent: I think so because it really helps them a they get ready for the real world outside because there they are not going to ... not clear. They are going to get used to the ... not clear of the thing of which we are going on in the class.

Interviewer: But then what would be the disadvantages?

Respondent: Oh, the disadvantages obviously will be that they can be neglected sometimes especially when the partially sighted are demanding and you can't get time to present to them because for instance now say I've got a grade 10 mathematics class here they, I've got only one blind and but the others are not but they are very demanding and it is a problem because I've started to take that kid in the afternoon when I'm here, but ones I got the...they can easily cope and know how to cope with others and you must make sure that you have all the ... ready before you meet and so forth with the introductory orientation for them to see how the graph work and stuff like that and I think they will be able to cope well in that class.

Interviewer: In terms of co-operative learning are they helpful to each other, are the partially blind helpful to the totally blind and vice-versa?

Respondent: Well sometimes they struggle when they are asked to do some research and how there in nature and whatever, but because you cannot possible think of ...not clear. Then you have to do your preparation very thoroughly and you have to decide before hand how the topic is gonna help the blind kids and leave for the blind to find out on their own part of the job is not that the info... should be available for them they must also try to get all the infor...Ja, but I think they can work as a team they can work well along as a team.

Interviewer: The final question now, I also got the impression that educators are no longer stimulating and developing the senses of blind learners during the teaching of sciences, how would you respond to this observation?

Respondent: Oh, well I think I disagree with you I don't know if you are maybe more aware of eco than I am, but they normally take this kids on an eco tour trips and then they try to make anything possible to the kids. Ok, in science experiments classes as well we do experiments that you have to tell certain things, ja well...not clear. Maybe we can concentrate on that more but it not yet time to do all those thing and it is not really neglecting it, I don't know.

Interviewer: Mr Prinsloo thanks for your time.

Respondent: Sorry for my English, I tried my best

Interviewer: Oh, no, no the information is excellent, all I need is the information, I'm not an English speaking person, thanks again hope to see you in the near future, keep well bye.