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APPENDIX A

1. FFAM³ GRADE 12 LEARNERS QUESTIONNAIRE SURVEY INSTRUMENT

2. FFAM TEACHERS QUESTIONNAIRE SURVEY INSTRUMENT

³ FFAM: Factors facilitating achievement in mathematics.



FFAM GRADE 12 LEARNERS QUESTIONNAIRE

The purpose of this questionnaire is to trace some factors that facilitate achievement in mathematics in traditionally disadvantaged secondary schools. Most of the statements instruct you to mark one option with a **cross** (\mathbf{X}) from a list of options. Use a pencil or black or blue pen to complete this questionnaire. Please be completely honest. Your answers will be regarded as strictly confidential. There are no **wrong** answers.

THANK YOU IN ADVANCE FOR YOUR CO-OPERATION.

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For office use only



Respondent number:		V1	1-3
Name:			
 Please mark with a cross (X): (1) What is your father/male guardian's highest education (Only one option) 	nal level?		
Lower than Grade 8 Grade 8 Grade 10 Grade 12			
Technical Qualification Bachelors degree Honours degree			
Masters degree Doctorate		V2	5
Other (specify) (2) What is your mother/female guardian's highest educated level? (Only one option) 	ational		
Lower than Grade 8			
Grade 8 Grade 10			
Grade 12 Technical Qualification Bachelors degree			
Honours degree			
Masters degree Doctorate Other (specify)		V3	7
 (3) Have you engaged in any of the following activities of past 3 years? (For each question, mark only one of a cross (X)) 			



 3.1 Participated in a mathematics or science tour/excursion? 3.2 Watched mathematics or science TV shows 3.3 Read mathematics or science magazines or news articles on mathematics 	REGULARLY	OCCASIONALLY	NEVER	V4 V5 V6 V7		8 9 10 11
3.4 Attended any mathematics Saturdays or Winter schools						
 (4) To what extent do you agree with each of the forstatements? For each question, mark only on cross (X)) 		-	ith a			
	AGREE	NEUTRAL	DISAGREE	V8		12
4.1 I am afraid of my maths teacher				V9		13
4.2 My teacher expects me to do well				V10		14
4.3 I look forward to mathematics classes				V10 V11		15
4.4 Mathematics is difficult for me						16
4.5 I have self-discipline in doing mathematics				V12	H	17
4.6 Mathematics is useful in my future career				V13 V14	H	18
4.7 Doing mathematics makes me nervous or upset					$\left \right $	19



V15	Me
s after Grade 12 V16 20	4.8 I will continue with mathematics after Grade 12
V17 21	4.9 I enjoy mathematics
mportant V18 22	4.10 Studying hard in maths is not important
us to work hard V19	4.11 My teacher always encourages us to work hard
athematics V20 24	4.12 My friends are interested in mathematics
V21	4.13 My best friend does well in mathematics4.14 I believe mathematics is difficult to do unless
26 V22	you have the brains for it
ork hard V23 27	4.15 My friends encourage me to work hard
a respect V24 28	4.16 My teacher treats learners with respect
29 vell V25	4.17 Learners in my class want to do well
	4.18 Learners in my class respect their maths teacher
gnized by the	4.19 Learners' achievement is recognized by the Teacher
	(5) How often do you do the following in mathema question, mark only one option with a cross



	REGULARLY	OCCASIONALLY	NEVER	V27	31
5.1 Skip maths classes				V28	32
5.2 Come to class without a pen or pencil				V29	33
5.3 Try to solve math problems before seeking help				V30	34
5.4 Attend extra classes				V31	35
5.5 Work with classmates in mathematics				V32	36
5.6 Remain after school doing maths				V33	37
5.7 Lose concentration when solving maths problems				V34	38
5.8 Participate in class discussion				V35	39
5.9 Come to class without having done my homework				V36	40
5.10 Get assistance from family (brother, sister etc)					
(6) What marks do you usually get in mathematics(Mark only one option with a cross (X))	s tests	orex	ams :		
Mostly As (around 80-100) Mostly Bs (around 70-79) Mostly Cs (around 60-69) Mostly Ds (around 50-59) Mostly Es (around 35-49)				V37	41
Mostly Fs (below 35)					



(7) How much effort do you usually put into work? (Mark only one option with a cro	•		nemat	ics			
I do not try of all							
I do not try at all I do just enough to get by					V38		42
I give an average amount of effort					130		-12
I try very hard, but not as hard as I could							
I work as hard as I can					V39		43
 (8)Which grade HG or SG? (9) In your own experience, learners performathematics because: (For each question) 				ne			
option with a cross (X))	,		U				
		S					
	ALWAYS	SOMETIMES	ER				
	ALV	SON	NEVER		V40		44
01. They are too many in the class					V41		45
02. They are not mothematically talented					V42		46
02. They are not mathematically talented 03. They do not know the career they will				-	~ ~ / ~		
follow after Grade 12					V43		47
04. They have uneducated parents					V44		48
05. They do not respect their teachers					V45		49
06. They do not attend extra classes					V46		50
07. They have underqualified teachers					V47		51
08. They are not expected to perform highly					V48		52
09. They do not feel respected and connected with their teacher					V49		53
10. They are not provided with extra support when needed					V50	\square	54
11. They do not practice maths with their classmates					V51		57



12. They do not have a strong background in mathematics	
(10) Which of the above reasons do you regard as the most important one?	V52 59
Give only the number	V53 62
(11) S.N	V54 65
(12) C.N	
STOP HERE: MAKE SURE THAT YOU HAVE ANSWERED ALL THE QUESTIONS.	



Τ

FFAM TEACHERS QUESTIONNAIRE

The purpose of this questionnaire is to trace some factors that facilitate achievement in mathematics in traditionally disadvantaged secondary schools. Most of the statements instruct you to mark one option with a **cross** (\mathbf{X}) from a list of options. Use a pencil or black or blue pen to complete this questionnaire. Please be completely honest. Your answers will be regarded as strictly confidential. There are no **wrong** answers.

THANK YOU IN ADVANCE FOR YOUR CO-OPERATION.



	For office use only
Respondent number	V1 1-4
SECTION A	
Please mark with a cross (X)	
(1) Indicate your gender	
Male Female	V2 5
(2) Years of experience in teaching Grade 12 mathematics	
Fill in the number	V3 6- 7
(3) What is the total number of standard grade (SG) learners in your mathematics class (es)?	
Fill in the number	V4 8- 10
(4) What is the total number of higher grade (HG) learners in your mathematics class (es)?	
Fill in the number	V5 11- 13
(5) What is your highest qualification in mathematics?	
Grade 12 JSTC STD	V6 14
Bachelors degree	
Honours degree	
Masters degree	



Doctorate	
Other (specify)	
SECTION B	
In the past 5 years, have you participated in any of the following activities related to mathematics or teaching of mathematics?	
(6) Attended any college/university mathematics course.	
Yes No	V7 15
If Yes give details:	
	V8 16- 17
(7) Attended any college/university course on the teaching of mathematics.	
Yes No	V9 18
If Yes give details:	
	V10 19- 20
(8) Observed other teachers teaching mathematics	
Yes No	V11 21
(9) Met with a local group of teachers to study/discuss mathematics teaching issues.	
Yes No	V12 22
(10) Attended a workshop on mathematics teaching?	
Yes No	V13 23
(11) Served as a mentor and /or peer coach in mathematics teaching for other teachers.	



Yes No					V14	24
(12) Attended any mathematics teach meeting.	her as	socia	tion			
Yes No						25
(13) Invited guest speakers or organised field trips relevant to the mathematics taught in class.						
Yes No				V16	26	
SECTION C						
(14) Please indicate to what extent yo with the following statements:	ou agi	ree or	disag	gree		
				1		
	AGREE	NEUTRAL	DISAGREE			
14.1 I am able to make connections between mathematics and other disciplines					V17	27
14.2 Additional mathematics textbooks as instructional tools are necessary					V18	28
14.3 I can deal with learners who are not doing well in my class					V19	29
14.4 Learners learn mathematics best in classes with learners of similar abilities					V20	30
14.5 I enjoy teaching mathematics					V21	31
14.6 I am able to connect the mathematics I teach with the tertiary mathematics that I studied					V22	32
14.7 Letting learners criticise /evaluate their own or other learners' homework is advisable					V23	33
14.8 I feel confident to teach Grade 12 learners					V24	34



cross (X))					
	REGULARLY	OCCASIONALLY	NEVER		
15.1 Take learners' prior understanding				V25	35
into account when planning a lesson 15.2 Cover all mathematical concepts in					
the syllabus				V26	36
15.3 Involve parents in the mathematics education of their children				V27	37
15.4 Advise learners about job				V 29	20
opportunities in mathematics, science and technology				V28	38
service training? (Think about content mast			n-		
service training? (Think about content mast					
service training? (Think about content mast		ind		V29	39
service training? (Think about content mast instructional strategies).		ind		V29 V30	39 40
service training? (Think about content mast instructional strategies). 16.1 Linear programming		ind			
service training? (Think about content mast instructional strategies). 16.1 Linear programming 16.2 Exponents and logarithms		ind		V30	40
service training? (Think about content mast nstructional strategies). 16.1 Linear programming 16.2 Exponents and logarithms 16.3 Euclidean geometry		ind		V30 V31	40 41
service training? (Think about content mast nstructional strategies). <u>16.1 Linear programming</u> <u>16.2 Exponents and logarithms</u> 16.3 Euclidean geometry <u>16.4 Trigonometry</u>		ind		V30 V31 V32	40 41 42
service training? (Think about content mast nstructional strategies). 16.1 Linear programming 16.2 Exponents and logarithms 16.3 Euclidean geometry 16.4 Trigonometry 16.5 Inequalities		ind		V30 V31 V32 V33	40 41 42 43
16.2 Exponents and logarithms 16.3 Euclidean geometry 16.4 Trigonometry 16.5 Inequalities 16.6 Remainder and factor theorem		ind		V30 V31 V32 V33 V34	40 41 42 43 44



	-			1		
16.10 Graphs of functions				V38		48
16.11 Other (specify)				V39		49
(17) Which of the above do you regard as the one?	e mos	t imp	ortant			
Give only the number]	V40	5	0- 51
SECTION D						
(18) How often do you do the following in y instruction?	our m	ather	natics			
	ALWAYS	SOMETIMES	NEVER			
18.1 Pose open-ended questions				V41		52
18.2 Engage the whole class in discussion				V42		53
18.3 Require learners to explain their reasoning				V43		54
18.4 Allow learners to work at their own pace				V44		55
18.5 Ask learners to explain concepts to one another				V45		56
18.6 Ask learners to seek alternative methods for solutions				V46		57
18.7 Assign mathematics homework				V47		58
18.8 Encourage learners to work in groups				V48		59
18.9 Review homework assignments				V49		60
18.10 Make separate presentations to HG and SG learners				V50		61
18.11 Make special provision for learners who are not doing well in your class				V51		62



18.12 Assist learners after normal class				V52		63
SECTION E						
(19) Give the three most important factors th learners' good performance in mathematics in						
(a)				V53	64	- 65
(b)				V54	66	6- 67
(c)				V55 🗌	68	69
(20) Give the three most important factors the learners' poor performance in mathematics in						
(a)				V56	70	- 71
(b)				V57	72	2- 73
(c)				V58	74	- 75
(21) How do you motivate your learners in m	ather	natics	?			
(a)				V59	76	5- 77
(b)				V60 V61	78	6- 79 0- 81
(22) Does the principal support you in your n teaching? Describe briefly.	nathe	matic	8			
(a)				V62		82
(b)				V63		83
(c)				V64		84



		\mathbf{S}				
	ALWAYS	SOMETIMES	NEVER			
01. They are too many in the class				V65		85
02. They are not mathematically talented				V66		86
				V67		87
03. They do not know the career they will follow after Grade 12				V68		88
04. They have uneducated parents				V69		89
05. They do not respect their teachers				V70		90
06. They do not attend extra classes						
07. They have underqualified teachers				V71	\square	91
08. They are not expected to perform highly				V72		92
09. They do not feel respected and connected with their teacher				V73		93
10. They are not provided with extra support when needed				V74		94
11. They do not practise maths with their classmates				V75		95
12. They do not have a strong background in mathematics				V76		96



(24) Which of the above reas important one?	ons do you regard as the most		
Give only the number		78	98



APPENDIX B

1. THE LETTER REQUESTING PERMISSION TO CONDUCT RESEARCH IN LIMPOPO PROVINCE SCHOOLS

2. LETTER OF APPROVAL TO CARRY OUT RESEARCH

3. LETTER REQUESTING PARTICIPANTS TO COMPLETE THE RESEARCH SURVEY FROM LEARNERS OR PARENTS OF LEARNERS

4. THE LETTER REQUESTING PERMISSION TO CONDUCT RESEARCH FROM TEACHERS AND PRINCIPAL OF SCHOOLS





University of Venda for Science and Technology School of Mathematics and Natural Sciences Department of Mathematics P/Bag X5050 Thohoyandou 0950

The Superintendent-General Department of Education, Arts, Culture and Sports POLOKWANE 0700

Dear Sir/Madam

RE: REQUEST FOR CONDUCTING RESEARCH IN THE NORTHERN PROVINCE SCHOOLS

The matter above refers.

I am a lecturer at the University of Venda and a degree-seeking student at the University of Pretoria. I intend to find relevant information regarding factors that facilitate achievement in mathematics in traditionally disadvantaged secondary schools.

The information obtained would constitute part of my research and is essential. May I therefore seek written permission for use when I visit schools that I would choose.

Thanking you sincerely.

Respectfully

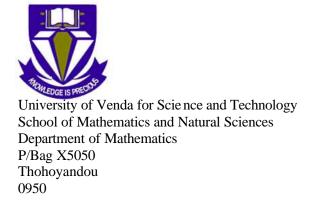
A.R. Tsanwani [RESEARCHER]



Northern Province DEPARTMENT OF EDUCATION Private Bag X2250 SIBASA VENDA NORTHERN REGION 0970 Tel.: 015 962 1313, 015 962 1331 Fax:: 015 962 6039/ 015 962 3076 REGIONAL' OFFICE DEPARTMENT OF EDUCATION. ARTS, CULTURE & SPORTS REGION 5 Ref: No. 8/3/1 Enq: Makgahlela S.M 3 -2 PRIVATE BAG X 2250 0070 SIBASA Mr A.R. Tsanwani P/Bag x 5050 NORTHERN PROVINCE THOHOYANDOU 0950 REQUEST FOR CONDUCTING RESEACH IN OUR SCHOOLS: YOURSELF 1. We acknowledge the receipt of your letter dated 1.8.2001 regarding the matter supra. 2. The region grants you permission to conduct the research in the schools under its jurisdiction of Soutpansberg and Vuwani Districts. 3. You are required to report at these two districts so that they arrange with the schools you are targetting. Good luck in your reseach. Augional Director FOR EDUCATION (mom-

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Dear Educator

Your learners have been selected to take part in a PhD research project. The purpose of this research is to trace some factors that facilitate achievement in mathematics in traditionally disadvantaged secondary schools. I have been granted permission to conduct research in your school by the Regional Education Department (Limpopo).

One questionnaire will be administered and it will take approximately 30 minutes to complete (**FFAM Grade 12 learners questionnaire**). **Please note:**

- 1. When a learner cannot answer a question or respond to a statement because he has not actually experienced the situation, or if s/he does not understand a certain statement or term, he should ask the researcher to explain it to him or her.
- 2. Most of the statements instruct the learner to mark one option with a **cross** (**X**) from a list of options.
- 3. Your learner's answers will be regarded as **strictly** confidential and I intend to use the data obtained for research **only**.
- 4. There is no known risk involved in the research. Possible benefits include the fact that participation will probably help your learner to improve in the study of mathematics.
- 5. There are no costs involved.
- 6. The learner should remember that there are no **right** or **wrong** answers.

Should you have any queries or comments, you are welcome to contact me.

A.R. Tsanwani

CONSENT

In terms of the ethical requirements of the University of Pretoria, you are requested to complete the following section:

Ι

_, have

read this letter and understand the terms involved.

On condition that the information provided by my learners is treated as confidential at all times, I hereby (MARK the appropriate section)

Give consent
Do not give consent

Signature: _____ Date: _____





Dear Parent/Guardian

Your child has been selected to take part in a PhD research project. The purpose of this research is to trace some factors that facilitate achievement in mathematics in traditionally disadvantaged secondary schools. I have been granted permission to conduct research in the school that your child is currently attending by the Regional Education Department (Limpopo).

One questionnaire will be administered and it will take approximately 30 minutes to complete (**FFAM Grade 12 learners questionnaire**). **Please note:**

- 1. When a learner cannot answer a question or respond to a statement because he has not actually experienced the situation, or if s/he does not understand a certain statement or term, he should ask the researcher to explain it to him or her.
- 2. Most of the statements instruct the learner to mark one option with a **cross** (**X**) from a list of options.
- 3. Your child's answers will be regarded as **strictly** confidential and I intend to use the data obtained for research **only.**
- 4. There is no known risk involved in the research. Possible benefits include the fact that participation will probably help your child to improve in the study of mathematics.
- 5. There are no costs involved.
- 6. The learner should remember that there are no **right** or **wrong** answers

Should you have any queries or comments, you are welcome to contact me.

A.R. Tsanwani

CONSENT

In terms of the ethical requirements of the University of Pretoria, you are requested to complete the following section:

I_

<u>,</u> have

read this letter and understand the terms involved. On condition that the information provided by my child is treated as confidential at all times, I hereby (MARK the appropriate section)

Give	consent

Do not give consent

Signature: _____ Date: _____