

Gender equality in learning outcomes in Africa: Evidence from SACMEQ and IIEP research studies

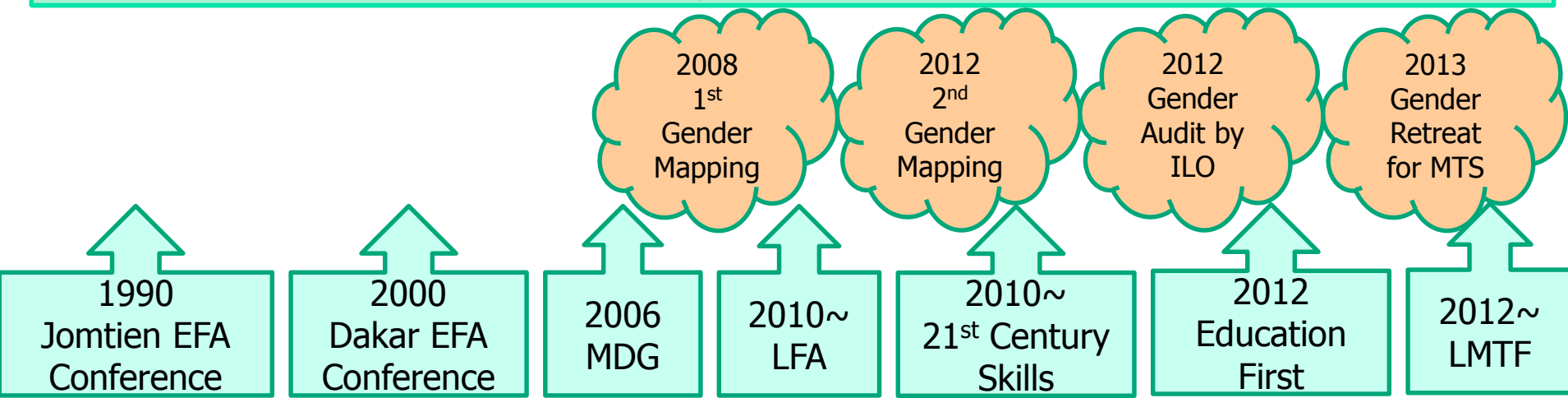
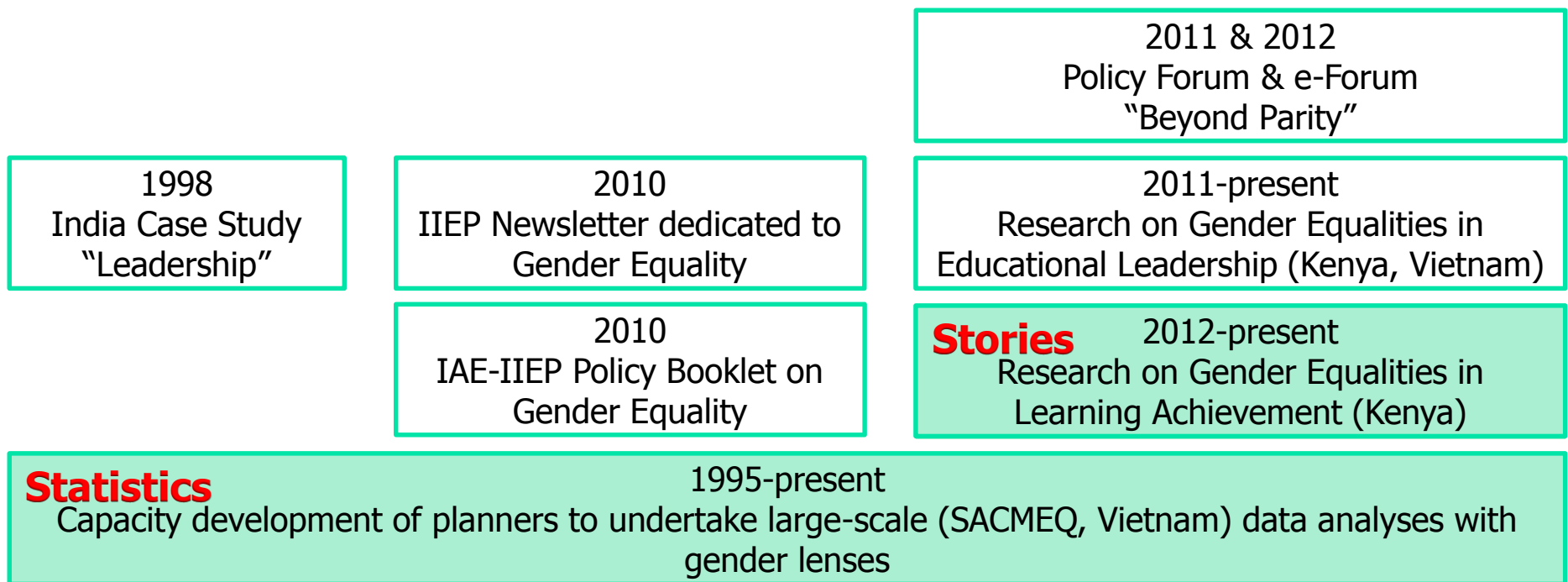
Teaching and Learning for Development

3 February 2014

Mioko Saito



IIEP Programmes on Gender Equality



"Gender" in International Goals

- **Millennium Development Goal** (UN, 2006)
 - ❖ #2. Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling
 - ❖ #3. Promote Gender Equality and Empower Women: Eliminate gender disparity in primary and secondary education preferably by 2005, and at all levels by 2015
- **Dakar Final Framework of Action** (UNESCO, 2000)
 - ❖ #2. Ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to and complete free and compulsory primary education of good quality;
 - ❖ #5. Eliminating gender disparities in primary and secondary education by 2005, and achieving gender equality in education by 2015, with a focus on ensuring girls' full and equal access to and achievement in basic education of good quality;

Policy Framework on Gender Equality

	BOT	KEN	LES	MAL	MAU	MOZ	NAM	SEY	SOU	SWA	TAN	UGA	ZAM	ZAN	ZIM
Special Ministry	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Focal point in MoE	x	x		x		x			x	x	x	x		x	x
Reference to access/participation		x	x			x	x		x		x	x	x	x	
Reference to retention				x		x	x		x				x		
Reference to violence	x									x	x	x		x	x
Reference to curriculum/teaching	x			x	x				x		x	x		x	x
Reference to school management								x							
Reference to career									x	x					
Reference to learning achievement	Less Focus														



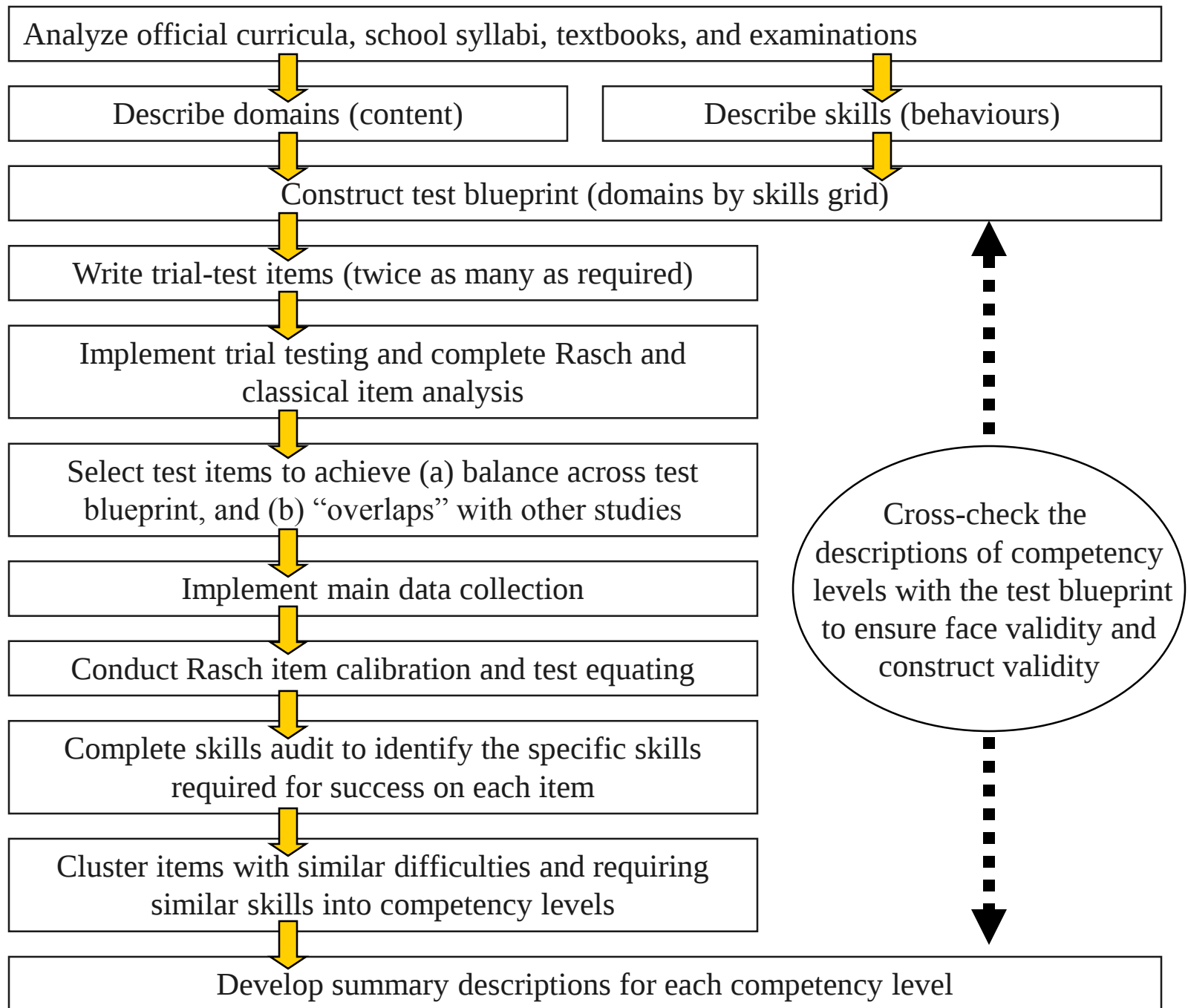
IIEP has collaborated with SACMEQ

SACMEQ I	SACMEQ II	SACMEQ III	SACMEQ IV
Data collection 1995 and 1998	Data collection 2000, 2001, and 2002	Data collection 2007	Data collection planned for 2013
7 Ministries of Education	14 Ministries of Education	15 Ministries of Education	15-16 Ministries of Education
+20,000 Grade 6 pupils	+41,000 Grade 6 pupils	+61,000 Grade 6 pupils	Est. +64,000 Grade 6 pupils
Reading	Reading and Mathematics	Reading, Mathematics, and HIV & AIDS knowledge	Reading, Mathematics, and HIV & AIDS knowledge
Tests for pupils	Tests for pupils and teachers	Tests for pupils and teachers	Tests for pupils and teachers

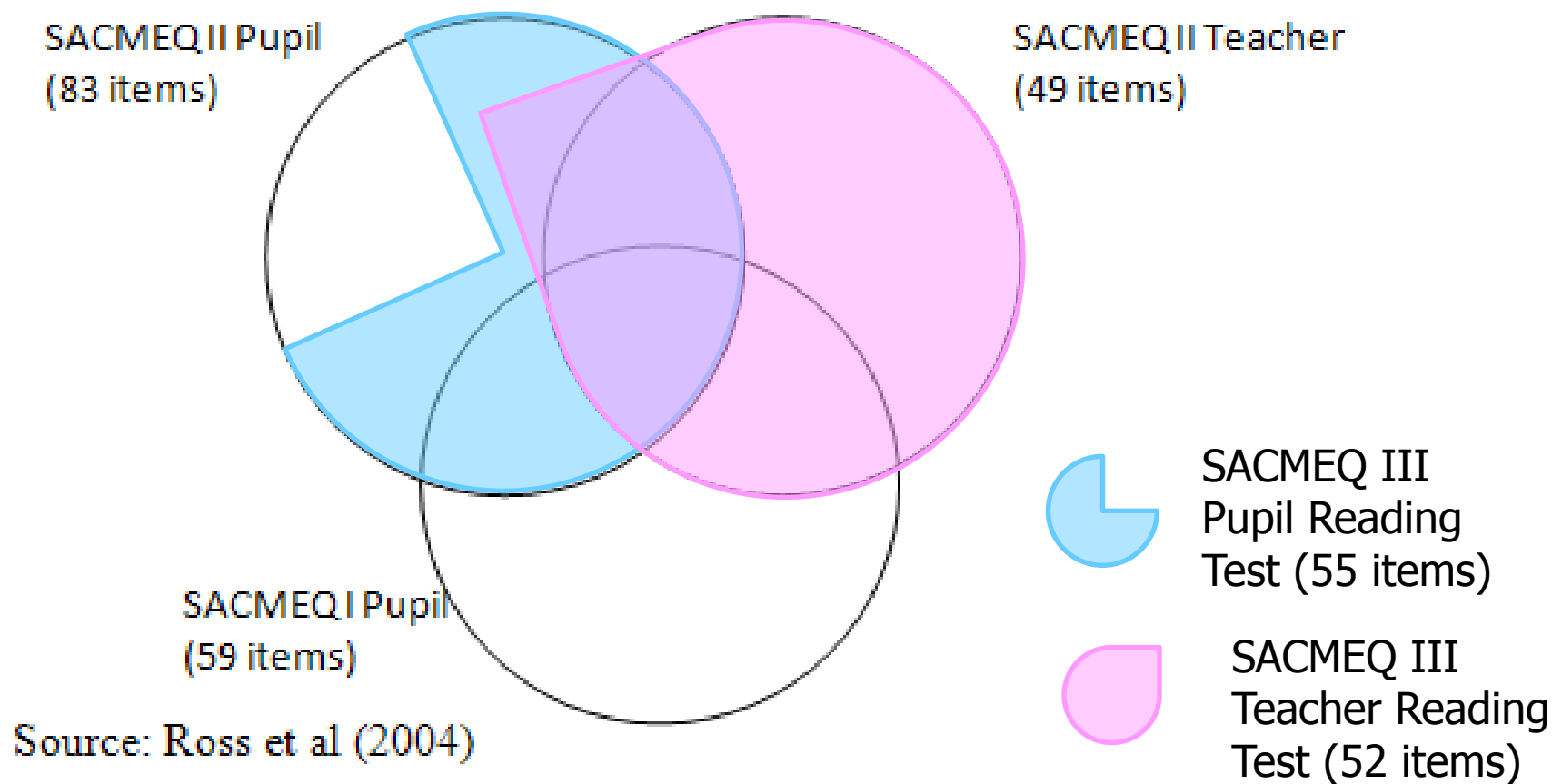
Planned, Achieved, and Effective sample size (SACMEQ III, 2007)

School System	Planned Sample		Achieved Sample		% Achieved		Design Effect			Effective Sample Size		
	Schools	Pupils	Schools	Pupils	Schools	Pupils	Reading	Maths	HAKT	Reading	Maths	HAKT
Botswana	160	4000	160	3868	100%	97%	8.3	7.4	7.4	468	524	520
Kenya	196	4900	193	4436	98%	91%	11.5	9.4	10.2	385	470	433
Lesotho	184	4600	182	4240	99%	92%	7.0	6.4	5.8	604	660	727
Malawi	140	3500	139	2781	99%	79%	7.1	5.9	6.7	394	473	414
Mauritius	158	3950	152	3524	96%	89%	5.9	6.5	9.9	596	539	354
Mozambique	184	4600	183	3360	99%	73%	4.8	3.5	8.8	706	958	383
Namibia	272	6800	267	6398	98%	94%	7.9	7.1	8.3	813	898	775
Seychelles	24	1515	24	1480	100%	98%	0.9	0.9	0.9	1580	1570	1572
South Africa	400	10000	392	9071	98%	91%	13.9	13.7	12.2	652	663	739
Swaziland	172	4300	172	4030	100%	94%	8.6	6.1	8.6	470	657	470
Tanzania	196	4900	196	4194	100%	86%	6.3	7.3	6.5	667	571	644
Uganda	268	6700	264	5307	99%	79%	10.6	8.0	10.0	502	666	530
Zambia	160	4000	157	2895	98%	72%	6.1	3.7	5.4	472	775	529
Zanzibar	147	3675	143	2791	97%	76%	3.3	3.5	3.3	842	791	843
Zimbabwe	160	4000	155	3021	97%	76%	9.0	7.8	7.0	335	387	427
SACMEQ III	2821	70525	2779	61396	99%	87%						

Source: Ross & Saito (forthcoming)



Structure of the SACMEQ III Reading Test from SACMEQ I and II (148 items)



Essential items

- Established by subject experts
- Prior to the data collection

	Country A	Country B	Country C	Country D	Country E
item 1	yes	yes	yes	yes	
item 2		yes	yes	yes	yes
item 3	yes	yes	yes	yes	yes
item 4	yes		yes	yes	yes
item 5	yes	yes	yes	yes	
item 6			yes	yes	yes
item 7		yes		yes	yes
item 8	yes	yes	yes	yes	yes
item 9	yes	yes	yes	yes	
item 10		yes	yes	yes	yes
item 11	yes		yes	yes	yes
:	:	:	:	:	:
:	:	:	:	:	:



IIEP Study on “Stories behind gender equality in student achievement”: Pilot case in Kenya

- Follow-up to SACMEQ assessment
- Partnership between Ministry of Education, UNESCO-IIEP, UNICEF-ESARO
- Capacity development of Kenyan planners and researchers (2012 –2013) in:
 - Qualitative data collection techniques
 - School Observation
 - Classroom Observation
 - Once-on-one interview
 - Focus-group interview
 - Data validation, data coding, and text analysis
 - Story writing for policy messages

Judgment Sample of Schools

Reading scores			Mathematics scores		
School	Gender differences (Girls' score minus boys' score)		School	Gender differences (Girls' score minus boys' score)	
School (1)	-19.8	Boys better	School O	-58.6	Boys better
School (2)	-18.6		School S	-21.0	
School O	-12.1		School (4)	-18.8	
School (3)	-5.8	Marginal	School (6)	-16.8	Marginal
School (4)	-2.8		School (5)	-15.8	
School S	7.6		School (3)	-7.0	
School (5)	7.9	Girls better	School (7)	-3.5	Girls better
School V	11.5		School V	-2.8	
School (6)	12.7		School (10)	12.0	
School (7)	19.3	Girls better	School (8)	12.7	Girls better
School (8)	25.1		School (12)	14.0	
School (9)	28.5		School (1)	14.6	
School (10)	28.9	Girls better	School K	23.3	Girls better
School (11)	47.4		School (2)	24.1	
School K	53.9		School (11)	37.1	
School (12)	77.2		School (9)	55.9	

Source: Saito (Ed.) (forthcoming)

SACMEQ statistics to respond to policy questions with gender lenses

- What are the trends in gender differences in:
 - Pupils' participation / schooling processes / family background / achievement in Reading & Mathematics / HIV & AIDS knowledge and attitude?
 - Teachers' working and living conditions / teaching practices & approaches / performance in Reading & Mathematics / HIV & AIDS knowledge and attitude?
- What are the gender balance in teaching force and school leadership?
- What is the relationship among teacher gender, teacher performance, and pupil achievement?
- Is there gender bias in SACMEQ assessments?
- What is the trend in the “gender sensitivity” in the school environment?

Policy Questions in “Stories behind Gender Equality in Student Achievement”

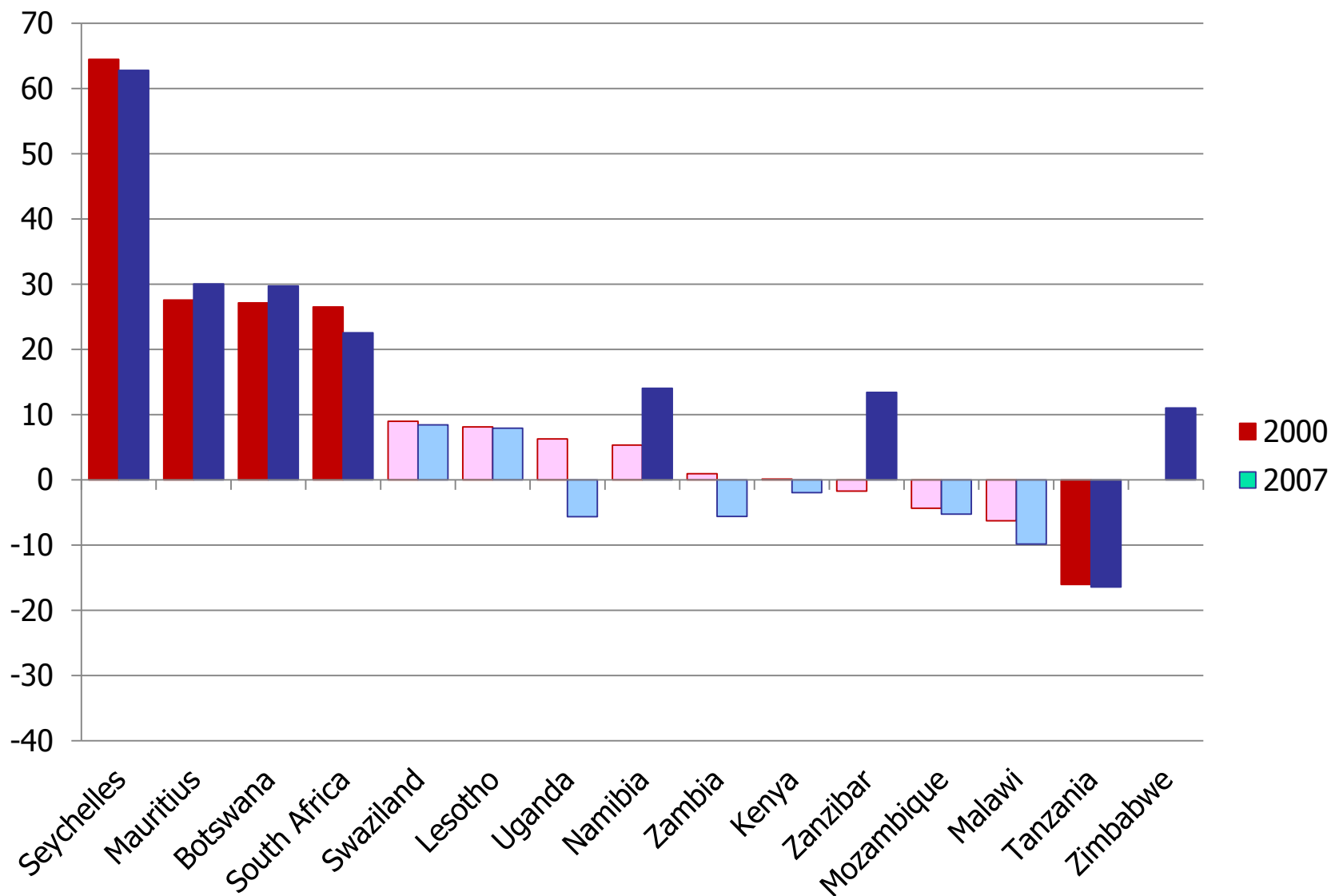
- How are classes managed by male and female teachers in order to provide equal learning processes in classroom for boys and girls?
- How are schools managed by male and female school heads in order to provide equal opportunities for (i) boys and girls to progress in learning, and (ii) male and female teachers to advance professionally?
- What views and beliefs do male and female teachers, school heads, and educational leaders at Ministry level have regarding the status of boys and girls as well as men and women?
- What views, beliefs, and aspirations do pupils and their parents have regarding the education and future life of girls and boys?

Estimated Grade 6 pupils by gender in SACMEQ countries (2000 & 2007)

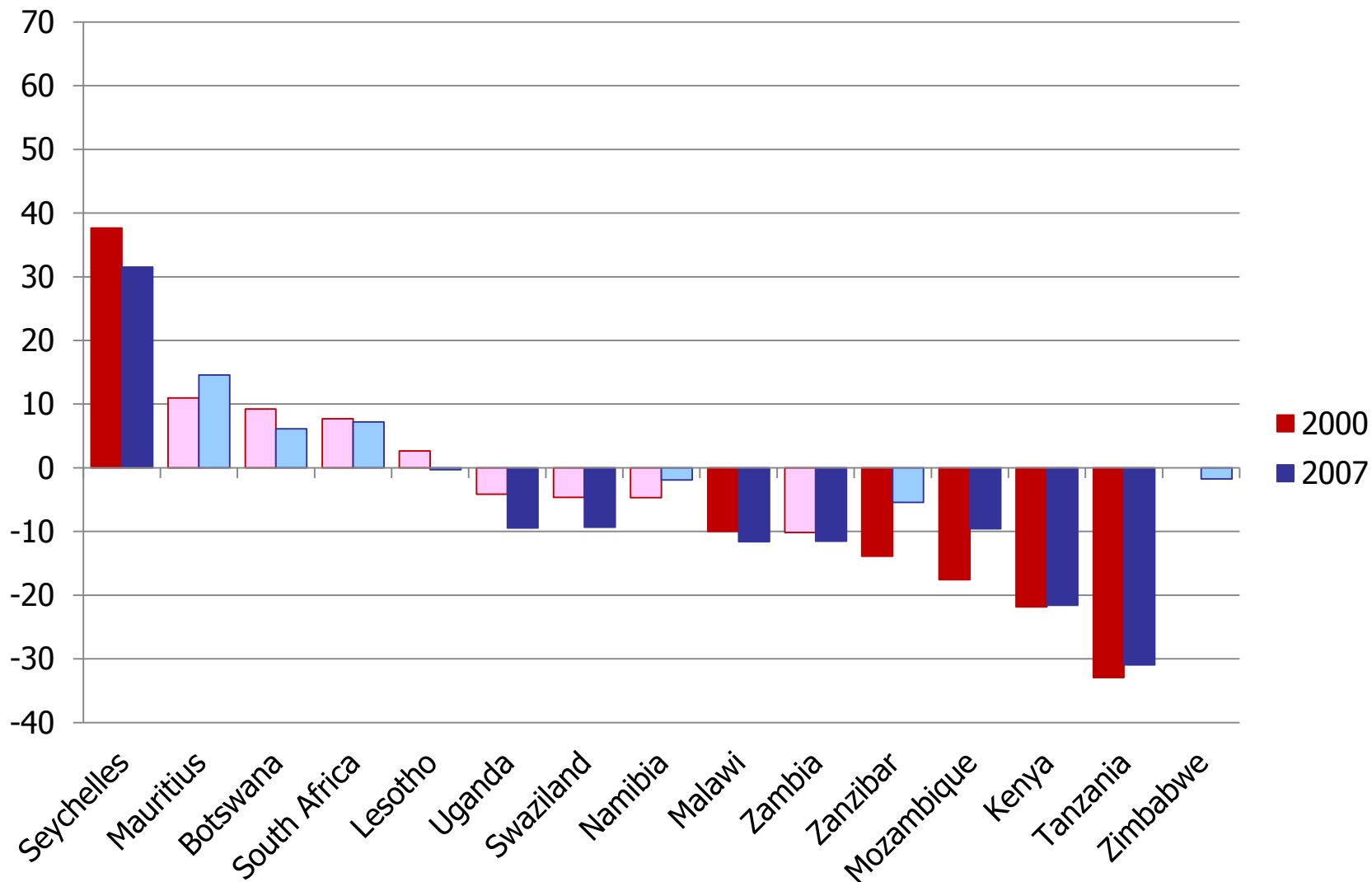
School Systems	Grade 6 enrolment 2000			Grade 6 enrolment 2007			Growth Rate	
	Boys	Girls	% Girls	Boys	Girls	% Girls	Boys	Girls
Botswana	19244	20062	51%	20736	20928	50%	8%	4%
Kenya	289230	293293	50%	378263	367444	49%	31%	25%
Lesotho	17257	21567	56%	20484	24634	55%	19%	14%
Malawi	83187	76054	48%	98387	95368	49%	18%	25%
Mauritius	13706	12714	48%	12068	11567	49%	-12%	-9%
Mozambique	73012	49326	40%	173454	145789	46%	138%	196%
Namibia	23247	25133	52%	23140	25111	52%	0%	0%
Seychelles	772	774	50%	773	742	49%	0%	-4%
South Africa	428040	473632	53%	457003	471483	51%	7%	0%
Swaziland	12135	12957	52%	14012	14042	50%	15%	8%
Tanzania(M)	234604	256329	52%	474301	491104	51%	102%	92%
Uganda	183325	147051	45%	301474	310192	51%	64%	111%
Zambia	84088	79007	48%	124029	117818	49%	47%	49%
Zanzibar	8349	8925	52%	11505	15435	57%	38%	73%
Zimbabwe	NA	NA	NA	120251	155643	56%	NA	NA
SACMEQ	1470196	1476824	50%	2229880	2267300	50%	52%	54%

Source: Saito (2011b)

SACMEQ Gender Differences in Reading

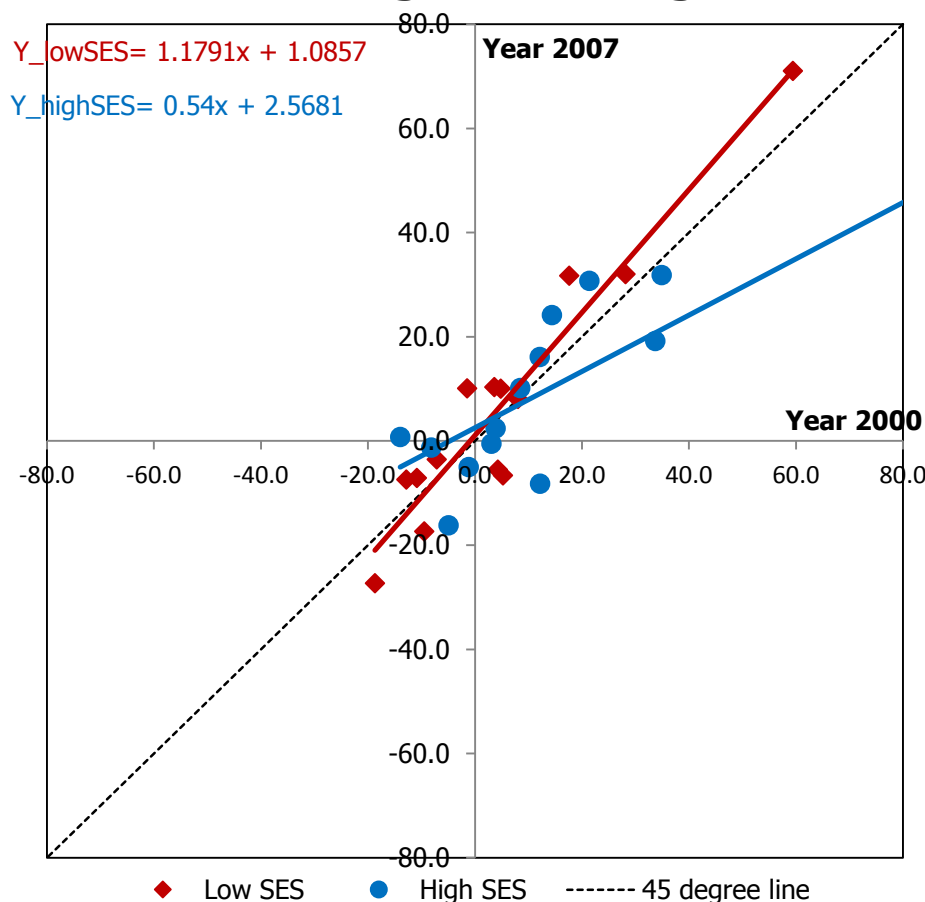


SACMEQ Gender Differences in Mathematics

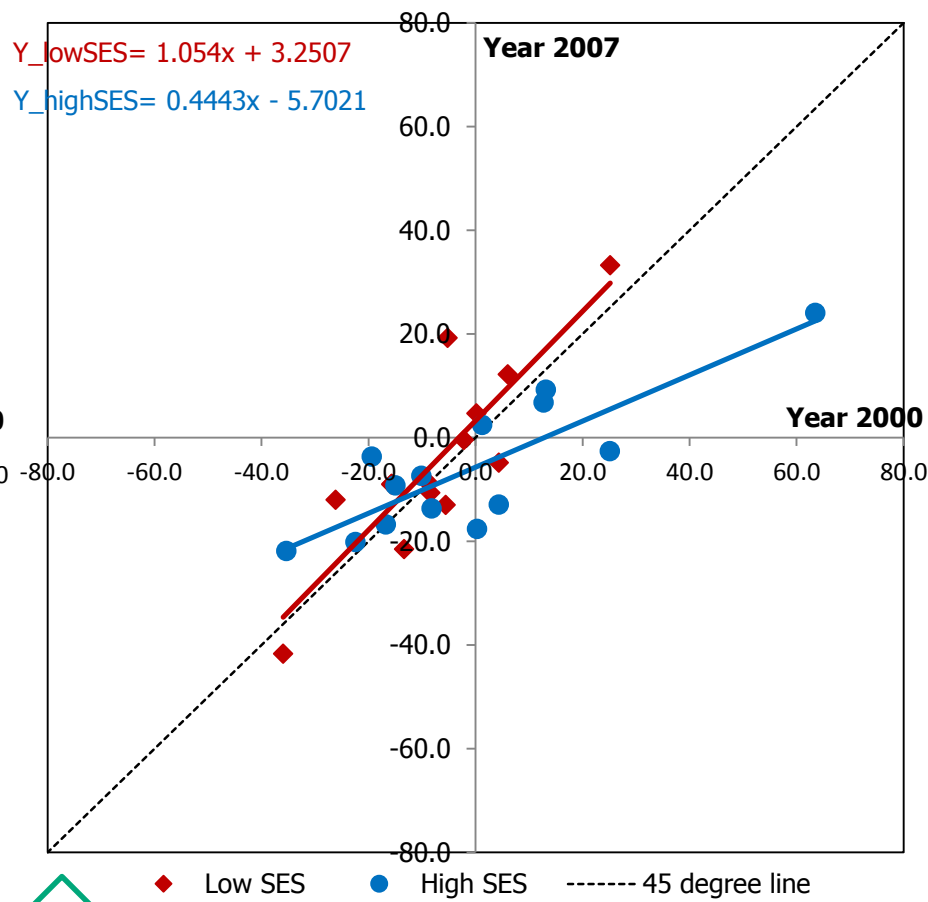


Change in gender differences between 2000 and 2007

Reading Low vs High SES



Mathematics Low vs High SES

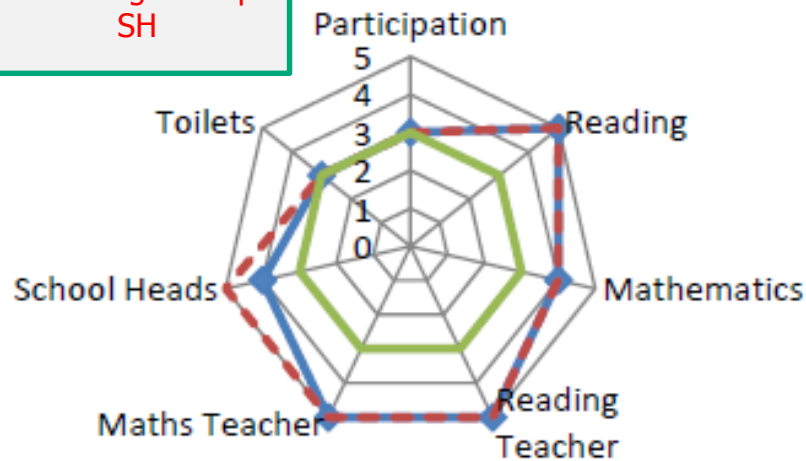


Source: Saito (2011b)

Reduction of the size of gender differences in Reading and Mathematics
only in High SES group

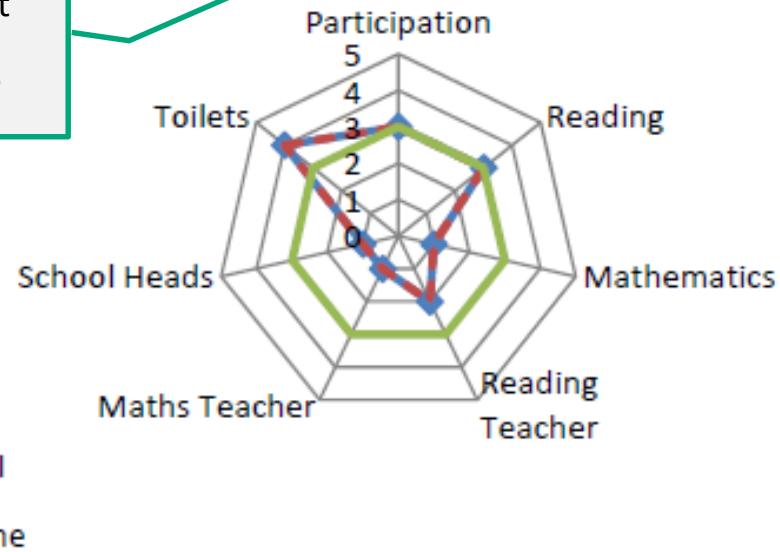
Botswana

Mostly in favor of female
No Change except SH



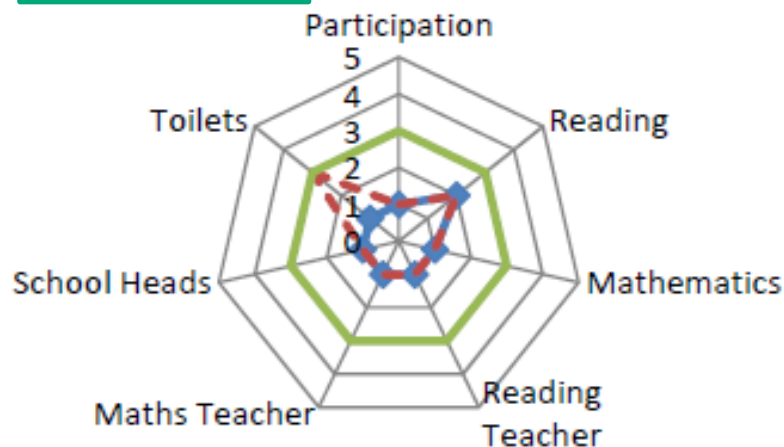
Kenya

Mostly in favor of male except Toilets
No Change



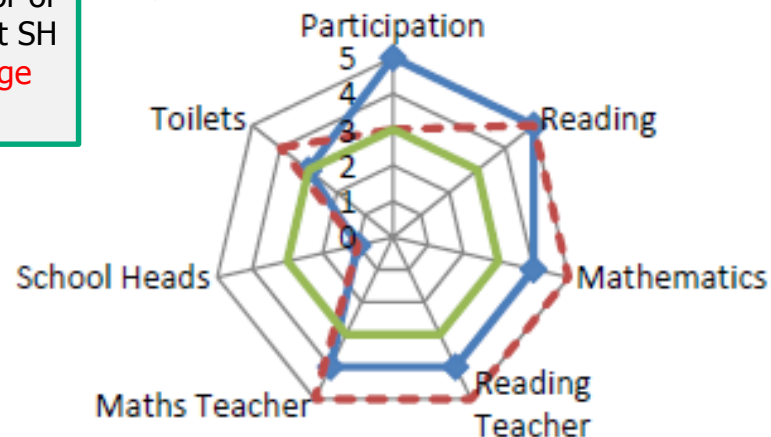
Mozambique

Mostly in favor of male
No Change except Toilets



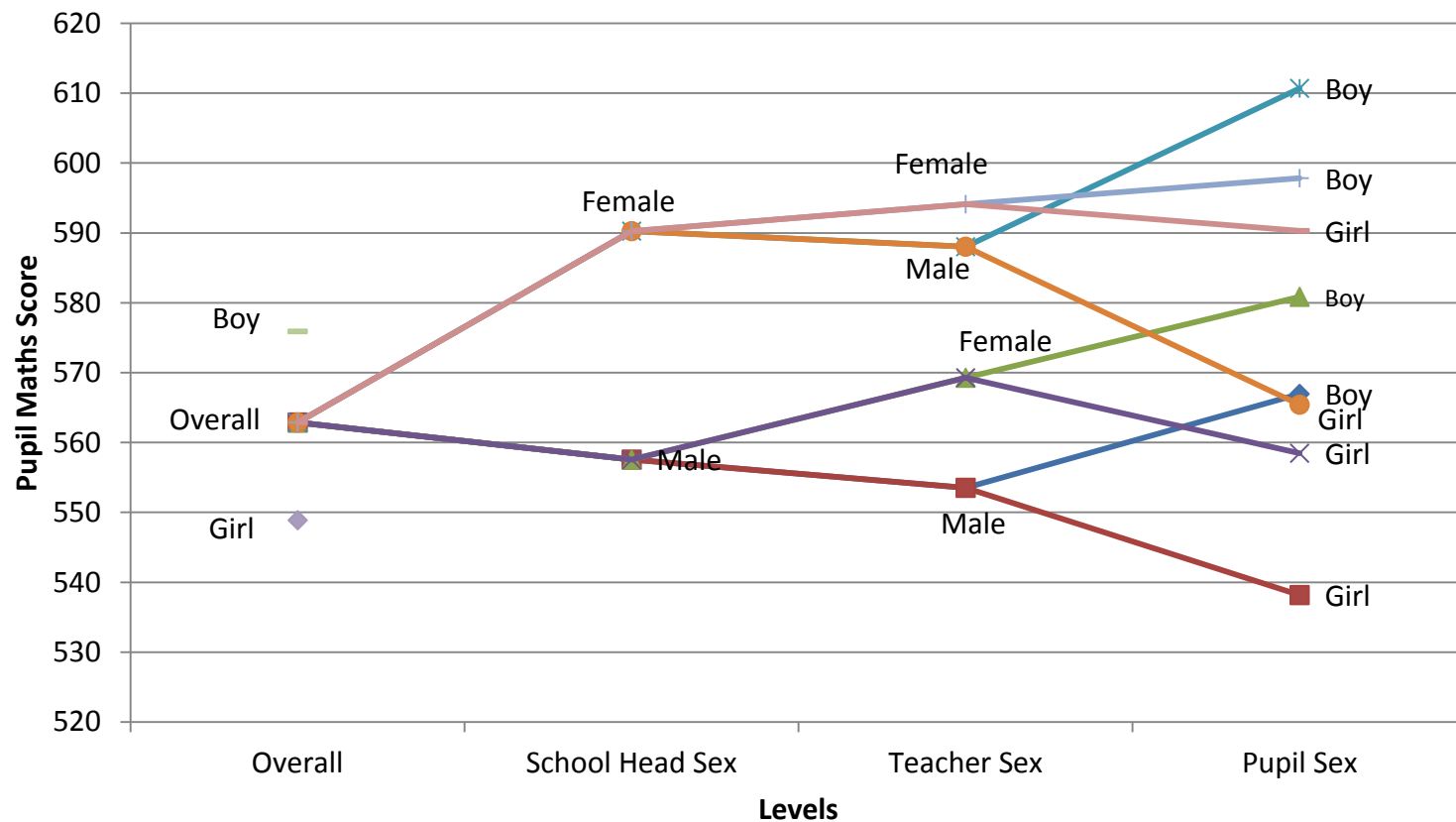
South Africa

Mostly in favor of female except SH
Some Change



Outside green → In favor of Female
Inside green → In favor of Male

Kenya (Mathematics)

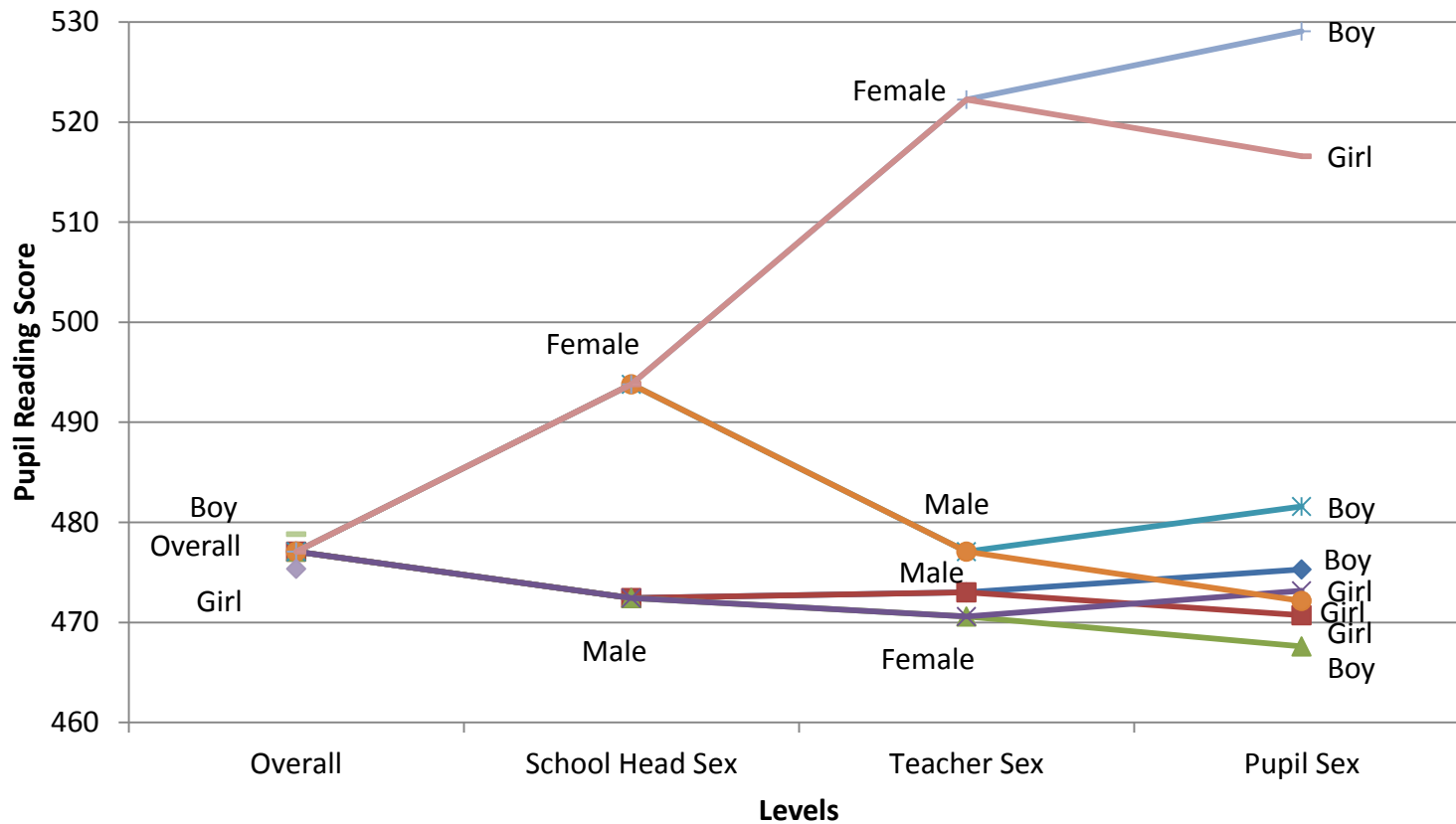


Boys' and Girls' Mathematics Mean Scores based on the Gender of School Heads and Mathematics Teachers in Kenya

School Head	Maths Teacher	Teacher Characteristics and Teaching Practices					
		Maths Scores	Maths. Homework			Give M. Tests	Meet Parents
			Give	Correct	Explain		
Male	Male	913	68%	37%	29%	22%	22%
Male	Female	894	70%	46%	36%	30%	26%
Female	Male	903	64%	49%	40%	33%	9%
Female	Female	929	80%	40%	36%	22%	41%

Source: Saito (2013b)

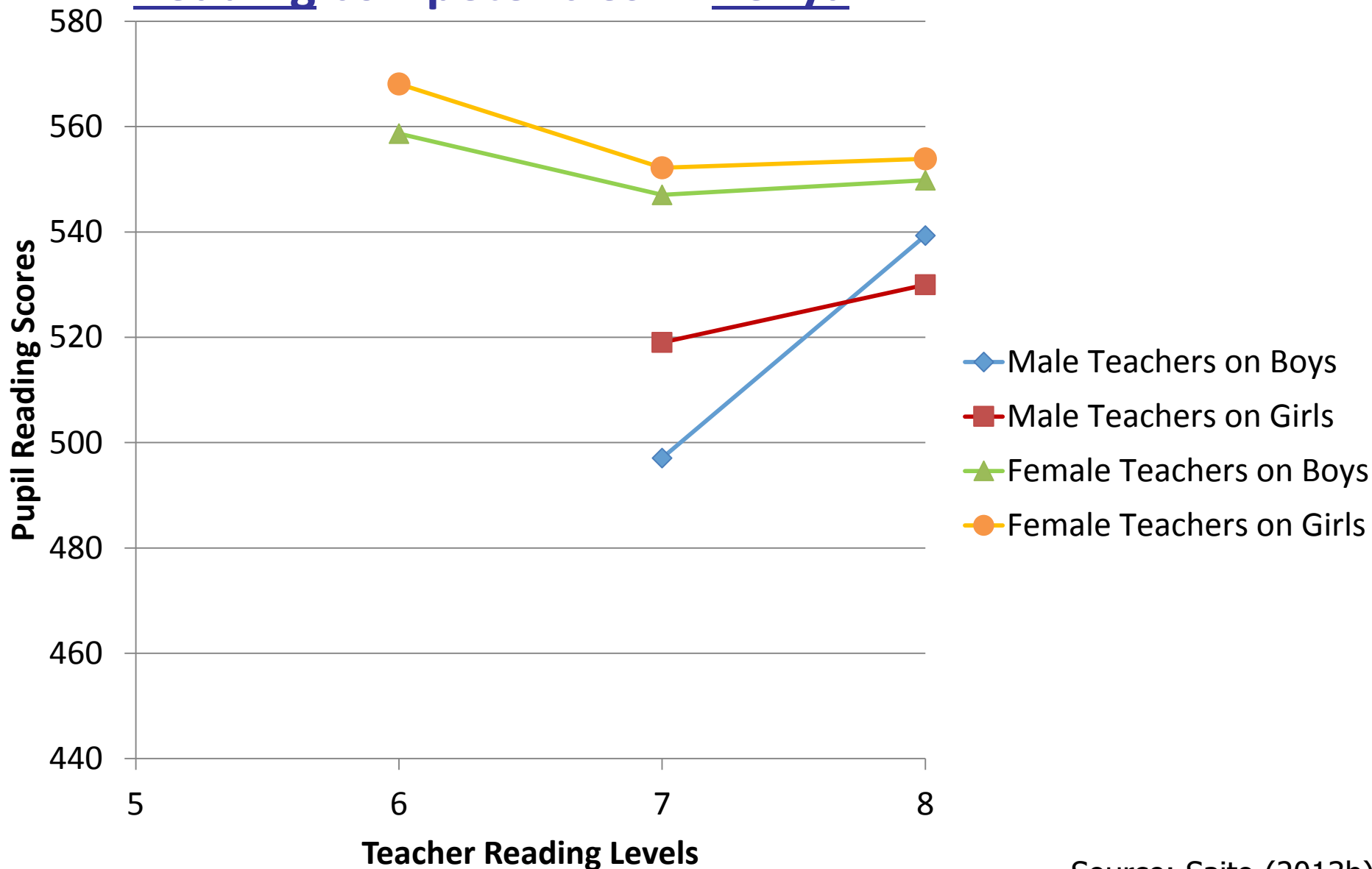
Uganda (Reading)



School Head	Reading Teacher	Teacher Characteristics and Teaching Practices					
		Reading Scores	Reading Homework			Give R. Tests	Meet Parents
			Give	Correct	Explain		
Male	Male	731	43%	30%	28%	32%	29%
Male	Female	718	55%	37%	35%	25%	26%
Female	Male	725	52%	35%	29%	30%	24%
Female	Female	732	60%	59%	54%	34%	33%

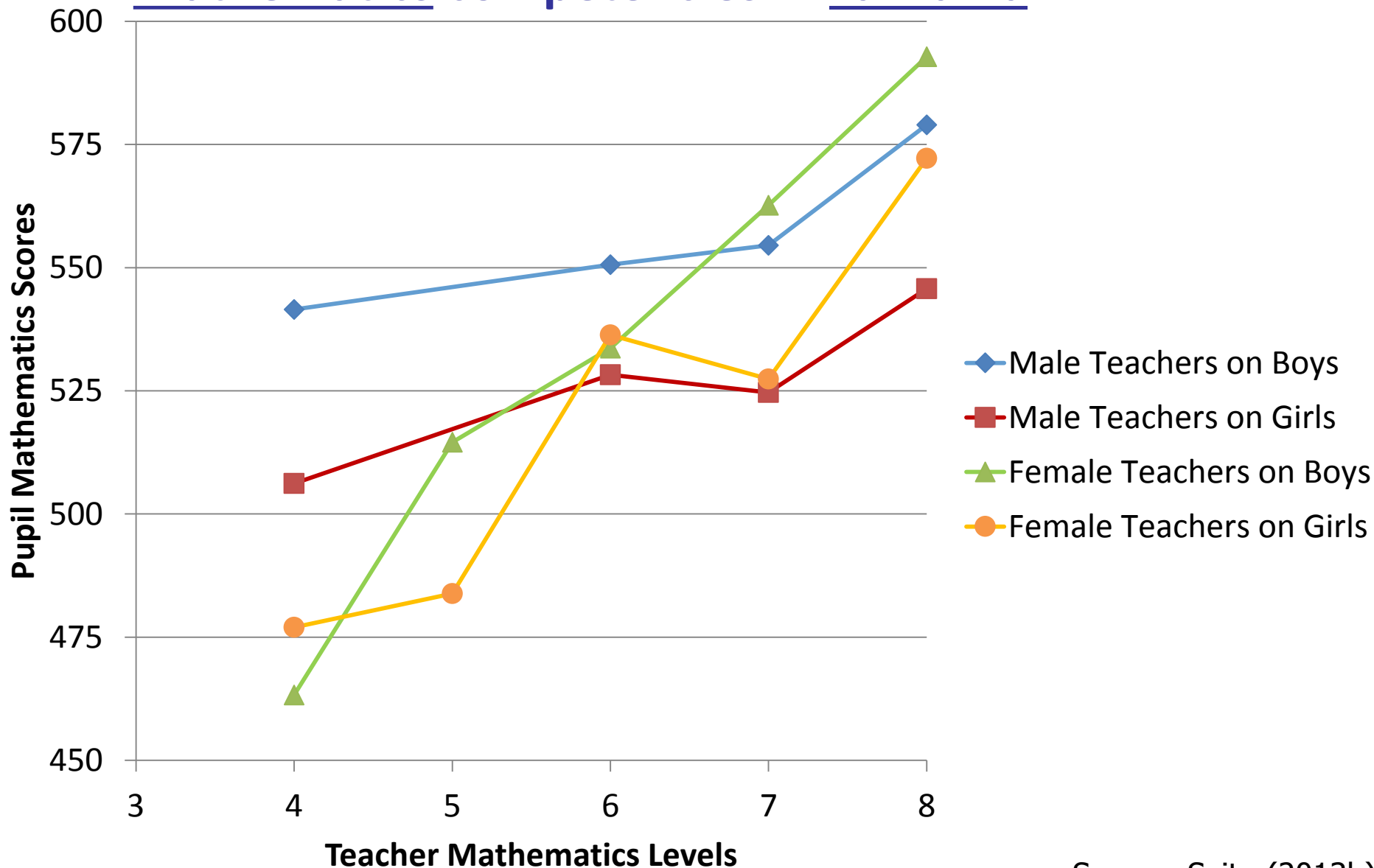
Source: Saito (2013b)

Relationship between pupils' and teachers' Reading competencies in Kenya

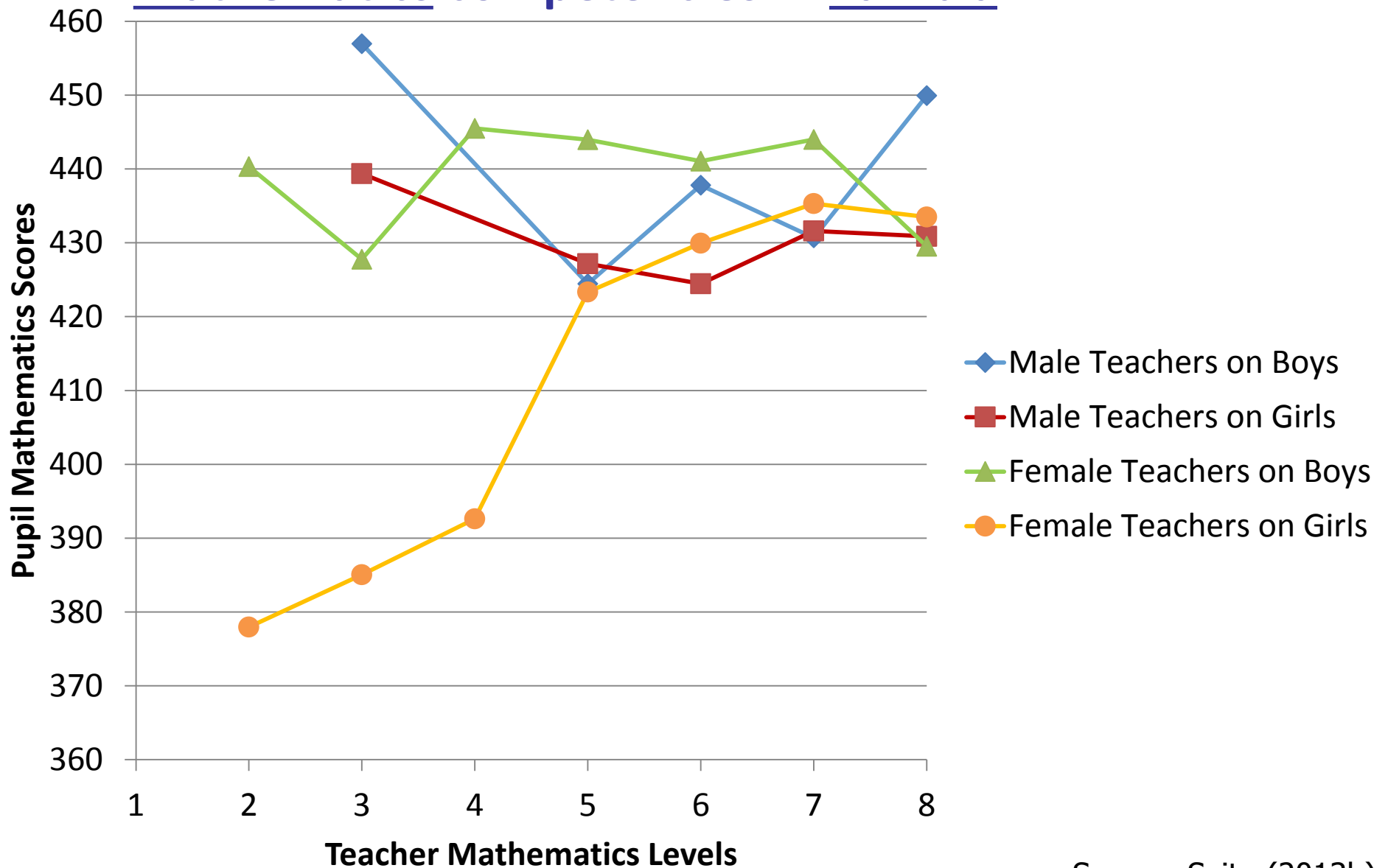


Source: Saito (2013b)

Relationship between pupils' and teachers' Mathematics competencies in Tanzania



Relationship between pupils' and teachers' Mathematics competencies in Zambia



Top Nairobi school

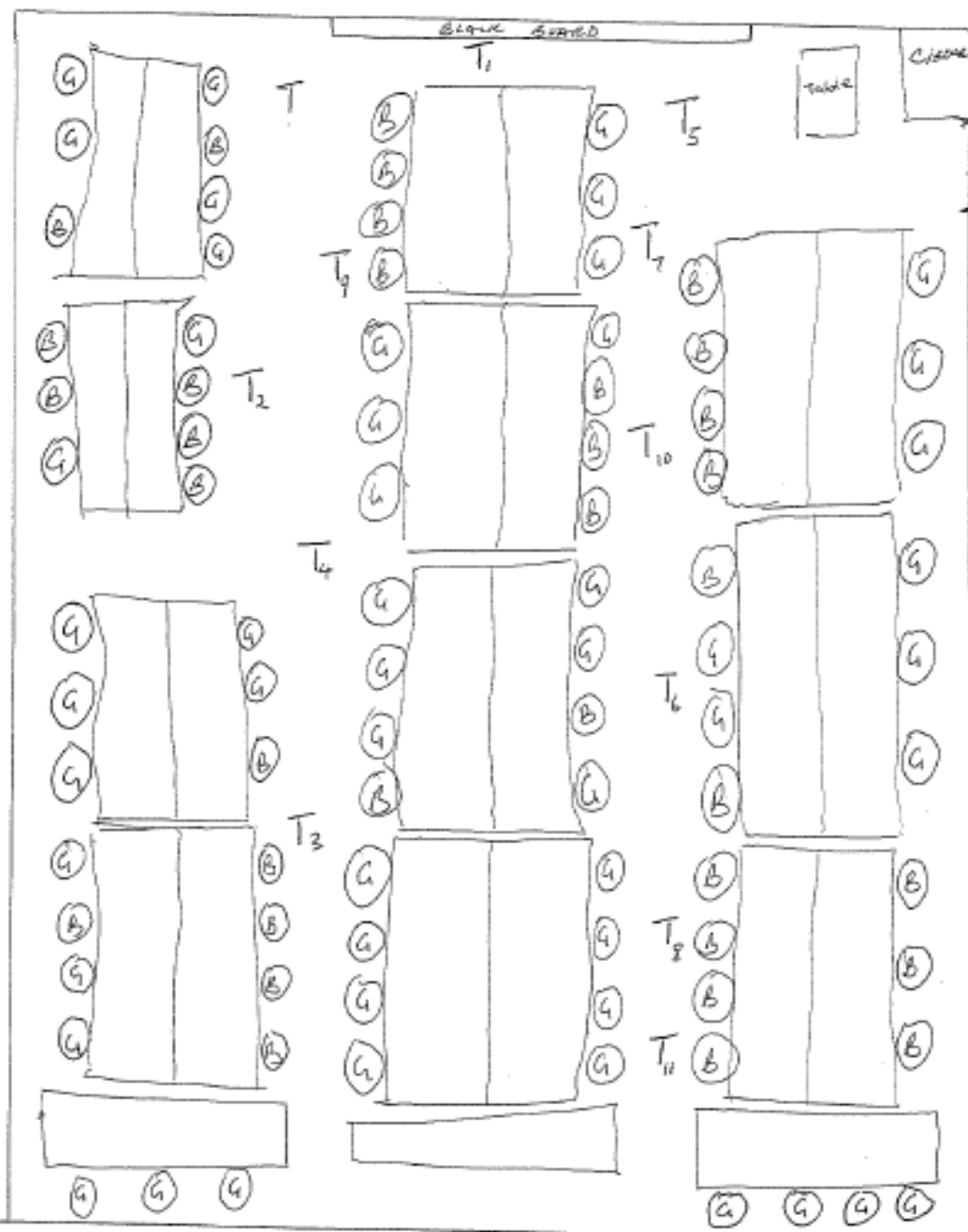
Large gender differences (B>G)

- (Female) School Head:
 - Rotates both male and female teachers equally across all levels and all subjects.
- (Female) Mathematics Teacher:
 - Taken gender-sensitive training activities (language, materials, equal participation).
 - "I make my Maths class conducive. I make the image of Maths more friendly. In my class no one is special."
 - Appoints a class leader based on the abilities, regardless of gender.
 - More questions at higher order thinking were addressed to girls during class.
- Standard 6 boy:
 - "I prefer a female teacher for Reading because she can repeat the question in different ways and translate problems better. I prefer a male teacher for Maths because I can understand better."
- Standard 6 girl:
 - "I prefer a female teacher for Maths because she waits for me to understand. I prefer male teacher for Reading because he helps me with challenges."

Top Nairobi School Grade 6 Maths Class

- 89 pupils
- 17 textbooks
- Periodically rotates seating arrangement based on performance.
- Uses peer learning approach, by pairing the brightest and the weakest, regardless of gender.

Source: Saito (Ed.) (forthcoming)





Average Nairobi school

Large gender differences ($G > B$)

- Female school head with two competent female deputies.
- Women teachers were majority – 80 percent
- More girls enrolled in higher classes e.g. 77 girls in class 6 and 50 boys.
- More attention and responses from girls than boys in upper classes.
- Caning of boys by teachers.
- Girls tease boys, but boys help girls when facing problems in class.
- No gender 'discrimination' in seating arrangement but the seating is organised by teachers according to performance.



Policy Messages: Implications for Monitoring and Evaluation, Policy and Planning (1)

- Need for a review on gender-related interventions through detailed analyses on budget for quality improvement as opposed to parity improvement (Planning Department).
- Need to agree on gender equality indicators to monitor the quality of learning of boys and girls (Planning Department).
- Need 'targeted' teaching /learning materials for different domains and competency levels of boys and girls (Curriculum Branch).
- Need not to ignore teachers' subject knowledge training in order to overcome Maths anxiety (Teacher Service Commission).
- Need to enhance teachers' skills to work with adolescents through in-service training (Teacher Service Commission).

Sexual Harassment (2000-2007)

	Pupils Harass Pupils			Pupils Harass Teachers			Teachers Harass Teachers			Teachers Harass Pupils		
	2000	2007		2000	2007		2000	2007		2000	2007	
Botswana	15	28	▲	0	3	►	1	4	►	1	4	►
Kenya	17	49	▲	4	8	►	5	7	▲	5	12	▲
Lesotho	12	23	▲	3	4	►	4	4	►	4	7	►
Malawi	36	42	▲	7	12	▲	16	14	▲	16	17	►
Mauritius	9	15	▲	0	2	►	0	1	►	0	3	►
Mozambique	22	20	►	12	6	▼	11	0	►	11	8	►
Namibia	36	38	►	5	6	►	7	8	▲	7	10	►
Seychelles	49	62	▲	5	0	▼	0	0	►	0	0	►
South Africa	25	40	▲	6	5	►	4	5	►	4	5	►
Swaziland	34	39	▲	8	6	►	4	9	▲	4	11	▲
Tanzania	50	38	▼	22	20	►	18	17	►	18	19	►
Uganda	41	58	▲	19	30	▲	17	31	▲	17	37	▲
Zambia	35	48	▲	14	12	►	11	13	▲	11	20	▲
Zanzibar	47	97	▲	14	92	▲	8	89	▲	8	90	▲
Zimbabwe	NA	42	XX	NA	12	XX	NA	19	XX	NA	19	XX
SACMEQ	29	41	▲	8	13	▲	7	13	▲	7	16	▲

Trend (2000-2007) of SH perception: % 'sometimes' or 'often'

▲	increased by GE 10 % points
▲	increased by GE 5 % points and LT 10 % points
►	changed by LT 5 % points
▼	decreased by GE 5 % points and LT 10 % points
▼	decreased by GE 10 % points

✓ Sexual harassment between pupils seems to be very common in SACMEQ countries.

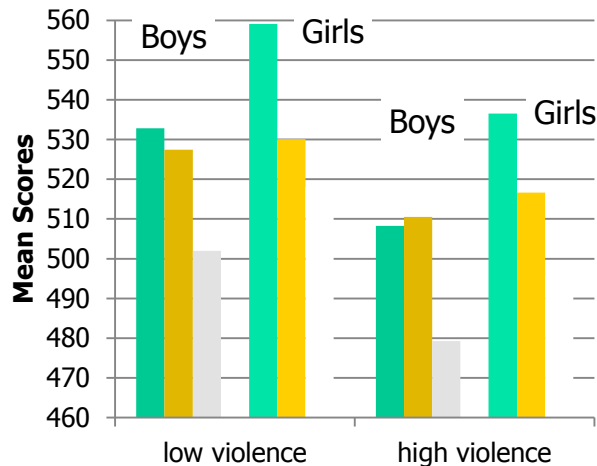
✓ In nine SACMEQ countries, the percentage for harassment between pupils increased greatly since 2000.

✓ In Uganda and Zanzibar, considerable increase was recorded in all forms of sexual harassment between 2000-2007.

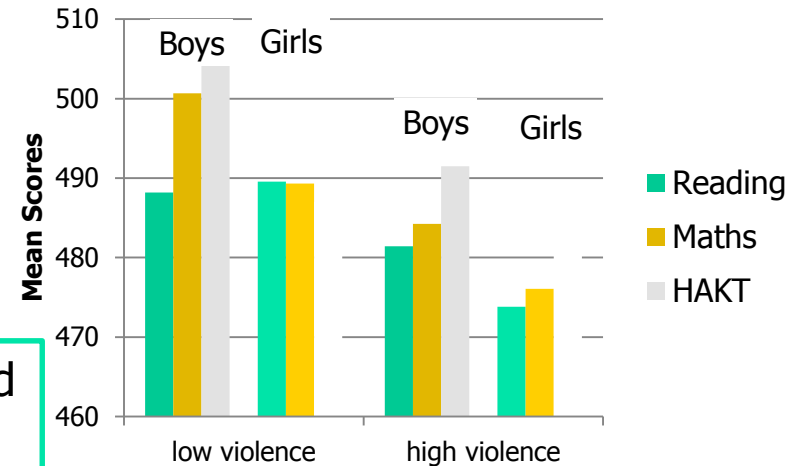
Source: Saito (2013a)

Differences between boys' and girls' achievement scores in schools with low violence vs. high violence

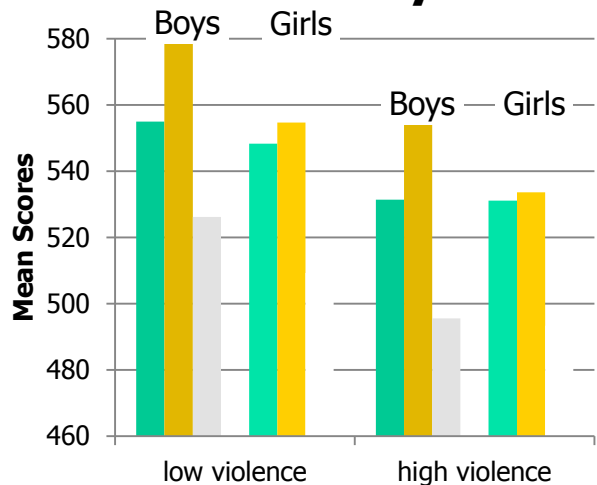
Botswana



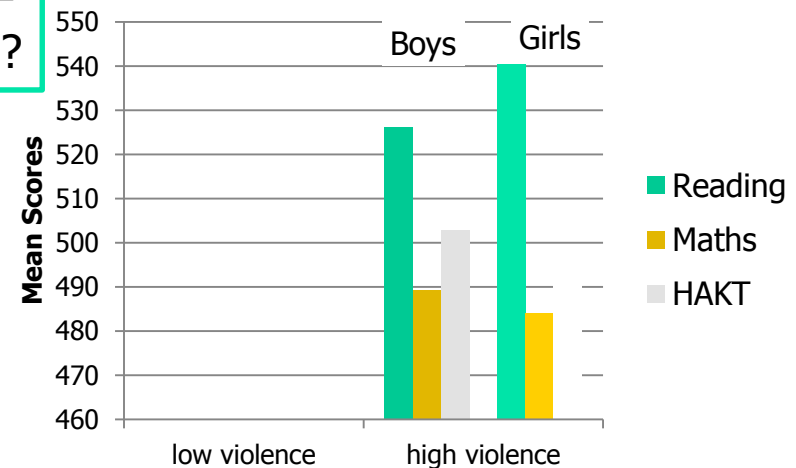
Uganda



Kenya



Zanzibar



Both boys and girls perform better in schools with low violence – gender based?

Stories behind violence/bullying/harassment

Case of a male teacher (girl's uncle) molesting a female pupil and patting other girls' buttocks in the staircase...

- The girl reported to her teacher who reported to School Head.
- School Head called in girl's parents.
- Parents protested: 'if you talk the truth, our brother can lose his job ... no, our brother cannot do something like that!' (girl's parents took the side of the 'teacher' – girl's uncle.)
- Teacher applied for an external transfer, and the case ended w/o follow-up.

Case of a male volunteer teacher asking a young boy to take his shorts off in front of his class...

- Boy's parents: 'My son says he does not want to go to class, because the teacher removed his clothes before the children and beat him'
- School Head: 'The teacher wanted the all boys to remove the clothes, so as to learn to name the kind of clothes the people wear'.

Policy Messages: Implications for Monitoring and Evaluation, Policy and Planning (2)

- The DEO should provide gender awareness programmes to both the schools (school heads, teachers, pupils, and all support staff) and the parents;
- Feasible reporting mechanisms must be put in place for school heads to report to the DEO;
- A system of redress should be established that could take the form of a 'code of behaviour' along with clearly defined consequences for inappropriate behaviour.

Stories behind toilet statistics

Table 1: Selected Information through 'Gender Lens' in Kenya (2000 and 2007)

Selected Indicators	2000	2007
Female Reading Teacher	46%	46%
Female Mathematics Teacher	24%	27%
Female School Head	9%	15%
Schools with Fences	80%	86%
# Boys per Boys' Toilet	49	56
# Girls per Girls' Toilet	45	52

Source: Wasanga et al (2011)

Standard 6 boy: "I'm scared of using it because I may fall."

Standard 6 boy: "... when you come out of the toilet, you find there is no water to wash your hands."

Standard 6 girl: "Boys sometimes peep at girls' toilets..."

Standard 6 girl: "I don't like to share the toilets with smaller children."

Standard 6 girl: "I keep the used napkin in my pocket and throw away at home."

Standard 6 girl: "During the menstruation period, I sneak out class to use the staff toilet."

Source: Saito (Ed.) (forthcoming)

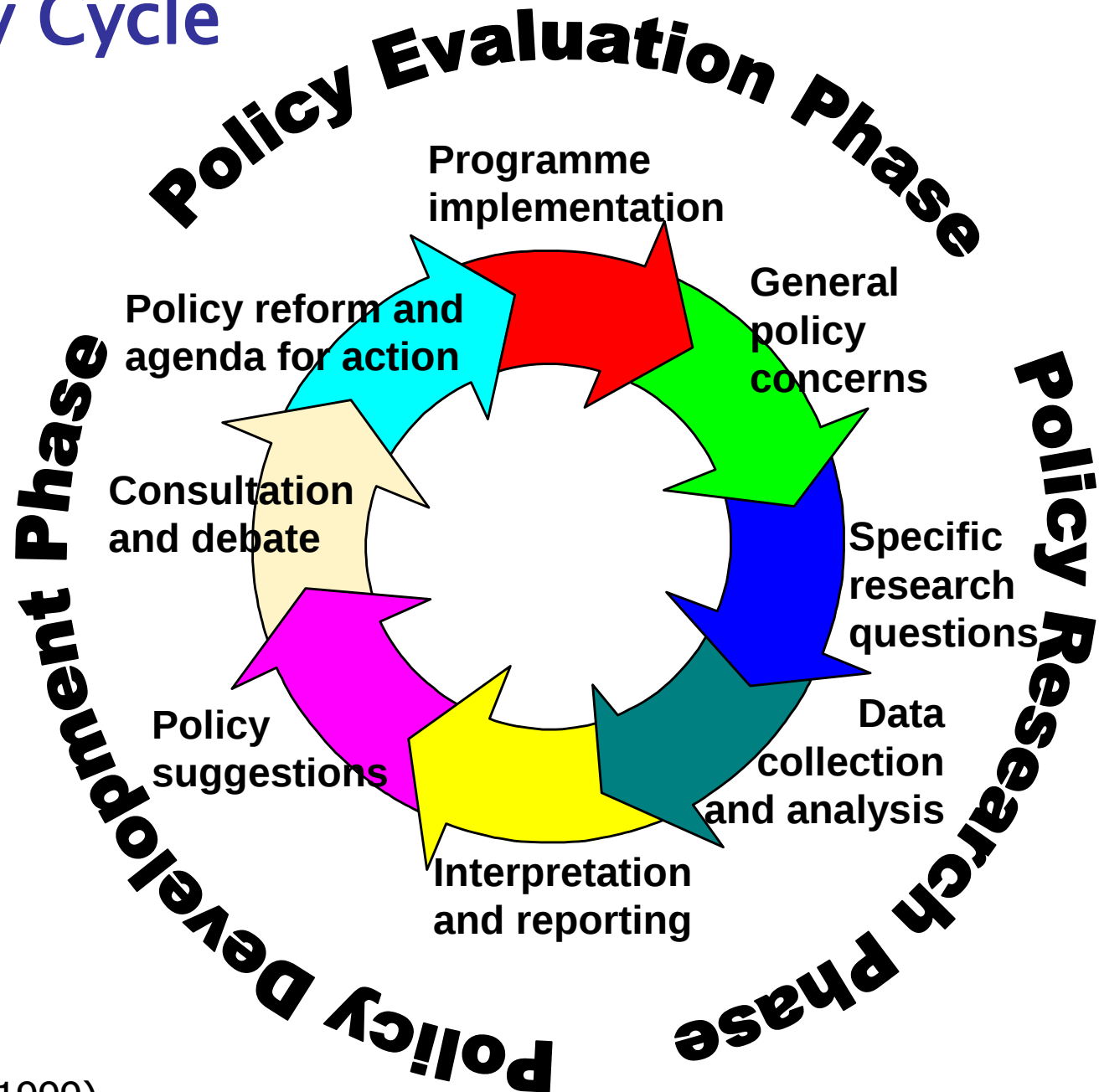




Policy Messages: Implications for Monitoring and Evaluation, Policy and Planning (3)

- District or City quality assurance officers may wish to include a description of the quality of toilets in the school inspection reports.
- School Heads may wish to prioritize the maintenance of toilets on the use of school grants.
- School Heads and the School Management Committee may wish to mobilize a toilet cleaning campaign.

Policy Cycle



References

- Ross, K., & Saito, M. (forthcoming). *SACMEQ III Project International Report: The Condition of Schooling and the Quality of Education in Southern and Eastern Africa (2000-2007)*. Volume 1: Technical Report, Chapter 2: "Sampling". Paris: SACMEQ.
- Ross, K., Saito, M., Dolata, S., Ikeda, M., & Zuze, L. (2004). Data archive for the SACMEQ I and SACMEQ II projects. Paris: IIEP-UNESCO.
- Saito, M. (1999). A generalizable model for educational policy research in developing countries. *Journal of International Cooperation in Education*, 2(2), 107–117.
- Saito, M. (2010). The gender gap in learning – Back to square one. IIEP Newsletter 28 (3).
- Saito, M. (2011a). *Trends in gender equality in learning achievement Southern and Eastern Africa: Exploration of characteristics of educational environment and curriculum areas*. Paper presented at IIEP Policy Forum on Gender Equality in Education (Paris, October 2011).
- Saito, M. (2011b). Trends in the magnitude and direction of gender differences in learning outcomes. *SACMEQ Working Paper #4*.
- Saito, M. (2013a). *Violence in Primary Schools in Southern and Eastern Africa: Some Evidence from SACMEQ*. SACMEQ Gender Series Contribution #1. Paris: SACMEQ.
- Saito, M. (2013b). *The classroom gender dynamics on the quality of learning at primary schools in Southern and Eastern Africa*. Presentation at the 57th Annual Conference of the Comparative and International Education Society (CIES) (March 2013).
- Saito, M. (Ed.) (forthcoming). *Stories behind gender differences in student achievements*. Paris: UNESCO-IIEP.
- Wasanga, P. M.; Ogle, M. A.; Wambua, R. M. (2011). *Progress in gender equality in education: Kenya*. SACMEQ (Policy Brief No. 6). Nairobi: Kenya National Examinations Council.



More information about IIEP's Gender Equality Programme:

m.saito@iiep.unesco.org