

**Assessing School Climate towards Sustainable Learning for All
in Sub-Saharan Africa: Perspectives from Unstable Health to School-Related Gender-
Based Violence (SRGBV)¹**

Mioko Saito, IIEP²

Introduction

In September 2015, world leaders adopted the 2030 Agenda for Sustainable Development. It comprises a set of 17 Sustainable Development Goals (SDG), including the education goal (SDG4) to “ensure inclusive and equitable quality education and promote lifelong learning opportunities for all” (United Nations, 2015).

When reflecting on the concept of quality of education, in addition to school resources and the quality of teachers, the school climate is often considered as an important enabling condition for pupils’ well-being. Pigozzi (2006) stated that the safety and security of the learning environment are crucial elements for a dynamic concept of quality education. Following on from this idea, pupils might find it difficult to attend classes, concentrate on their school subjects, and/or reach their full potential in an environment where they feel unsafe, insecure or intimidated.

In fact, one of the implementation targets (4.a) for SDG4 is to “build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all” (UNESCO, UNICEF, the World Bank, UNFPA, UNDP, UN Women and UNHCR, 2015). One of the indicators (Indicator #33) put forward to monitor this target is the “percentage of students experiencing bullying, corporal punishment, harassment, violence, sexual discrimination and abuse”. However, this indicator does not provide information on the school climate more generally.

Regarding school-related gender-based violence (SRGBV), many studies exist that (i) define the concept and what to measure, (ii) examine methodology on how to measure, (iii) measure the “gendered effects” of the incidents on learners’ school performances, (iv) investigate the causes and prevention, (v) assess the type of counselling and the impact of interventions, etc. (see for example, Klein, 2007; Rabrenovic et al., 2004; Saito, 2013; UNESCO-GMR and UNGEI, 2015; USAID, 2015; WHO, 2015). However, since the issue is multifaceted, no consensus has been reached in terms of the concept and the methodology. In addition, the inter-relationships between the different elements which lead to school disorder (i.e., health problems, substance use, and/or violence), as well as the relationship with learning outcomes, have been rarely reported.

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The objective of the current study is to explore the use of Rasch scaling technique to construct a Perceived School Disorder Index (PSDI) in order to see if there are 'stages' of evolution in a school climate. More specifically, the research questions for the current study are:

- Which items constitute the PSDI in Sub-Saharan African countries?
- What profile of behavioural problems are likely to emerge at different stages of the school climate?
- What were boys' and girls' learning outcomes at each stage of the school climate?

Methodology

The current study is based on data collected by the Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) in 2000 and 2007. SACMEQ conducted three large-scale surveys, in 1995, 2000, and 2007, and a fourth survey was carried out in 2013. In all studies, the target population has been Grade 6 pupils registered in government or non-government schools in Ministries³ of Education in each of the participating countries. The sample was drawn using a two-stage cluster sampling based on a probability proportional to the size of the schools (PPS sampling), with a sampling accuracy which is equivalent to a simple random sample of 400 pupils for each country. A total sample of some 41,000 and 61,000 Grade 6 pupils in some 2,300 and 2,700 schools participated in 2000 and 2007 respectively (Ross and Saito, in press).

A total of 28 questions related to school heads' perceptions of pupils' and teachers' behavioural problems (18 items and 10 items respectively) at the primary school level were included in the school head questionnaire used in the SACMEQ studies in 2000 and 2007. The Rasch Unidimensional Measurement Models (RUMM) software (Andridge et al, 2007) was used in order to calibrate these behavioural items. In addition, Differential Item Functioning (DIF) analyses were carried out in order to ensure the coherence of the model regardless of the country, time, school location, and the sex of the school head.

Limitations

As pointed out by Saito (2013), the behavioural problems reported are the perceptions of school heads, in terms of how often they have to deal with these problems. This means that if problems exist but are not reported to the school heads, they would not be captured by SACMEQ questionnaires. In addition, if school heads have received complaints or reports about problems, this indicates that a regulation and a reporting mechanism exist in the schools, i.e., that these schools tend to be more 'sensitive' to discriminatory environments in general. These competing notions may cancel out the hypothetical hierarchical school disorder index.

Moreover, SACMEQ questionnaires did not gather information about the sex of those concerned. Similarly, an attempt has been made to observe the relationship between the school climate and pupils' learning achievement. However, there is no intention of drawing a

³ These Ministries are Botswana, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania (Mainland), Tanzania (Zanzibar), Uganda, Zambia, and Zimbabwe. Angola joined SACMEQ in 2013 as the 16th member.

cause and effect presumption. Finally, the latest data available at the time of writing are those collected in 2007, which could be considered outdated.

Results

- Which items constitute the PSDI in Sub-Saharan African countries?

In **Figure 1**, the different behavioural problem item's thresholds and the distribution of schools according to their disorder level have been placed on the same scale based on the 28-item scale. If a behavioural problem item appeared above the zero line, this meant that this problem would occur in fewer schools than the average problem would. Conversely, if a behavioural problem item appeared below the zero-line, this meant that this problem would occur in more schools than the average problem would. Also shown in **Figure 1** is the position of the schools in relation to the individual behavioural problem items: a school that was positioned at a certain level of the scale would be more likely to have the problems that were at or below this level and less likely to have the problems above this level. The reliability on the person separation index with the 28-item scale was 0.89, providing the power of test-of-fit rating as "Excellent".

- What profile of behavioural problems are likely to emerge at different stages of the school climate?

Using the item map in **Figure 1**, Perceived School Disorder Profiles (PSDP) have been identified (see **Table 1**). These were based on the analysis of the nature of the behavioural problem items to identify common characteristics in groups, as well as the evaluation of the values of estimates and the overall distribution in order to obtain the reasonable breaks. Using this information, it was possible to develop a portrait of four typical schools with increasing levels of school disorder on the SACMEQ PSDI. In other words, items on absenteeism, lateness, and health problems appeared at the earliest stage, then items related to classroom disturbance, fights, and theft emerged at the second stage. The third stage concerned drug and alcohol dependency, while items relating to sexual harassment appeared at the final stage. This could also mean that earlier stages could be considered as the earlier symptoms and therefore, before any school reaches the stage of sexually undisciplined, it might be possible to remedy the 'lighter' problems that emerge beforehand.

- What were boys' and girls' learning outcomes at each stage of the school climate?

In **Appendix A**, the mean scores on Reading, Mathematics for 2000 and 2007, and HIV and AIDS Knowledge Test (HAKT) for 2007 have been presented for all the SACMEQ countries (for more detailed accounts on the calibration of these tests, see Ross et al, 2004; Dolata and Ross, 2010; and Saito et al, 2010). It should be noted that the correlation coefficients between the PSDI and the test scores were without statistical significance when the analysis was controlled by the school location and sex of the school head. However, different patterns emerged based on the country and subject. As examples, **Figure 2** illustrates boys' and girls' mean scores on the HAKT for 2007 for each school disorder level for four countries: Botswana, Kenya, South Africa and Uganda. For Botswana and Uganda, while girls' mean scores were much higher at level 1 (lower school disorder level), the gender differences disappear as the school disorder level increases. In Kenya, the general higher mean scores by boys appeared for levels 1 through 3; it was only at level 4 that the mean score of girls was higher than that

of boys. In South Africa, no substantial relationship was shown between the school disorder level and the HAKT mean scores for either sex.

Conclusions

By using the Rasch scaling technique, it was possible to construct a PSDI, based on the 28 items on the perceptions of school heads about pupils' and teachers' behavioral problems at their schools. This scale measured the reliable and valid level of perceived disorder of all SACMEQ schools and the levels of all items on a single scale. The PSDP was also established using descriptions of the items. Items which concerned sexual harassment all came in the highest profile level on the scale. This supports the hypothesis that there is a hierarchy in the developmental levels of school disorders. That is, schools are likely to go through stages in the order of: (i) unstable health; (ii) disquieting environment; (iii) substance dependence; and finally (iv) sexually undisciplined. The PSDI scale puts the magnitude of school-related gender-based violence into the general perspective of school disorder. The study was useful to see the potential and opportunities in using the Rasch scaling technique for the measurement of highly worrying gender-related violence issues. For example, the instruments could be adopted to be integrated in the School Census in order to be used as a diagnostic tool for school safety. Further equating possibilities include: (i) school data identifying the sex of the victims; (ii) pupil-level data that are directly informed by pupils.

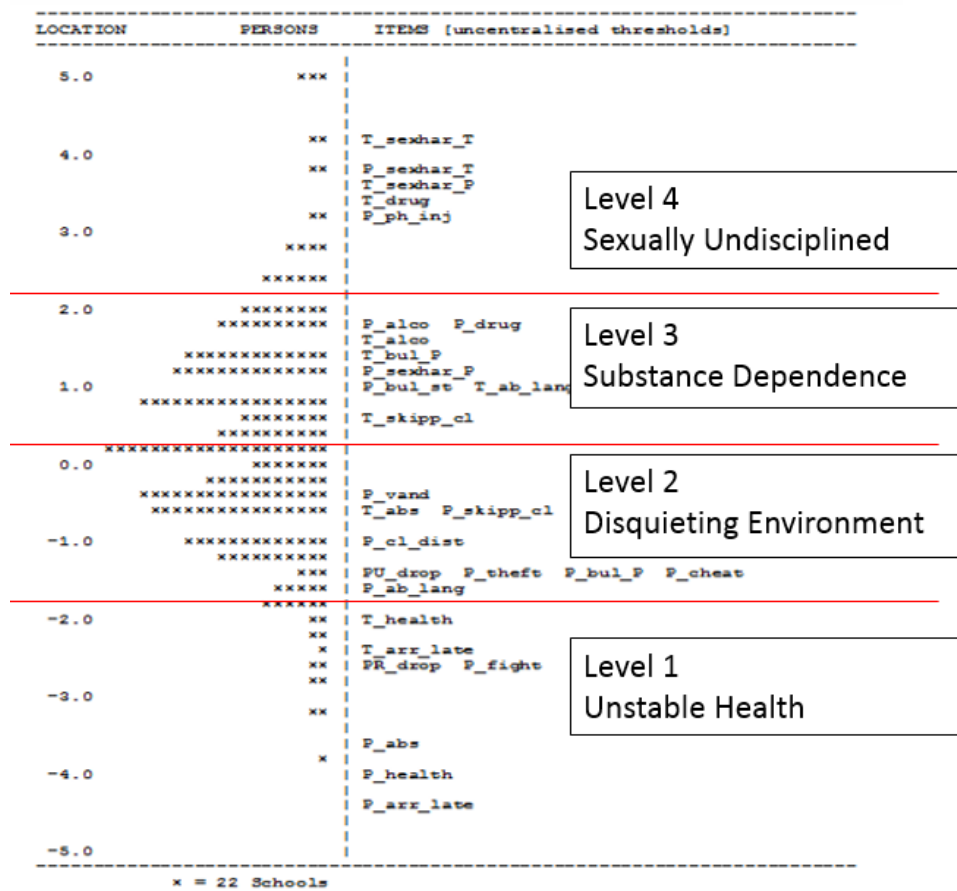


Figure 1: Perceived School Disorder Index – Item Map

Table 1: Perceived School Disorder Profile (PSDP) in Sub-Saharan Africa

Levels	Pupils' Behaviour	Teachers' Behaviour
① Unstable Health	Pupils arrive late. Pupils have health problems. Pupils' absenteeism. Pupils drop out (Rural) ⁴ . Pupils fight.	Teachers arrive late. Teachers have health problems.
② Disquieting Environment	<u>In addition to LEVEL ① problems...</u> Pupils' vandalism. Pupils skip classes. Pupils disturb class. Pupils drop out (Urban). Pupils' theft. Pupils bully pupils. Pupils cheat. Pupils use abusive language.	<u>In addition to LEVEL ① problems...</u> Teachers skip classes. Teachers' absenteeism.
③ Substance Dependence	<u>In addition to LEVEL ② problems...</u> Pupils abuse alcohol. Pupils abuse drugs. Pupils sexually harass pupils. Pupils bully staff.	<u>In addition to LEVEL ② problems...</u> Teachers abuse alcohol. Teachers bully pupils. Teachers use abusive language.
④ Sexually Undisciplined	<u>In addition to LEVEL ③ problems...</u> Pupils sexually harass teachers. Pupils physically injure staff.	<u>In addition to LEVEL ③ problems...</u> Teachers sexually harass teachers. Teachers sexually harass pupils. Teachers abuse drugs.

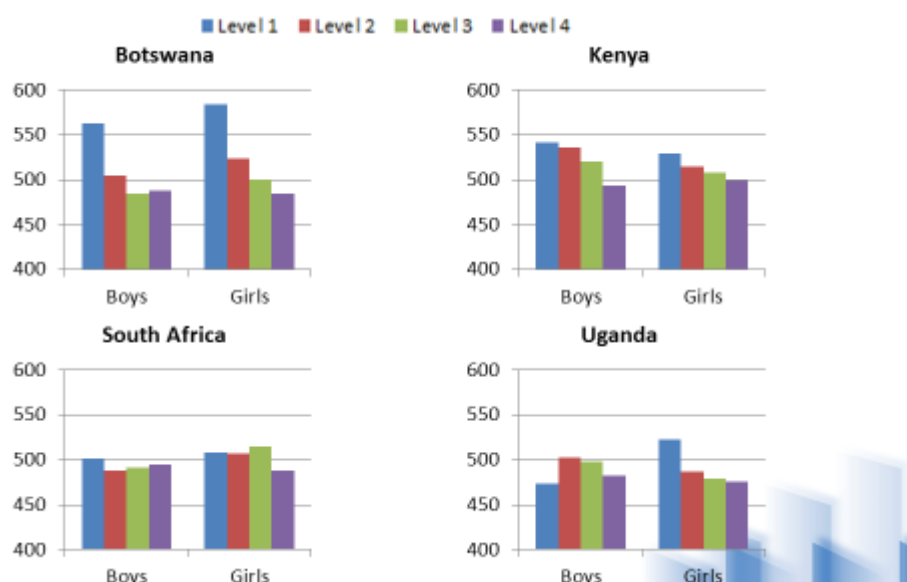


Figure 2: Relationship between PSDP and HAKT Scores for Boys and Girls (2007)

⁴ DIF was present between the rural and the urban schools for this item on pupils' dropping out. Therefore the item is split into two items.

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Appendix A: Learning Outcomes in SACMEQ Countries by sex and PSDP level (2000 and 2007)



